FINAL
ENVIRONMENTAL IMPACT REPORT

ALAMITOS BAY MARINA REHABILITATION PROJECT

SCH NO. 2008041028

Submitted to:

City of Long Beach
Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
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LSA

December 2009

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VOLUME I:
DRAFT EIR

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1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This Executive Summary has been prepared according to the California Environmental Quality Act (CEQA) Guidelines Section 15123 for the City of Long Beach (City) Environmental Impact Report (EIR) for the proposed Alamitos Bay Marina Rehabilitation Project. This EIR has been prepared by the City to analyze the proposed project's potential impacts on the environment, to discuss alternatives, and to propose mitigation measures for identified potentially significant impacts that will minimize, offset, or otherwise reduce or avoid those environmental impacts.

1.2 SUMMARY OF PROJECT DESCRIPTION

The Alamitos Bay Marina is located in the southeastern portion of Los Angeles County within the City. Alamitos Bay Marina was opened in the late 1950s and early 1960s; the Marina facilities are operated by the City of Long Beach. Although Alamitos Bay Marina is comprised of eight basins, the proposed project includes renovations only to Basins 1–7. Basin 8 is not included in the project, as addressed in this Draft EIR.

The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the harbor. The project encourages boating use by providing upgraded American with Disabilities (ADA) compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation. There are currently 1,967 existing slips in Basins 1 through 7. The proposed project includes installation of 1,646 slips in these basins, resulting in the loss of approximately 321slips. As of the date of this EIR, there are 1,430 customers in the Marina, so there would be a slip for every customer once the renovations are complete. However, should the number of correctly sized slips not be available at project completion, those customers would be placed in alternate slips until the appropriately sized slips become available.

Implementation of the project is anticipated to be accomplished in a 12-phase program, extending over approximately 6 years. The proposed project consists of a number of improvements to the existing Marina and includes the following: (1) dredging the Marina basins down to original design depths and/or original basin depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) completing dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project also includes the construction of an approximately 565-foot (ft) long dock located adjacent to Basin 4 at the southeast corner of the Long Beach Yacht Club

(LBYC). The long dock includes a 200 ft temporary section that would accommodate boaters during the renovations and would be removed upon project completion. Based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. Therefore, the City has identified a site adjacent to the northeast shore of Marine Stadium to convert to an open space/habitat mitigation site The project includes two construction staging areas: one located in a parking lot on Marina Drive near Basin 2 and one located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard. Each of these project components is described in greater detail in Chapter 3.0, Project Description.

1.3 ALTERNATIVES

The following three alternatives to the proposed project were selected for consideration, including the No Project Alternative and alternative sites as required by CEQA:

- Alternative 1: No Project/No Development
- Alternative 2: Reduced Project Alternative
- Alternative 3: On-Site Dry Stack Storage Alternative

In evaluating an appropriate range of alternatives to the proposed project, a number of alternatives were considered and rejected by the Lead Agency. These included an alternative location, alternative habitat mitigation sites (Alamitos Bay Peninsula between Balboa and 56th Place, Cerritos Channel and Wetlands, Basin 6 North – Cerritos Channel, Downtown Marina/Long Beach Shoreline between Junipero Ave to 1st Street, Rainbow Marina along the south jetty/breakwater, and the Huntington Beach Wetlands Restoration Project) and an existing layout alternative. Each of these alternatives was rejected for differing reasons, as described further in Chapter 5.0, Alternatives.

The No Project/No Development Alternative would be environmentally superior to the proposed project on the basis of the physical impacts that would occur with this alternative. If there were no changes to the existing conditions on site, there would be no increase in construction traffic, construction noise, or construction and cumulative air emissions. However, the No Project Alternative would not provide Americans with Disabilities Act (ADA)-compliant facilities or provide upgraded and new dock facilities to safely serve the boating community and extend the useful life of the Marina.

The CEQA Guidelines require that if the environmentally superior alternative is the No Project Alternative, "the EIR also identify an environmentally superior alternative among the other alternatives" (CEQA Guidelines Section 15126.6(e)(2)). The Environmentally Superior Alternative, in terms of direct physical effects on the environment, is the Reduced Project Alternative.

The Reduced Project Alternative would eliminate construction activities associated with the proposed project's landside improvements (rehabilitation of the restroom facilities, parking lot repaving, and ADA access improvements), as well as eliminating construction of the long dock and reducing the dock area and number of slips in Basin 4. Therefore, direct physical effects on the environment as a result of construction would be reduced as compared to the proposed project.

Although this alternative would reduce the duration of project emissions, it would still result in the same significant construction-related and cumulative air quality emission impacts associated with the proposed project. Also, due to the existing location of sensitive receptors and type of construction, this alternative would still result in significant and unavoidable construction noise impacts. The Reduced Project Alternative would result in reduced construction impacts for cultural resources, geology and soils, hazardous materials, hydrology/water quality, and traffic compared to the proposed project because the improvements to landside facilities would not occur with this alternative. However, impacts related to these topics would still be less than significant, which is the same as what would occur with implementation of the proposed project.

For operational considerations, Alternative 2 would not increase energy efficiency or reduce potable water demand, as would occur with the renovation of restrooms under the proposed project. In addition, ADA access to the restroom facilities for handicapped and disadvantaged residents would not be provided, and no beneficial improvements to storm drain facilities would be implemented.

The Reduced Project Alternative meets some of the project objectives, but not to the same extent as the proposed project. The aging and deteriorating docks and slip facilities would be replaced, and recreational boating would be enhanced. However, because this alternative would result in a greater loss of smaller slips than the proposed project, it would potentially reduce the overall recreational opportunities for small boat owners and users when compared to the proposed project. Further, the goals of the Alamitos Bay Master Plan to remodel the restrooms and bring them up to current standards, and the objectives contained in the City's Open Space and Recreation Element related to modernizing the Marina condition, infrastructure, and amenities would not be fully implemented with the Reduced Project Alternative. The restroom facilities and parking areas would continue to deteriorate, and the costs associated with continued maintenance would continue to rise.

The alternatives analysis is described in greater detail in Chapter 5.0, Alternatives.

1.4 AREAS OF CONTROVERSY

Pursuant to State CEQA Guidelines Section 15123, this EIR acknowledges the areas of controversy and issues to be resolved that are known to the City of Long Beach or were raised during the scoping process.

In accordance with State CEQA Guidelines Section 15082, the City circulated a Notice of Preparation (NOP) on May 11, 2009, to agencies and interested individuals for a period of 30 days, during which time written comments were solicited pertaining to environmental issues/topics that the Draft EIR should evaluate. The major issues identified by the agencies included the following:

- Impacts related to identification and handling of potentially hazardous materials (refer to Section 4.6, Hazards and Hazardous Materials)
- Impacts to air quality (refer to Section 4.2, Air Quality)
- Impacts related to increased traffic and circulation conditions (refer to Section 4.12, Traffic and Circulation)
- Impacts related to regional planning and transportation policies (refer to Sections 4.8, Land Use, and 4.12, Traffic and Circulation)
- Impacts to marine biological resources (refer to Section 4.3, Biological Resources)
- Consistency with the provisions of the State Tidelands Grant (refer to Section 4.8, Land Use)

The City held a public scoping meeting on May 28, 2009, to present the proposed project and to solicit input from interested individuals regarding environmental issues that should be addressed in this Draft EIR. Major issues and concerns raised at the scoping meeting included: (1) project impacts to recreation within Marine Stadium and within the Marina (particularly to rowers); (2) project impacts to Marine Stadium, a historic resource; (3) safety concerns related to the narrowing of the Marina Channel between Basins 3 and 4; (4) public access to and availability of guest docks and other facilities during construction; (5) project impacts to water quality (e.g., silt and hazardous materials); (6) project-related noise impacts; (7) project impacts to views and aesthetics; (8) impacts to and/or loss of habitat; (9) consideration of alternatives; and (10) traffic-related project impacts.

The Draft EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures designed to reduce or eliminate potentially significant impacts.

1.5 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1.A identifies the project environmental impacts, a significance determination, proposed mitigation measures, and level of significance after mitigation is incorporated into the project. Table 1.A also identifies cumulative impacts resulting from the proposed project in conjunction with the approved and pending cumulative projects. Environmental topics addressed in this EIR include: Aesthetics, Air Quality, Biological Resources, Cultural

Resources, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use, Noise, Public Services and Utilities, Recreation, and Traffic and Circulation.

Refer to Section 2.4 of this EIR for a discussion of additional effects found not to be significant through the Initial Study/Notice of Preparation process.

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
AESTHETICS			
Substantial adverse effect on a viewshed from a public viewing area (such as a park, scenic highway, scenic roadway, or other scenic vista)	Implementation of the proposed project will not disrupt existing scenic vistas or viewsheds visible on or from the project site.	No mitigation is required.	Less Than Significant
Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	Portions of Pacific Coast Highway (PCH) are designated as an Eligible State Scenic Highway. The closest historical resource to the project site is Marine Stadium, which is located to the north of the Marina, outside of the project boundaries, and not within view of the portion of PCH designated as an Eligible State Scenic Highway. Impacts are considered less than significant. The project will not impact any other scenic resources such as trees or rock outcroppings.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Substantial degradation of the existing visual character or quality of the site and its surroundings	The visual character of the Marina Basins would not change. The views of the newly renovated restroom facilities would be considered visual improvements from the existing condition. Views of the long dock after project completion would be visible. The seawall on Naples Island would be partially obstructed, and depending on the size of boats docked at the long dock, views of Long Beach Yacht Club (LBYC) may be partially obstructed. Views of the open marine waters or sky would not be blocked, and these changes would not impact the visual character of this area of Alamitos Bay.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Creation of a new source of substantial light or glare, which would adversely affect day or nighttime views in the area	The replacement of lighting associated with the proposed project would not create a substantial new source of light or glare affecting day or nighttime views in the area or illuminate areas outside the project boundary. The replacement lighting would not increase the intensity of light to sensitive viewers such as residents in the surrounding area due to the distance and intervening uses between residences and the Marina. Lighting associated with recreational boats is generally low-level safety lighting and is not expected to significantly increase with project implementation. Therefore, visual impacts relating to light or glare would be considered less than significant.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Contribute to cumulative impacts	The proposed project would not contribute to potential cumulative impacts related to aesthetics or visual resources.	No mitigation is required.	Less Than Significant
AIR QUALITY			
Conflict with or obstruct implementation of the applicable air quality plan	The proposed project would not result in any population growth and is consistent with the City's General Plan designation for the site. In addition, the proposed project is not expected to result in any increase in long-term regional air quality emissions. Therefore, the project will not conflict with the Air Quality Management Plan (AQMP).	No mitigation required.	Less Than Significant
Violate any air quality standard or contribute substantially to an existing or projected air quality violation	The project would result in an exceedance of the South Coast Air Quality Management District (SCAQMD) daily threshold for nitrogen oxide (NO_X) during construction. Implementation of Mitigation Measure 4.2-1 would reduce the	**4.2-1** Prior to commencement of construction, the Marine Bureau Manager shall ensure that the final project plans and the construction contract include, but are not limited to, the following energy conservation and emission reduction measures:	Significant and Unavoidable

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	vehicle exhaust emissions during construction. However, the impact would remain significant and unavoidable for the duration of construction activities in Phases 2 and 3.	**Fugitive Dust Controls.** The project construction contractor shall develop and implement dust-control methods that shall achieve this control level in a South Coast Air Quality Management District (SCAQMD) Rule 403 dust control plan, designate personnel to monitor the dust control program, and order increased watering, as necessary, to ensure a 90 percent control level. Their duties shall include holiday and weekend periods when work may not be in progress. Additional control measures to reduce fugitive dust shall include, but are not limited to, the following: • Provide temporary wind fencing around sites being graded or cleared • Cover truck loads that haul dirt, sand, or gravel or maintain at least 2 feet (ft) of freeboard in accordance with Section 23114 of the California Vehicle Code (CVC) • Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off tires of vehicles and any equipment leaving the construction site • Suspend all soil disturbance activities when winds exceed 25 miles per hour (mph) as	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		instantaneous gusts or when visible dust plumes emanate from the site and stabilize all disturbed areas • Appoint a construction relations office to act as a community liaison concerning on-site construction activity, including resolution of issues related to particulate matter less than 10 microns in diameter (PM_{10}) generation • Sweep all streets at least once a day using SCAQMD Rule 1186, 1186.1 certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water) • Apply water three times daily, or nontoxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces or as needed to areas where soil is disturbed **Emission Controls for Nonroad Construction Equipment.** Construction equipment shall meet the United States Environmental Protection Agency	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		(EPA) Tier 4 nonroad engine standards, where feasible. The Tier 4 standards become available starting in 2012. **Best Management Practices (BMPs) for Construction Equipment.** The construction contractor shall implement the following BMPs on construction equipment, where feasible, to further reduce emissions from these sources. • Use of diesel oxidation catalysts and/or catalyzed diesel particulate traps, as feasible • Maintain equipment according to manufacturer specifications • Restrict idling of equipment and trucks to a maximum of 5 minutes (per California Air Resources Board [ARB] regulation) • Use of high-pressure fuel injectors on diesel-powered equipment • Use of electricity from power poles rather than temporary diesel- or gasoline-powered generators **Construction Traffic Emission Reductions.** The	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		construction contractor shall implement the following measures to further reduce emissions from construction. • Trucks used for construction (a) prior to 2015 shall use engines certified to no less than 2007 nitrogen oxide (NO_x) emissions standards and (b) in 2015 and beyond shall meet EPA 2010 emission standards. • Provide temporary traffic control such as a flag person during all phases of construction to maintain smooth traffic flow • Schedule construction activities that affect traffic flow on arterial systems to off-peak hours where possible • Reroute construction trucks away from congested streets or sensitive receptor areas • Provide dedicated turn lanes for movement of construction trucks and equipment on and off site • Configure construction parking to minimize traffic interference • Improve traffic flow by signal synchronization	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		• All vehicles and equipment will be properly tuned and maintained according to manufacturer specifications. • Reduce traffic speeds on all unpaved roads to 15 mph or less **Emission Controls for Construction Tugboats.** All tugboats used in construction shall meet the EPA Tier 2 marina engine standards, and if feasible, use construction tugs that meet the EPA Tier 3 marine engine standards. The Tier 3 standards become available starting in 2009. **Construction Tugboat Home Fleeting.** The construction contractor shall require all construction tugboats that home fleet in the San Pedro Bay Port (SPBP) to (a) shut down their main engines, and (b) refrain from using auxiliary engines at dock or to use electrical shore power, if need be.	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Result in a cumulative 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)	Building design and building operation for the proposed restroom facilities could contribute to increased amounts of carbon dioxide (CO_2) and other greenhouse gases (GHGs) from use of electricity, natural gas, and other fuels.	**4.2-2** Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings include the following building design energy conservation measures: **Green Building Design for Restroom Buildings:** Incorporate measures from the Leadership in Energy and Environmental Design (LEED) certification program and other green building guidelines that reduce greenhouse gas (GHG) emissions through either development density/ design and/or energy conservation. The LEED for Retail–New Construction and LEED for Commercial Interiors programs developed by the United States Green Building Council are good sources for identifying measures and examples of energy conservation measures, including the following: • Meet or exceed Title 24 requirements • Incorporate ENERGY STAR-rated windows • Incorporate ENERGY STAR-rated space heating and cooling equipment • Incorporate hot water systems that are energy	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		efficient • Incorporate ENERGY STAR-rated light fixtures • Incorporate ENERGY STAR-rated appliances • Install/operate renewable electric generation systems, as appropriate and economically feasible **4.2-3** Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings of the building operations and maintenance plan include, but are not limited to, the following energy conservation measures: • **Compact Fluorescent Light Bulbs:** All interior building lighting shall use compact fluorescent light bulbs. Fluorescent light bulbs produce less waste heat and use substantially less electricity than incandescent light bulbs. • **Energy Audits:** Conduct a third-	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		party energy audit every 5 years and install innovative power-saving technology where feasible, such as power factor correction systems and lighting power regulators. Such systems help to maximize usable electric current and eliminate wasted electricity, thereby lowering overall electricity use.	
	The project would not result in increases in long-term operational emissions because the capacity of the Marina would not be increased with the proposed project, and operations are not anticipated to change significantly. Therefore, the project would not contribute cumulatively to long-term local and regional air quality degradation.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	The project will not result in a new, ongoing source of GHG emissions; therefore, the project's contribution to cumulative GHG emissions and global climate change GCC is less than significant.	No mitigation is required.		Less Than Significant
Expose sensitive receptors to substantial pollutant concentrations	Calculated emissions rates for the proposed construction activities would not exceed the localized significance thresholds for the nearest sensitive receptors, under the condition that no more than 1 acre (ac) of parking lot repaving occurs at any one time.	**4.2-4**	Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings and the construction contract indicate that no more than 1 acre (43,560 square feet) of parking lot pavement area shall be under construction for replacement at any one time during each phase of the project.	Less Than Significant
	Construction activities are expected to generate a temporary increase in carbon dioxide (CO_2) emissions for the duration of such activities.	**4.2-5**	During all phases of demolition, dredging, and construction, the Marine Bureau Manager shall ensure that the contract to construct complies with the following rules for construction and operation to minimize the air quality impacts from the proposed project. The following measures are required and will reduce or minimize air pollutants	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		generated by construction vehicles and equipment and fugitive dust emissions associated with earthmoving or excavation operations, or other soil disturbances, as identified in South Coast Air Quality Management District (SCAQMD) Rules 402 and 403. The following measures shall be printed on all final plans and drawings associated with the project: During earthmoving or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust-preventive measures using the following procedures: • All material excavated shall be sufficiently watered to prevent excessive amounts of dust. Watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day. • All earthmoving or excavation activities shall cease during periods of high winds (i.e., winds greater than 20 miles per hour [mph] averaged	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		over 1 hour). • All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust. • The area disturbed by earthmoving or excavation operations shall be minimized at all times. After earthmoving or excavation operations, fugitive dust emissions shall be controlled using the following measures: • Portions of the construction area to remain inactive longer than a period of 3 months shall be revegetated and watered until cover is grown. • All active portions of the construction site shall be watered to prevent excessive amounts of dust. At all times, fugitive dust emissions shall be controlled using the following procedures: • On-site vehicle speed shall be limited to 15 mph.	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		• Road improvements shall be paved as soon as feasible, watered periodically, or chemically stabilized. At all times during the construction phase, ozone precursor emissions from mobile equipment shall be controlled using the following procedures: • Equipment engines shall be maintained in good condition and in proper tune according to manufacturer's specifications. • On-site mobile equipment shall not be left idling for a period longer than 60 seconds. Outdoor storage piles of construction materials shall be kept covered, watered, or otherwise chemically stabilized with a chemical wetting agent to minimize fugitive dust emissions and wind erosion.	
Create objectionable odors affecting a substantial number of people	Some objectionable odors may emanate from operation of diesel-powered construction equipment during construction of the project. These odors, however, would be limited to the	No mitigation required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	site only during the construction period and therefore would not be considered a significant impact.			
	The dredged material from Basin 1 may generate unpleasant odors when exposed to air and may result in odor impacts at the adjacent and nearby sensitive land uses. Mitigation Measure 4.6-3 in Section 4.6, Hazards and Hazardous Materials, requires the application of a mixture of Simple Green and water to the excavated sediment as part of an overall Soil Management Plan. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions.	**4.6-3**	**Soil Management Plan:** The Office of Environmental Health Hazard Assessment (OEHHA) shall review the dredge materials removal workplan and shall list any additional requirements. Implementation of the workplan shall be overseen by the OEHHA for compliance with local, State, and federal regulations. Any additional sampling or contaminant material removal shall be subject to these same regulations. As part of the soil management plan, all disposal material will be characterized prior to disposal at a State landfill site. All hazardous waste will be disposed of in a Class I landfill. All other soils or solid waste will be disposed of at an unclassified landfill. In addition, during construction activities of the potentially impacted soils on site, monitoring will be required by the South Coast Air	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		Quality Management District (SCAQMD). After removal of the contaminated materials from Basin 1 and during the drying process of these sediments/soils, a mixture of Simple Green and water (10:1) shall be lightly applied to the excavated sediments/soils. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions.	
Contribute to cumulative impacts	The proposed project's construction activities would contribute cumulatively to the local and regional air pollutants, together with other projects under construction, and would result in temporary significant cumulative air quality impacts during construction activities associated with Phases 2 and 3. Mitigation Measure 4.2-1 would reduce construction emissions, but the impact would remain significant and adverse for the	See Mitigation Measure 4.2-1, Air Quality.	Significant and Unavoidable

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	duration of construction.			
BIOLOGICAL RESOURCES				
Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-interest species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.	Although there are no nesting sites in the vicinity of project construction, and construction phasing will disturb only small areas of the Marina at any one time, construction activities may disturb the California brown pelican (*Pelecanus occidentalis*) and the California least tern (*Sterna antillarum browni*) if present during such ac activities.	**4.3-1**	Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that a qualified biologist has been retained and shall be on site to assess the roosting (and foraging) behavior of waterbirds at the Marina immediately prior to any major construction disturbance. In the event of an imminent threat to a special-status species, the monitor shall immediately contact the Construction Manager. In the event the Construction Manager is not available, the monitor shall have the authority to redirect or halt construction activities if determined to be necessary.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	Construction activities may disturb green sea turtles, if present during such activities.	**4.3-2** Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract in order to further reduce any potential impacts to green sea turtles: • A qualified marine biologist shall be on site during the construction period to monitor the presence of endangered species. The on-site biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed. • Construction crews and work vessel crews shall be briefed on the potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions. • In the event that a sea turtle is	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle is safely outside the outer perimeter of construction. The on-site biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed. • The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his/crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS).	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	Dredging will remove approximately 0.03 ac (1,373 sf) of eelgrass vegetation in Basins 2, 4, and 6.	**4.3-3**	Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall ensure that an Eelgrass Mitigation Plan has been included in the contract for construction. The Plan shall require that any direct losses to eelgrass will be mitigated at a ratio of 1.2:1 according to the Southern California Eelgrass Mitigation Policy (SCEMP) requirement. According to current surveys, eelgrass to be impacted by the project is 1,373 square feet (sf), which would result in 1,648 sf to be mitigated at the 1.2:1 mitigation ratio. As detailed in the SCEMP, the actual amount of eelgrass to be mitigated shall depend on preconstruction surveys, postconstruction surveys, and surveys at a control site at the appropriate time prior to the beginning of project activities. The preferred mitigation area is located adjacent to the northeast end of Marine Stadium on a City of Long Beach-owned storage site. A qualified biologist shall monitor the successful	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
			establishment of the eelgrass mitigation site for a period of 5 years, in accordance with the Southern California Eelgrass Mitigation Policy.	
	No invasive *Caulerpa taxifolia* was present during surveys within the project site. However, if present, construction activities could contribute to the propagation of such species.	**4.3-7**	The Marine Bureau Manager shall ensure that a field survey to investigate the presence of the invasive algae *Caulerpa taxifolia* is conducted 30 to 60 days prior to commencement of construction by qualified divers certified by the California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) to conduct such surveys. The preconstruction *Caulerpa* surveys will be conducted ac according to the ac accepted criteria of the Southern California *Caulerpa* Action Team (SCCAT) for conducting surveys for the invasive algae and in ac accordance with the NMFS and CDFG *Caulerpa* survey protocols. In ac accordance with the recommendations of the Southern California Caulerpa Action Team (SCCAT), and according to the NMFS *Caulerpa* Control Protocol	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		(Version 3, adopted March 12, 2007 [NMFS 2007]), a survey must be conducted in harbor areas that may be disturbed. In areas that are expected to be free of *Caulerpa*, a 20 percent visual Surveillance Level survey is required prior to any dredging. The survey will also identify any other marine vegetation in the proposed construction area, including eelgrass. The Marine Bureau Manager, or his/her designee, will transmit the survey results via *Caulerpa* Survey Reporting Form to NMFS and the CDFG within 48 hours of completion of the survey. If *Caulerpa* is identified in the project area, the City, NMFS, and CDFG will be notified within 24 hours of completion of the survey. In the event that *Caulerpa* is detected, disturbance shall not be conducted until such time as the infestation has been isolated, treated, or the risk of spread from the proposed disturbing ac activity is eliminated in ac accordance with Section F of the	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		Caulerpa Control Protocol.7	
Substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS.	The land side portion of the project site is currently developed with parking lots and restroom facilities and is sparsely landscaped with nonnative landscape and ornamental vegetation. Long-term operations at the renovated Marina would result in conditions similar to the existing setting and would not have impacts on wildlife or habitat from ongoing Marina operations.	No mitigation is required.	Less Than Significant
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.	Dredging and pile replacement will generate temporary increases in turbidity, reductions in dissolved oxygen, and possible localized increases in the dissolved concentrations of sediment-bound contaminants. The City will implement the required dredging water quality monitoring plan as set forth by	See Mitigation Measures 4.7-5 and 4.7-6 as required in Section 4.7, Water Quality and Hydrology: No additional mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	the Regional Water Quality Control Board (RWQCB). Mitigation Measures 4.7-5 and 4.7-6 (as outlined in Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging Best Management Practices (BMPs) are incorporated into the project to ensure that impacts related to the effects of turbidity, construction dredging, and piling replacement are reduced to a less than significant level. No additional mitigation is required.			
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.	The project includes relocation of several trees to accommodate the restroom renovations. Construction activities may cause the potential abandonment of nests by migratory birds. Construction activities associated with the proposed	**4.3-6**	Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall ensure that the following provisions are incorporated into the final project plans and construction contract for the purpose of protecting nesting birds within the study area during construction:	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	project may result in some temporary disruptions to the roosting activities of the great blue heron.	• Tree and vegetation removal shall be restricted to outside the likely ac active nesting season (January 1–September 1) for those bird species present or potentially occurring within the project area. That time period is inclusive of most other birds' nesting periods, thus maximizing avoidance of impacts to any nesting birds. If construction must be completed during the breeding season listed above, surveys for nesting birds shall be conducted at least 15 days prior to construction. Should an occupied nest be detected, the City will consult with the California Department of Fish and Game (CDFG) to determine an appropriate means for reducing impacts to nesting birds prior to tree removal. If nesting birds are observed within the vicinity, a buffer from the nest shall be established. The size of the buffer	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		is dependent on the species and shall be determined by a qualified biologist. The buffer shall be delineated by roping the boundaries of construction and shall remain in place until the nest is abandoned or the young have fledged.	
Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.	The City also requires that the project remove existing trees adjacent to the existing restroom structures in the parking lots. The project will comply with City of Long Beach Municipal Code (Ordinance C-7642) requiring that a permit be obtained from the Director of Public Works prior to any demolition or construction activities. As required, the trees would be identified, mapped, and measured prior to removal, and landscape ornamental trees would be replaced on a 1:1 basis, per the City's Tree Removal Ordinance. Therefore,	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	impacts related to this issue are considered less than significant, and no mitigation is required.		
Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state habitat conservation plan.	No conservation plans exist for the project site. Therefore, no impacts to the provisions of any adopted conservation plan are expected.	No mitigation is required.	Less Than Significant
Potential to degrade the environment, or 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, or reduce the number or restrict the range of a rare or endangered plant or animal.	Dredging and pile replacement could disturb sediments and cause turbidity effects, resulting in degradation of water quality that could affect several marine species, habitat, and fishes.	**4.3-4** Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall provide verification that the following provision has been included in the contract for project construction: that a qualified biologist has been retained to implement the following measures, which shall be incorporated during all phases of construction in order to minimize impacts on eelgrass and other biological resources: • Impacts to eelgrass beds shall be avoided where practical and feasible. A project marine biologist shall	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone. To assist the construction crew in avoiding unnecessary damage to eelgrass, the project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques. • Barges and work vessels shall avoid impacts to eelgrass beds in Basins 2 and 4. Barges and work vessels shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other ac activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		• A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality best management practices (BMPs) are implemented and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within 30 days after the project is completed, a post-construction marine biological survey shall be conducted to determine the extent of any construction impacts on eelgrass habitat. The survey report will be completed within 30 days and shall be submitted to the California Coastal Commission and the United States Army Corps of Engineers. **4.3-5** Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		contract. The construction contractor shall be responsible for ensuring that the following measures are implemented during all phases of construction in order to minimize impacts on biological resources: • No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil. Any construction debris within the temporary cofferdam area shall be removed from the site at the end of each construction day. • Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. Such measures include deployed oil booms and a silt curtain around the proposed	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		construction zone at all times to minimize the spread of any ac accidental fuel spills, turbid construction-related water discharge, and debris. Other measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits. • All trash shall be disposed of in the proper trash receptacles at the end of each construction day. Any construction debris shall be removed from the site. • During construction, floating booms shall be used to assist in containing debris discharged. Any debris discharged shall be removed as soon as possible but no later than the end of each day. • If turbid conditions are generated during construction, including dredging or pile driving, a silt	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		curtain shall be utilized to control turbidity. The City of Long Beach shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column. • The City shall implement all the requirements of the Department of the Army Permit and the RWQCB WQC, This includes the anticipated dredging water quality monitoring plan set forth by the RWQCB. • Construction methods shall be used that are the least damaging to benthic sediments and organisms. Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. The City of Long Beach shall have adequate equipment available to contain such spills immediately.	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Contribute to cumulative impacts	The proposed project would not contribute to potential cumulative impacts related to biological resources.	No mitigation is required.	Less Than Significant
CULTURAL AND HISTORIC RESOURCES			
Cause a substantial adverse change in the significance of a historic resource as defined in Section 15064.5	Marine Stadium is listed on the California Register of Historical Resources (California Register), the California Historical Landmarks (CHL; No. 1014), and the California Points of Historical Interests (PHI; No. 19-186115). The proposed project, including the proposed open water habitat mitigation site, would not detract from the integrity of any historical, structural, or operational elements of Marine Stadium that contribute to its being a historic resource. Therefore, no substantial adverse change in the significance of a historic resource as defined in Section 15064.5 would occur.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5	There are no recorded archaeological resources located within the project boundaries. The proposed improvements would be located in areas that were previously disturbed or dredged. Therefore, implementation of the proposed project would not disturb sensitive archaeological soils, and an adverse change in the significance of an archaeological resource pursuant to Section 15064.5 would not occur.	No mitigation is required.	Less Than Significant
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature	There are no recorded paleontological resources located within the project boundaries. The proposed improvements would be located in areas that were previously disturbed or dredged. Therefore, implementation of the proposed project would not disturb sensitive paleontological soils, and impacts are considered less	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	than significant.		
Disturb any human remains, including those found outside of formal cemeteries	Human remains are unlikely to be located in the project area due to previous disturbance of project area soils and waters. However, in the unlikely event that human remains are encountered during construction activities, adherence to existing standard construction regulations, including State Health and Safety Code Section 7050.5, would reduce potential adverse impacts to human remains to less than significant levels, and no further mitigation is necessary.	No mitigation is required.	Less Than Significant
Contribute to cumulative impacts	The proposed project would not contribute to potential cumulative impacts related to cultural resources.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
GEOLOGY AND SOILS			
Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, and seismic-related ground failure, including liquefaction or landslides.	The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone and is not expected to experience primary surface fault rupture or related ground deformation. However, significant ground shaking or secondary seismic ground deformation effects could occur at the site should a major seismic event occur along the Newport-Inglewood Structural Zone.	**4.5-1** Prior to issuance of building permits, the Marine Bureau Manager shall verify that recommendations contained in the Geotechnical Evaluation prepared for the proposed project (Ninyo and Moore, February 2007) have been incorporated into final construction drawings. Design and grading construction shall be performed in accordance with the most current California Building Code in use by the City of Long Beach, the most current local grading regulations, and recommendations of the project geotechnical consultant.	Less Than Significant
Substantial soil erosion or the loss of topsoil.	There is the potential for soil erosion to occur at the site during project implementation. Construction of the proposed project includes excavation of land side soils to develop the open space/habitat mitigation	See Mitigation Measure 4.2-5 (Section 4.2, Air Quality). See Mitigation Measures 4.7-2 and 4.7-3 (Section 4.7, Hydrology and Water Quality). No further mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	site, minor grading of land side soils associated with repaving of parking areas, trenching for utilities, and reconstruction of the restrooms. Mitigation measures are required to reduce fugitive dust and transport of soil (refer to Section 4.2, Air Quality, and Section 4.7, Hydrology and Water Quality, respectively). With implementation of these standard control measures, soil erosion potential will be reduced to less than significant levels. No additional mitigation is required.		
Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading,	There are no geologic units or soils that would become unstable as a result of the proposed project; however, seismically induced lateral spread could occur during an earthquake event.	See Mitigation Measure 4.5-1 above.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
subsidence, liquefaction, or collapse.	Due to the variability of the on-site soils, the potential for liquefaction would vary across the site. Seismically induced liquefaction could result in damage to structures. The project site is not located near any known historical landslides, and the site topography is relatively level. No impacts related to landslides are anticipated.		
Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property.	The soils underlying the project site include sand, clay, and silt. The clay material is considered expansive. However, due to the relatively high groundwater levels, the soils are anticipated to remain relatively wet, which would reduce the potential effects of the expansive soils on site.	See Mitigation Measure 4.5-1 above.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.	The proposed project would utilize the existing sewer system and does not include the use of septic tanks or alternative methods for disposal of wastewater. Therefore, no impacts related to this issue would occur.	No mitigation is required.	Less Than Significant
Contribute to cumulative impacts	The proposed project would not contribute to potential incremental or cumulative impacts related to geology and soils.	No mitigation is required.	Less Than Significant
HAZARDS AND HAZARDOUS MATERIALS			
Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials	Dredging within Basins 2–7 has been determined to be nonhazardous, and it is unlikely that any dredging activities in those basins will pose a concern through the routine transport, use, or disposal of sediment material. However, a portion of sediments in Basin 1 have tested for mercury levels that exceeded acceptable thresholds for ocean	**4.6-1** Prior to Prior to issuance of any permits allowing dredging in Basin 1, the City of Long Beach (City) shall conduct additional laboratory testing of the sediment materials from Basin 1. Additional testing shall be conducted prior to disposal of the contaminated soils to determine if concentrations of mercury exceed the Soluble Threshold Limit Concentration (STLC) for mercury at 0.2 milligrams per liter	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	disposal, and would be tested and disposed of at an appropriate State-certified landfill. Transport of these contaminated materials could potentially pose a hazard to the public or environment.	(mg/L) and are considered hazardous by State standards (California Code of Regulations [CCR], Title 22, Section 66261.1–66261.126), and/or are considered hazardous by federal standards (Resource Conservation Recovery Act [RCRA]), where mercury concentrations exceed the federal threshold of 0.2 mg/L, as determined from toxicity characteristic leaching procedure (TCLP) extract testing (TCLP method shall be determined by leaching potential). **4.6-2** Prior to issuance of any permits allowing dredging in Basin Basin 1, the City of Long Beach shall conduct a Human Health Risk evaluation to determine the level of exposure to potentially hazardous levels of mercury during construction activities. **4.6-3** **Soil Management Plan:** The Office of Environmental Health Hazard Assessment (OEHHA) shall review the	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		dredge materials removal workplan and shall list any additional requirements. Implementation of the workplan shall be overseen by the OEHHA for compliance with local, State, and federal regulations. Any additional sampling or contaminant material removal shall be subject to these same regulations. As part of the soil management plan, all disposal material will be characterized prior to disposal at a State landfill site. All hazardous waste will be disposed of in a Class I landfill. All other soils or solid waste will be disposed of at an unclassified landfill. In addition, during construction activities of the potentially impacted soils on site, monitoring will be required by the South Coast Air Quality Management District (SCAQMD). After removal of the contaminated materials from Basin 1 and during the drying process of these sediments/soils, a mixture of Simple Green and water (10:1) shall be lightly applied to the	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		excavated sediments/soils. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions.	
Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment	Construction activities could result in the accidental spill or exposure of hazardous materials to workers or the public. Contaminated groundwater, if present on site, could be encountered during grading or excavation activities. Due to the age of the existing restroom structures, there is a potential for exposure to asbestos-containing materials (ACMs) and/or lead-based paints (LBPs) Proposed resurfacing of the parking lots may disturb or remove existing transformer-mounted utility poles. Impacted	**4.6-4** During all excavation activities, the Marine Bureau Manager shall ensure that all construction subcontractors comply with the appropriate health and safety measures required by the Occupational Safety and Health Administration (OSHA). In the event that groundwater is encountered during grading or excavation activities, all construction activities shall be terminated in the immediate area until the groundwater is investigated for potentially hazardous content. In the event that suspicious odors are observed in soil, construction shall also be terminated until the soil is properly characterized for hazardous waste content. Appropriate measures shall be taken in compliance with all applicable regulations for the characterization and disposal of hazardous materials.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	soil or groundwater from leaking transformers containing polychlorinated biphenyls (PCBs), if present on site, may pose a concern to worker safety.	**4.6-5** Prior to the issuance of any demolition permits and at least 10 days prior to any demolition work for proposed improvements, the Marine Bureau Manager shall notify and submit fees to the South Coast Air Quality Management District (SCAQMD) in compliance with SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities. Contractors shall adhere to the requirements of SCAQMD Rule 1403 during all construction and demolition activities. **4.6-6** Prior to the issuance of any demolition permits, the Marine Bureau Manager shall provide evidence that a certified asbestos consultant has conducted an asbestos survey of the existing concrete materials. If asbestos-containing material (ACM) is found, it shall be removed and disposed of by a licensed and certified asbestos abatement	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		contractor in accordance with requirements outlined by the local county health department. **4.6-7** Prior to the issuance of any demolition permits, the Marine Bureau Manager shall provide evidence that a certified lead-based paint (LBP) consultant has conducted LBP surveys in the areas where paint materials may be removed or disturbed on existing structures. If LBPs are found, they shall be removed and disposed of by a licensed and certified LBP contractor in accordance with requirements outlined by the local county health department. **4.6-8** Prior to the issuance of any demolition permits, the City of Long Beach shall conduct the inspection of utility pole-mounted transformers within the project area for leaks. Leaking transformers shall be considered a potential for polychlorinated biphenyl (PCB) hazard unless tested and shall be handled	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		accordingly. If the removal of utility poles is anticipated, all treated wooden poles may have a potential for creosote. Areas immediately surrounding the utility pole shall be tested and handled accordingly.	
Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mi of an existing or proposed school	Basin 7 of the project site is located approximately 0.25 mile (mi) south of Naples Elementary School. The uses proposed are similar to existing land uses on site and are not expected to introduce significant amounts of hazardous materials or waste. Although unlikely, sensitive receptors at the school could be exposed to hazardous emissions, materials, or substances.	See Mitigation Measures 4.6-1 through 4.6-8.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Be located within an airport land use plan, or where such a plan has not been adopted within 2 mi of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area	The project site is not located within an airport land use plan area or within 2 mi of a public airport.	No mitigation is required.	Less Than Significant
Be located within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the project area	The project site is not located within the vicinity of a private airport.	No mitigation is required.	Less Than Significant
Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan	The proposed project is a continuation of existing land uses and does not result in an intensification of use or alter access on or in the vicinity of the project site. Impacts to emergency response or access are considered less than significant.	No mitigation is required.	Less Than Significant
Expose people or structures to a significant risk of loss, injury, or death involving	The project site is not located adjacent to wildlands, and no impacts related to wildland fires	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
wildland fires, including where wildlands are adjacent to urbanized areas or where residents are intermixed with wildlands	are anticipated.		
Contribute to cumulative impacts	Based on the distance to the nearest cumulative project and the amount of hazardous materials use associated with the proposed project, the project's contribution to cumulative hazards and hazardous materials impacts would be considered less than significant.	No mitigation is required.	Less Than Significant
HYDROLOGY AND WATER QUALITY			
Violate any water quality standards or waste discharge requirements, and/or otherwise substantially degrade water quality.	Impacts to water quality due to Marina operations and boater activities are expected to be less than significant because adherence to the Long Beach Marina Environmental Policies is required for boaters and Marina employees. In addition, the Marina provides four sewage	**4.7-1** Prior to issuance of a grading permit, the Marine Bureau Manager shall verify that construction plans for the project include features meeting the applicable construction activity Best Management Practices (BMPs) and erosion and sediment control BMPs published in the *California Storm Water BMP Handbook—Construction Activity* or	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	pump-out stations. Because uses on site would not change, and because there would be fewer boats in the Marina, operational impacts to water quality are expected to remain similar to existing conditions and are considered less than significant. Construction activities associated with the renovations to restrooms and parking lots have the potential to temporarily impact water quality. Construction activities associated with dredging activities have the potential to temporarily impact water quality. Construction activities associated with the replacement of pilings and docks and repairs to seawalls have the potential to	equivalent. The construction contractor shall be required to submit a Storm Water Pollution Prevention Plan (SWPPP) to the City that includes the BMP types listed in the handbook or equivalent. The SWPPP shall be prepared by a civil or environmental engineer and will be reviewed and approved by the City Building Official prior to the issuance of any grading or building permits. The SWPPP shall reduce the discharge of pollutants to the maximum extent practicable using BMPs, control techniques and systems, design and engineering methods, and such other provisions as appropriate. A copy of the SWPPP shall be kept at the project site. The SWPPP shall meet the requirements of the General Construction Permit and shall identify potential pollutant sources associated with construction activities; identify non-storm water discharges; develop a water quality monitoring and	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	temporarily impact water quality.		sampling plan; and identify, implement, and maintain BMPs to reduce or eliminate pollutants associated with the construction site. The BMPs identified in the SWPPP shall be implemented during project construction. The SWPPP Notice of Termination (NOT) shall be submitted to the State Water Resources Control Board (SWRCB) upon completion of construction and stabilization of the site.	
		4.7-2	Prior to issuance of demolition and grading permits, the Marine Bureau Manager shall demonstrate to the Director of Long Beach Development Services, or their designee, that compliance with the provisions of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Construction and Land Disturbance Activities*, and any subsequent permit as they relate to construction activities for the project has been obtained. This will include	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		submission of the Permit Registration Documents, including a Notice of Intent (NOI), a risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (SWRCB) at least 14 days prior to the start of construction. **4.7-3** Prior to issuance of demolition and grading permits, the Marine Bureau Manager shall provide evidence that a Standard Urban Storm Water Mitigation Plan (SUSMP) for the project has been prepared in accordance with the Los Angeles County SUSMP and the Municipal National Pollutant Discharge Elimination System (NPDES) Permit. The project SUSMP shall identify all of the Nonstructural and Structural Best Management Practices (BMPs) that will be implemented as part of the project in order to reduce impacts to water quality to the maximum extent practicable by	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		addressing typical land use pollutants and pollutants that have impaired the Alamitos Bay. The SUSMP shall be reviewed and approved by the City of Long Beach Building Official prior to issuance of a grading permit. **4.7-4** Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification in the record that approval to initiate the City's contract with AES (to increase pumping rates) has been incorporated into project plans and will be implemented in the event that water quality standards are exceeded during construction activities associated with Basins 6-North and 6-South (Basins 6-N and 6-S). The construction contractor shall be responsible for notifying the Marine Bureau Manager in the event that increased flushing in the Bay is needed, should water quality remain impaired **(**i.e.**,** water quality standards are exceeded) beyond 2 days after dredging	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
			in Basins 6-N or 6-S.	
		4.7-5	Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification that authorization has been obtained from: (1) the United States Army Corps of Engineers (Corps) under the Section 404 Permit program for the discharge of fill material into jurisdictional waters; (2) the Corps, under Section 10 of the Rivers and Harbors Act for the disposal of dredged material and placement of piles and riprap; and (3) the Corps, under Section 103 of the Marine Protection Research and Sanctuaries Act for the transportation of dredged material for ocean disposal. In addition, standard conditions of the Corps permits require Section 401 water quality certification by the Regional Water Quality Control Board (RWQCB). In order to obtain these authorizations, the City shall develop a mitigation plan subject to review and approval by the	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		appropriate resource agencies (Corps, United States Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], California Department of Fish and Game [CDFG], and RWQCB).	
		4.7-6 Prior to the issuance of any construction permits, the Marine Bureau Manager shall demonstrate in the record that Best Management Practices (BMPs) for all dredging activities, as listed in Appendix F of this document, have been incorporated into project plans in order to reduce impacts to water quality to the maximum extent practicable. The construction contractor shall be responsible for performing and documenting the application of BMPs identified in this document.	
		4.7-7 Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification in the record that a trash and debris containment	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		boom has been incorporated into project plans and will be implemented during all dock removal and replacement activities in order to reduce impacts to water quality to the maximum extent practicable. The construction contractor shall be responsible for performing and documenting the application of the trash and debris containment boom.	
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 level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).	The project site is not located within a groundwater recharge basin, and there would be no impact to groundwater supply with implementation of the proposed project. Historic high-water groundwater is estimated to be approximately 8 feet (ft) below the existing ground surface. This level is deeper than the proposed excavation for repaving the parking lots and renovating the restroom structures. Therefore, impacts to groundwater would	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	not be significant.		
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, or substantially increase the rate or amount of surface runoff in a manner in which would result in flooding on- or off-site; and/or create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.	The surface area of the parking lot is not being increased, and therefore no increase in storm water runoff is expected. In addition, the proposed project includes installation of storm drain inserts (filters) into the storm drains located in the parking lot. Storm water collection and treatment prior to discharge into the Marina will reduce contaminant levels and protect the existing water quality. As a result, the proposed project will result in improved drainage and storm water treatment over existing conditions.	No mitigation is required.	Less Than Significant
Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood	No housing is proposed as part of the proposed project.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Insurance Rate Map or other flood delineation map.			
Place within a 100-year flood hazard area structures that would impede or redirect flood flows.	The proposed project replaces or renovates 13 restroom structures within their existing parking lots. No new structures are proposed that would impede or redirect flood flows.	No mitigation is required.	Less Than Significant
Expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam.	The proposed project is not within an inundation area for the failure of a levee or dam. Therefore, flooding as a result of the failure of a levee or dam is considered less than significant.	No mitigation is required.	Less Than Significant
Expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.	The proposed project is located in a coastal bay and is within a seiche and tsunami influence area. The proposed project would not change or worsen this existing condition and involves a renovation of existing facilities. Because the site is not located in a hilly area, it is not considered to be at a high risk for inundation by mudflow.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	Therefore, the impacts of the proposed project related to potential inundation by seiche, tsunami, or mudflow are considered less than significant.		
Contribute to cumulative impacts	The proposed project would not contribute to cumulative water quality impacts. The installation of storm drain filters would improve water quality in the Marina waters.	No mitigation is required.	Less Than Significant
LAND USE			
Physically divide an established community	The proposed project would not change the existing uses within or adjacent to the project site. The Marina is an existing recreational/open space use, which would continue with implementation of the proposed project. Therefore, the proposed project would not divide an established community or disrupt the existing physical arrangement of the surrounding area.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
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	The proposed project would make long-term improvements to the existing land uses on site. These improvements would enhance the value of the site's existing uses and not conflict with any applicable land use plan, policy, or regulation.	No mitigation is required.	Less Than Significant
Substantially conflict with existing on-site or adjacent land uses	The land uses and intensity of uses on the project site will remain essentially the same after implementation of the Marina improvements. The only change in use involves development of the open space/habitat mitigation site, which would convert a City-owned storage area (located adjacent to Marine Stadium's northeast shore) to an eelgrass habitat mitigation area. Development of the open space/eelgrass habitat area	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	would be consistent with the existing low-intensity uses and would complement the marine environment of Marine Stadium and the adjacent open space/ recreational uses. Therefore, no conflicts with on-site or adjacent land uses would occur.		
Conflict with any applicable habitat conservation plan or natural community conservation plan	There are no adopted Habitat Conservation Plans (HCPs) or Natural Communities Conservation Plans (NCCPs) applicable to the project site. Therefore, the proposed project would not result in effects to an adopted HCP or NCCP.	No mitigation is required.	Less Than Significant
Contribute to cumulative impacts	The proposed project is the continuation of an existing use and would not contribute to cumulative land use impacts.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
NOISE				
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.	Noise associated with construction of the proposed project would result in a temporary periodic increase in existing ambient noise levels in the project area. Sensitive receptors located within 315 ft of the standard construction equipment and 706 ft of the pile driving would be exposed to noise levels in excess of the City's daytime exterior noise standard. Therefore, project-related construction activities would result in a significant noise impact that would be intermittent and temporary. These noise levels would no longer occur once construction of the project is completed.	**4.9-1**	Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirements are printed on all final project plans: Consistent with the City of Long Beach (City) Noise Ordinance, construction activity that produces loud or unusual noise that could impact a reasonable person of normal sensitivity shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and federal holidays, and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall occur on Sundays.	Significant and Unavoidable
		4.9-2	Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: during construction and demolition, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		maintained mufflers consistent with manufacturers' standards. **4.9-3** Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: the project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site. **4.9-4** Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: the construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
		4.9-5 Prior to issuance of a grading permit, the Director of Parks, Recreation, and Marine shall hold a community preconstruction meeting in concert with the Construction Contractor to provide information regarding the construction schedule. The construction schedule information shall include the duration of each construction activity and the specific location, days, frequency, and duration of the pile driving that will occur during each phase of the project construction. Public notification of this meeting shall be undertaken in the same manner as the Notice of Availability mailings for this Draft Environmental Impact Report (EIR).	
Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.	The primary source of vibration during construction would be generated by the proposed pile driving. The closest pile-driving activities to a sensitive receptor would occur during Phase 12 at a distance of 100 ft from the nearest residence. Construction	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	vibration levels would exceed the threshold of perception, but would be below the annoyance threshold, below which there is virtually no risk of resulting in architectural damage to normal buildings. Therefore, the proposed project would not result in any significant vibration impacts.		
A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	The proposed project would retain the existing recreation and open space uses of the project site and would not result in additional noise sources. Therefore, long-term operation of the proposed project would not result in a permanent increase in ambient noise levels in the project vicinity.	No mitigation is required.	Less Than Significant
A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Noise associated with construction of the proposed project would result in a temporary periodic increase in existing ambient noise levels in	See Mitigation Measures 4.9-1 through 4.9-5 above.	Significant and Unavoidable

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	the project area. Sensitive receptors located within 315 ft of the standard construction equipment and 706 ft of the pile driving would be exposed to noise levels in excess of the City's daytime exterior noise standard. Therefore, project-related construction activities would result in a significant noise impact that would be intermittent and temporary. These noise levels would no longer occur once construction of the project is completed. The addition of construction haul truck trips per hour to the local roadways would not result in a perceptible change in traffic noise, and impacts related to truck traffic are considered less than significant.		

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Contribute to cumulative impacts	Construction and operation of the proposed project would not contribute to potential cumulative impacts.	No mitigation is required.	Less Than Significant
PUBLIC SERVICES AND UTILITIES			
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered 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 public services including fire protection, police protection, schools, libraries, or other public facilities.	The proposed project is not anticipated to result in an increase in calls for police or fire services or require additional personnel to maintain acceptable service ratios, response times, or other performance objectives. Similarly, the project will not require new or expanded police or fire facilities. The proposed project will not increase demand for or impact capacity in the Long Beach Unified School District (LBUSD) and would not create a need to expand or construct new school facilities. Similarly, the proposed project would not result in increased demands on	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	the existing library facilities.		
Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB).	The proposed project would not exceed wastewater treatment requirements of the Los Angeles RWQCB. Impacts to wastewater infrastructure and wastewater treatment requirements are considered less than significant	No mitigation is required.	Less Than Significant
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.	The proposed project includes the renovation and/or reconstruction of 13 existing restroom facilities. The new restrooms will be equipped with low-flow faucets and toilets (pursuant to Title 24 of the California Administrative Code) that would reduce the amount of water consumed by the fixtures, thereby also reducing the amount of wastewater generated when compared to existing conditions. In addition, the proposed project results in fewer slips, which may result in less demand for water	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	and generation of less wastewater on site. The project would not result in a significant increase in water use or necessitate new or expanded infrastructure. In addition, project-generated wastewater will not exceed the existing capacity of the sewer delivery system and will not require the construction of new sewer delivery facilities.		
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.	The proposed project includes the replacement of existing storm drain catch basins within the parking areas, but does not create additional demands for storm water drainage. In addition, the project will not require or result in the expansion or construction of new storm water drainage facilities.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Require new or expanded water entitlements to have sufficient water supplies available to serve the project.	The new restrooms will be equipped with low-flow faucets and toilets (pursuant to Title 24 of the California Administrative Code) that would reduce the amount of water consumed by the fixtures. In addition, the proposed project results in fewer slips, which may result in less demand for water. Therefore, the proposed project will not necessitate new or expanded water entitlements, as significant increases in water demands would not result from the proposed project.	**4.10-1** Prior to the issuance of building permits, the Marine Bureau Manager shall demonstrate on the final construction plans that applicable interior and exterior water conservation measures have been incorporated into all aspects of this project. At a minimum, measures shall include low-flush toilets, low-flow faucets and shower heads, and the installation of efficient irrigation systems to minimize runoff and evaporation.	Less Than Significant
Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve projected demand in addition to the provider's existing commitments.	Project-generated wastewater will not exceed the existing capacity of the sewer delivery system and will not require the construction of new sewer delivery facilities. The proposed project is not anticipated to result in a determination by the Los Angeles County Sanitation	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
	Districts (LACSD) that inadequate capacity exists to serve the project in addition to existing commitments.			
Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.	Construction of the project would result in solid waste that would need to be disposed of in off-site facilities. The amount of the project's construction-related solid waste would be spread out over the anticipated 6 years of construction and is not anticipated to result in a significant impact to the capacity of the off-shore disposal site (LA-2) or the land side solid waste facilities. In compliance with State Assembly Bill 939 (AB 939), the proposed project will be required to incorporate the collection of recyclable materials into project design and to require contractors to reuse construction supplies, including landscape containers,	**4.10-2**	Prior to the issuance of any demolition permit, a solid waste management plan for the proposed project shall be developed by the Marine Bureau, and submitted to the Environmental Services Bureau for review and approval. The plan shall identify methods to promote recycling and reuse of construction materials as well as safe disposal consistent with the policies and programs outlined by the City of Long Beach. The plan shall identify methods of incorporating source reduction and recycling techniques into project construction and operation in compliance with State and local requirements such as those described in Chapter 14 of the California Code of Regulations and Assembly Bill (AB) 939.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	where practicable or applicable to the extent feasible. Long-term operation of the proposed project is not anticipated to increase the amount of solid waste generated, as the existing land uses will not change, and fewer slips may result in less generation of solid waste. Therefore, solid waste impacts due to operation of the proposed project are considered less than significant, and no mitigation is required.		
Not be in compliance with federal, State, and local statutes and regulations related to solid waste.	Solid waste generated during construction of the proposed project would not result in significant impacts related to landfill capacity or prevent compliance with federal, State, and local statutes and regulations related to solid waste. The project would comply with Assembly Bill	See Mitigation Measure 4.10-2 above.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	(AB) 939, which requires that every city and county in California implement programs to recycle, reduce refuse at the source, and compost waste to achieve a 50 percent reduction in solid waste being taken to landfills.		
Contribute to cumulative impacts	With implementation of Mitigation Measures 4.10-1 and 4.10-2, the proposed project would not contribute to potential cumulative impacts related to public services or utilities.	See Mitigation Measures 4.10-1 and 4.10-2	Less Than Significant
RECREATION			
Increase demand on the City Department of Parks, Recreation, and Marine's services and facilities beyond its capacity, thereby accelerating or leading to substantial physical deterioration of existing recreation facilities.	The primary goal of the proposed project is to renovate the docks and slips, seawall, utilities, parking areas, and restroom facilities that are in a physical state of decline, thereby extending the Marina's useful life and improving safety for recreational users. Therefore, the proposed project would not	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	accelerate or lead to the physical deterioration of existing recreational facilities and would not increase demand on City Department of Parks, Recreation, and Marine services and facilities beyond its capacity.		
Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.	The proposed Marina improvements are not anticipated to result in any substantial increased use of the Marina and would not adversely impact other recreational opportunities in the project area. The proposed project includes a temporary dock to accommodate displaced boaters during construction activities, and all current customers in the Marina will continue to have a slip once the proposed project is implemented. Therefore, the proposed project would not require the construction or	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	expansion of additional recreational facilities, and impacts to these facilities are considered less than significant.		
Contribute to cumulative impacts	The proposed project would not contribute to potential cumulative impacts related to recreational facilities.	No mitigation is required.	Less Than Significant
TRAFFIC AND CIRCULATION			
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 v/c ratio on roads, or congestion at intersections).	The proposed project would result in fewer boat slips, and therefore no increase or significant change in operational traffic levels is expected. Although the proposed project itself would not generate new vehicle trips, there would be a temporary increase in traffic volumes during construction activities. Construction workers will add 64 daily passenger car trips (32 inbound in the morning and 32 outbound in the evening) to each phase of the project, but	**4.12-1** Prior to the issuance of demolition or building permits, the City of Long Beach (City) shall develop a Construction Traffic Management Plan for review and approval by the City of Long Beach Traffic Engineer. The plan shall be designed by a registered Traffic Engineer and shall address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes. The plan shall identify the routes that construction vehicles will use to access the site, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas. The plan shall also restrict	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	will not add a.m. or p.m. peak-hour trips to construction traffic because the workers will arrive on site before the 7:00 a.m.–9:00 a.m. peak period and will depart prior to the 4:00 p.m.–6:00 p.m. peak period. A total of 118 trucks are expected during the typical 6-month (26-week) construction phase, resulting in an average of 4–5 trucks per week. Therefore, an average of one truck per day (2 truck trips, equal to 4 passenger car equivalent [PCE] trips), with a maximum of one truck trip (2 PCE) during the a.m. peak hour, is estimated to occur during a typical construction phase. Construction-related vehicle trips associated with Phase 1A (the open space/habitat	construction trucks to no more than 19 during the a.m. peak hour for any one phase of the project, prohibit truck trips after 3:30 p.m., and require that a minimum of one travel lane in each direction on Marina Drive and 2nd Street be kept open during construction activities. The plan shall also require the City to keep all haul routes clean and free of debris including, but not limited to, gravel and dirt.	

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	mitigation site) are estimated to total 585 truckloads over a duration of 1.5 months. This would result in an average of approximately 18 trucks per day (36 truck trips [72 PCE]), with a maximum of 9 trucks (18 truck trips [36 PCE]) in the a.m. peak hour. A total of 836 trucks each are expected during Phases 2 and 3, resulting in an average of 7 trucks per day (14 truck trips [28 PCE]) occurring in the a.m. peak-hour period for each of these phases. The total daily construction-related trips are expected to be less than significant with implementation of a Construction Traffic Management Plan.		

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways.	Phases 1/1A will be implemented concurrently. Based on the estimated trip generation, the construction activity during Phases 1/1A will add approximately 140 daily PCE trips and result in the most intense trucking phase of the project. The truck trips associated with Phases 1/1A would travel two separate routes leaving the project area. Trucks associated with Phase 1 (Basin 4) would utilize Appian Way, 2nd Street, and Studebaker Road to State Route 22 (SR-22). Trucks associated with Phase 1A would utilize Eliot Street, Colorado Street, Park Avenue, and Seventh Street to SR-22. Delivery trucks coming to the project site would travel via Studebaker Road, 2nd Street, and Marina Drive.		Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	The addition of 68 daily PCE associated with Phase 1 is expected to be insignificant to traffic flows along Appian Way, 2nd Street, and Studebaker Road. The 72 daily PCE of Phase 1A are also expected to be insignificant to traffic flows along Eliot Street, Colorado Street, Park Avenue, and 7th Street. Therefore, the total daily construction-related trips on area roadways are expected to be less than significant with implementation of a Construction Traffic Management Plan.		
Result in inadequate parking capacity.	The overall number of spaces provided at project completion exceeds the City's requirements by 1,289 spaces, including the addition of 23 Americans with Disabilities Act (ADA) accessible parking spaces. No impacts related to parking would	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	occur with implementation of the proposed project.		
Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)	The proposed project would not result in any significant impacts related to hazardous design features.	No mitigation is required.	Less Than Significant
Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks	The proposed project would not result in any significant impacts related to air traffic patterns.	No mitigation is required.	Less Than Significant
Result in inadequate emergency access	The proposed project would not result in any significant impacts related to emergency access.	No mitigation is required.	Less Than Significant
Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	The proposed project would not result in any significant impacts related to adopted policies, plans, or programs supporting alternative transportation.	No mitigation is required.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]		Level of Significance After Mitigation
Contribute to cumulative impacts	There is the potential for construction of the proposed project and construction for the Home Depot Project and/or the Second+PCH Project to occur at the same time. Therefore, should either the Second+PCH Project or the Home Depot Project be under construction at the same time as the proposed Marina Rehabilitation Project, a construction traffic control measure requiring the City of Long Beach Traffic Engineer to address the truck route and circulation effects of construction traffic associated with these cumulative projects is warranted to ensure that potential cumulative construction traffic is addressed. With implementation of this measure, the project's contribution to cumulative traffic impacts is considered less	**4.12-2**	Prior to the issuance of demolition or building permits, the Marine Bureau Manager shall, under the direction of the City of Long Beach Traffic Engineer, address the truck route and circulation effects of the Home Depot and/or the Second+PCH Project construction, should either of these projects be under construction in the vicinity of the project site during construction of the Alamitos Bay Marina Rehabilitation project. The coordination shall identify the construction routes, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas, and address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes.	Less Than Significant

Table 1.A: Summary of Project-Specific Impacts, Mitigation Measures, and Level of Significance

Threshold of Significance	Potential Environmental Impact	Mitigation Measures[1]	Level of Significance After Mitigation
	than cumulatively significant. The project would not contribute to long-term operational cumulative traffic impacts.		

2.0 INTRODUCTION

INTRODUCTION

This Environmental Impact Report (EIR) has been prepared to evaluate environmental impacts associated with the proposed Alamitos Bay Marina Rehabilitation Project (the proposed project) in the City of Long Beach (City). The City is the Lead Agency with authority to prepare this EIR. After completion of the public comment/response process, it will consider certifying the Final EIR. This EIR is intended to serve as an informational document to be considered by the City and the Responsible Agencies during deliberations on the proposed project. The anticipated project approvals associated with the proposed project are described in Section 3.0, Project Description.

The City initially prepared an Initial Study (IS) for the Alamitos Bay Marina Rehabilitation Project to determine whether a Categorical Exemption (CE), Mitigated Negative Declaration (MND), or EIR would be the appropriate documentation for compliance with the California Environmental Quality Act of 1970 (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) for the proposed project. The analysis contained in the IS found that the project may have a significant effect on the environment unless mitigation is included to lessen or avoid the environmental effects of the project. Mitigation measures to reduce potentially significant effects to less than significant levels were incorporated into the project, and the City staff determined that an MND was the appropriate environmental documentation to be prepared for the Alamitos Bay Marina Rehabilitation Project. The IS/MND was prepared and circulated for public review from April 4, 2008, to May 5, 2008.

Comments received from certain agencies during the public review period suggested that there were more effective mitigation measures for impacts to eelgrass habitat that could reduce impacts to a greater degree than the original mitigation measures. Although no new impacts were identified, the City has determined that it will expand the mitigation for impacts to marine biological resources. The City has incorporated the revised mitigation into the project. The reviewing agencies also suggested that the proposed dredging activities would result in a loss of potential habitat and that such loss should be included in the impacts of the project and mitigated. However, it was the City's opinion that maintenance dredging would not require mitigation for areas of soft-bottom sediment that did not currently support eelgrass, and the issues related to potential habitat were not resolved at that point in time. Therefore, out of an abundance of caution, the City elected to elevate the level of CEQA review to an EIR so that the issues could be more fully addressed.

This EIR was prepared in accordance with CEQA (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines for Implementation of CEQA (California

Code of Regulations [CCR], Title 14, Section 15000 et seq.). This EIR also complies with the procedures established by the City for implementation of CEQA.

Questions regarding the preparation of this document and City review of the project should be referred to:

City of Long Beach
Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802
Attention: Jill Griffiths
(562) 570-6368

2.1 PURPOSE AND TYPE OF EIR/INTENDED USES OF EIR

The purpose of this EIR is to inform decision-makers and the general public of any significant adverse environmental effects associated with the proposed actions and to identify appropriate and feasible mitigation measures and alternatives that may be adopted to minimize or eliminate any significant project or cumulative effects. This EIR also includes an evaluation of reasonable alternatives to the proposed project, including:

- No Project/No Development Alternative
- Reduced Project Alternative
- Americans with Disabilities (ADA) Improvements Only Alternative

The CEQA Guidelines Section 15126.6(f)(2)(A) states, "The key question [with regard to alternative locations] and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." The proposed project is location-specific, as the project is to rehabilitate an existing marina and the associated facilities. Because the project is specific to the Alamitos Bay Marina (Marina), there are no alternative locations for the proposed project, which consists of improvements to the Marina facilities. Therefore, the Draft EIR does not include analysis regarding alternative locations.

Pursuant to Section 15105 of the State CEQA Guidelines, the Draft EIR for the Alamitos Bay Marina Rehabilitation Project will be circulated for public review and comment for a period of 45 days.

2.2 NOTICE OF PREPARATION AND AREAS OF CONTROVERSY

On May 11, 2009, a Notice of Preparation (NOP) was distributed by the City for the proposed Alamitos Bay Marina Rehabilitation Project. The State of California Clearinghouse issued a project number for the Draft EIR (SCH No. 2008041028). In accordance with State CEQA Guidelines Section 15082, the NOP was circulated to the agencies and individuals listed in Appendix A for a period of 30 days, during which time written comments were solicited pertaining to environmental issues/topics that the Draft EIR should evaluate. The NOP and responses to the NOP from agencies, organizations, and individuals are included in Appendix A of this EIR. The major issues identified by the agencies included the following:

- Impacts related to identification and handling of potentially hazardous materials (refer to Section 4.6, Hazards and Hazardous Materials)
- Impacts to air quality (refer to Section 4.2, Air Quality)
- Impacts related to increased traffic and circulation conditions (refer to Section 4.12, Traffic and Circulation)
- Impacts related to regional planning and transportation policies (refer to Sections 4.8, Land Use, and 4.12, Traffic and Circulation)
- Impacts to marine biological resources (refer to Section 4.3, Biological Resources)
- Consistency with the provisions of the State Tidelands Grant (refer to Section 4.8, Land Use)

The City held a public scoping meeting on May 28, 2009, to present the proposed project and to solicit input from interested individuals regarding environmental issues that should be addressed in this Draft EIR. Major issues and concerns raised at the scoping meeting included: (1) project impacts to recreation within Marine Stadium and within the Marina (particularly to rowers); (2) project impacts to Marine Stadium, a historic resource; (3) safety concerns related to the narrowing of the Marina Channel between Basins 3 and 4; (4) public access to and availability of guest docks and other facilities during construction; (5) project impacts to water quality (e.g., silt and hazardous materials); (6) project-related noise impacts; (7) project impacts to views and aesthetics; (8) impacts to and/or loss of habitat; (9) consideration of alternatives; and (10) traffic-related project impacts.

The Draft EIR addresses each of these areas of concern or controversy in detail, examines project-related and cumulative environmental impacts, identifies significant adverse environmental impacts, and proposes mitigation measures designed to reduce or eliminate potentially significant impacts of the proposed project.

2.3 EFFECTS FOUND NOT TO BE SIGNIFICANT

As required by State CEQA Guidelines Section 15128, the Draft EIR should identify the potential effects of the proposed project that were determined not to be significant. The proposed project would not result in adverse impacts related to the following: Agricultural Resources, Mineral Resources, and Population and Housing. These issues are briefly discussed below along with reasons they were determined not to be significant. For further information and additional discussion, please refer to the NOP in Appendix A of this EIR.

2.3.1 Agricultural Resources

According to the United States Department of Agriculture National Agricultural Statistics Service, no farmland, agricultural zoning, or Williamson Act contracts exist within or adjacent to the project site. No impact to farmland or agriculture will occur with project implementation, and the proposed project will not result in the conversion of existing farmland uses to nonagricultural uses. Therefore, this issue is not evaluated further in this EIR.

2.3.2 Mineral Resources

The proposed project site is not a mineral resource recovery site designated on a local General Plan, Specific Plan, or other land use plan. The project site contains no known mineral resources that would be of value to the region or the residents of the State of California. Therefore, this issue is not evaluated further in this EIR.

2.3.3 Population and Housing

The proposed project will renovate the existing boating facilities in the Marina and will not include the construction of any new homes or businesses. The proposed project will not impact or affect the location, distribution, density, or growth rate of populations within the vicinity of the project site. In addition, the proposed project will not create additional permanent employment that could increase the City's population.

There would be no displacement or loss of residential units as a result of the project, and no replacement housing would be necessary. The project site is designated as a Marina use on the City's General Plan and zoning maps and is not designated for residential uses. However, it is possible that people living on their boats ("live-aboards") may claim them as their primary home. Although the proposed project may result in temporary displacement or relocation of these individuals within the Marina, the City has assured its Alamitos Bay Marina customers that they will not be forced out of the Marina due to the project.

The rebuild will result in 1,646 slips in Basins 1 through 7. As of the date of this notice, there are 1,430 customers in the Marina, so there would be a slip for every customer once the

renovations are complete. However, should the number of correctly sized slips not be available at project completion, those customers would be placed in alternate slips until the appropriately sized slips become available. Currently, less than 7 percent of Marina customers have live-aboard permits issued by the Marine Bureau. Because the number of customers who live aboard boats is relatively small, and because boats will be temporarily relocated only during construction, impacts are considered less than significant, and mitigation is not required. Therefore, this issue is not evaluated further in this EIR.

2.4 FORMAT OF THE EIR

Pursuant to State CEQA Guidelines Section 15120(c), this EIR contains the information and analysis required by Sections 15122 through 15131. Each of the required elements is covered in one of the sections described below.

2.3.1 Section 1.0: Executive Summary

Section 1.0 contains the Executive Summary of the EIR, listing all significant project impacts, mitigation measures that have been recommended to reduce any significant impacts of the proposed project, and the level of significance of each impact following mitigation. The summary is presented in a matrix (tabular) format.

2.3.2 Section 2.0: Introduction

Section 2.0 contains a discussion of the purpose and intended use of the EIR, a background on project initiation and the NOP, and areas of controversy known to the Lead Agency, including issues raised by the public. A summary discussion of effects found not to be significant and therefore not included in the EIR analysis is also included in this section.

2.3.3 Section 3.0: Project Description

Section 3.0 includes a discussion of the project's geographical setting, the history of the project site, and the project's goals, objectives, characteristics, and components.

2.3.4 Section 4.0: Environmental Analysis, Impacts, and Mitigation Measures

Section 4.0 includes an analysis of the project's environmental impacts. It is organized into topical sections, including Aesthetics, Air Quality, Biological Resources, Cultural and Historic Resources, Geology and Soils, Hazardous Materials, Hydrology and Water Quality, Land Use, Noise, Public Services and Utilities, Recreation, and Transportation and Circulation. The environmental setting discussions describe the "existing conditions" of the

environment on the project site and in the vicinity of the site as they pertain to the environmental issues being analyzed (Section 15125 of the State CEQA Guidelines).

The project impact discussions identify and focus on the significant environmental effects of the proposed project. The direct and indirect significant effects of the project on the environment are identified and described, giving due consideration to both the short-term and long-term effects, as necessary (Section 15126.2[a] of the State CEQA Guidelines).

Cumulative impacts are based on the build out of the project and the surrounding area, including all other known proposed projects in the surrounding area.

The discussions of mitigation measures identify and describe feasible measures that could minimize or lessen significant adverse impacts for each significant environmental effect identified in the EIR (Section 15126[c] of the State CEQA Guidelines). The level of significance after mitigation is reported in each section. Unavoidable adverse effects are identified where mitigation is not expected to reduce the effects to insignificant levels.

2.3.5 Section 5.0: Alternatives to the Proposed Project

In accordance with CEQA, the alternatives discussion in Section 5.0 describes a reasonable range of alternatives that could feasibly attain the basic objectives of the project and that are capable of eliminating any significant adverse environmental effects or reducing them to a level of insignificance. Alternatives analyzed in Section 5.0 include: No Project/No Development Alternative; Reduced Project Alternative; and ADA Improvements Only Alternative.

2.3.6 Section 6.0: Long-Term Implications of the Project

Section 6.0 includes CEQA-mandated discussions required by Section 15126 of the State CEQA Guidelines regarding: (a) significant irreversible environmental changes that would result from implementation of the proposed project, and (b) growth-inducing impacts of the proposed project.

2.3.7 Section 7.0: Mitigation Monitoring and Reporting Program

Section 7.0 provides a list of all proposed project mitigation measures, defines the party responsible for implementation, and identifies the timing for implementation of each control measure.

2.3.8 Sections 8.0 and 9.0, Report Preparers and References

Sections 8.0 and 9.0 respectively provide: the Draft EIR preparers, technical report authors, and the organizations and persons contacted during preparation of the Draft EIR; and the references used by the authors.

2.5 INCORPORATION BY REFERENCE

As permitted in Section 15150 of the State CEQA Guidelines, an EIR may reference all or portions of another document that is a matter of public record or is generally available to the public. Information from the documents that have been incorporated by reference has been briefly summarized in the appropriate sections of this EIR, along with a description of how the public may obtain and review these documents. These documents include:

- Alamitos Bay Master Plan, City of Long Beach, 2001
- City of Long Beach General Plan, City of Long Beach, as amended
- City of Long Beach Municipal Code
- Colorado Lagoon Draft Environmental Impact Report, LSA Associates, Inc., 2008
- Local Coastal Program (LCP), City of Long Beach, 1980
- State Tidelands Grant, City of Long Beach
- Seaport Marina Draft Environmental Impact Report, ESA, 2006
- Guidelines for Marina Berthing Facilities, California Department of Boating and Waterways, 2005
- City of Long Beach Parks, Recreation and Marine Strategic Plan, City of Long Beach, 2003.
- Termino Avenue Drain Project Draft Environmental Impact Report, County of Los Angeles Department of Public Works, February 2007.

Documents that are incorporated by reference are available for review at the City of Long Beach, Department of Development Services, located at the address provided in Section 2.1, above.

3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION AND SITE DESCRIPTION

The Alamitos Bay Marina is located in the southeastern portion of Los Angeles County within the City of Long Beach. The Alamitos Bay Marina lies adjacent to and northwest (upshore) of the mouth of the San Gabriel River. The Marina facilities are operated by the City of Long Beach Marine Bureau and are primarily accessible from Pacific Coast Highway (PCH) and Second Street (see Figure 3.1).

Alamitos Bay Marina is comprised of eight basins located throughout Alamitos Bay. The proposed project includes renovations only to Basins 1 through 7. Basin 8 is not included in the project as addressed in this EIR. Basins 1 through 3 are located adjacent to Marina Drive south of Second Street; Basin 4 is located along East Appian Way on the southeast corner of Naples Island, adjacent to the Long Beach Yacht Club; Basin 5 is located adjacent to the Alamitos Bay Yacht Club on Ocean Boulevard; Basin 7 is located on Ocean Boulevard to the northwest of Basin 5. Basin 6 is comprised of two separate areas known as Basin 6-South (6-S) and Basin 6-North (6-N). Basin 6-S is located at the northernmost end of Marina Pacifica Drive, and Basin 6-N is located northeast of Basin 6-S, adjacent to the Marina Pacifica Mall on PCH. Each of the seven basins has a differing number of slips available to boaters, ranging from 20 to 120 feet (ft) in length.

The land uses surrounding the basins are primarily residential, but also include areas of commercial development, marine-related commercial uses, restaurants, a shipyard, yacht and sailing clubs, and public beaches. Figure 3.2 illustrates the location and layout of the basins.

Basins 1, 2, and 3 are surrounded by Marina parking areas and commercial uses, including several restaurants and marine-related retail uses. The Navy Yacht Club of Long Beach and the Seal Beach Yacht Club are both located on Marina Drive near Basin 2 of the Marina. Commercial uses, including a hotel, are located across Marina Drive from Basins 2 and 3. A fuel dock is located west of Basin 1, just inside the entrance to Alamitos Bay Marina.

Basin 4, located across the water from Basin 3 on Naples Island, is surrounded by residential uses and is adjacent to the Long Beach Yacht Club. Basin 5 is located at the southeast end of the Alamitos Bay Peninsula, adjacent to Alamitos Bay Yacht Club.

Land uses adjacent to Basin 6-N include the Marina Pacifica Mall commercial center located on PCH. Residential uses and private slips are located across the channel from Basin 6-N.

Basin 6-S is adjacent to the residential community of Marina Pacifica, with additional residential uses located across the channel from the basin.

Land uses surrounding Basin 7 include residential uses on the Alamitos Bay Peninsula and residential uses across the channel on Naples Island. The United States Sailing Center Long Beach is located adjacent to Basin 7.

The harbor entrance is from the south between two jetties, each marked by a light on the seaward end. Alamitos Bay contains 7 miles (mi) of inland waterways for recreational water-related uses and includes private dock and slip facilities, guest slips, and a fuel dock.

Some of the boater-related terms used in this document may be unfamiliar to readers. Therefore, a list of definitions is provided in Table 3.A in order to familiarize readers to the terms used to describe common features of Marinas and waterfront developments.

3.2 PROJECT HISTORY AND BACKGROUND

The construction of Alamitos Bay Marina began in the 1950s, with basins in the Marina opened in the late 1950s and early 1960s. Since its creation approximately 50 years ago, many parts of the Marina's infrastructure, including dock and gangway facilities, parking lots, and the restroom buildings have deteriorated and are in need of modernization and/or replacement.

In 1999 the City of Long Beach Planning Commission recommended the completion of an Alamitos Bay Master Plan. As part of the process, discussion regarding the rebuild of the Alamitos Bay Marina ensued, which included discussion of slip mix. Popular opinion was that the Marina should continue to be recognized as a small craft marina and as such should include slips as small as 20 ft. The Alamitos Bay Master Plan (adopted July 2001) did not include specific slip mix recommendations, but did initiate the evaluation of slip mix in the Marina.

City staff coordinated with California Coastal Commission (CCC) staff at that time to discuss the Master Plan and the future slip mix. As a result, the proposed slip mix reflects a marina that contains approximately 25 percent slips 25 ft and less (20s and 25s), 39 percent slips 30 ft and less (20s, 25s, and 30s), 58 percent slips 35 ft and less (20s, 25s, 30s, and 35s), and 81 percent slips 40 ft and less.

In accordance with CEQA, an Initial Study/Mitigated Negative Declaration (IS/MND) was prepared by the City in 2007/2008 as the preliminary environmental documentation for the proposed Alamitos Bay Marina Rehabilitation Project. The analysis contained in the IS/MND found that, with implementation of mitigation measures and incorporation of standard

Table 3.A: Boater Terminology Definitions

Breakwater	A barrier that protects a harbor or shore from the full impact of waves.
Buoy	A floating object marking the navigable limits of channels, sunken dangers, isolated rocks, telegraph cables etc.
Channel	A natural or artificially dredged route on a river, bay, sea, or ocean, delineated for the safe passage of boats
Dry Stack Storage	A land side building used for indoor or outdoor storage of boats, typically storing the boats in vertical rack systems.
Dock	A platform that forms the space for receiving or mooring a boat.
Fairway	The unobstructed channel between boat slips; used to access individual slips
Fingerfloat	A finger-like floating structure typically attached perpendicular to a main walkway that together define the length and width of a berth, provide direct pedestrian access to and from a boat in the berth, provide for the secure mooring of a boat in the berth, and may support the provision of various utility services
Fingers	Docks separating boats into slips
Float	A pier that floats on top of the water, with guide piles driven to maintain its location.
Freeboard	The distance between the statutory deck line of a boat and the waterline
Gangway	A ramp used to access floats and docks from the shore
Headwalk	A dock providing access from a gangway to several connected mainwalks
Interior Channel	A watercourse, within a marina, through which boats travel between an entrance channel and a fairway(s)
Jetty	A structure, usually constructed of large rock, that projects into a body of water to influence the current or tide or to protect a harbor or shoreline from storms or erosion, similar to a breakwater.
MLLW	Mean Lower Low Water; A tidal datum of the average lower low water height of each tidal day.
Main Channel	Navigable channel used to enter/exit the Marinas
Marginal Walkway	A floating structure that provides pedestrian access between two or more main walkways and shore, and may serve as a platform for lighting, fuel stations, sewage pumpout facilities, lift stations, and utility lines
Mast-up Storage	A land side storage lot where boats with masts in a vertical position can be stored
Mole	A solid fill barrier that protects a harbor or shore from the full impact of waves, similar to a breakwater or jetty.
Pier	A pile-supported structure over water that extends out from the seawall.

Table 3.A: Boater Terminology Definitions

Pile or Piling	A long, slender column, usually of timber, steel, or reinforced concrete, that is driven into the ground to carry a vertical load. Piers and floating docks are typically supported or secured by pilings.
Quay	A wharf usually built parallel to the shoreline along the edge of a body of water.
Revetment	A facing of wood, stone, or any other material placed to sustain an embankment; also, a retaining wall.
Riprap	A loose assemblage of broken stones erected in water or on soft ground as a foundation.
Seawall	A retaining wall that separates land from a body of water.
Side-ties	Locations where boats may be tied to the side, or parallel with a dock
Waler	A structural member(s) fastened along the edges of a dock system to hold it together, provide stability, and protect the flotation pontoons and utilities

conditions, potential environmental effects would be reduced to less than significant levels. Therefore, the City subsequently circulated the IS/MND for public review and comment in April 2008. During the IS/MND public review period, comments were received from certain reviewing agencies, and issues were raised in the comments that caused the City to rethink the pursuit of the proposed project on the basis of the IS/MND. Therefore, out of an abundance of caution, the City is preparing this EIR so that the issues raised by the reviewing agencies could be more fully addressed.

3.3 PROJECT GOALS AND OBJECTIVES

The primary goals of the Alamitos Bay Marina Rehabilitation Project are to rehabilitate the Marina facilities for boaters, local residents, and tourists while maintaining the unique character of the Marina. Project objectives include:

- Renovate and replace the deteriorating Marina facilities to expand recreational boating opportunities in keeping with the current and future demands of the boating public for larger slips
- Restore the Marina's original and/or design depths by dredging the basins to ensure safe navigation and adequate access for the boating public
- Provide overdue and necessary Marina repairs and maintenance through surface repaving of parking areas, repairs to basin seawalls where required, and complete renovations to the 13 restroom buildings

- Maintain the Marina's existing character
- Satisfy Americans with Disabilities Act (ADA) requirements for access to the Marina facilities and docks
- Enhance the level of safety for boaters
- Extend the useful life of the Marina
- Upgrade utility facilities
- Provide slips/layout designs in accordance with Department of Boating and Waterways (DBAW) standards
- Rebuild the Marina consistent with the goals of the Alamitos Bay Master Plan and the Department of Parks, Recreation, and Marine Departmental Strategic Plan

3.4 PROJECT CHARACTERISTICS

The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the Marina. The project encourages boating use by providing upgraded ADA-compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation.

The Alamitos Bay Marina Rehabilitation Project would accommodate changes in the boating needs of the public by providing longer average slip lengths. The dock and slip facilities were developed 50+ years ago, when the average length and width of recreational boating slips were shorter and narrower than current boater demand. However, providing longer slips will reduce the total number of slips within the Marinas. There are currently 1,967 existing slips in Basins 1 through 7. The proposed project includes installation of 1,646 slips in these Basins, resulting in the loss of approximately 321 slips.

As discussed above, during the preparation of the Alamitos Bay Master Plan (adopted July 2001) the popular opinion was that the Marina should continue to be recognized as a small craft marina and as such should include slips as small as 20 ft. The Alamitos Bay Master Plan did not include specific slip mix recommendations, but did initiate the evaluation of slip mix in the Marina. The Master Plan and the future slip mix were discussed with the CCC staff at that time. As a result, the proposed project's slip mix reflects a marina that contains approximately 25 percent slips 25 ft and less (20s and 25s), 39 percent slips 30 ft and less (20s, 25s, and 30s), 58 percent slips 35 ft and less (20s, 25s, 30s, and 35s), and 81 percent slips 40 ft and less. These are a cumulative total of slip categories.

The City wishes to avoid any displacement of its Alamitos Bay Marina customers due to the project, even if the City has to put a small vessel in a larger slip until a small slip is available.

In order to ensure that this desire can be met, the City started an "attrition program" approximately 2 years ago that holds open slips that would not be replaced with the rebuild.

The proposed rebuild of the Marina would result in approximately 1,646 slips. As of the date of this EIR, there are 1,430 customers in the Marina, so there would be a slip for every customer once the renovations are complete. However, should the number of correctly sized slips not be available at project completion, those customers would be placed in alternate slips until the appropriately sized slips become available.

The proposed project consists of a number of improvements to the existing Marina and includes the following: (1) dredging the Marina basins down to original design depths and/or original basin depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) completing dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project includes two construction staging areas: one located in a parking lot on Marina Drive near Basin 2; and the second staging area would be located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard. Each of these project components is described in greater detail below.

3.4.1 Dredging

As part of the proposed project, the Marina would be dredged to the original design depths and/or original basin depths with a target depth of 10 ft below mean lower low water (-10 ft MLLW) in Basins 2 through 7. Basin 1 will be dredged to target depths ranging from -12 ft MLLW to -15 ft MLLW. The dredge limits for each basin are indicated in Figures 3.3 through 3.10**.** The purpose of the dredging is to remove accumulated materials that prevent safe navigation throughout the Marina basins. The dredge quantity is approximately 287,120 cubic yards (cy) of sediment. The dredging work would be phased by basin along with the dock and piling replacement work. The equipment used for the dredging would include one diesel clam bucket and a floating barge with a diesel tender.

Dredge materials from Marina Basins 2 through 7 and a portion of Basin 1 will be barged to the United States Environmental Protection Agency (EPA) designated offshore disposal site, known as LA-2, with material discharged via a dump barge. However, due to high levels of mercury discovered during preliminary sampling in Basin 1, approximately 25,504 cy will need to be trucked off site from this basin and disposed of at an approved landfill, confined aquatic disposal site, or an upland confined disposal facility. Because the final determination of where these materials will go is still under discussion, the EIR has assumed a worst-case scenario that the materials will be trucked to Kettleman Hills Hazardous Waste Facility, a commercial chemical waste site located in Kings County, California. After the contaminated

dredge materials are dried on a barge or at one of the construction staging areas, it is estimated that removal will require 1,435 truck trips spread out over Phases 2 and 3 of the project (a time period of approximately 12 months).

3.4.2 Restrooms

There are a total of 13 restrooms located throughout the Marina basins that are included as part of this project. Three restroom structures, located in Basin 6-S, Basin 6-N, and Basin 7, respectively, would be remodeled and renovated in place. The remaining 10 restroom buildings would be demolished and replaced with similar structures that contain toilet, shower, and laundry facilities. Six of the 10 structures to be demolished would be constructed in slightly different locations than where they currently exist to accommodate ADA ramps and gangways. However, each basin would continue to have the same number of restroom buildings that currently exist, in the same approximate locations (see Figure 3.11). The restrooms would be constructed in compliance with the ADA requirements. This portion of the project includes replacement of the existing water and sewer lines with 6-inch lines from all restrooms to the existing water and sewer mains.

3.4.3 Sea Wall Repairs

It is anticipated that 8,250 linear feet (lf) of sea wall repair would be required as part of the proposed project. The repairs are primarily focused on restoring the eroded bearing surface and reestablishing the rock revetment along the slope to the basin floor. Sea wall repairs would be done in phases that correspond with each basin's dock and piling replacement work. A typical cross-section example of the seawall repair is illustrated in Figure 3.12.

3.4.4 Dock and Piling Replacement

There are 1,967 existing slips in Basins 1 through 7 of the Marina that total approximately 476,839 square feet (sf) of dock surface area. The proposed project includes installation of 1,646 slips that total approximately 474,239 sf of new dock surface area. Therefore, the proposed project would result in the loss of approximately 321 slips and a reduction of approximately 2,600 sf of dock surface area. In addition, the proposed project would result in the removal of approximately 808 existing piles and installation of 620 new piles to support the new dock system. The new docks, accessory gangways, and ramps would meet ADA requirements. Upgraded water, electricity, and phone utilities would be provided to the new slip facilities. Table 3.B contains the existing and proposed number of slips, as well as slip sizes for each basin. The proposed configuration of the docks over the existing layout is illustrated in Figure 3.13.

Table 3.B: Slip Count and Size per Basin

Slip Size (ft)	Basin 1		Basin 2		Basin 3		Basin 4		Basin 5		Basin 6		Basin 7	
	Exist	Prop	Exist	Prop	Exist	Prop	Exist	Prop	Exist	Prop	Exist	Prop	Exist	Prop
20					360	140	85	25						
25			165	2	122	190	51	25		1	3	4	28	20
30			186	14	132	103	32	50	16	17	63	61		
35	1		138	193	59	79	32	31		1	8	8		
40	1	1	131	241	93	67	26	37	11	7	16	15		
45	67	9		28	25	51		24						
50	46	72	1	39			12	18	3	4				
55	4	4												
60	21	35						2						
65			1											
70	12	12	1				1							
80	16	5												
90		4												
100	1	4												
110		2												
120		1												
Total	166	**149**	623	**517**	791	**630**	239	**212**	30	**30**	90	**88**	28	**20**

ft = feet
Exist = existing
Prop = proposed

3.4.5 Temporary/Long Dock

The project includes replacement and extension of the long dock located adjacent to the Long Beach Yacht Club, at the southeast end of Basin 4 (see Figure 3.14). The new 10 ft wide long dock will be extended by approximately 565 ft from where it currently ends. However, approximately 200 ft of this long dock is temporary and is intended to accommodate displaced boats during each phase of the rehabilitation process. The 200 ft temporary portion of the dock will be removed upon project completion. It is anticipated that the temporary dock section could be relocated as a permanent dock at the completion of the Marina rehabilitation. No additional gangway is planned for the Temporary/Long Dock; access to this dock would continue to be made from existing gangways located at the southeast end of Basin 4. Dock design and access would comply with ADA requirements. Approximately 3,150 sf of water area would be permanently covered by the extension of the long dock, with an additional 2,000 sf of water area covered temporarily during construction.

3.4.6 Parking Lot Replacement

The project includes the replacement of the paved parking lot surfaces adjacent to the Marina slips in Basins 1, 2, 3, 4, 6-North, and 6-South. New asphalt paving would be installed and the lots would be restriped (repaving areas total 930,622 sf). No landscaped islands within the parking lots areas would be removed. In addition, new utility connections including electricity, water, wastewater, and storm drain facilities would be installed in conjunction with the repaving of the parking areas. Concrete ramps meeting ADA requirements and concrete sidewalks and curbs are also included in the parking lot or land side improvement portion of the project.

3.4.7 Water Open Space/Habitat Mitigation Site

The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an underwater open space/habitat mitigation site. The habitat mitigation site is located within a City-owned storage area. The fenced storage area is currently used, in part, to store impounded items. The project includes abandoning a portion of the storage yard to create an open space habitat. An area of 218 ft by 105 ft would be excavated to a depth of 2–3 ft below MLLW. The existing rock revetment along Marine Stadium would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel (see Figure 3.15). The new underwater open space area would be planted with eelgrass to mitigate for the project's potential impacts to this marine resource.

3.5 PROJECT PHASING

The proposed project is anticipated to be implemented in 12 phases over approximately 6 years and includes two construction staging areas: one located in a parking lot on Marina Drive near Basin 2; and one located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina shipyard. Each basin would be dredged after removal of the docks and slips within that respective basin. Sea wall repair would occur as necessary within each phase. Rehabilitation of the restroom facilities and the parking lot replacement would be completed after installation of all dock facilities and related utilities. In order to accommodate the Marina operations, no more than 1 acre (ac)of parking lot pavement area would be replaced at any one time. The components of each construction phase are summarized in Table 3.C. Figure 3.16 illustrates the preliminary phasing plan.

3.6 DISCRETIONARY PERMITS, APPROVALS, OR ACTIONS REQUIRED

In accordance with Sections 15050 and 15367 of the State CEQA Guidelines, the City is the designated Lead Agency for the Project and has principal authority and jurisdiction for CEQA actions. Responsible Agencies are those agencies that have jurisdiction or authority over one or more aspects associated with the development of a proposed Project and/or mitigation. Trustee Agencies are State agencies that have jurisdiction by law over natural resources affected by a proposed Project.

Project implementation will require approval of a Coastal Development Permit by the CCC and approvals, permits, and/or Agreement Approvals from Responsible and Trustee Agencies, including but not limited to the CCC, California Water Resources Control Board, Los Angeles Regional Water Quality Control Board (RWQCB), the United States Department of the Interior, the United States Fish and Wildlife Service (USFWS), the United States Army Corps of Engineers (ACOE), the California Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), DBAW, and the California State Lands Commission. See Table 3.D for a list of discretionary, Agreement, and permit approvals required for Project implementation.

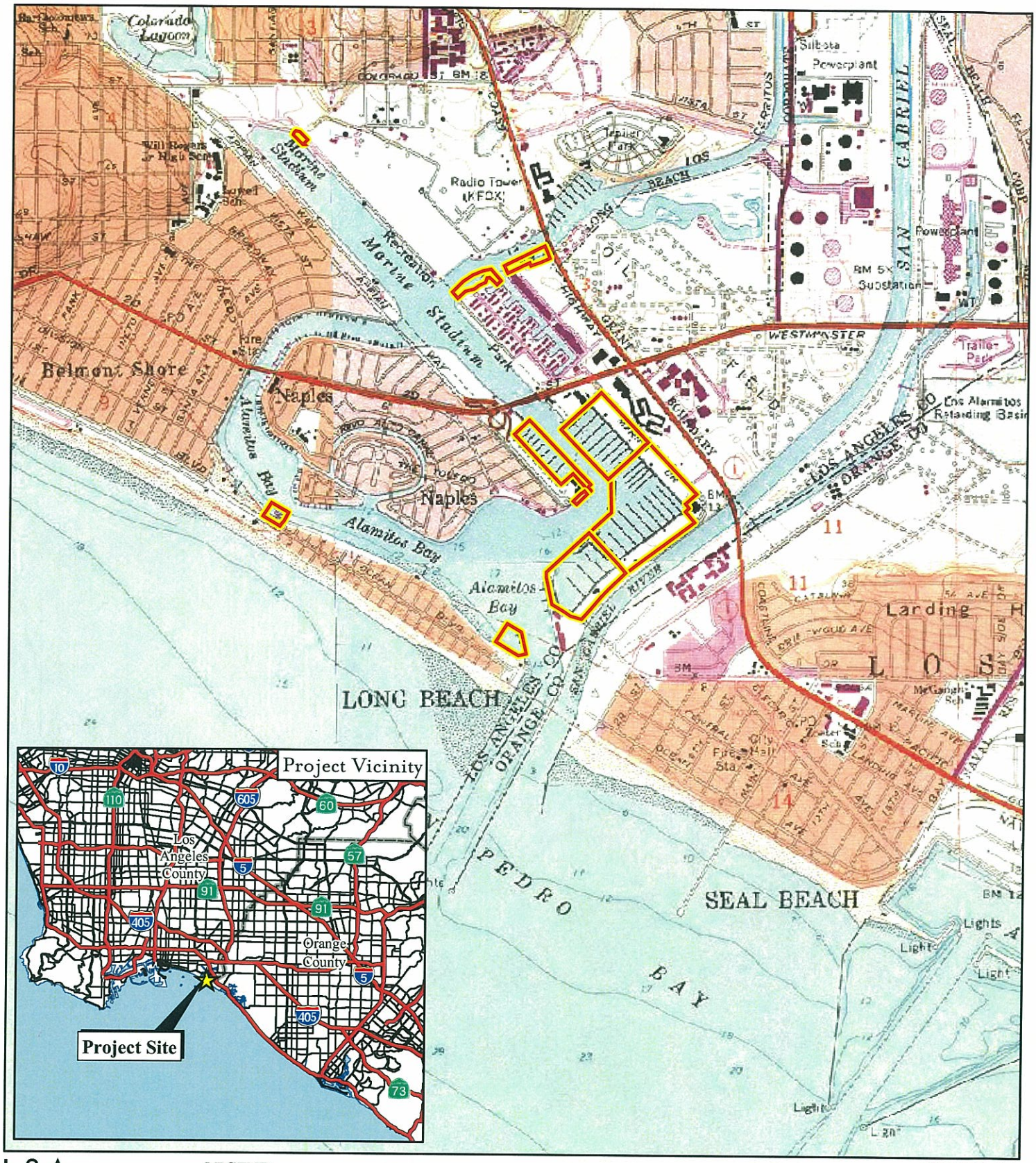
Table 3.C: Proposed Construction Phasing

Phase(s) (Months)	Basin	Existing Slips	Proposed Slips	Slip Difference	Restroom Upgrades	Parking Lot Repaving Area (sf)
1 (6)	4	239	212	-27	1 existing restroom to be demolished and rebuilt in place	153,680
1A (1.5)	Mitigation Site	0	0	0	Not Applicable	0
2–3 (12)	1	166	149	-17	2 existing restrooms to be demolished and rebuilt in place; 1 existing restroom to be demolished and replaced	156,402
4–7 (24)	2	623	517	-106	2 existing restrooms to be demolished and replaced	348,835
8–11 (24)	3	791	630	-161	3 existing restrooms to be demolished and replaced	247,005
12 (6)	5	30	30	0	1 existing restroom to be demolished and rebuilt in place	N/A
	6S/6N	90	88	-2	2 existing restrooms to be rehabilitated in place	24,700
	7	28	20	-8	1 existing restroom to be rehabilitated in place	N/A
Total		**1,967**	**1,646**	**-321**	**13 restroom buildings**	**930,622**

Source: TranSystems, 2009.
N = north
N/A = not applicable
S = south

Table 3.D: Discretionary Permits and Approvals

Environmental Impact Report (EIR) Certification	City of Long Beach: Planning Commission – Certification
Project approval	City of Long Beach Planning Commission California Coastal Commission (CCC) State Lands Commission (consultation)
Coastal Development Permit(s)	CCC
Section 404 Permit Navigable waters (dock renovations and pile placement, temporary docks)	United States Army Corps of Engineers (ACOE) United States Fish and Wildlife Service (USFWS) (consultation) National Marine Fisheries Service (NMFS) California Department of Fish and Game (CDFG) California Regional Water Quality Control Board, Los Angeles Region (RWQCB)
Section 10 Permit Navigable waters (docks)	ACOE United States Coast Guard (consultation)
Section 401 Certification water quality permits	Los Angeles RWQCB
Improvement Plans (infrastructure) Water Quality Management Plans Building Plans/Permits Certificates of Occupancy	City of Long Beach Building Department City of Long Beach Water Department County of Los Angeles Flood Control District Los Angeles RWQCB



LSA

LEGEND

Project Locations

FIGURE 3.1

N

0 1000 2000

FEET

SOURCE: USGS 7.5' QUAD - LONG BEACH ('81), LOS ALAMITOS ('81), SEAL BEACH ('81); CALIF.

I:\TSY0701B\GIS\Fig1.mxd (7/15/2009)

Alamitos Bay Marina Rehabilitation Project

Project Location Map

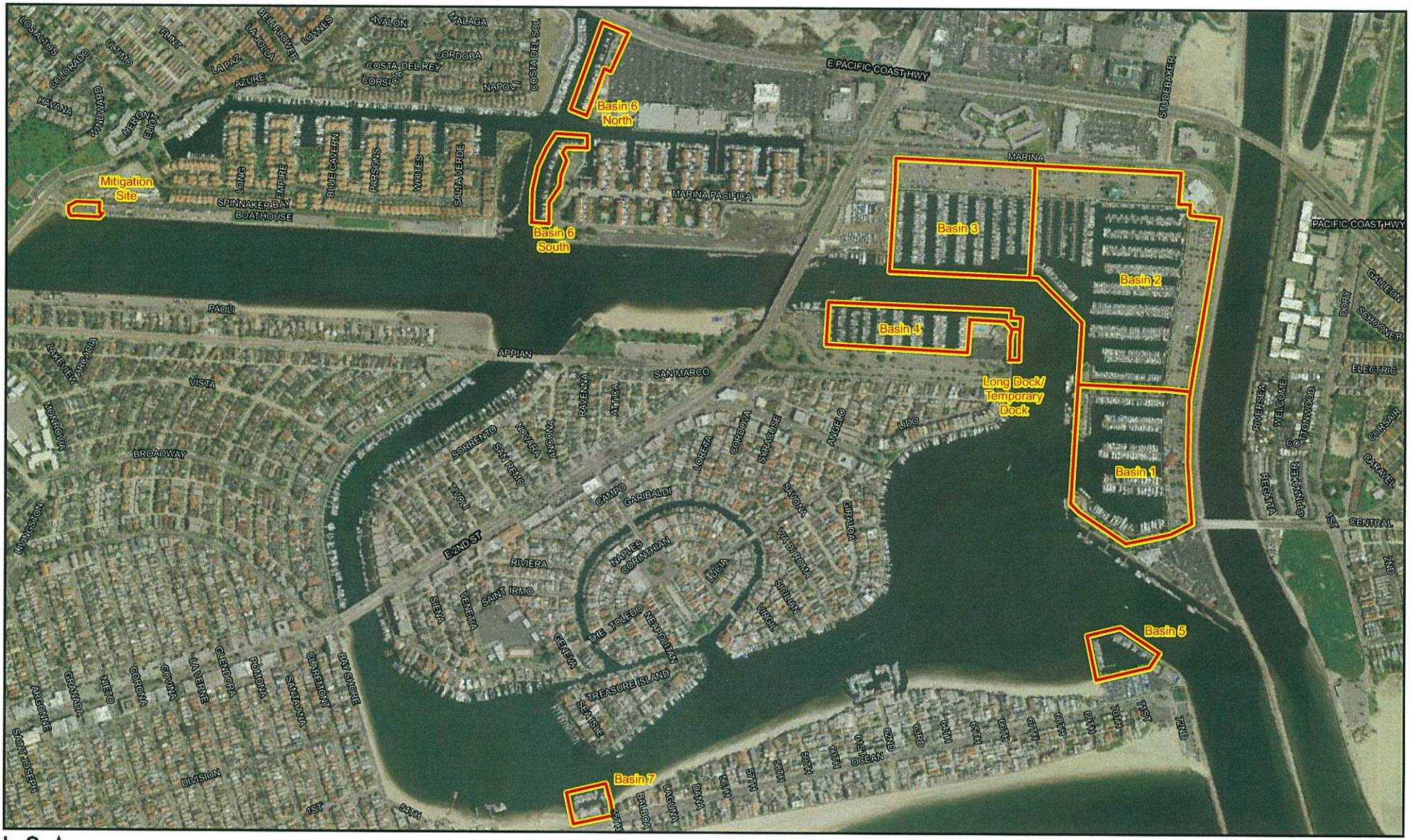


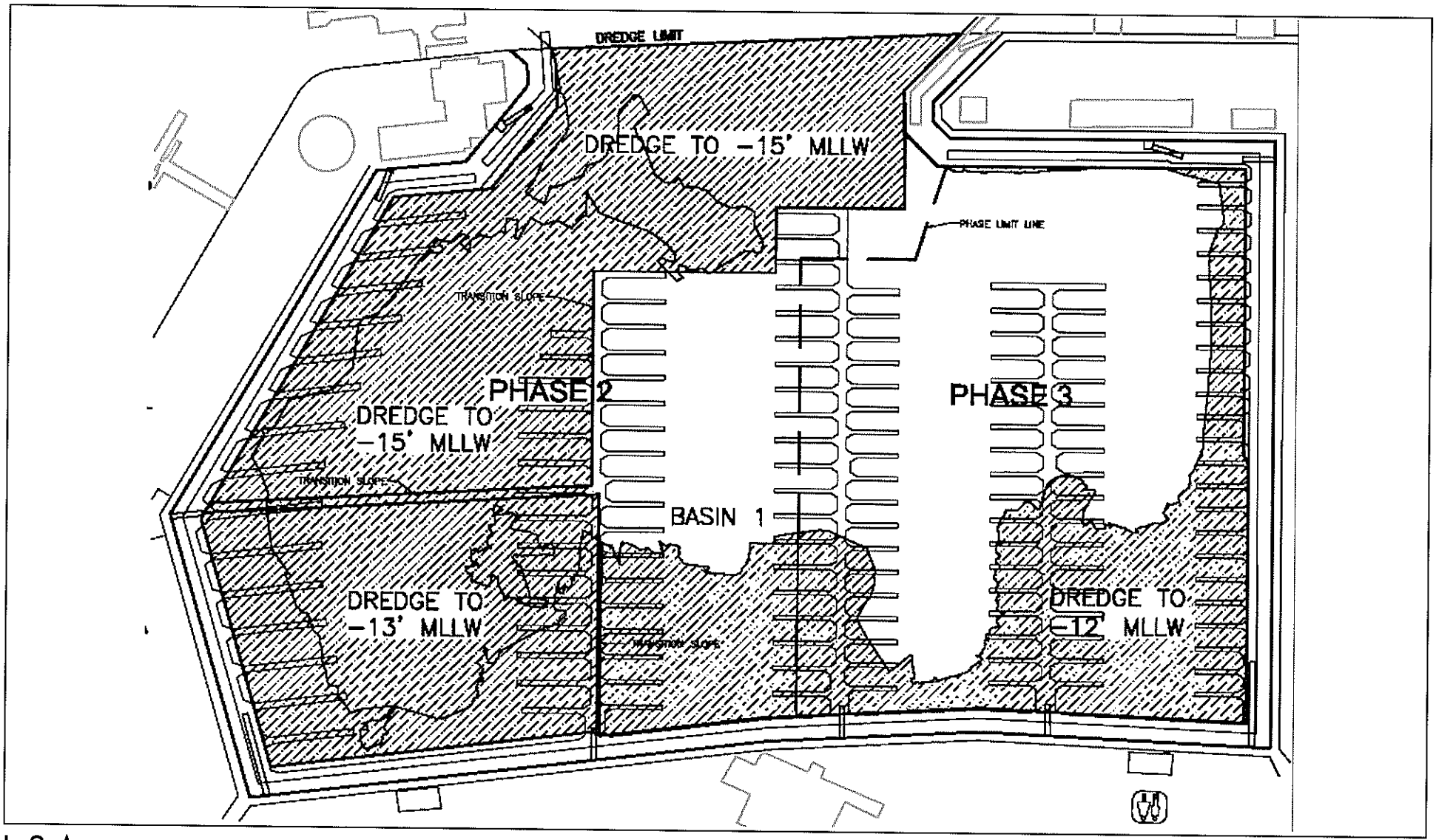
FIGURE 3.2

SOURCE: DigitalGlobe (4/08); TBM (2008); City of Long Beach (2008, 1/09)

I:\tsy0701\GIS\BasinLocations_8x11.mxd (7/22/2009)

Alamitos Bay Marina Rehabilitation Project

Key View Locations



LSA

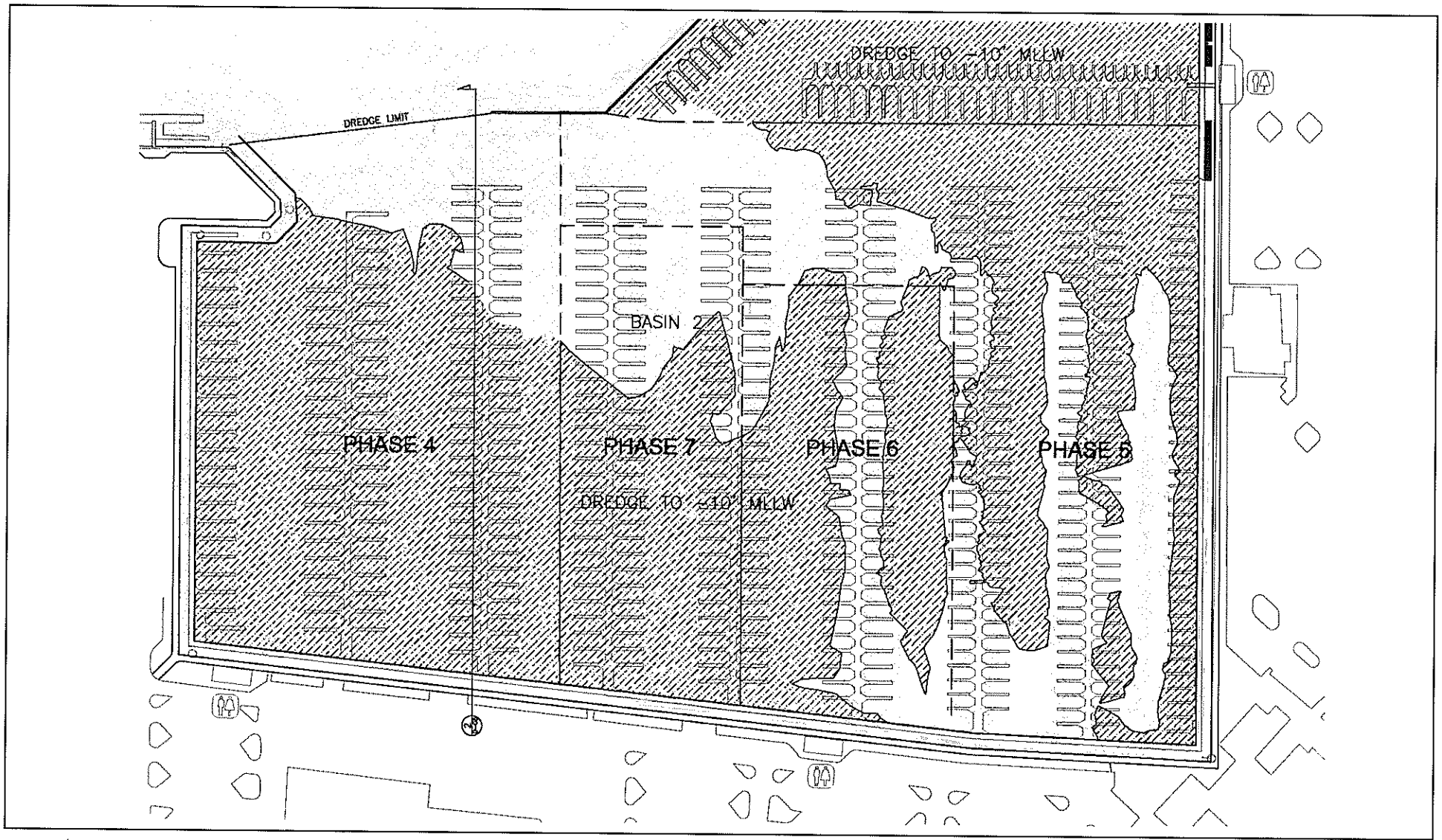
FIGURE 3.3

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 1

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 1.cdr (7/15/09)



LSA

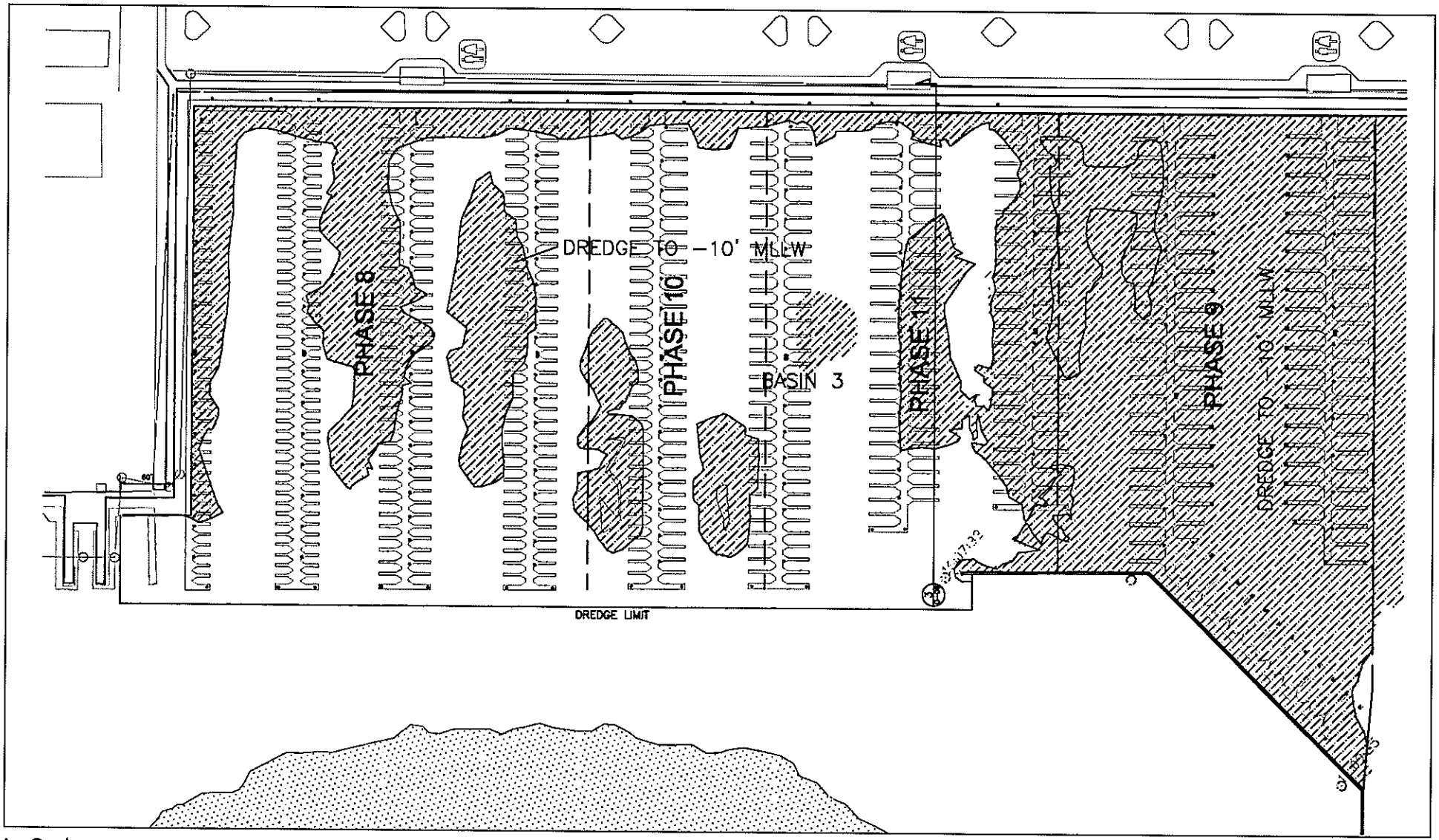
FIGURE 3.4

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 2

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 2.cdr (7/15/09)



LSA

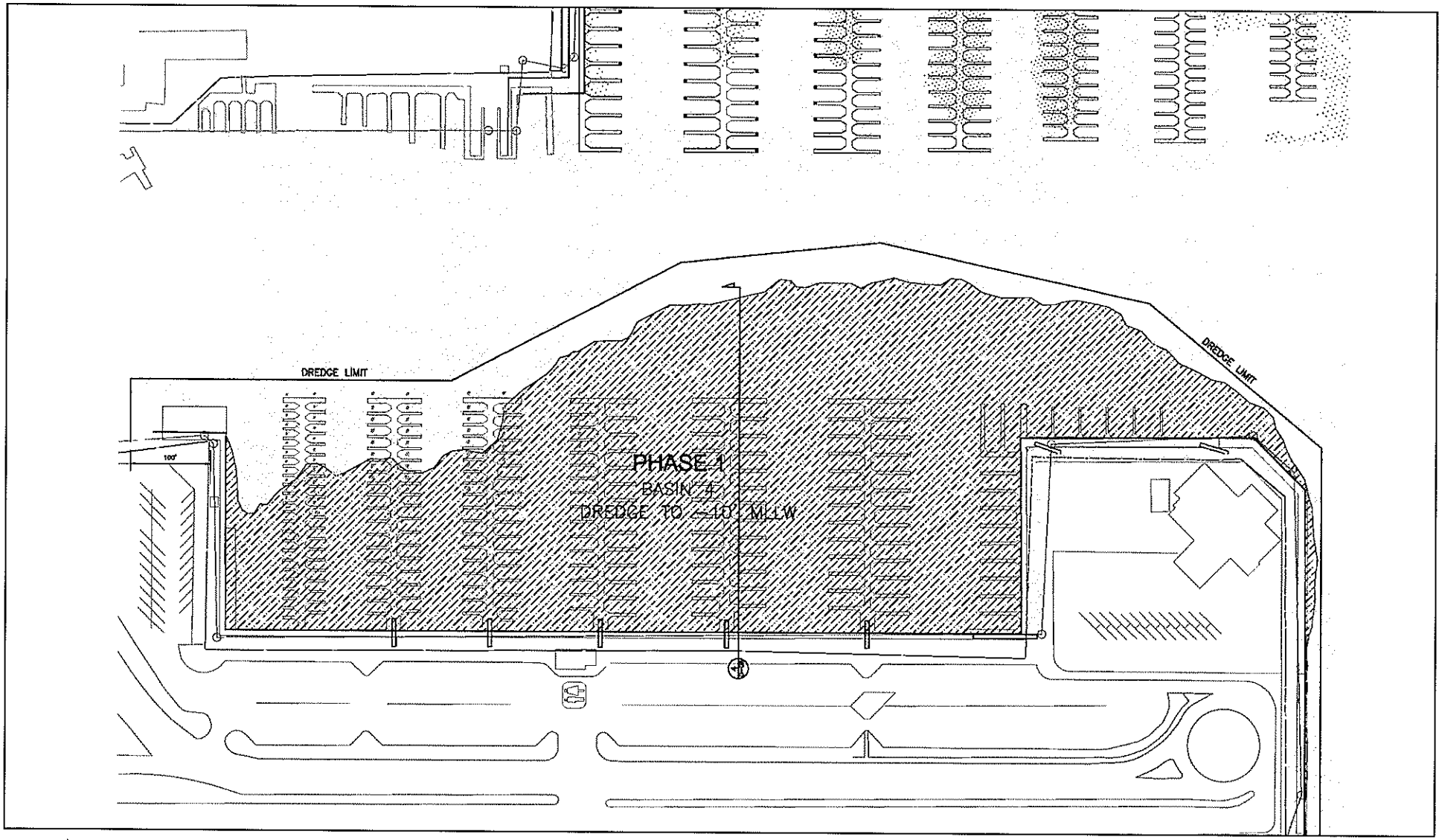
FIGURE 3.5

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 3

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 3.cdr (7/15/09)



LSA

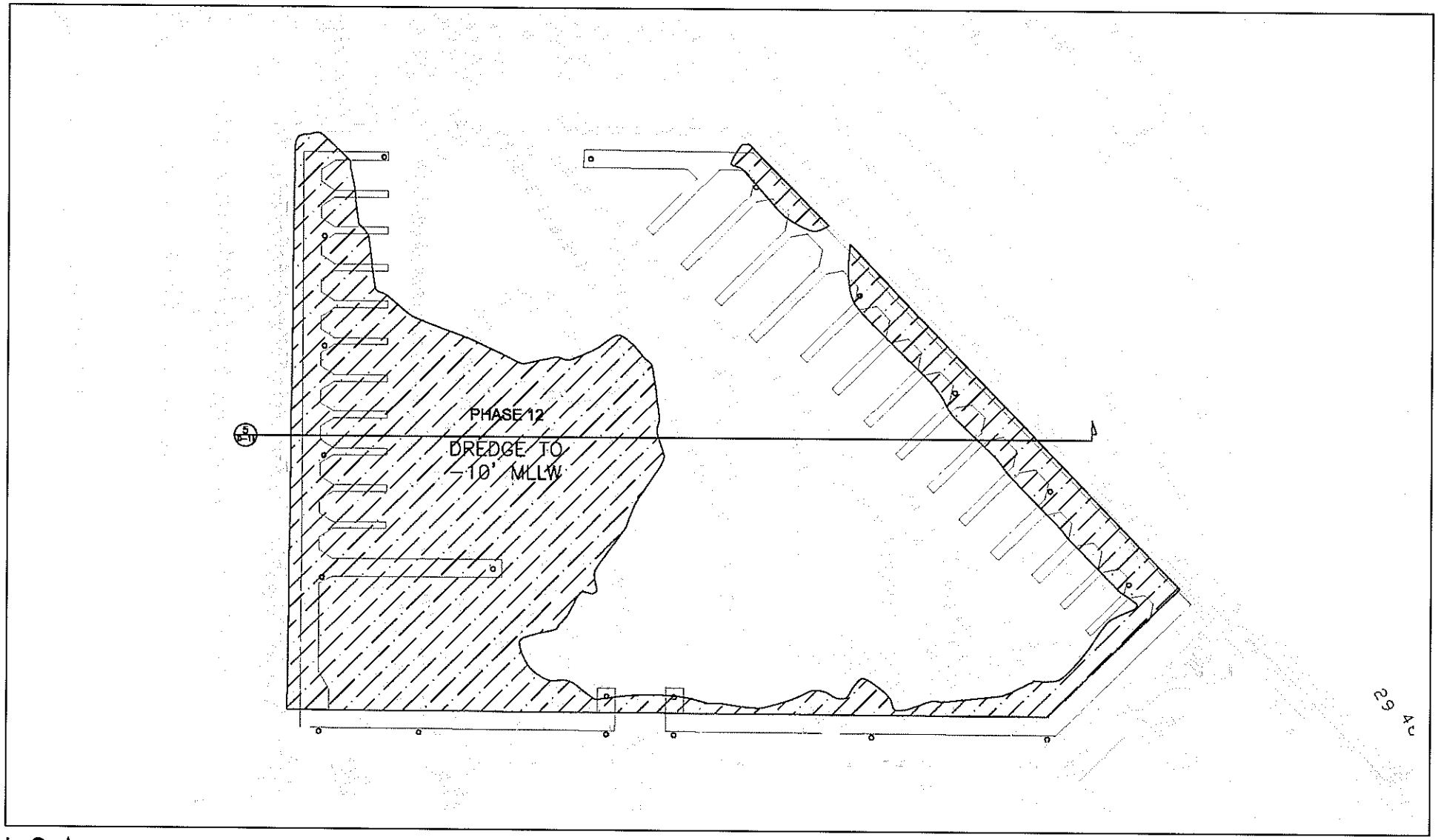
FIGURE 3.6

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 4

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 4.cdr (7/15/09)



LSA

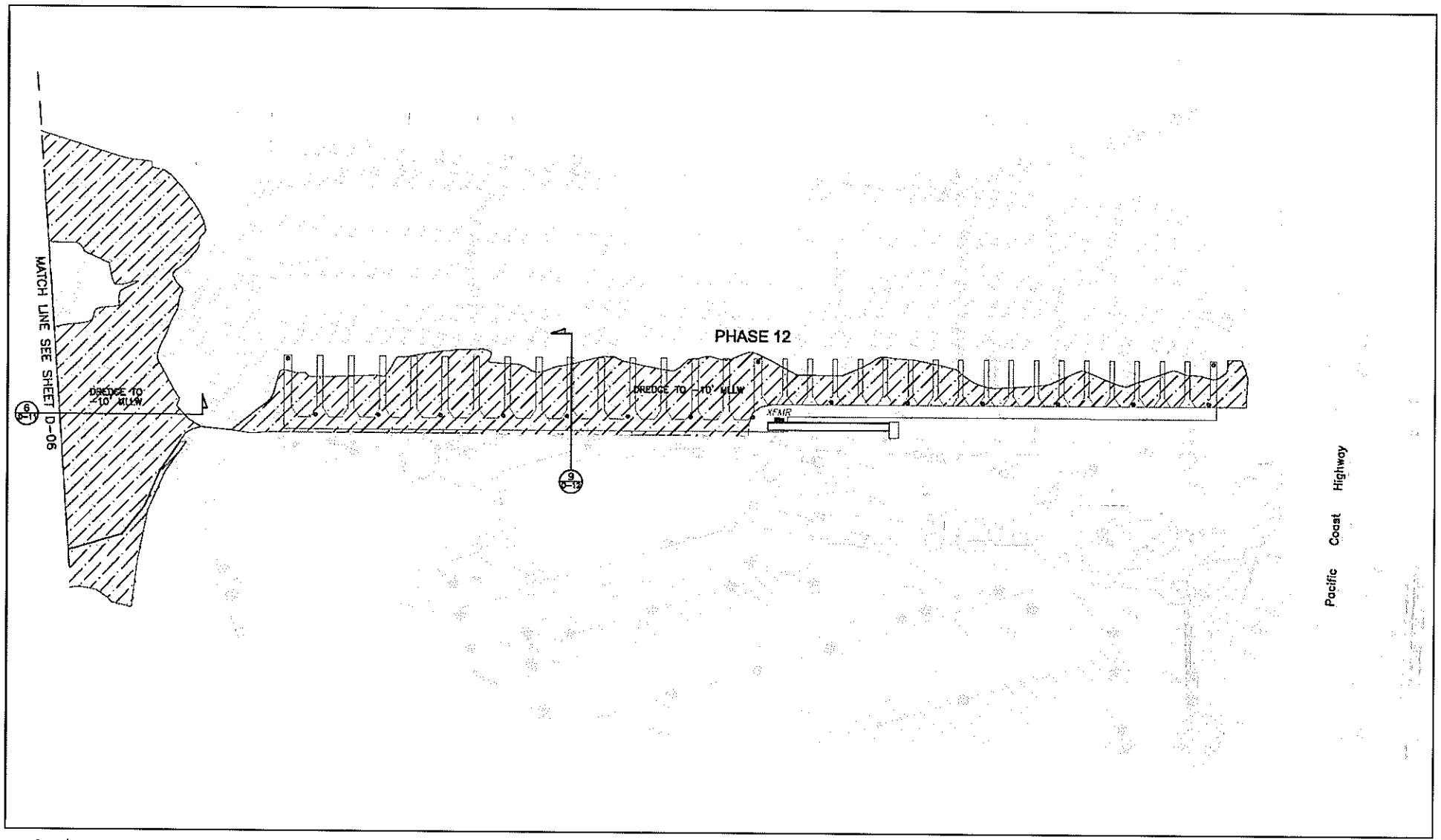
FIGURE 3.7

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 5

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 5.cdr (7/15/09)



LSA

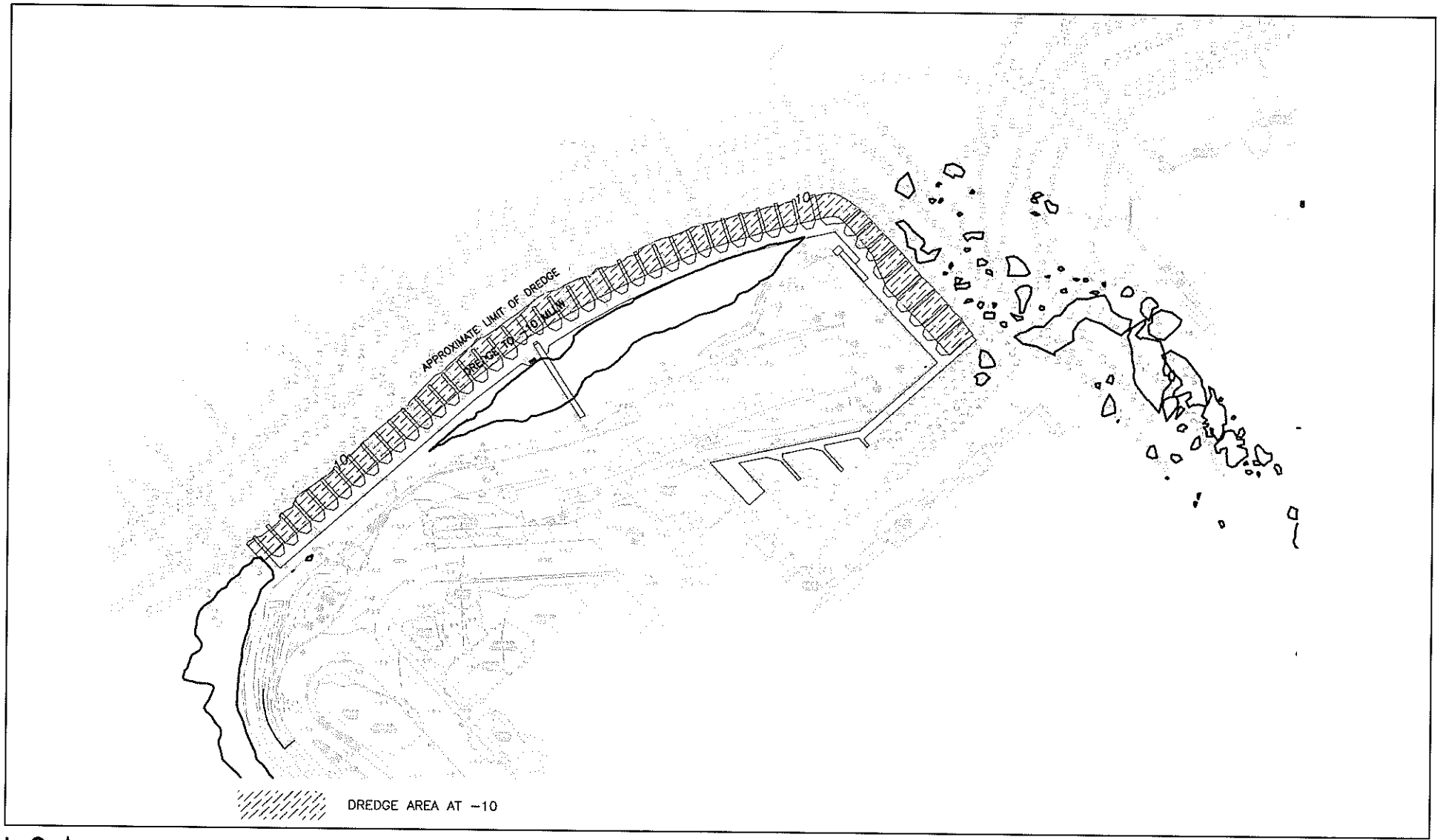
FIGURE 3.8

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 6N

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 6N.cdr (7/15/09)



LSA

FIGURE 3.9

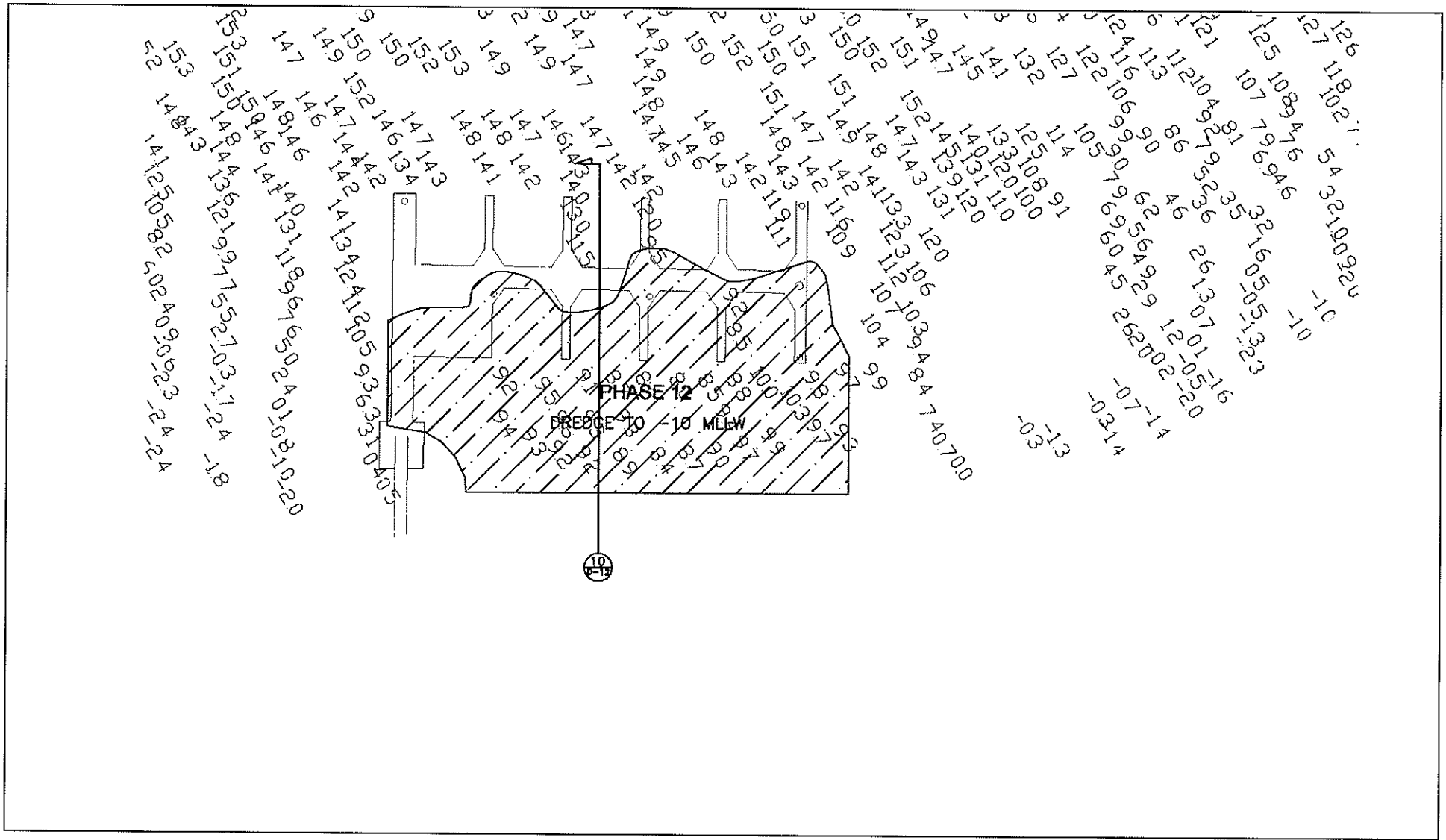
N

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 6S

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 6S.cdr (7/15/09)



LSA

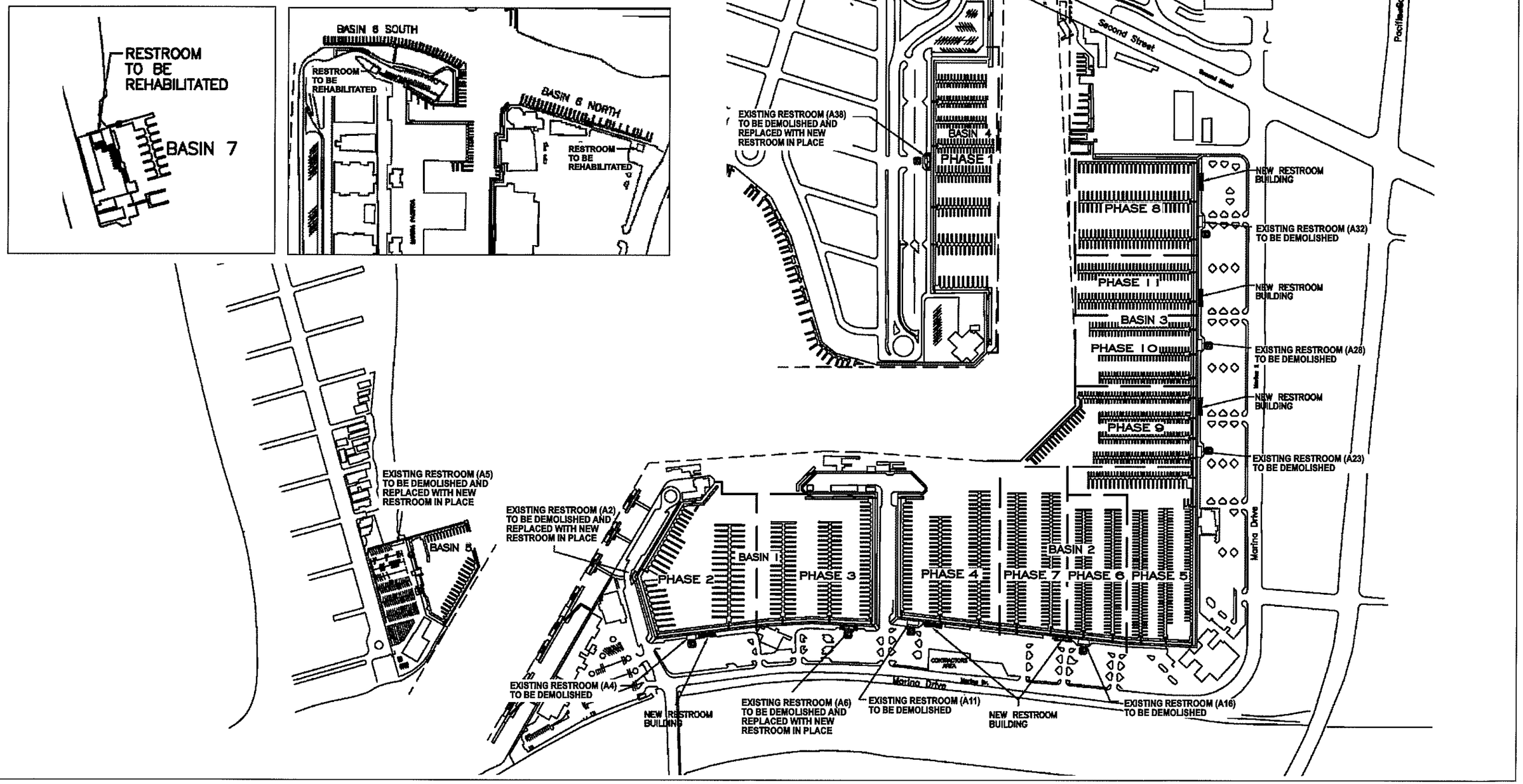
FIGURE 3.10

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout/Dredging Limits Basin 7

SOURCE: Tran Systems

I:\TSY0701B\G\PDL Basin 7.cdr (7/15/09)



LSA

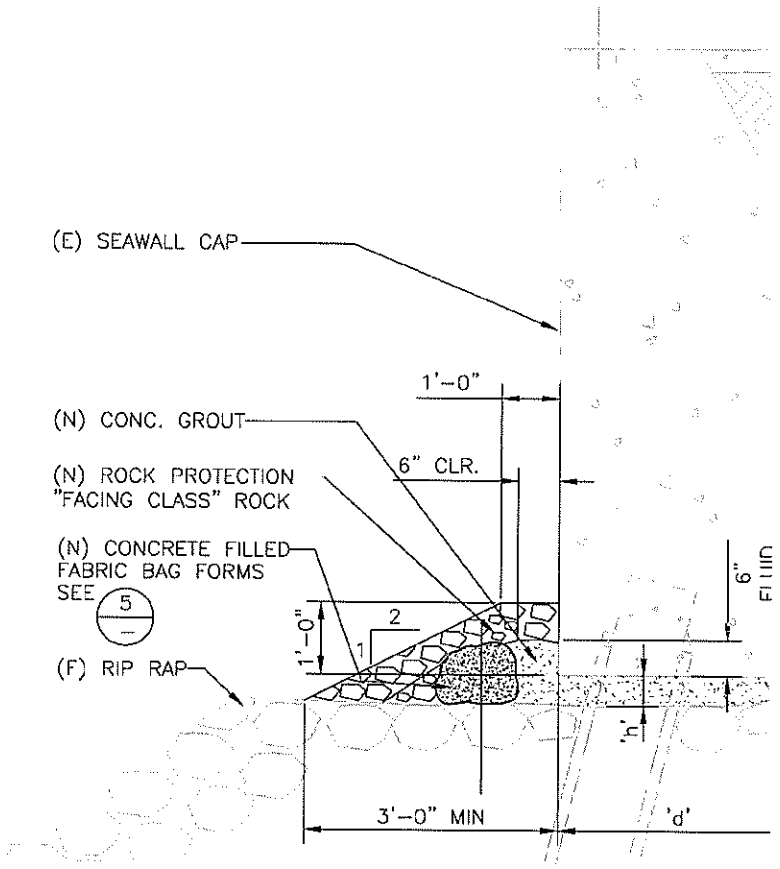
FIGURE 3.11

Alamitos Bay Marina Rehabilitation Project EIR

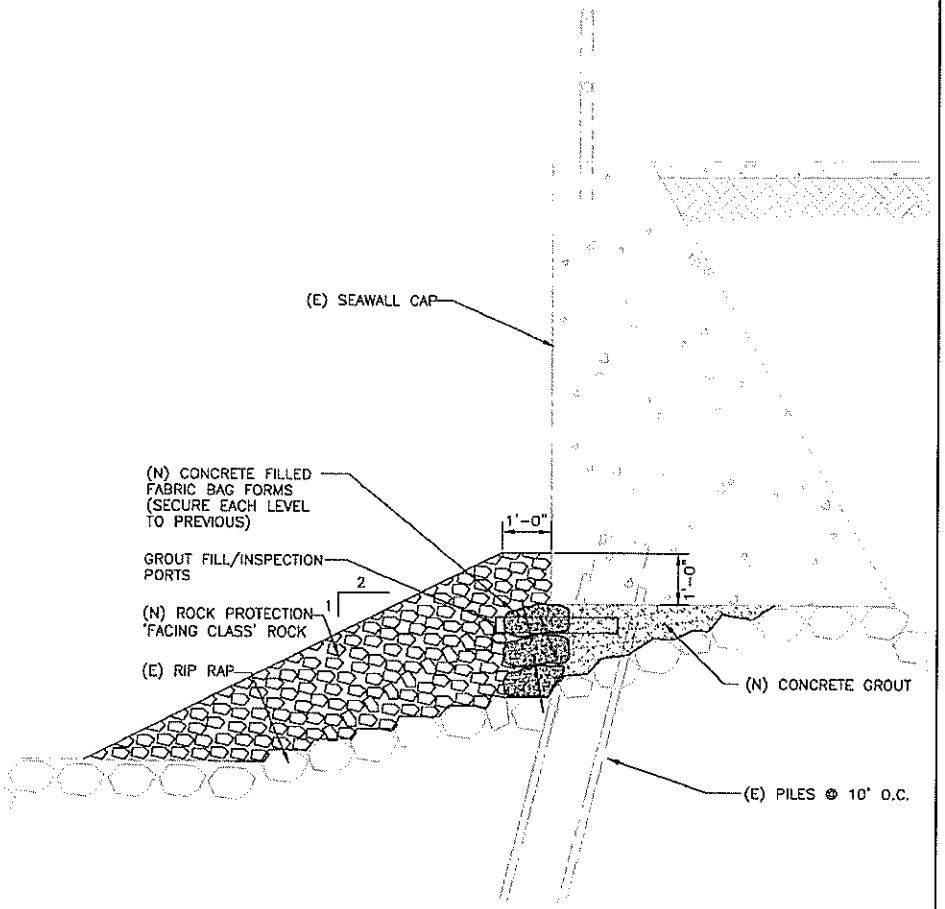
Existing and Proposed Restroom Locations

SOURCE: Tran Systems

I:\TSY0701B\G\Ex Prop RR Loc.cdr (7/15/09)



VOID REPAIR, 'h' <6" & 'd'>1' (1)



VOID REPAIR, 'H'>12" & 'd'>1' (4)

LSA

FIGURE 3.12

Alamitos Bay Marina Rehabilitation Project EIR

Typical Seawall Repair Cross-Sections

SOURCE: Tran Systems

I:\TSY0701B\G\Typ X sections.cdr (7/16/09)

LSA

LEGEND

- New Docks
- Existing Docks to be Replaced

FIGURE 3.13

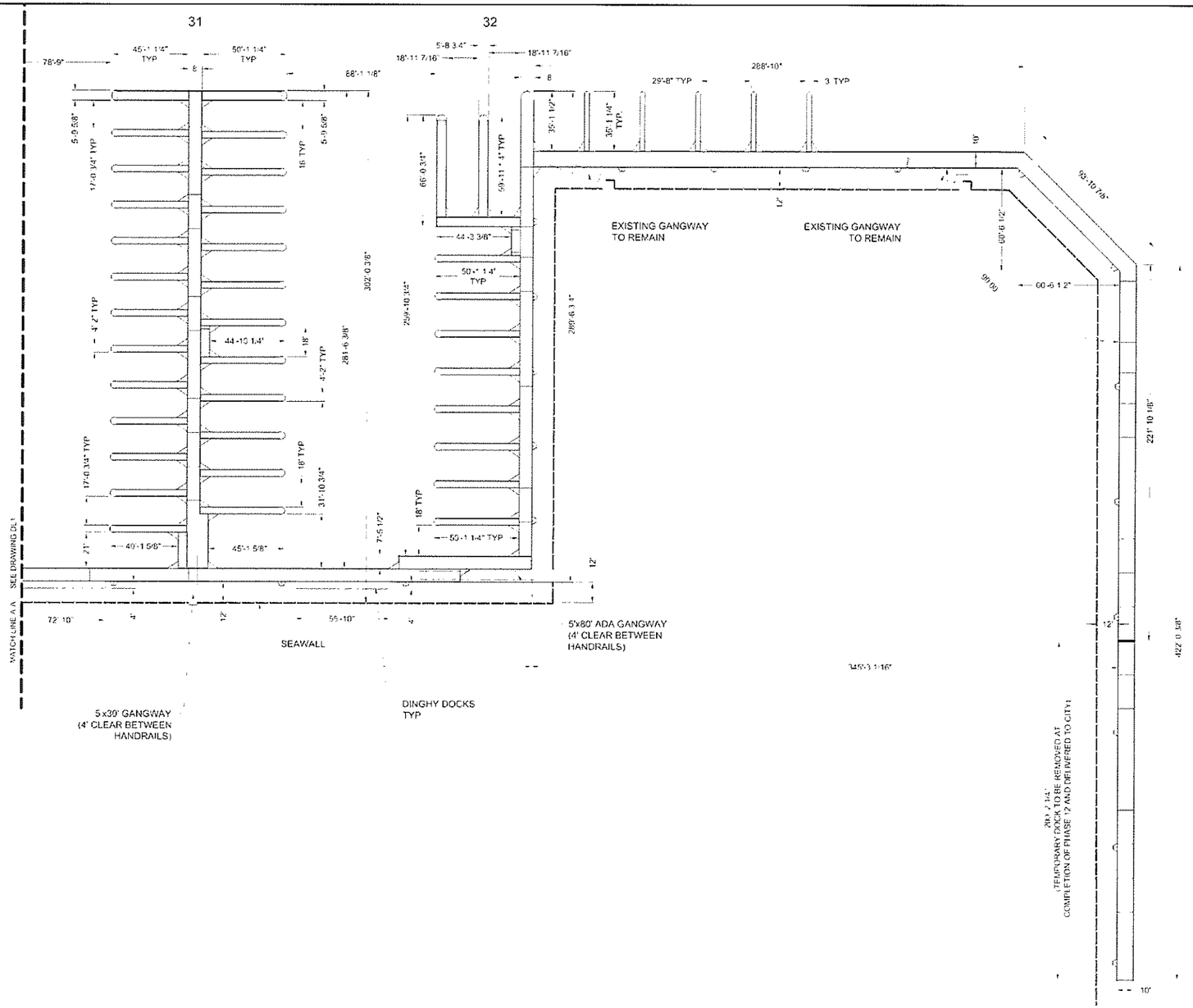
NO SCALE

SOURCE: TranSystems

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Dock Layout Over Existing Docks

I:\TAG330\G\Pkg Survey Locs.cdr (7/18/09)



LSA

FIGURE 3.14

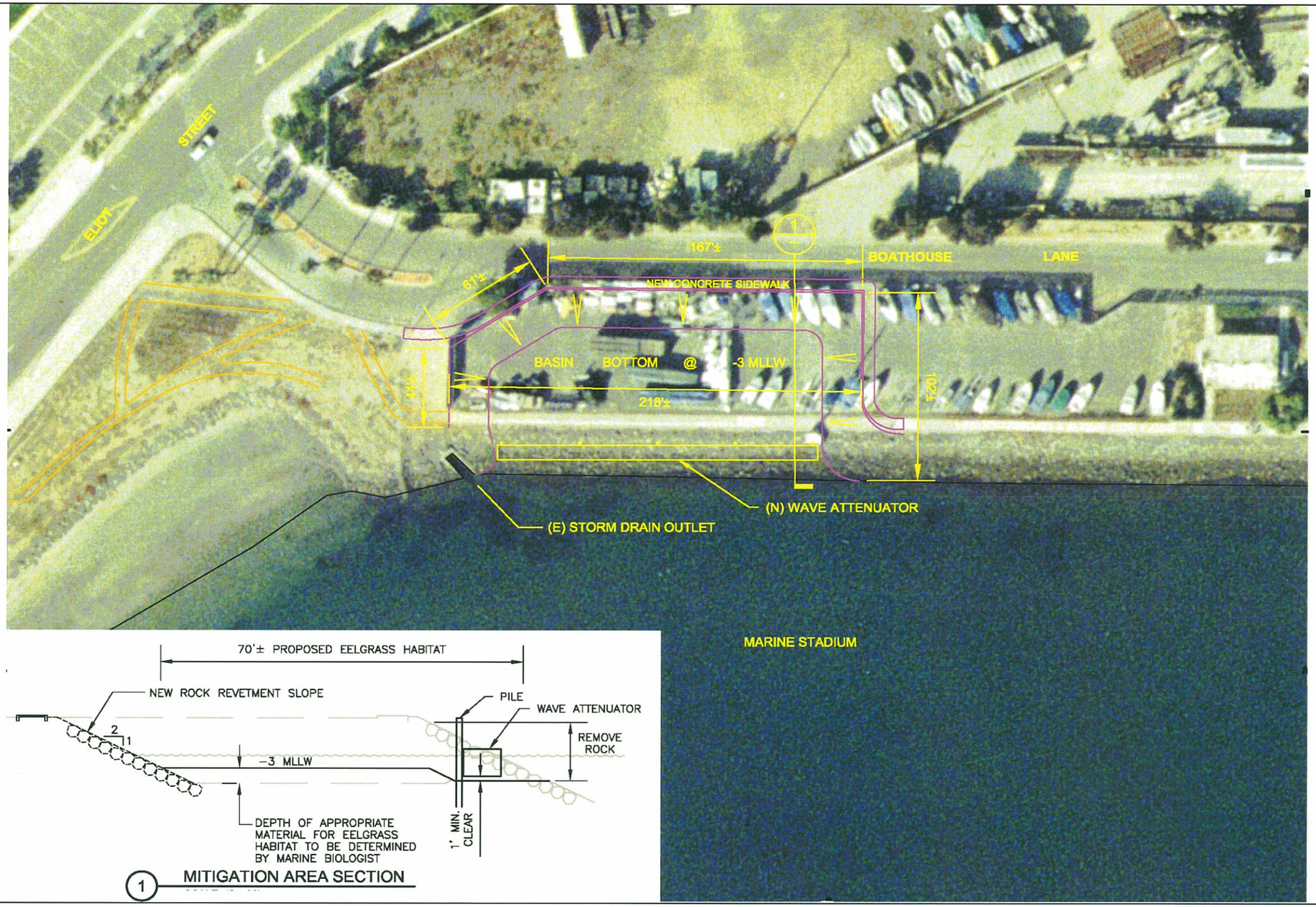
0 40 80
FEET

SOURCE: Bellingham Marine

Alamitos Bay Marina Rehabilitation Project EIR

Temporary/Long Dock Configuration, Basin 4

I:\TSY0701B\G\Temp Doc Cnfg.cdr (7/16/09)



LSA

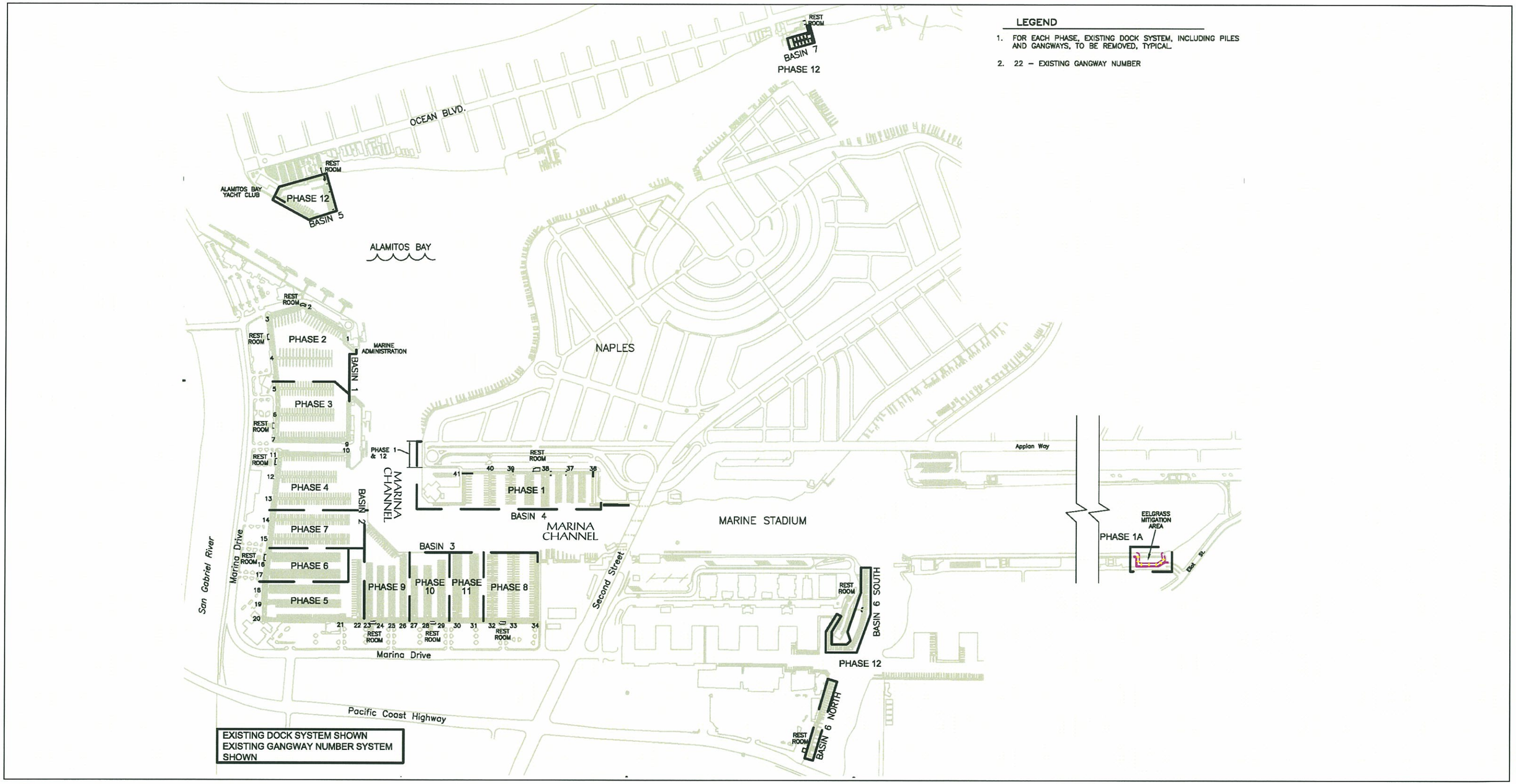
FIGURE 3.15

SOURCE: Tran Systems

I:\TSY0701B\G\Prop OSHMS.cdr (7/15/09)

Alamitos Bay Marina Rehabilitation Project EIR

Proposed Open Space/Habitat Mitigation Site



LSA

FIGURE 3.16

SOURCE: Tran Systems

I:\TSY0701B\G\Pre Phase Plan.cdr (7/15/09)

Alamitos Bay Marina Rehabilitation Project EIR

Preliminary Phasing Plan

4.0 EXISTING ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

The following chapter contains 12 sections; each section addresses one environmental topic outlined in Appendix G of the Guidelines for the California Environmental Quality Act (State CEQA Guidelines) (California Code of Regulations [CCR] Title 14, Chapter 3, Sections 1500–15397).

For each environmental impact issue analyzed, the Environmental Impact Report (EIR) includes a detailed explanation of the existing conditions; the regulatory setting applicable to the environmental topic; the methodology of the impact analysis; thresholds of significance that will be applied to determine whether the project's impacts are significant or less than significant; identification of short-term and long-term direct and indirect project impacts; and mitigation measures identified to avoid or substantially reduce potentially significant adverse project impacts. A "significant impact" or "significant effect" means "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (14 CCR 15382). Each environmental topic section in Chapter 4.0 also includes a discussion of the cumulative effects of the project when considered in combination with other projects, causing related impacts, as required by Section 15130 of the State CEQA Guidelines.

The following environmental topics are assessed in Chapter 4.0:

4.1 Aesthetics
4.2 Air Quality
4.3 Biological Resources
4.4 Cultural and Historic Resources
4.5 Geology and Soils
4.6 Hazards and Hazardous Materials
4.7 Hydrology and Water Quality
4.8 Land Use and Planning
4.9 Noise
4.10 Public Services and Utilities
4.11 Recreation
4.12 Transportation and Circulation

4.1 AESTHETICS

This section provides a discussion of the existing visual and aesthetic resources on site and in the surrounding area as well as an analysis of potential impacts from implementation of the proposed Alamitos Bay Marina Rehabilitation Project. The term "project area" is used to refer to the combination of the Alamitos Bay Marina (Marina) Basins 1–7, the open space/mitigation habitat site, and the immediately adjacent land uses.

4.1.1 EXISTING ENVIRONMENTAL SETTING

4.1.1.1 Existing Visual Character in the Vicinity of the Project Site

The proposed project area, which includes Marina Basins 1–7, the proposed habitat mitigation site, and the immediately adjacent land uses, is located within the City of Long Beach (City) adjacent to and northwest of the mouth of San Gabriel River. The Alamitos Bay Marina is operated by the City of Long Beach Marine Bureau and is primary accessible from Pacific Coast Highway (PCH) and 2nd Street.

The project area contains 7 miles (mi) of inland waterways for recreational water-related uses and includes private and public dock and slip facilities, guest slips, and a fuel dock. The entrance to Alamitos Bay is on the south between two jetties. The Alamitos Bay Peninsula (peninsula), which consists of beaches and residential land uses on both the bay and ocean sides, is located to the south and west of the Marina. The peninsula encloses the bay and provides protection to the bay waters from the Pacific Ocean. Naples Island, consisting primarily of residential development, is centrally located within Alamitos Bay. The surrounding land uses are primarily residential, but also include areas of commercial development, marine-related commercial uses, restaurants, recreational uses, a shipyard, yacht and sailing clubs, and public beaches. Refer to Figure 3.2 in Section 3.0, Project Description, for an aerial depiction of the project area.

The general visual character of the project area is characterized by open and expansive views of the bay waters, the peninsula, Naples Island, boating facilities, and residential/commercial development in the surrounding area. Distant views outside the project area are dominated by urban development including residential uses, restaurants, hotels, and commercial businesses. In addition, long-range views to the south and southwest of the Marina include the Pacific Ocean and horizon.

In addition to the boating and water-oriented recreation provided by Alamitos Bay Marina, there are several recreational amenities within the project area. Marine Stadium is located adjacent to and north of the Marina. Marine Stadium is a 1 mi long man-made water course

that was used for the 1932 Olympic rowing competition and the 1968 Olympic rowing trials. Marine Stadium is now used for recreational water skiing and rowing and includes viewing and picnic areas, as well as a bayside beach. The proposed habitat mitigation habitat site is located adjacent to the northern terminus of Marine Stadium.

Marina Park, also known as Mother's Beach, encompasses 4.60 acres (ac) and is located on the northeast side of Naples Island, along Appian Way. Mother's Beach overlooks the Marine Stadium and a portion of Basin 6-South (6-S) and contains a swimming beach, picnic areas, playground equipment, open grassy areas, and a volleyball court. Mother's Beach consists mainly of a stretch of sandy beach along the bay and ornamental landscaping, including grassy areas and mature trees.

Bayshore Aquatic Park encompasses 1.8 ac and is located on the peninsula at East Ocean Boulevard and 54th Place. Bayshore Park overlooks Alamitos Bay and offers a wide range of activities, including playground equipment and picnic tables, handball, paddle tennis and racquetball courts, a roller hockey rink, boat facilities, and beach swimming. In addition, a co-op pre-school, operating during the months of September to June, is located in Bayshore Park.

4.1.1.2 Existing Visual Character of the Project Site

The project site is an existing fully developed Marina within Alamitos Bay. The primary visual features within the project site are open waters and boats. Other elements that contribute to the visual setting include docks, pilings, gangways, gates, restroom facilities, seawalls, surface parking lots, sidewalks, and landscaped areas. All trees within the landscaped areas of Alamitos Bay Marina are ornamental and were planted during development of the Marina. Each of the basins is characterized by boats docked, gangways leading to the docked boats, seawalls, pilings, surface parking lots, and at least one restroom building per basin. Because the seven project basins are spread throughout Alamitos Bay, the visual character of each Basin is discussed below.

Basin 1. Basin 1 is located on the southeastern side of the Marina. The Marine Department Headquarters, Marina parking, restaurants and marine-related commercial development surround Basin 1 on the eastern and southern boundaries of the basin. The northern portion of Basin 1 includes the concrete peninsula that separates Basins 1 and 2 and contains a fuel dock, a Long Beach Fire Department office, Marina restrooms, a yacht club facility, a grassy area, and the City of Long Beach Maurice "Mossy" Kent Park. The visual character of Basin 1 is dominated by views of the Marina waters, docked boats, surface parking, Marina facilities, and adjacent marine-related commercial development. Distant views from Basin 1 include the waters of the Marina, residential land uses with private slips on Naples Island, Long Beach Yacht Club (LBYC), marine-related commercial development, the San Gabriel River, and other general urban development.

Basin 2. Basin 2 is located on the eastern corner of the Marina. Seal Beach Yacht Club, restaurants, and marine-related commercial development are located northeast of and adjacent to Basin 2. Marina parking, restaurants, and restrooms surround Basin 2 on the eastern and northern boundaries. The southwestern portion of Basin 2 is bordered by the concrete peninsula that separates Basins 1 and 2, as described above. The visual character of Basin 2 is dominated by views of the Marina waters, docked boats, surface parking, Marina facilities, a public park, and adjacent marine-related commercial development. Distant views from Basin 2 include the waters of the Marina, the Marina Channel, LBYC, marine-related commercial development, the San Gabriel River, and other general urban development.

Basin 3. Basin 3 is located on the northeastern side of the Marina. The northeastern portion of Basin 3 consists of surface parking and Marina restroom facilities. The visual character of Basin 3 is dominated by views of the Marina waters, docked boats, surface parking, Marina facilities, and adjacent marine-related commercial development, including a dry dock. Distant views from Basin 3 include the waters of the Marina, LBYC, marine-related commercial development, the 2nd Street bridge, a dry dock, and other general urban development.

Basin 4. Basin 4 is located on the east side of Naples Island. The western portion of Basin 4 consists of surface parking and Marina restroom facilities. The visual character of Basin 4 is dominated by views of the Marina waters, docked boats, and surface parking. Distant views from Basin 4 include the Marina waters, LBYC, residential land uses on Naples Island, marine-related commercial development, the 2nd Street Bridge, a dry dock, and other general urban development.

Basin 5. Basin 5 is located in the southeastern portion of the Marina at the end of Alamitos Bay Peninsula and is enclosed by seawalls on the western and eastern sides. The visual character of Basin 5 is dominated by views of Marina waters, docked boats, and seawalls. Distant views from Basin 5 include Long Beach Marina waters, Alamitos Bay Landing, Marine Department Headquarters, Alamitos Bay Yacht Club and facilities, the entrance channel of Alamitos Bay, residential land uses on the Alamitos Bay Peninsula, sandy beaches along the inside of Alamitos Bay Peninsula, and residential land uses and private slips on Naples Island.

Basin 6 North. Basin 6 is the northernmost basin within the Marina and is located east of Marine Stadium at the entrance to Los Cerritos Channel. Basin 6 consists of two sections; Basin 6 North (6-N), and Basin 6 South (6-S). Basin 6-N consists of a single row of slips,

adjacent parking, and is accessed via the Marina Pacifica Mall commercial center located on PCH. The visual character of Basin 6-N is dominated by views of Marina waters, docked boats, Marina facilities, and Marina parking. Distant views from Basin 6-N include Los Cerritos Channel waters, the PCH bridge over Los Cerritos Channel, other marine facilities, grass landscaped open space, residential land uses, Marina Pacifica Mall, and Basin 6-S.

Basin 6 South. Basin 6-S is located adjacent to the residential community of Marina Pacifica and consists of a single row of slips and surface parking. The visual character of Basin 6-S is dominated by views of marine waters, docked boats, Marina facilities, Marina parking, and grass landscaped open space. Distant views from Basin 6-S include Los Cerritos Channel waters, Alamitos Bay and Marine Stadium waters, Mother's Beach, land side urban development, Marina Pacifica Mall, Marina Pacifica residential land uses with private slips, Basin 6-N, Prince Island, California State University Boat House, residential land uses, and open space.

Basin 7. Basin 7 is the westernmost basin within the Marina and located at the United States Sailing Center (USSC), on the interior side of the Alamitos Bay Peninsula. Basin 7 includes approximately 30 slips, associated parking, and restroom facilities adjacent to the USSC facilities. The visual character of Basin 7 is dominated by views of marine waters, docked boats, Marina facilities, Marina parking, and the USSC. Distant views from Basin 7 include marine waters, sandy beaches north, east, and west of Basin 7, Bay Shore Avenue, Bayside Aquatic Park, beach side residential uses, and residential uses with private slips on Treasure Island and Naples Island.

Open Space/Habitat Mitigation Site. The project includes a new open space marine habitat area that would be planted with eelgrass to mitigate for the project's potential impacts to this marine resource. The proposed habitat mitigation site is located adjacent to the northeast end of Marine Stadium. The site is a City-owned storage area bound by on the north by portions of Boathouse Lane and the open space nature trail, on the east by Boathouse Lane, on the south by the fenced storage area, and on the west by a rock revetment (riprap) that separates the site from Marine Stadium. The visual character of the site is dominated by views of Marine Stadium waters, End Beach (a sandy area located at the end of Marine Stadium that is fenced off from public access), the rock revetment extending along the east and west sides of Marine Stadium, and the remainder of the storage area. Distant views from the mitigation site include Marina Vista Park, parking areas and residential uses adjacent to the western side of Marine Stadium, and Marina waters.

4.1.1.3 Light and Glare

Alamitos Bay Marina is located within an urbanized area surrounded by a mix of residential, retail, commercial, and recreational land uses. These existing uses (including the existing Marina use) utilize interior and exterior building lighting, parking lot lighting, and landscape lighting. Light sources also include light generated by passing vehicles and street lighting. Safety lighting is provided on all docks and facilities within the Marina.

4.1.2 REGULATORY SETTING

4.1.2.1 City of Long Beach Planning Documents

The City's Open Space and Recreation Element of the General Plan and the Long Beach Department of Parks, Recreation, and Marine Strategic Plan contain objectives and policies related to aesthetics and visual character. The applicable objectives and policies are listed below.

- **Open Space and Recreation Element–Policy 1.2:** Protect and improve the community's natural resources, amenities, and scenic values, including nature centers, beaches, bluffs, wetlands, and water bodies.
- **Open Space and Recreation Element–Policy 4.1:** Create additional recreation open space and pursue all appropriate available funding to enhance recreation opportunities.
- **Marine Strategic Plan–Goal 4:** Ensure beaches, waterways, and marine amenities are accessible and provide a positive experience and image.

City of Long Beach Scenic Routes Element. According to the City of Long Beach Scenic Routes Element (1975), 2nd Street and Marina Drive are identified as potential local scenic routes. The 2nd Street Bridge crosses over the Marina Channel within the project vicinity and provides views of Basin 3, Basin 4, and Basin 2. Marina Drive is located on the southeastern boundary of Basin 1 and Basin 2, and the northeastern boundary of Basin 2 and Basin 3, and provides views of these basins. However, neither of these routes has been officially designated as a Scenic Route or Scenic Highway.

According to the Scenic Routes Element, Ocean Boulevard, located on the Alamitos Bay Peninsula southwest of the project site, is designated as a scenic route. Basin 5 and Basin 7 are located on the peninsula and are accessed via Ocean Boulevard.

City of Long Beach Municipal Code. Chapter 14.28 requires that a permit be obtained from the Director of Public Works prior to removal of trees from City-owned property. The City also requires that the trees be identified, mapped, and measured prior to removal. In addition,

the City's Department of Parks, Recreation, and Marine has a Tidelands Area Tree Trimming policy that provides guidelines and procedures for trimming trees within the Tidelands area.

4.1.2.2 California Coastal Act

The policies included in the California Coastal Act (Sections 30200, et al.), Article 3, are intended to protect certain water-oriented activities, recreational boating uses, marine-related recreational facilities, and development of the ocean front land. The activities covered in Article 3 also include dredging and movement of sediments and nutrients from the ocean floor. An applicable Coastal Act visual/aesthetic policy is listed below.

- The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coast areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas, and where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting (California Coastal Act, Section 30251).

4.1.2.3 State Scenic Highways

According to the California Department of Transportation (Caltrans),[1] portions of State Route 1 (SR-1) or PCH, are designated as an Eligible State Scenic Highway – Not Officially Designated. PCH is located north of the project site and borders the northwestern edge of Basin 6-N. The majority of the views of the project site from PCH are obstructed by existing development and topography. Distant views of the boats are intermittently provided from the viewpoint of a driver along PCH. In addition, no other State scenic highways are in the vicinity of the proposed project.

4.1.3 METHODOLOGY

As discussed in detail in Section 3.0, Project Description, the proposed project involves improvements to Marina facilities in Basins 1 through 7, and the construction of an approximately 565-foot (ft) long dock (200 ft of the dock is temporary [for the duration of the project construction]) located adjacent to Basin 4 at the southeast corner of the LBYC. In addition, based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. The City has identified a site adjacent to the northeast

[1] Website: California Department of Transportation, California Scenic Highway Mapping System: http://www.dot.ca.gov/hq/LandArch/scenic_highways/ (accessed July 16, 2009).

end of Marina Stadium to convert to an open space/habitat mitigation site. A field visit was conducted to gather photographs of the project area and to assist in the evaluation of potential aesthetic impacts of the proposed project.

The potential aesthetic impacts of the proposed project were evaluated considering such factors as the scale, mass, proportion, orientation, and landscaping/buffering associated with design of the proposed project. Because implementation of the proposed project would be consistent with the existing Alamitos Bay development, would replace Marina facilities with similar structures, and would not be considered out of character with the scale, mass, proportion, orientation, and landscaping/buffering associated with the existing uses, view simulations were not required for the analysis. However, existing views are provided in Figures 4.1.2 through 4.1.13. Where appropriate, indicators have been added to the existing view figures indicating where construction or additional development would occur. A comparison of the existing visual setting to the proposed visual setting has been thoroughly analyzed using descriptive text.

In order to evaluate the aesthetic impacts of the proposed project, potential visual changes were identified based on field reconnaissance, photographs taken from on- and off-site vantage points, and aerial photographs. As discussed above, 12 view locations of the project site from publicly accessible vantage points were selected to best depict the potential change in views from the current condition.

The project is anticipated to be completed in 12 phases over approximately 6 years and includes two construction staging areas: one located in the parking lot on Marina Drive near Basin 2; and one located in the parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard. Visual impacts resulting from construction of the proposed project have also been thoroughly analyzed using descriptive text.

In addition to the textual description of the visual change, compliance with the goals and policies set forth in the City of Long Beach General Plan Open Space and Recreation Element, Scenic Routes Element, Marine Strategic Plan, Local Coastal Program, and Parks Recreation Marine Strategic Plan were evaluated.

4.1.4 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, the proposed project may be considered to have a significant effect related to aesthetics if any of the following would occur:

- Have a substantial adverse effect on a scenic vista;
- Cause substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area.

4.1.5 IMPACTS AND MITIGATION MEASURES

4.1.5.1 Less Than Significant Impacts

The following aesthetic impacts that could result from implementation of the project were evaluated and are considered to be less than significant.

Scenic Vista and Visual Character. This subsection addresses public views of the project site and how they would be affected by the proposed project. Figure 4.1.1 is provided to indicate the locations of each of the 12 vantage points or Key View locations. Existing views of the project site and coverage areas of the 12 vantage points are provided in Figures 4.1.2 through 4.1.13. The following analysis addresses whether there is a significant impact on the environment with regard to changes to the scenic vistas and visual character of the project area. The discussion for each Key View analyzes the following project areas:

- Key Views 1 and 2 address the proposed habitat mitigation site.
- Key View 3 addresses Basins 6-N and 6-S.
- Key View 4 primarily addresses Basins 3 and 4.
- Key Views 5 and 6 primarily address Basins 1–3.
- Key Views 7–10 address the temporary/long dock, views associated with the LBYC, Basin 4, and residential uses on Naples Island.
- Key View 11 addresses Basin 7.
- Key View 12 addresses Basin 5.

Key View 1: Proposed Mitigation Site Facing Southeast from North of Marine Stadium. As described in Section 3.0, Project Description, the City has identified this site adjacent to the northeast shore of Marine Stadium for conversion to an open space/habitat mitigation site. Figure 4.1.2 provides an existing view of the proposed mitigation site from the recreational trails located at the north end of Marine Stadium. This view is representative of typical views surrounding the proposed mitigation site from the recreational uses north of the proposed mitigation site. Existing views of the proposed mitigation site include a rocky/sandy beach (not publically accessible), ornamental vegetation, and steel fencing in the foreground. Middleground views include the rocky/sandy beach, ornamental vegetation, waters at the north end of Marine

Stadium, marine storage, steel fencing, and riprap. Background views include ornamental vegetation, marine storage, Marine Stadium, Marina Channel, Second Street Bridge, Mother's Beach, beach side residential uses, and sky. The visual character surrounding the proposed mitigation site can be described as marine usage surrounding open waters and recreational uses.

The project includes abandoning a portion of the existing storage yard to create an open space habitat. An area of 218 x 105 ft would be excavated to a depth of 2–3 ft below mean low lower water (MLLW), and the existing rock revetment along Marine Stadium would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel (see Figure 3.14 in Section 3.0, Project Description). The new open space water area would be planted with eelgrass to mitigate for the project's potential impacts to this marine resource. During construction of the proposed open space/habitat mitigation site, visual impacts would occur to the recreational areas within view of and immediately northwest of the site. However, these visual impacts resulting from construction of the proposed open space/habitat mitigation site would be temporary and considered less than significant. Changes in the permanent views of the proposed open space/habitat mitigation site would consist of a reduced amount of fenced storage area, an increased amount of marine waters, a proposed nonaccessible dock (wave attenuator) that protects the habitat area and delineates Marine Stadium, and a shift in the riprap to the northeast. This change in the positioning of the riprap would alter the view of Marine Stadium from the recreational uses north of Marine Stadium by visually increasing the water area. However, this change in view would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed open space/habitat mitigation site would not result in a change in the visual character of the area surrounding the north end of Marine Stadium. Therefore, any impact resulting from the proposed open space/habitat mitigation site to visual resources surrounding the north end of Marine Stadium would be considered less than significant.

Key View 2: Proposed Mitigation Site Facing Northeast from the Western Side of Marine Stadium. Figure 4.1.3 provides an existing view of the proposed mitigation site from the parking lot adjacent to the northwestern end of Marine Stadium. This view is representative of typical views of the mitigation site from the western side of Marine Stadium. Existing views of the proposed mitigation site include riprap, the storage area, and Marine Stadium waters in the foreground. Middleground views include parking, viewer's stand adjacent to Marine Stadium, riprap, Marine Stadium waters, and marine boat storage. Background views include ornamental mature vegetation, recreational uses north of Marine Stadium, the proposed mitigation site, and sky. The visual character surrounding the proposed mitigation site can be described as marine usage surrounding open waters and recreational uses.

Construction of the proposed open space/habitat mitigation site would be visible from the west side of Marine Stadium; however, views of the proposed site are at a distance of at least 500 ft. In addition, visual impacts resulting from construction of the proposed open space/habitat mitigation site would be temporary and considered less than significant. Similar to Key View 1, postproject views of the proposed open space/habitat mitigation site would consist of a reduced amount of fenced storage area, an increased amount of marine waters, the wave attenuator, and a shift in the riprap to the northeast. Because of the distance from the proposed site, impacts to views from across (on the west side of) Marine Stadium of the site would be considered less than significant. In addition, the proposed open space/habitat mitigation site would not substantially degrade the existing visual character or quality of the site and its surroundings. The proposed open space/ habitat mitigation site would not result in a change in the visual character of the area surrounding the north end of Marine Stadium. Therefore, any impact resulting from the proposed open space/habitat mitigation site to visual resources on the west side of Marine Stadium would be considered less than significant.

Key View 3: Basin 6-S, Facing South from Jack Dunster Marine Biological Reserve. Figure 4.1.4 provides an existing view of Basin 6-S from the Jack Dunster Marine Biological Reserve looking south across Marina waters toward Marine Stadium and the Appian Way bridge. This view is representative of typical views of Basin 6–S from the residential uses northwest of Basin 6-S, recreational users of the public trail located within the Jack Dunster Marine Biological Reserve, and views from the docks at the southern end of the Long Beach Rowing Center. Existing views of Basin 6-S include the biological reserve, nonaccessible dock and pilings protecting the biological reserve, and Basin 6 channel waters in the foreground. Middleground views include boats docked within Basin 6-S and Marine Stadium. Background views include residential uses located southeast of Basin 6-S, mature ornamental vegetation, the Appian Way Bridge, residential uses southwest of Marine Stadium, and sky. The visual character of the area surrounding Basin 6-S can be described as marine recreational uses surrounded by residential and commercial uses.

The proposed project would remodel and renovate in place the restroom structures located in Basins 6-S and 6-N and replace the marine pilings and docks within Basins 6-S and 6-N. During construction of the proposed project, views of the pilings, docks and restrooms would be visible from the areas surrounding Basins 6-S and 6-N. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basins 6-S and 6-N would be similar to the existing views and consist of newly renovated pilings, docks, and restrooms, and would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basins 6-S and 6-N. Therefore, any impact to visual resources surrounding Basins 6-S and 6-N

resulting from construction or operation of the proposed project would be considered less than significant.

Key View 4: Basins 2–4 from Second Street Bridge Facing South. Figure 4.1.5 provides an existing view of Basins 3 and 4, and further in the distance Basin 2, from the Second Street Bridge facing south. This view is representative of elevated views of Alamitos Bay from the Second Street Bridge. Existing views include the Marina Channel waters and Marina storage in the foreground. Middleground views include boats docked at Basin 3, the Marina Channel waters, and boats docked at Basin 4. Background views include mature trees, Basin 2, the seawall located on the western side of Basin 2, LBYC, residential uses on Naples Island, and sky. The visual character of this area of Alamitos Bay can be described as marine uses and open marine channel waters.

The proposed project would remove and replace the docks and pilings in Basins 3 and 4. During construction of the proposed project, views of the docks and pilings would be visible from the Second Street Bridge. Construction of the proposed project will occur in phases; therefore, construction of Basins 3 and 4 would not occur simultaneously. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basins 3 and 4 would be similar to the existing views and consist of newly renovated pilings and docks. Construction of the proposed project also includes renovations and/or reconstruction of the restrooms located adjacent to Basins 3 and 4; however, it is unlikely that construction of these restroom facilities would be visible from the Second Street Bridge. In addition, the renovated pilings, docks, and restrooms would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basins 3 and 4. Therefore, any impact to visual resources surrounding Basins 3 and 4 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 5: Basin 2 from Sidewalk East of Basin 2 Facing South. Figure 4.1.6 provides an existing view of Basin 2 from the adjacent sidewalk facing south. This view is representative of general views from the sidewalk adjacent to Basins 1–4. Existing views include sidewalk, steel fencing, docks, small boat on-dock storage, boats docked, pilings, and gangways in the foreground. Middleground views include parking area landscaping, Marina commercial and restaurant uses, docks, boats docked, pilings, and channel waters. Background views include mature trees, Seal Beach Yacht Club facilities, Marina commercial, restaurant uses, and sky. The visual character can be described as marine recreational surrounded by commercial and restaurants.

With implementation of the proposed project, the restroom facilities would be renovated in place and/or reconstructed, and docks and pilings would be removed and replaced in

Basins 1–4. During construction of the proposed project, views of the restrooms, docks and pilings would be visible from the sidewalks adjacent to Basins 1–4. Construction of the proposed project will occur in phases; therefore, construction of Basins 1–4 would not occur simultaneously. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basins 1–4 would be similar to the existing views and consist of newly renovated pilings, docks, and restrooms, and would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basins 1–4. Therefore, any impact to visual resources surrounding Basins 1–4 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 6: Sidewalk Adjacent to Basin 2 Facing North. Figure 4.1.7 provides an existing view of the sidewalk adjacent to Basin 2 facing north. This view is similar to Key View 5 and is representative of general views along the sidewalks adjacent to Basins 1–4. Existing views include sidewalk, steel fencing, small boat storage, pilings, sidewalk, and grass landscaping in the foreground. Middleground views include parking, Marina restroom facilities, sidewalk, and boats docked in Basin 2. Background views include mature trees, ornamental vegetation, boats docked in Basin 3, and sky. The visual character can be described as marine recreational surrounded by marine facilities.

With implementation of the proposed project, the restroom facilities would be renovated in place and/or reconstructed, and docks and pilings would be removed and replaced in Basins 1–4. During construction of the proposed project, views of the restrooms, docks, and pilings would be visible from the sidewalks adjacent to Basins 1–4. Construction of the proposed project will occur in phases; therefore, construction of Basins 1–4 would not occur simultaneously. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basins 1–4, would be similar to the existing views and consist of newly renovated pilings, docks, and restrooms, and would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basins 1–4. Therefore, any impact to visual resources surrounding Basins 1–4 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 7: Marina Channel and LBYC on Naples Island from Maurice "Mossy" Kent Park in Basin 2 Facing North. Figure 4.1.8 provides an existing view of the Marina channel, the southeast end of Naples Island, and LBYC from Maurice "Mossy" Kent Park in Basin 2, facing north. This view is representative of general Marina views from the north side of Basins 1 and 2. Existing views include open marine waters in the foreground. Middleground views include open marine waters, residential uses on Naples

Island, boats docked adjacent to residential uses on Naples Island, mature ornamental vegetation, LBYC, boats docked in Basins 2 and 3, and a seawall. Background views include sky and distant mature trees. The visual character can be described as open marine channel, marine recreational facilities, and marine residential.

The proposed project includes replacement and extension of the long dock located adjacent to the LBYC at the southeast end of Basin 4. The new 10 ft wide long dock would be extended by approximately 565 ft from where it currently ends. However, approximately 200 ft of this long dock is temporary and is intended to accommodate displaced boats during each phase of the Marina rehabilitation process. The 200 ft temporary portion of the dock will be removed upon project completion. No additional gangway is planned for the temporary/long dock; access to this dock would continue to be made from existing gangways located at the southeast end of Basin 4. See Figure 3.13 and Section 3.0 for more detail. Construction of the long dock would be visible from surrounding areas; however, visual impacts due to construction activities would be temporary and therefore considered less than significant. Views of the temporary portion of the long dock would be visible during construction, and any impacts to visual resources due to the temporary portion of the long dock would be temporary and therefore considered less than significant. Views of the portion of the long dock to remain after project completion would be visible during operation of the proposed project; however, these views of the long dock would not impact the visual character of the project area, nor would views of the open marine waters or sky be blocked. Views of the seawall on Naples Island would be partially obstructed, and depending on the size of boats docked at the long dock, views of LBYC may be partially obstructed. However, these changes would not impact the visual character of this area of Alamitos Bay, and the visual character would remain open marine channel, marine recreational facilities, and marine residential.

Postproject views of Basins 1–4 would be similar to the existing views and consist of a newly renovated seawall, which would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basins 1–4. Therefore, any impact to visual resources surrounding Basins 1–4 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 8: Existing Long Dock on the East Side of Basin 4 and LBYC Facing North. Figure 4.1.9 provides an existing view of the existing long dock adjacent to Basin 4 and LBYC from the adjacent sidewalk facing north. This view is representative of general views from the sidewalk adjacent to LBYC. Existing views include sidewalk, steel fencing, a gangway, docks, pilings, and grass landscaping in the foreground. Middleground views include small boat on-dock storage, docks, pilings, gangways, landscaping, LBYC facilities, and channel waters. Background views include mature

trees, boats docked in Basin 4, Marina Channel waters, Second Street Bridge, Marine Stadium, boats docked in Basin 3, mature trees, and sky. The visual character can be described as marine recreational facilities surrounded by open marine channel.

As discussed above, the proposed project includes replacement and extension of the long dock located adjacent to the LBYC at the southeast end of Basin 4. The existing long dock depicted in Figure 4.1.9 is the existing long dock from which the proposed dock will be extended. In addition, Figure 4.1.9 provides an example of the type of long dock that would be constructed as part of the proposed project. During construction of the proposed project, views of the long dock would be visible from the sidewalk adjacent to Basin 4. Any visual impact resulting from construction of the proposed project would be temporary and therefore less than significant. Postproject construction views of the long dock adjacent to Basin 4 would be similar to the existing views and consist of newly renovated pilings and docks and would be considered a visual improvement from the existing setting. The extension of the long dock would not result in a change in the visual character of the area surrounding Basin 4 and the LBYC. Therefore, any impact to visual resources surrounding Basin 4 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 9: Marine Channel and Sidewalk Adjacent to LBYC Facing South. Figure 4.1.10 provides an existing view of the marine channel and sidewalk adjacent to LBYC facing south. This view is representative of general views from the sidewalk wrapping around the southeast side of LBYC. Existing views include the sidewalk, steel fencing, landscaping, and open channel in the foreground. Middleground views include open channel, steel fencing, sidewalk, landscaping, and LBYC facilities. Background views include the Basin 2 seawall, boats docked in Basins 1 and 2, Maurice "Mossy" Kent Park at the end of the peninsula separating Basins 1 and 2, Long Beach Fire Department Facilities, marine gas station facilities, mature trees, and sky. The visual character can be described as marine recreational facilities surrounded by open marine channel.

As discussed above, the proposed project includes extension of the long dock located adjacent to LBYC at the southeast end of Basin 4. The proposed long dock would be extended and would be visible from this view location. During construction of the proposed project, views of the long dock would be visible from this location; however, any visual impact resulting from construction of the proposed project would be considered temporary and therefore less than significant. Postproject construction views of the long dock adjacent to Basin 4 would be visible from this view location. The long dock would appear immediately to the left of and adjacent to the sidewalk depicted in this view, and displaced boats would be docked at the proposed long dock. From this view location, foreground views of the open channel would be obstructed by the proposed long dock and boats docked at the long dock. However, the proposed long dock and boats

docked at it would not change the visual character of this view and surrounding area. The visual character would remain marine recreational facilities surrounded by open marine channel. Therefore, any impact to visual resources surrounding LBYC and Basin 4 resulting from construction of the proposed long dock would be considered less than significant.

In addition, during construction of the proposed project, views of the docks and pilings in Basins 1 and 2 would be visible from this view location. Construction of the proposed project will occur in phases; therefore, construction of Basins 1 and 2 would not occur simultaneously. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basins 1 and 2 would be similar to the existing views and consist of newly renovated pilings and docks and would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basins 1–4. Therefore, any impact to visual resources surrounding Basins 1–4 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 10: South End of Naples Island Adjacent to Residential Uses Facing East. Figure 4.1.11 provides an existing view from the south end of Naples Island adjacent to residential uses and sidewalk facing east. This view is representative of typical views from the south end of Naples Island adjacent to residential uses and LBYC. Existing views include sidewalk, landscaping, steel fencing, and open channel waters in the foreground. Middleground views include mature trees, landscaping, benches, sidewalk, steel fencing, and open channel waters. Background views include LBYC facilities, sidewalk, Basin 2, the seawall adjacent to Basin 2, boats docked in Basin 2, mature trees, Maurice “Mossy” Kent Park at the end the peninsula separating Basins 1 and 2, and Fire Department facilities. The visual character can be described as marine recreational facilities surrounded by open channel.

The proposed long dock would be extended and would be visible from this view location. During construction of the proposed project, views of the long dock would be visible from this location; however, any visual impact resulting from construction of the proposed project would be considered temporary and therefore less than significant. Postproject construction views of the long dock adjacent to LBYC would be visible from this view location. The long dock would appear immediately to the right of and adjacent to the sidewalk depicted in this view, and displaced boats would be docked at the proposed long dock. From this view location, foreground views of the open channel would be obstructed by the proposed long dock and boats docked at the long dock. However, the proposed long dock and boats docked at it would not change the visual character of this view and surrounding area. The visual character would remain marine recreational facilities surrounded by open marine channel. Therefore, any impact to

visual resources surrounding the south end of Naples Island and LBYC resulting from construction of the proposed long dock would be considered less than significant.

In addition, during construction of the proposed project, views of the docks and pilings in Basin 2 would be visible from this view location. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basin 2 would be similar to the existing views and consist of newly renovated pilings and docks that would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character from this view location. Therefore, any impact to visual resources from this view location resulting from construction and/or operation of the proposed project would be considered less than significant.

Key View 11 of Basin 7 from Ocean Boulevard Traveling East. Figure 4.1.12 provides an existing view of Basin 7 from Ocean Boulevard traveling east. According to the City's General Plan, Scenic Routes Element, Ocean Boulevard, located on the Alamitos Bay Peninsula, southwest of the project site, is designated as a scenic route. General views from Ocean Boulevard consist of views of the Marina, marine facilities, marine recreation facilities, beach side residential along Ocean Boulevard, sandy beaches on both sides of Ocean Boulevard, and views of the Long Beach Harbor to the south. Basin 7 of the proposed project would be visible from Ocean Boulevard. As depicted in Figure 4.1.12, views of Basin 7 from Ocean Boulevard traveling east would consist of views of the docks and existing restroom facilities.

The proposed project would remodel and renovate in place the restroom structure located in Basin 7 and replace the marine pilings and docks. During construction of the proposed project, views of the restroom renovation, pilings, and dock replacement would be visible from Ocean Boulevard. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basin 7 from Ocean Boulevard would be similar to the existing views and consist of newly renovated restroom facilities, docks, and marine pilings that would be considered a visual improvement from the existing setting. The proposed project would not result in a change in visual character to the scenic route of Ocean Boulevard. Therefore, any impact to visual resources surrounding Basin 7 resulting from construction or operation of the proposed project would be considered less than significant.

Key View 12 of Basin 5 from Beachside Residential and Recreational Sensitive Viewers. Figure 4.1.13 provides an existing view of Basin 5 from the beach side residential uses on the interior (east side) of the peninsula looking east. This view is representative of typical views from the residential uses located on the interior of the peninsula and persons using the beach adjacent to Basin 5 for recreational purposes.

Existing views of Basin 5 from the beach include sand in the foreground, Basin 5 seawall, Basin 5 restroom, small craft storage, Marina waters, and boats docked within Basin 5 in the middleground. Background views consist of distant docked boats in Basin 1, Marina commercial uses, mature ornamental vegetation, and sky. The visual character of the area surrounding Basin 5 can be described as recreational and beach side residential.

The proposed project would reconstruct the restroom building and replace the marine pilings and docks within Basin 5. During construction of the proposed project, views of the seawall would be visible from the adjacent beach and residential uses. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basin 5 from the adjacent beach and residential uses would be similar to the existing views and consist of newly renovated docks and a restroom building within the Basin that would be considered a visual improvement from the existing setting. The proposed project would not result in a change in the visual character of the area surrounding Basin 5. Therefore, any impact to visual resources surrounding Basin 5 resulting from construction or operation of the proposed project would be considered less than significant.

Scenic Resources.

Views From a State Scenic Highway. As discussed previously, according to Caltrans, portions of SR-1 (or PCH) are designated as an Eligible State Scenic Highway. Views of the project site from PCH consist of intermittent and obstructed distant views of the vessels docked at the Marina. No other State scenic highways are located in the vicinity of the proposed project. Any impact to views of the project site from PCH would be temporary construction impacts, and the visual character of the project site seen from PCH would remain the same as the existing views. The project also will not impact any other scenic resources such as trees or rock outcroppings. Therefore, visual impacts resulting from the proposed project to any State Scenic Highway would be considered less than significant.

As discussed previously, according to the City's General Plan, Scenic Routes Element, Ocean Boulevard, located on the southwestern side of the project site on the Alamitos Bay Peninsula, is a City-designated Scenic Route. Basins 5 and 7 are accessed by Ocean Boulevard. However, Basin 5 is not visible from Ocean Boulevard because views are obstructed by Alamitos Bay Yacht Club facilities and beach side residential uses on the inland side of the Peninsula. Therefore, no impact to views from Ocean Boulevard resulting from construction located at Basin 5 would occur.

As discussed above and depicted in Figure 4.1.12, views of Basin 7 from Ocean Boulevard would be visible. Figure 4.1.12 provides an existing view of Basin 7 from

Ocean Boulevard traveling east. General views from Ocean Boulevard consist of views of the Marina, marine facilities, marine recreation facilities, beach side residential along Ocean Boulevard, sandy beaches on both sides of Ocean Boulevard, and views of the Long Beach Harbor to the south. As depicted on Figure 4.1.12, views of Basin 7 from Ocean Boulevard traveling east would consist of views of the docks and existing restroom facilities.

The proposed project would remodel and renovate in place the restroom structure located in Basin 7 and replace the marine pilings and docks. During construction of the proposed project, views of the restroom renovation in place, pilings, and dock replacement would be visible from Ocean Boulevard. However, any visual impact resulting from construction of the proposed project would be temporary. Postproject construction views of Basin 7 from Ocean Boulevard would be similar to the existing views and consist of newly renovated restroom facilities, docks, and marine pilings, and would be considered a visual improvement from the existing setting. The proposed project would not result in a change in visual character to the scenic route of Ocean Boulevard. Therefore, any impact to visual resources surrounding Basin 7 resulting from construction or operation of the proposed project would be considered less than significant.

Historical Buildings within a State Scenic Highway. As discussed previously, according to Caltrans, portions of SR-1 or PCH are designated as an Eligible State Scenic Highway. The closest historical resource to the project site is Marine Stadium, which is located to the north of the Marina, outside of the project boundaries, and not within view of the portion of PCH designated as an Eligible State Scenic Highway.

In addition, the proposed open space/habitat mitigation site located adjacent to the northeast end of Marine Stadium (see Figures 4.1.2 and 4.1.3) is currently part of a paved storage area and is not landscaped. Implementation of the proposed project would create an open water area to be planted with eelgrass vegetation. The existing rock riprap along the edge of Marine Stadium would be relocated to the east and would wrap around the perimeter of the new open space site, connecting to the existing riprap border on the east side of Marine Stadium. The proposed project would not cause a break in the riprap, but would realign it to include the habitat mitigation site. The proposed marine habitat area would be protected by a floating concrete dock, referred to as a wave attenuator, which would serve to delineate the boundary of Marine Stadium. The marine habitat would be visually consistent with the recreation trails and natural plantings that border the end of Marine Stadium. The two areas would serve as native habitat open spaces and would complement one another. Therefore, visual impacts related to this site would be considered a visual enhancement, and any visual impacts relating to this mitigation area would be considered less than significant.

Light or Glare. As discussed previously, the proposed project site is currently illuminated with nighttime lighting on the existing docks and adjacent Marina facilities for safety purposes. Low-level lights line each of the docks and illuminate the restroom facilities in each of the basins. The proposed project would include replacement of the existing lighting on the docks and inside and outside of the restroom facilities. The replacement lighting would be similar to the existing lighting and would consist of low-intensity lighting meeting current City security and Municipal Code standards, with minimal spillover to the surrounding uses. The replacement of lighting associated with the proposed project would not create a substantial new source of light or glare affecting day or nighttime views in the area or illuminate areas outside the project boundary. In addition, the replacement lighting would not increase the intensity of light to sensitive viewers such as residents in the surrounding area due to the distance and intervening uses between residences and the Marina.

Although the project may result in a greater number of larger boats being berthed in the Marina, there is no quantifiable method to determine whether more nighttime boating activities would occur or lead to additional light in the Marina. However, lighting associated with recreational boats is generally low level safety lighting and is not expected to significantly increase with project implementation. Therefore, visual impacts relating to light or glare would be considered less than significant.

4.1.5.2 Potentially Significant Impacts

There are no identified potentially significant impacts relating to visual resources.

4.1.6 MITIGATION MEASURE

Implementation of the proposed project would not require any mitigation.

4.1.7 CUMULATIVE IMPACTS

Cumulative impacts refer to the combined effect of project impacts with the impacts of other past, present, and reasonably foreseeable future projects. The cumulative study area for aesthetic impacts is limited to the immediately adjacent area within view of the project site. As discussed above, the proposed project will not significantly alter the visual character of the immediate area or vicinity, as the land use will continue to be a Marina. In addition, the proposed improvements, including the habitat mitigation site, are compatible in character with the surrounding area. There are no known visual incompatibilities between the proposed project and planned future projects located in the surrounding area.

Project lighting will be similar to the existing lighting and would consist of low-intensity lighting meeting current City security standards, with minimal spillover to the surrounding uses and not contribute to a significant cumulative impact. Therefore, the contribution of the proposed project to potential cumulative visual/aesthetic impacts in the study area is considered less than significant.

4.1.8 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

There are no significant, unavoidable impacts related to aesthetics or visual resources.

LSA

LEGEND

Project Locations

Photo Locations

0 400 800

FEET

SOURCE: DigitalGlobe (4/08); TBM (2008); City of Long Beach (2008, 1/09)

I:\tsy0701\GIS\PhotoPointLocations.mxd (7/22/2009)

FIGURE 4.1.1

Alamitos Bay Marina Rehabilitation Project

Key View Locations

View of proposed mitigation site facing southwest from north of Marine Stadium.

LSA

FIGURE 4.1.2

Marina Rehabilitation Project EIR

Key View 1

I:\TSY0701B\G\Panoramas\Key View-1.cdr (7/17/09)

View of proposed mitigation site facing northeast from western side of Marine Stadium.

LSA

FIGURE 4.1.3

Marina Rehabilitation Project EIR
Key View 2

I:\TSY0701B\G\Panoramas\Key View-2.cdr (6/30/09)

View of Basin 6 south, facing south from Jack Dunster Marine Biological Reserve.

LSA

FIGURE 4.1.4

Marina Rehabilitation Project EIR

Key View 3

I:\TSY0701B\G\Panoramas\Key View-3.cdr (7/17/09)

View of Basin 2, Basin 3, and Basin 4 from Second Street Bridge facing south.

LSA

FIGURE 4.1.5

Marina Rehabilitation Project EIR
Key View 4

I:\TSY0701B\G\Panoramas\Key View-4.cdr (7/17/09)

View of Basin 2 from sidewalk facing south. East of Basin 2.

LSA

FIGURE 4.1.6

Marina Rehabilitation Project EIR
Key View 5

I:\TSY0701B\G\Panoramas\Key View-5.cdr (7/17/09)

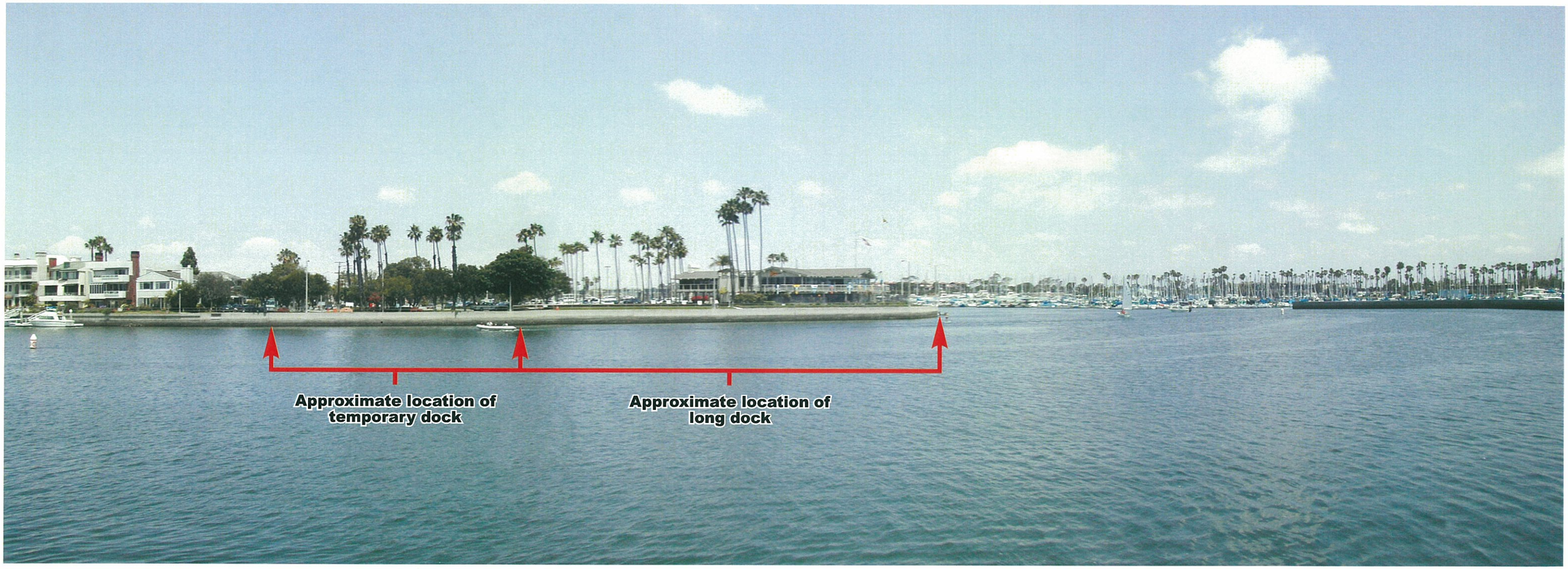
View of sidewalk adjacent to Basin 2 facing north.

LSA

FIGURE 4.1.7

Marina Rehabilitation Project EIR
Key View 6

I:\TSY0701B\G\Panoramas\Key View-6.cdr (7/17/09)



View of marina channel and Long Beach Yacht Club on Naples Island from park in Basin 2 facing north

LSA

FIGURE 4.1.8

Marina Rehabilitation Project EIR
Key View 7

I:\TSY0701B\G\Panoramas\Key View-7.cdr (7/170/09)

View of existing long dock on the east side of Basin 4 and Long Beach Yacht Club facing north..

LSA

FIGURE 4.1.9

Marina Rehabilitation Project EIR

Key View 8

I:\TSY0701B\G\Panoramas\Key View-8.cdr (7/17/09)

View of marine channel and sidewalk adjacent to Long Beach Yacht Club facing south.

LSA

FIGURE 4.1.10

Marina Rehabilitation Project EIR

Key View 9

I:\TSY0701B\G\Panoramas\Key View-9.cdr (7/17/09)

View from south end of Naples Island adjacent to residential uses facing east.

LSA

FIGURE 4.1.11

Marina Rehabilitation Project EIR
Key View 10

I:\TSY0701B\G\Panoramas\Key View-10.cdr (7/22/09)

View of Basin 7 from Ocean Boulevard traveling east.

LSA

FIGURE 4.1.12

Marina Rehabilitation Project EIR
Key View 11

I:\TSY0701B\G\Panoramas\Key View-11.cdr (7/17/09)

View of Basin 5 facing east from beachside residential and recreational sensitive viewers.

LSA

FIGURE 4.1.13

Marina Rehabilitation Project EIR
Key View 12

I:\TSY0701B\G\Panoramas\Key View-12.cdr (7/27/09)

4.2 AIR QUALITY

INTRODUCTION

This section discusses the potential short- and long-term air quality impacts of the construction and ongoing operation of the proposed project. Specifically, this section addresses short-term impacts during construction, including fugitive dust and equipment emissions.

The project site is located within the City of Long Beach (City), which is within the nondesert portion of Los Angeles County. Los Angeles County is part of the South Coast Air Basin (SCAB or Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD). The air quality assessment for the proposed project includes estimating emissions associated with short-term construction and long-term operation of the proposed project.

A number of air quality modeling tools are available to assess air quality impacts of projects. In addition, certain air districts such as the SCAQMD have created guidelines and requirements to conduct air quality analyses. The SCAQMD's current guidelines, which are included in its California Environmental Quality Act (CEQA) Air Quality Handbook (April 1993), were adhered to in the assessment of air quality impacts for the proposed project.

4.2.1 EXISTING ENVIRONMENTAL SETTING

4.2.1.1 Regional Air Quality

Both the State of California and the federal government have established health-based ambient air quality standards (AAQS). As shown in Table 4.2.A, these pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. PM includes particulate matter with a diameter of 10 microns or less (PM_{10}) and particulate matter with a diameter of 2.5 microns or less ($PM_{2.5}$). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to setting out primary and secondary AAQS, the State has established a set of episode criteria for O_3, CO, NO_2, SO_2, and PM_{10}. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three. Table 4.2.B lists the primary health effects and sources of common air

Table 4.2.A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (56 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (338 µg/m^3)		—		

Table 4.2.A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3-Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		—	—	
Lead[8]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	
	Rolling 3- Month Average[9]	—		0.15 µg/m^3		
Visibility-Reducing Particles	8-Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07-30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[8]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

Source: California Air Resources Board (ARB) (November 17, 2008).

See Footnotes on next page.

Table 4.2.A: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]

[1] California standards for ozone; carbon monoxide (except Lake Tahoe); sulfur dioxide (1- and 24-hour); nitrogen dioxide; suspended particulate matter - PM_{10}, $PM_{2.5}$, and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact EPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25˚C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25˚C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure that can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

[8] The ARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[9] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

ARB = California Air Resources Board EPA = United States Environmental Protection Agency
mg/m^3 = milligrams per cubic meter ppm = parts per million ºC = degrees Celsius $\mu g/m^3$ = milligrams per cubic meter

Table 4.2.B: Health Effects Summary of Some of the Common Pollutants Found in Air

Pollutant	Health Effects	Examples of Sources
Particulate Matter (PM_{10}: less than or equal to 10 microns)	• Increased respiratory disease • Lung damage • Premature death	• Cars and trucks, especially diesels • Fireplaces, wood stoves • Windblown dust from roadways, agriculture, and construction
Ozone (O_3)	• Breathing difficulties • Lung damage	• Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon Monoxide (CO)	• Chest pain in heart patients • Headaches, nausea • Reduced mental alertness • Death at very high levels	• Any source that burns fuel such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen Dioxide (NO_2)	• Lung damage	• See carbon monoxide sources
Toxic Air Contaminants	• Cancer • Chronic eye, lung, or skin irritation • Neurological and reproductive disorders	• Cars and trucks, especially diesels • Industrial sources such as chrome platers • Neighborhood businesses such as dry cleaners and service stations • Building materials and products
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.
Sulfur Dioxide (SO_2)	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.	Combustion of sulfur-containing fossil fuels. Smelting of sulfur-bearing metal ores. • Industrial processes.

Table 4.2.B: Health Effects Summary of Some of the Common Pollutants Found in Air

Pollutant	Health Effects	Examples of Sources
Lead (Pb)	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.	• Contaminated soil (e.g., from leaded fuels and lead-based paints).

Source: ARB 2004.
ARB = California Air Resources Board

pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (by the United States Environmental Protection Agency [EPA]), these health effects will not occur unless the standards are exceeded by a large margin or for a prolonged period of time. The State AAQS are more stringent than the federal AAQS. Among the pollutants, O_3, and $PM_{2.5}$, and PM_{10} are considered regional pollutants, while the others have more localized effects.

The California Clean Air Act (CCAA) provides the SCAQMD with the authority to manage transportation activities at indirect sources. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. Examples of this are the motor vehicles at an intersection, a mall, and on highways. The SCAQMD also regulates stationary sources of pollution throughout its jurisdictional area. Direct emissions from motor vehicles are regulated by the California Air Resources Board (ARB).

Climate/Meteorology. Air quality in the planning area is not only affected by various emission sources (mobile, industry, etc.), but is also affected by atmospheric conditions such as wind speed, wind direction, temperature, rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the SCAB the worst air pollution problem in the nation.

Climate in the SCAB is determined by its terrain and geographical location. The SCAB is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern border, and high mountains surround the rest of the SCAB. The SCAB lies in the semipermanent high-pressure zone of the eastern Pacific; the resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted; however, periods of extremely hot weather, winter storms, or Santa Ana wind conditions do occur.

The annual average temperature varies little throughout the SCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than

inland areas. The climatological station closest to the site is the Long Beach Station.[1] The monthly average maximum temperature recorded at this station from April 1958 to June 2007 ranged from 66.9°F in January to 83.9°F in August, with an annual average maximum of 74.2°F. The monthly average minimum temperature recorded at this station ranged from 45.3°F in December to 64.9°F in August, with an annual average minimum of 54.8°F. January is typically the coldest month, and August is typically the warmest month in this area of the SCAB.

Most rainfall in the SCAB occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the SCAB and along the coastal side of the mountains. The Long Beach Station monitored precipitation from April 1958 to June 2007. Average monthly rainfall during that period varied from 2.93 inches in February to 0.39 inch or less between May and October, with an annual total of 11.96 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

Although the SCAB has a semiarid climate, air near the surface is generally moist because of the presence of a shallow marine layer. With very low average wind speeds, there is a limited capacity to disperse air contaminants horizontally. The dominant daily wind pattern is an onshore 8- to 12-mile–per-hour (mph) daytime breeze and an offshore 3 to 5 mph nighttime breeze. The typical wind flow pattern fluctuates only with occasional winter storms or strong northeasterly (Santa Ana) winds from the mountains and deserts northeast of the SCAB. Summer wind flow patterns represent worst-case conditions because this is the period of higher temperatures and more sunlight, which results in O_3 formation.

During spring and early summer, pollution produced during any one day is typically blown out of the SCAB through mountain passes or lifted by warm, vertical currents adjacent to mountain slopes. Air contaminants can be transported 60 miles or more from the SCAB by ocean air during the afternoons. From early fall to winter, the transport is less pronounced because of slower average wind speed and the appearance of drainage winds earlier in the day. During stagnant wind conditions, offshore drainage winds may begin by late afternoon. Pollutants remaining in the SCAB are trapped and begin to accumulate during the night and the following morning. A low morning wind speed in pollutant source areas is an important indicator of air stagnation and the potential for buildup of primary air contaminants.

Temperature normally decreases with altitude, and a reversal of this atmospheric state, where temperature increases with altitude, is called an inversion. The height from the Earth to the inversion base is known as the mixing height. Persistent low inversions and cool coastal air tend to create morning fog and low stratus clouds. Cloudy days are less likely in the eastern portions of the SCAB and are about 25 percent more likely along the coast. The vertical

[1] Western Regional Climate Center, www.wrcc.dri.edu.

dispersion of air pollutants in the SCAB is limited by temperature inversions in the atmosphere close to the Earth's surface.

Inversions are generally lower in the nighttime when the ground is cool than during daylight hours when the sun warms the ground and, in turn, the surface air layer. As this heating process continues, the temperature of the surface air layer approaches the temperature of the inversion base, causing heating along its lower edge. If enough warming takes place, the inversion layer becomes weak and opens up to allow the surface air layers to mix upward. This can be seen in the middle to late afternoon on a hot summer day when the smog appears to clear up suddenly. Winter inversions typically break earlier in the day, preventing excessive contaminant buildup.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problem is accumulation of CO and oxides of nitrogen (NO_X) due to extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO_X to form photochemical smog.

Global Warming. Global warming is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2 °Celsius (1.1 ± 0.4 °Fahrenheit) in the 20th Century. The prevailing scientific opinion on climate change is that "most of the warming observed over the last 50 years is attributable to human activities."[1] The increased amounts of carbon dioxide (CO_2) and other greenhouse gases (GHGs) are the primary causes of the human-induced component of warming. They are released by the burning of fossil fuels, land clearing and agriculture, etc. and lead to an increase in the greenhouse effect.

GHGs are present in the atmosphere naturally, released by natural sources, or formed from secondary reactions taking place in the atmosphere. They include CO_2, methane, nitrous oxide, and O_3. In the last 200 years, humankind has been releasing substantial quantities of GHGs into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, enhancing the natural greenhouse effect, which is believed to be causing global warming. While humanmade GHGs include CO_2, methane, and nitrous oxide, some (like the chlorofluorocarbons [CFCs]) are completely new to the atmosphere.

[1] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2001: The Scientific Basis*, http://www.grida.no/climate/ipcc_tar/wg1/index.htm.

Natural sources of CO_2 include the respiration (breathing) of animals and plants and evaporation from the oceans. Together, these natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of humanmade emissions from fossil fuel burning, waste incineration, deforestation, and cement manufacture. Nevertheless, natural removal processes such as photosynthesis by land and ocean-dwelling plant species cannot keep pace with this extra input of man-made CO_2, and consequently the gas is building up in the atmosphere.

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Man-made sources include the mining and burning of fossil fuels, digestive processes in ruminant animals such as cattle, rice paddies, and the burying of waste in landfills. Total annual emissions of methane are approximately 500 million tons, with man-made emissions accounting for the majority. As for CO_2, the major removal process of atmospheric methane—chemical breakdown in the atmosphere—cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing.

California is a substantial contributor of global GHGs, emitting over 400 million tons of CO_2 per year.[1] Climate studies indicate that California is likely to see an increase of 3–4°F over the next century. Because primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere is mostly independent of the point of emission.

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun
- Natural processes within the climate system (e.g., changes in ocean circulation, reduction in sunlight from the addition of GHGs and other gases to the atmosphere from volcanic eruptions)
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g., deforestation, reforestation, urbanization, desertification)

The impact of anthropogenic activities on global climate change (GCC) is readily apparent in the observational record. For example, surface temperature data shows that 11 of the 12 years from 1995 to 2006 rank among the 12 warmest since 1850, the beginning of the instrumental

[1] California Energy Commission, *Inventory of California GHG Emissions and Sinks: 1990 to 2004,* 2006. http://www.energy.ca.gov/global_climate_change/inventory/documents/index.html.

record for global surface temperature.[1] In addition, the atmospheric water vapor content has increased since at least the 1980s over land and sea and in the upper atmosphere, consistent with the capacity of warmer air to hold more water vapor; ocean temperatures are warmer to depths of 3,000 feet (ft); and a marked decline has occurred in mountain glaciers and snow pack in both hemispheres, polar ice, and ice sheets in both the Arctic and Antarctic regions.

Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO_2, CH_4 (methane), and N_2O (nitrous oxide) from before the start of industrialization (around 1750) to over 650,000 years ago. For that period, it was found that CO_2 concentrations ranged from 180 parts per million (ppm) to 300 ppm. For the period from around 1750 to the present, global CO_2 concentrations increased from a preindustrialization period concentration of 280 ppm to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the preindustrial period range.
The primary effect of GCC has been a rise in the average global tropospheric temperature of 0.2°C per decade, determined from meteorological measurements worldwide between 1990 and 2005.[2] Climate change modeling using year 2000 emission rates shows that further warming would occur, which would induce further changes in the global climate system during the current century.[3] Changes to the global climate system and ecosystems and to California would include, but would not be limited to:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures[4]
- A rise in the global average sea level primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets[5]
- Changes in weather that include widespread changes in precipitation, ocean salinity, and wind patterns, and more energetic and aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones[6]

1 Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*, February 2007.
2 Ibid.
3 Ibid.
4 Ibid.
5 Ibid.
6 Ibid.

- A decline in Sierra snowpack, which accounts for approximately half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years[1]
- An increase in the number of days conducive to O_3 formation by 25–85 percent (depending on the future temperature scenario) in high-O_3 areas of Los Angeles and the San Joaquin Valley by the end of the 21st Century[2]
- High potential for erosion of California's coastlines and seawater intrusion into the delta and levee systems due to the rise in sea level[3]

These changes to the environment as a result of climate change may affect the project site and the proposed project; however, the precise nature and extent of change cannot be predicted at this time without undue speculation.

Rising Ocean Levels. Rising ocean levels, more intense coastal storms, and warmer water temperatures may increasingly threaten the Los Angeles County coastal region. The Intergovernmental Panel on Climate Change (IPCC) reviewed several possible GCC scenarios, and under the higher warming scenario, the IPCC anticipates that ocean levels will rise 4–30 inches along the California coast by 2100. Based on information included in "The Impacts of Sea-level Rise on the California Coast" (Pacific Institute, March 2009),[4] under medium to medium-high GHG emissions scenarios, the mean sea level along the California coast is expected to rise from 3.28–4.59 ft by 2100. Elevations of the sea level may result in inundation of coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and other natural habitats.

1 California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature (Executive Summary)*, March 2006.
2 Ibid.
3 Ibid.
4 Pacific Institute, California Climate Change Center, *The Impacts of Sea-Level Rise on the California Coast,* March 2009.

Rising sea levels may affect the natural environment in the coming decades by eroding beaches, converting wetlands to open water, exacerbating coastal flooding, and increasing the salinity of estuaries and freshwater aquifers. Coastal headlands and beaches are expected to erode at a faster pace in response to future sea level rise. The Pacific Institute (2009) estimates that 430,000 acres (ac) of wetlands exist along the California coast, but additional work is needed to evaluate the extent to which these wetlands would be degraded over time, or to what extent new wetland habitat would be created if those lands are protected from further development. Cumulatively, the effects of sea level rise may be combined with other potential long-term factors such as changes in sediment input and nutrient runoff. The cumulative impacts of physical and biological change due to sea level rise on the quality and quantity of coastal habitats are not well understood.[1] At the proposed project site, there is potential for the sea level change to adversely affect the ecosystem. The project site provides habitat for a variety of special-status (i.e., federally or State-listed as threatened, endangered, or candidate) species.

Rising sea levels may also affect the built environment, including coastal development such as buildings, roads, and infrastructure. The Pacific Institute (2009) estimates that nearly $1000 billion (in 2000 dollars) worth of property is at risk of flooding from a 100-year event with a 4.59 ft sea level rise if no adaption actions are taken. Potential effects to the existing and proposed built environment include increased risk of flooding from rainstorms and from the possible creation of an elevated base for storm surges to build upon. Potential increases in shore erosion could also contribute to increased flooding by removing protective beach area. The increased flooding could adversely affect the usability of some or all of the existing and planned land side improvements within the Marina, as well as adversely affect coastal access via roadways near the project site.

Under the higher warming scenario, the IPCC anticipates that ocean levels will rise 4–30 inches in Orange County by 2100. The Pacific Institute (2009) estimates a rise of 3.28–4.59 ft statewide by 2100. According to the Scenarios for Climate Change in California published by California Climate Change Center in 2006, Orange County is expected to experience a moderate to very extensive sea level rises within this century; ocean level rises are expected to substantially exceed the historical rate of ocean level rise. Elevations of this magnitude are known to inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and other natural habitats.

[1] Climate Change Science Program (CCSP) 4.1 January 15, 2009, 1 of 784 Final Report, United States CCSP, Synthesis and Assessment Product 4.1. Coastal Sensitivity to Seal Level Rise: A Focus on the Mid-Atlantic Region. Lead Agency: United States Environmental Protection Agency, Other Key Participating Agencies: United States Geological Survey, National Oceanic and Atmospheric Administration. Contributing Agencies: Department of Transportation.

In November 2006, California voters passed Propositions 1E and 84 to provide $4.9 billion in new flood management investments (which will help prepare for more frequent and intense floods and sea level rise) and nearly $1 billion in integrated regional water management and climate change evaluation and adaptation. Recommended actions in the Pacific Institute Report (2009) included integrating climate change into insurance policies and strategies, protecting wetlands and potential migratory paths, limiting development in areas at risk from rising seas, involving communities most vulnerable to harm in developing preparation and adaptation strategies, considering phased abandonment of low- and medium-density areas at high risk, protecting vital coastal-dependent resources, considering the cost-benefit of building coastal protection structures, improving disaster response and recovery in coastal communities, and considering adoption of a principle of "No Adverse Impact" when designing and permitting flood protection, beach nourishment, and other coastal protection projects.

Air Pollution Constituents and Attainment Status. The following describes the criteria air pollutants and their attainment status in the SCAB based on ARB Area Designations, Activities, and Maps (ARB 2006). Table 4.2.C summarizes the attainment status in the SCAB for the major criteria pollutants.

Table 4.2.C: Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
O_3 1-hour	Nonattainment	Revoked June 2005
O_3 8-hour	Nonattainment	Severe 17 Nonattainment
PM_{10}	Nonattainment	Serious Nonattainment[1]
$PM_{2.5}$	Nonattainment	Nonattainment[2]
CO	Attainment	Attainment/Maintenance[3]
NO_2	Attainment	Attainment/Maintenance
All others	Attainment/Unclassified	Attainment/Unclassified

Source: California Air Resources Board (ARB), 2009 (http://www.arb.ca.gov/desig/desig.htm).

[1] In October 2006, the EPA, in its final rule revision, eliminated the annual PM_{10} standard.

[2] The $PM_{2.5}$ nonattainment designation is based on the 1997 standard. In 2006, the EPA revised the 24-hour standard. The 2006 $PM_{2.5}$ new standard of 35 $\mu g/m^3$ applies 1 year after the effective date of the new designation (April 2010).

[3] Effective June 11, 2007, the South Coast Air Basin was redesignated as attainment/maintenance for the federal CO standard.

CO = carbon monoxide NO_2 = nitrogen dioxide O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matte less than 2.5 microns in diameter

Ozone. O_3 (smog) is formed by photochemical reactions between nitrogen oxides (NO_X) and reactive organic gases (ROGs) rather than being directly emitted. O_3 is a pungent, colorless gas typical of Southern California smog. Elevated O_3 concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. O_3 levels peak during summer and early fall. Effective June 15, 2005, the EPA revoked in full the federal 1-hour O_3 ambient air quality standard, including associated designations and classifications, in all areas except 14 early action compacts all outside California. The entire Basin is designated as a nonattainment area for the State 1-hour O_3 standard. The EPA has designated the status in the Basin for the 8-hour O_3 standard as "Severe 17," which means the Basin has until 2021 to attain the federal 8-hour O_3 standard. SCAQMD has requested that the Basin's federal designation be changed from severe to extreme nonattainment. This change would extend the attainment deadline to 2023.

Carbon Monoxide. CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. The entire Basin is designated as attainment/maintenance for the federal standard and attainment for the State CO standard.

Nitrogen Oxides. NO_2, a reddish brown gas, and nitric oxide (NO), a colorless, odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO_X. NO_X is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO_2 decreases lung function and may reduce resistance to infection. The entire Basin has not exceeded either federal or State standards for NO_2 in the past 5 years with published monitoring data. It is designated a maintenance area under federal standards and an attainment area under State standards.

Sulfur Dioxide. SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment with both federal and State SO_2 standards.

Lead. Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the bloodstream, lead can cause damage to the brain, nervous system, and other body

systems. Children are highly susceptible to the effects of lead. The entire Basin is in attainment for federal and State lead standards.

Particulate Matter. Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles, PM_{10}, derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle, $PM_{2.5}$, levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM_{10} can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to the health effects listed in a number of recently published community epidemiological studies at concentrations that extend well below those allowed by current PM_{10} standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The entire Basin is a nonattainment area for federal and State PM_{10} and federal $PM_{2.5}$ standards. The $PM_{2.5}$ nonattainment designation is effective from April 5, 2005, and the conformity determination requirements are effective from April 5, 2006. In the 2007 AQMP, SCAQMD anticipated that the Basin will be in attainment for the $PM_{2.5}$ annual average federal air quality standard by the April 5, 2015, deadline.

Reactive Organic Compounds. Reactive organic compounds (ROCs) are formed from the combustion of fuels and evaporation of organic solvents. ROCs are not defined criteria pollutants but are a prime component of the photochemical smog reaction. Consequently, ROCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower. ROCs are also referred to as volatile organic compounds (VOCs).

4.2.1.2 Local Air Quality

The SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the SCAB. The air quality monitoring station closest to the site is the Long Beach East Pacific Coast Highway Station, and its air quality trends are representative of the ambient air quality in the project area. The pollutants monitored at this station are PM_{10} and $PM_{2.5}$.[1] The closest station that monitors CO, O_3, NO_2, and SO_2 is the North Long Beach Station. The

[1] Air quality data, 2006–2008; EPA and ARB Web sites.

ambient air quality data monitored at these two stations within the past 3 years is listed in Table 4.2.D.

The ambient air quality data in Table 4.2.D show that NO_2, SO_2, and CO levels are below the relevant State and federal standards. The State 1-hour O_3 standard was exceeded once in 2007. The federal 8-hour O_3 standard was not exceeded within the past 3 years. The State 24-hour PM_{10} standard was exceeded 9 to 19 times per year in the last 3 years but has not exceeded the federal 24-hour standard. The federal 24-hour $PM_{2.5}$ standard was exceeded one to six times per year in the last 3 years.

4.2.2 REGULATORY SETTING

4.2.2.1 Federal Regulations/Standards

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS) for six major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health.

Data collected at permanent monitoring stations are used by the EPA to classify regions as "attainment" or "nonattainment," depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas have additional restrictions as required by the EPA.

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring the Basin's compliance with the CAA.

The EPA established new national air quality standards for ground-level O_3 and $PM_{2.5}$ matter in 1997. On May 14, 1999, the Court of Appeals for the District of Columbia Circuit issued a decision-ruling that the CAA, as applied in setting the new public health standards for O_3 and particulate matter, was unconstitutional as an improper delegation of legislative authority to the EPA. On February 27, 2001, the U.S. Supreme Court upheld the way the government sets air quality standards under the CAA. The court unanimously rejected industry arguments that the EPA must consider financial cost as well as health benefits in writing standards. The justices also rejected arguments that the EPA took lawmaking power from Congress when it set tougher standards for O_3 and particulate matter in 1997.

Table 4.2.D: Ambient Air Quality at the Long Beach Air Monitoring Stations

Pollutant	Standard	2006	2007	2008
Carbon Monoxide				
Max 1-hr concentration (ppm)		4.2	3.3	3.3
No. days exceeded: State	> 20 ppm/1-hr	0	0	0
Federal	> 35 ppm/1-hr	0	0	0
Max 8-hr concentration (ppm)		3.4	2.6	2.5
No. days exceeded: State	9.0 ppm/8-hr	0	0	0
Federal	9 ppm/8-hr	0	0	0
Ozone				
Max 1-hr concentration (ppm)		0.081	0.099	0.093
No. days exceeded: State	> 0.09 ppm/1-hr	0	1	0
Max 8-hr concentration (ppm)		0.058	0.074	0.074
No. days exceeded: Federal	> 0.075 ppm/8-hr	0	0	0
Particulates (PM_{10})				
Max 24-hr concentration ($\mu g/m^3$)		117	123	81
No. days exceeded: State	> 50 $\mu g/m^3$/24-hr	19	11	9
Federal	> 150 $\mu g/m^3$/24-hr	0	0	0
Annual Arithmetic Average ($\mu g/m^3$)		45	41	36
Exceeded: State	> 20 $\mu g/m^3$ ann. arth. avg.	Yes	Yes	Yes
Particulates ($PM_{2.5}$)				
Max 24-hr concentration ($\mu g/m^3$)		53.6	67.9	37.1
No. days exceeded: Federal	> 65 $\mu g/m^3$/24-hr	0	1	1
Annual Arithmetic Average ($\mu g/m^3$)		14.4	13.7	11.7
Exceeded: State	> 12 $\mu g/m^3$ ann. arth. avg.	Yes	Yes	No
Federal	> 15 $\mu g/m^3$ ann. arth. avg.	No	No	No
Nitrogen Dioxide				
Max 1-hr concentration (ppm)		0.102	0.107	0.125
No. days exceeded: State	> 0.25 ppm/1-hr	0	0	0
Annual arithmetic average concentration (ppm)		0.022	0.020	0.021
Exceeded: Federal	> 0.053 ppm ann. arth. avg.	No	No	No

Table 4.2.D: Ambient Air Quality at the Long Beach Air Monitoring Stations

Pollutant	Standard	2006	2007	2008
Sulfur Dioxide[2]				
Max 24-hr concentration (ppm)		0.010	0.010	0.012
No. days exceeded: State	> 0.04 ppm/24-hr	0	0	0
Federal	> 0.14 ppm/24-hr	0	0	0
Annual arithmetic average concentration (ppm)		0.001	0.003	0.002
Exceeded: Federal	> 0.030 ppm ann. arth. avg.	No	No	No

Source: ARB and EPA, 2006–2008.
1-hr = 1-hour
8-hr = 8-hour
24-hr = 24-hour
ann. arth. avg. = annual arithmetic average
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
ND = No Data (there was insufficient or no data available to determine the value)
ppm = parts per million
$\mu g/m^3$ = micrograms of pollutant per cubic meter of air

Nevertheless, the court threw out the EPA's policy for implementing new O_3 rules, saying that the agency ignored a section of the law that restricts its authority to enforce such rules.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the 8-hour ground-level O_3 standard. The EPA issued the proposed rule implementing the 8-hour O_3 standard in April 2003. The EPA completed final 8-hour nonattainment status on April 15, 2004. The EPA revoked the one-hour O_3 standard on June 15, 2005.

The EPA issued the final $PM_{2.5}$ implementation rule in fall 2004. The EPA issued final designations on December 14, 2004. The EPA lowered the 24-hour $PM_{2.5}$ standard from 65 to 35 micrograms per cubic meter ($\mu g/m^3$) and revoked the annual average PM_{10} standard in December 2006.

Climate Change. In February 2002, the United States government announced a comprehensive strategy to reduce the GHG intensity of the American economy by 18 percent over the 10-year period from 2002 to 2012. GHG intensity measures the ratio of GHG emissions to economic output. New and refined technologies offer great promise to reduce GHG emissions significantly. The federal government established the multiagency Climate

Change Technology Program (CCTP) in February 2002 to accelerate the development and deployment of key technologies.

In February of 2002, the United States government announced a climate change research initiative to focus on key remaining gaps in climate change science. To meet this goal, the Federal, multi-agency Climate Change Science Program (CCSP) was established to investigate natural and human-induced changes in the Earth's global environmental system; to monitor, understand and predict global change; and to provide a sound scientific basis for national and international decision-making. EPA's primary role in CCSP is evaluating the potential consequences of climate variability and the effects on air quality, water quality, ecosystems and human health in the United States.

Currently there are no adopted regulations to control GCC on a national level. However, recent statutory authority has been granted to the EPA that may change the voluntary approach taken under the current administration to address this issue. On April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO_2 emissions under the federal Clean Air Act (CAA). Consequently, the regulation of GHG emissions on a national level by the EPA is forthcoming.

Over a decade ago, most countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), to begin to consider what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. More recently, a number of nations have approved an addition to the treaty: the Kyoto Protocol, which has more powerful (and legally binding) measures.

Because it will affect virtually all major sectors of the economy, the Kyoto Protocol is considered to be the most far-reaching agreement on environment and sustainable development ever adopted. However, any treaty not only has to be effective in tackling a complicated worldwide problem, it must also be politically acceptable. Most of the world's countries eventually agreed to the Protocol, but some nations chose not to ratify it. Following ratification by Russia, the Kyoto Protocol entered into force on February 16, 2005.

As of February 2009, 183 countries had ratified the agreement with the United States taking the position of signing but not ratifying. Participating nations are separated into Annex 1 (i.e., industrialized) and Non-Annex 1 (i.e., developing) countries that have different requirements for GHG reductions. The goal of the Protocol is to achieve overall emissions reduction targets for six GHGs by the period of 2008 to 2012. The six GHGs regulated under the Protocol are CO_2, CH_4, N_2O, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. Each nation has an emissions reduction target to reduce GHG emissions a certain percentage below 1990 levels (e.g., 8 percent reduction for the European Union, 6 percent reduction for Japan). The average reduction target for nations participating in the Kyoto Protocol is approximately 5 percent below 1990 levels. Although the United States has not ratified the Protocol, on February 14, 2002, it established a goal of an 18 percent reduction in GHG

emissions intensity by 2012. GHG intensity is the ratio of GHG emissions to economic output (i.e., gross domestic product).

4.2.2.2 State Regulations/Standards

The State of California began to set California ambient air quality standards (CAAQS) in 1969 under the mandate of the Mulford-Carrell Act. The CAAQS are generally more stringent than the NAAQS. In addition to the six criteria pollutants covered by the NAAQS, there are CAAQS for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are also listed in Table 4.2.A. In January 2007 the CAAQS for 1-hour NO_2 was reduced from 0.25 ppm to 0.18 ppm.

Originally, there were no attainment deadlines for CAAQS. However, the CCAA of 1988 provided a time frame and a planning structure to promote their attainment. The CCAA required nonattainment areas in the State to prepare attainment plans and proposed to classify each such area on the basis of the submitted plan, as follows: moderate, if CAAQS attainment could not occur before December 31, 1994; serious, if CAAQS attainment could not occur before December 31, 1997; and severe, if CAAQS attainment could not be conclusively demonstrated at all.

The attainment plans are required to achieve a minimum 5 percent annual reduction in the emissions of nonattainment pollutants unless all feasible measures have been implemented. The SCAB is currently classified a nonattainment area for four criteria pollutants.

State Climate Change Policies and Regulations.

Title 24 (California Energy Code). The Energy Efficiency Standards for Residential and Nonresidential Buildings, commonly referred to as Title 24 of the California Code of Regulations (CCR), were established by the Energy Commission in 1978. All new projects in California are required to meet the standards, which are updated approximately every three years. The most current standards are from 2005 and superseded standards from 2001. Currently, the California Energy Commission proposes to adopt changes to the Building Energy Efficiency Standards contained in CCR, Title 24, Part 6, and associated administrative regulations in Part 1.

The current standards significantly reduce energy consumption as compared to previously constructed projects, particularly those built before 1990. Generally, standards from 2005 mandate efficient outdoor and indoor lighting, cool roofs, demand control ventilation, efficient space conditions systems and duct and pipe insulations, etc. The premise for the standards is that energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for

water heating) results in GHG emissions. Therefore, increased energy efficiency in buildings results in fewer GHG emissions.

Assembly Bill 1493 Vehicular Emissions of Greenhouse Gases. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, Assembly Bill (AB) 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the California Air Resources Board (ARB) to set GHG emission standards for passenger vehicles, light duty trucks, and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation in the State manufactured in 2009 and all subsequent model years. In setting these standards, the ARB considered cost effectiveness, technological feasibility, and economic impacts. ARB adopted the standards in September 2004. When fully phased in, the near-term (2009 to 2012) standards would result in a reduction of approximately 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the midterm (2013 to 2016) standards would result in a reduction of approximately 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drives. To set its own GHG emissions limits on motor vehicles, California must receive a waiver from the EPA. The EPA approved the waiver in June 2009.

Executive Order S-03-05. In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order (EO) S-3-05. The EO established the following goals: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2050. Furthermore, EO S-03-05 requires the Secretary of the California Environmental Protection Agency (Cal EPA) to evaluate the impacts of climate change and establish mitigation measures that would reduce potential impacts. These responsibilities are further delegated to the California Climate Action Team (CAT), which was also created in an effort to support the ARB in its responsibilities under the California Global Warming Solutions Act (described below). The CAT is chaired by the Secretary of Cal EPA and consists of representatives from major California agencies (Secretary of the Business, Transportation, and Housing Agency; Secretary of the Department of Food and Agriculture; Secretary of the Resources Agency; ARB Chairperson; Chairperson of the Energy Commission; and President of the Public Utilities Commission). The CAT is divided into 11 subgroups that develop various strategies to address aspects of global warming, including, but not limited to, land use, transportation, and planning.

Assembly Bill 32–California Global Warming Solutions Act of 2006. California's major initiatives for reducing GHG emissions are outlined in AB 32, the "Global

Warming Solutions Act," passed by the California State legislature on August 31, 2006, the 2005 EO discussed above, and a 2004 ARB regulation to reduce passenger car GHG emissions. The statute begins with several legislative findings and declarations of intent, including the following:

> Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snow pack, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems. (Health and Safety Code, Section 38501.)

The State goal is to reduce GHG emissions to 1990 levels by 2020, a reduction of approximately 25 percent, and then an 80 percent reduction below 1990 levels by 2050. The main strategies for making these reductions are outlined in the Scoping Plan, which when completed will include a range of GHG reduction actions that can include direct regulations, alternative compliance mechanisms, monetary and nonmonetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system.

Pursuant to the requirements of AB 32, the State's reduction in global warming emissions will be accomplished through an enforceable Statewide cap on global warming emissions that will be phased in starting in 2012. Additional early action items include a comprehensive framework of regulatory and nonregulatory elements that will result in significant and effective GHG emission reductions. ARB must prepare a plan demonstrating how the 2020 deadline can be met by January 1, 2009, or earlier. However, as immediate progress in reducing GHGs can and should be made, AB 32 directed ARB and the newly created CAT to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. CAT is a consortium of representatives from State agencies who have been charged with coordinating and implementing GHG emission reduction programs that fall outside of ARB's jurisdiction.

AB 32 requires the ARB to adopt GHG emission limits and emission reduction measures by January 1, 2011, both of which are to become effective on January 1, 2012. The ARB must also evaluate whether to establish a market-based cap and trade system. AB 32 does not identify a significance level of GHG for CEQA purposes, nor has the ARB adopted such a significance threshold.

Executive Order S-01-07. EO S-01-07 was put forth by Governor Arnold Schwarzenegger on January 18, 2007. California further solidified its dedication to reducing GHGs above what was intended in EO S-03-05 by setting a new Low Carbon Fuel Standard for transportation fuels sold within the State. EO S-1-07 sets a declining standard for GHG emissions measured in CO_2 equivalent grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. Essentially, the order mandates the following: (1) that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California.

Executive Order S-13-08. EO S-13-08, pertaining to sea level rise assessment, was issued by Governor Arnold Schwarzenegger on November 14, 2008. There are four key actions in the EO, including: (1) initiate California's first Statewide climate change adaptation strategy that will assess the State's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies by early 2009; (2) request that the National Academy of Science establish an expert panel to report on sea level rise impacts in California to inform State planning and development efforts; (3) issue interim guidance to State agencies for how to plan for sea level rise in designated coastal and floodplain areas for new projects; and (4) initiate a report on critical existing and planned infrastructure projects vulnerable to sea level rise. As a result of the EO, all State agencies are to consider a range of sea level rise scenarios for 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks. However, all projects that have filed a Notice of Preparation and/or are programmed for construction funding in the next five years, or are routine maintenance projects as of the date of the order, may, but are not required to, account for these planning guidelines.

The EO is intended to facilitate California's first comprehensive climate adaptation strategy. This effort will improve coordination within State government and adapt the way it works so that better planning can more effectively address climate impacts to human health, the environment, the State's water supply, and the economy. The EO is intended to provide consistency and clarity to State agencies on how to address sea level rise in current planning efforts, reducing time and resources unnecessarily spent on developing different policies using different scientific information.

Development of the State's comprehensive climate adaptation strategy is occurring concurrently with preparation of this Draft EIR for the proposed project; no strategy has yet been adopted. The City will comply with applicable requirements that result from the climate adaptation strategy as specific plans or regulations are specified in law or adopted by the State legislature.

Senate Bill 97. To address GHG emission and GCC in General Plans and CEQA documents, Senate Bill (SB) 97 (Chapter 185, 2007) requires the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how to address global warming emissions and mitigate project-specific GHG. OPR is required to prepare, develop, and transmit these guidelines on or before July 1, 2009. As described below, OPR has issued a Technical Advisory (TA) in advance of developing amendments to the CEQA Guidelines.

Senate Bill 375. SB 375, which was signed into law on October 1, 2008, provides emissions reduction goals and provides incentives for local governments and developers to follow new conscientiously planned growth patterns. SB 375 enhances the ARB's ability to reach AB 32 goals by directing the ARB to develop regional GHG emission reduction targets to be achieved by the automobile and light truck sectors for 2020 and 2035. The ARB will also work with California's 18 metropolitan planning organizations to align their regional transportation, housing and land use plans; prepare a "sustainable communities strategy" to reduce the number of vehicle miles traveled in their respective regions; and demonstrate the region's ability to attain its GHG reduction targets.

Additionally, SB 375 provides incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The bill exempts homebuilders from certain CEQA requirements if they build projects consistent with the new sustainable community strategies. It will also encourage the development of more alternative transportation options to promote healthy lifestyles and reduce traffic congestion.

OPR Guidelines. OPR issued a Technical Advisory titled "CEQA and Climate Change: Addressing Climate Change Through CEQA Review" on June 18, 2008. The TA was intended as a guide to planners and CEQA practitioners for addressing climate change in CEQA documents. The Advisory noted that neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. However, even in the absence of clearly defined thresholds for GHG emissions, the emissions from projects must be disclosed. OPR identified three basic steps for the GHG approach in CEQA documents: (1) Identify and quantify the GHG emissions; (2) assess the significance of the impact on climate change, and (3) if the impact is found to be significant, identify alternatives and/or mitigation measures that will reduce the impact below significance.

OPR released draft amendments to the CEQA Guidelines in January 2009, providing informal guidance for public agencies as they address the issue of climate change in

CEQA documents. The proposed draft amendments were prepared by OPR in collaboration with the California Resources Agency, Cal EPA, and the ARB. On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the State CEQA Guidelines for GHG emissions, as required by SB 97. These proposed CEQA Guideline amendments would provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in draft CEQA documents. The Natural Resources Agency will conduct formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by SB 97. The proposed amendments are to 14 sections of the CEQA Guidelines, and it is anticipated that amended regulations will be adopted by 2010.

Waste Diversion. AB 75 was passed in 1999, and the State Agency Model Integrated Waste Management Act (Chapter 764, Statutes of 1999, Strom-Martin) took effect on January 1, 2000. This bill added new provisions to the Public Resources Code (PRC), mandating that State agencies develop and implement an Integrated Waste Management Plan (IWMP); AB 75 also mandated that community service districts providing solid waste services report disposal and diversion information to the city, county, or regional agency in which the community service district is located.

The provisions of AB 75 are listed below. Specifically, PRC Sections 40148, 40196.3, and 42920–42926 require State agencies to:

- Develop and submit an IWMP by July 15, 2000;
- Divert at least 25 percent of their solid waste from landfills or transformation facilities by January 1, 2002, and divert 50 percent on and after January 1, 2004; and
- Submit an annual report to the California Integrated Waste Management Board (CIWMB) on the previous year's diversion amounts and activities by April 1 of each year.

4.2.2.3 Regional Air Quality Planning Framework

The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the state.

The ARB coordinates and oversees both State and federal air pollution control programs in California. It oversees activities of local air quality management agencies and is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. The ARB maintains air quality monitoring stations throughout the State in conjunction with local air districts. Data collected at these

stations are used by the ARB to classify air basins as "attainment" or "nonattainment" with respect to each pollutant and to monitor progress in attaining air quality standards. The ARB has divided the State into 15 air basins. Significant authority for air quality control within them has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

Regional Air Quality Management Plan (AQMP). The SCAQMD and the SCAG are responsible for formulating and implementing the AQMP for the SCAB. Every 3 years the SCAQMD prepares a new AQMP, updating the previous plan and having a 20-year horizon. The SCAQMD adopted the 2003 AQMP in August 2003 and forwarded it to ARB for review and approval. The ARB approved a modified version of the 2003 AQMP and forwarded it to the EPA in October 2003 for review and approval.

The 2003 AQMP updates the attainment demonstration for the federal standards for O_3 and PM_{10}; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future; and updates the maintenance plan for the federal NO_2 standard that the SCAB has met since 1992. The 2003 AQMP proposes policies and measures to achieve federal and State standards for healthful air quality in the SCAB.

This revision to the AQMP also addresses several State and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. This AQMP is consistent with and builds upon the approaches taken in the 1997 AQMP and the 1999 Amendments to the O_3 SIP for the SCAB for the attainment of the federal O_3 air quality standard. However, this revision points to the urgent need for additional emission reductions (beyond those incorporated in the 1997/1999 Plan) to offset increased emission estimates from mobile sources and meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act.

The SCAQMD adopted the 2007 AQMP on June 1, 2007, which it describes as a regional and multiagency effort (i.e., the SCAQMD Governing Board, ARB, SCAG, and EPA). State and federal planning requirements will include developing control strategies, attainment demonstration, reasonable further progress, and maintenance plans. The 2007 AQMP also incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The ARB approved the 2007 AQMP on September 27, 2007, and adopted it as part of the 2007 SIP. SCAQMD has forwarded the 2007 AQMP to the EPA for its review and approval.

4.2.3 METHODOLOGY

A number of modeling tools are available to assess air quality impacts of projects. In addition, certain air districts, such as the SCAQMD, have created guidelines and requirements to conduct air quality analysis. Current SCAQMD guidelines (CEQA Air Quality Handbook, April 1993) were adhered to in the assessment of air quality impacts for the proposed project.

The air quality assessment includes estimating emissions associated with short-term construction and long-term operation of the proposed project. Criteria pollutants with regional impacts would be emitted by project-related vehicular trips as well as by emissions associated with stationary sources used on site.

The net increase in pollutant emissions determines the significance and impact on regional air quality as a result of the proposed project. The results also allow the local government to determine whether the proposed project will deter the region from achieving the goal of reducing pollutants in accordance with the AQMP in order to comply with federal and State AAQS.

SCAQMD has developed localized significance threshold (LST) methodology that can be used to determine whether or not a project may generate significant adverse localized air quality impacts. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable federal or State AAQS and are developed based on the ambient concentrations of that pollutant for each source receptor area. Current SCAQMD guidelines (Final Localized Significance Threshold Methodology, June 2003) were adhered to in the assessment of air quality impacts for the proposed project.

The LST mass rate look-up tables are used to determine whether the daily emissions for the proposed construction and operational activities could result in significant localized air quality impacts. The emissions of concern from construction activities are NO_X and CO combustion emissions from construction equipment and fugitive PM_{10} dust from construction site preparation activities. The primary emissions from operational activities include, but are not limited to, NO_X and CO combustion emissions from stationary sources and/or on-site mobile equipment. Off-site mobile emissions from the project are not included in the emissions compared to the LSTs.

4.2.4 THRESHOLDS OF SIGNIFICANCE

According to Appendix G of the State CEQA Guidelines, a project may be considered to have a significant adverse effect on air quality if the project would:

- Conflict with or obstruct implementation of the applicable air quality plan

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation
- Result in a cumulative 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 O_3 precursors)
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

In addition to the federal and State AAQS, there are daily and quarterly emissions thresholds for construction and operation of a proposed project in the SCAB. The SCAB is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its CEQA Air Quality Handbook (April 1993) are used in the air quality analysis (Appendix B). The emission thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emission thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

4.2.4.1 SCAQMD Thresholds

Thresholds for Construction Emissions. The following CEQA significance thresholds for construction emissions have been established for the SCAB:

- 75 pounds per day (lbs/day) of ROCs
- 100 lbs/day of NO_X
- 550 lbs/day of CO
- 150 lbs/day of PM_{10}
- 55 lbs/day of $PM_{2.5}$
- 150 lbs/day of sulfur oxides (SO_X)

Projects in the SCAB with construction-related emissions that exceed any of the emission thresholds are considered to be significant short-term adverse air quality impacts under the SCAQMD guidelines and CEQA.

Thresholds for Operational Emissions. The daily operational emissions significance thresholds established for the SCAB by the SCAQMD are as follows.

Emission Thresholds for Pollutants With Regional Effects. Projects with operation-related emissions that exceed any of the emission thresholds listed below are considered significant under SCAQMD guidelines.

- 55 lbs/day of ROCs
- 55 lbs/day of NOX
- 550 lbs/day of CO
- 150 lbs/day of PM10
- 55 lbs/day of PM2.5
- 150 lbs/day of SO_X

Local Microscale Concentration Standards. The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO.

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

Thresholds for Localized Significance. For this project, the appropriate Source Receptor Area (SRA) for Localized Significance Thresholds (LST) is South Coastal Los Angeles County, according to the SRA/City Table on the SCAQMD LST website.[1] The size of the project phases and the distance to the nearest sensitive receptors vary throughout the construction schedule. In order to accommodate the Marina operations, no more than 1 ac of parking lot pavement area would be replaced and/or disturbed at any one time. The parking lot paving and the other on-site construction activities would occur simultaneously. Therefore, the conservative thresholds for a 2 ac site located within 50 meters (m) (164 ft) of the nearest sensitive receptor were applied to the project. The following thresholds apply for this project.

[1] www.aqmd.gov/ceqa/handbook/LST/LST.html.

Construction thresholds for a 2 ac site:

- 64 lbs/day of NO_X at 50 m
- 1,158 lbs/day of CO at 50 m
- 21 lbs/day of PM_{10} at 50 m
- 7 lbs/day of $PM_{2.5}$ at 50 m

Operational thresholds for a 2 ac site:

- 64 lbs/day of NO_X at 50 m
- 1,158 lbs/day of CO at 50 m
- 5 lbs/day of PM_{10} at 50 m
- 2 lbs/day of $PM_{2.5}$ at 50 m

Global Warming. Under CEQA, an EIR must identify and analyze the significant environmental effects of a project. Significant effect on the environment means a substantial, or potentially substantial, adverse change in the environment (PRC, Section 21068). CEQA further states that the CEQA Guidelines shall specify certain criteria that require a finding that a project may have a significant effect on the environment. That said, while the global impact of climate change has been widely recognized, the standards and methodologies for analyzing what a project's contribution to that impact may be, as well as assessing whether that impact is significant, is still substantially uncertain. As of the writing of this EIR, the agencies with jurisdiction over air quality regulation and GHG emissions such as the ARB and the SCAQMD have not adopted regulations, methodologies, significance thresholds, standards, or analysis protocols for the assessment of GHG emissions and climate change. OPR has issued very general guidance on how to approach GHG emissions, recommending that the agency (1) identify and quantify GHG emissions, (2) assess the significance of the impact on climate change, and (3) if significant, identify alternatives and/ or mitigation measures to reduce the impact below significance. In April 2009, proposed CEQA Guideline amendments released by OPR included the following direction regarding determination of significant impacts from GHG emissions (Section 15064.4):

> 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.
>
> (2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

> (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 greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

These Guidelines have not been adopted. Thus, to date, there have been no prescribed thresholds of significance or a particular methodology for performing an impact analysis. CEQA Guidelines Section 15064(b) states that the "determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

CEQA provides guidance on how to approach analysis of subject matters that are not well understood as yet, such as climate change. Sections 15144 and 15145 of the CEQA Guidelines address forecasting and speculation. Section 15144 notes that drafting an EIR necessarily involves some degree of forecasting, whereas Section 15145 deals with the difficulty of forecasting when reasonable investigation is unable to resolve the issues and thus may result in speculative answers. As stated in the CEQA Guidelines, the Lead Agency is not required to engage in speculation discussion but is required to inform the decision-makers of the potential impacts of the proposed activity. CEQA Guidelines Section 15002(a)(1) states that one of the basic purposes of CEQA is to "inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities." The Governor of California and the State Legislature have expressed their interest in, and the importance of, GCC to the citizens of California though the passage of AB 32 in the Legislature and the Governor's Executive Order (EOs), which call for reductions of GHG emissions. Therefore, the presented discussion is warranted to inform decision-makers of the potential effects of the proposed project.

Some policy makers and regulators suggest that a zero emissions threshold would be appropriate when evaluating GHGs and their potential effect on climate change. Such a rule appears inconsistent with the State's approach to mitigation of climate change impacts. AB 32 does not prohibit all new GHG emissions; rather, it requires a reduction in statewide emissions to a given level. Thus, AB 32 recognizes that GHG emissions will continue to occur; and that increases will result from certain activities, but that emissions reductions must be achieved overall. Moreover, if all economic development were to cease, the state would very likely be unable to fund the very measures that are needed to combat climate change.

This EIR analyzes whether the project's emissions should be considered significant. The proposed project may result in a significant GCC impact if it would impede achievement of the State's mandatory requirement under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

4.2.5 STANDARD CONDITIONS

4.2.5.1 Construction Emissions

The project is required to comply with regional rules that assist in reducing short-term air pollutant emissions. SCAQMD Rule 403 requires that fugitive dust be controlled with best available control measures so that the presence of such dust does not remain visible in the atmosphere beyond the property line of the emission source. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to prevent fugitive dust from creating a nuisance off site. Applicable dust suppression techniques from Rule 403 are summarized below. Implementation of these dust suppression techniques can reduce the fugitive dust generation (and thus the PM_{10} component). Compliance with these rules would reduce impacts on nearby sensitive receptors.

Applicable Rule 403 Measures.

- Water active sites at least twice daily. (Locations where equipment operations are to occur will be thoroughly watered prior to use.)
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered, or should maintain at least two feet of freeboard in accordance with the requirements of California Vehicle Code (CVC) Section 23114 (freeboard means vertical space between the top of the load and top of the trailer).
- Traffic speeds on all unpaved areas shall be reduced to 15 miles per hour (mph) or less.
- Use low-sulfur fuel for stationary construction equipment. This is required by SCAQMD Rules 431.1 and 431.2.

4.2.6 IMPACTS AND MITIGATION MEASURES

Implementation of the proposed project would result in short-term construction impacts related to air quality. Once construction of the project has been completed, the on-site activities would return to preexisting levels. The following focuses on air quality impacts associated with the construction of the proposed project.

4.2.6.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and considered less than significant.

Long-Term Project-Related Emissions Impacts. Long-term air emission impacts are associated with any change in permanent use of the project site by on-site and off-site stationary and mobile sources that substantially increase emissions. Stationary source emissions include emissions associated with electricity consumption and natural gas usage. Mobile source emissions would result from on-road vehicle trips and watercraft associated with the proposed project. The proposed project would not result in any significant increase in emissions from long-term on-site stationary sources and would have minimal change in the off-site vehicle trips. Rehabilitation of the Alamitos Bay Marina would reduce the number of boat slips from 1,967 to 1,646. Therefore, no emissions were calculated for the proposed project from long-term mobile sources, watercraft, or stationary sources. The project's air quality impact would be less than significant because there would be no increase in stationary or mobile source emissions.

The primary mobile source pollutant of local concern is CO, which is a direct function of vehicle idling time caused by traffic conditions. CO transport is extremely limited; it disperses rapidly with distance from the source under normal meteorological conditions. Under certain extreme meteorological conditions, CO concentrations proximate to a congested roadway or intersection may reach unhealthy levels affecting local sensitive receptors (residents, schoolchildren, the elderly, hospital patients, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. According to the Traffic Impact Report prepared for the Seaport Marina Project in 2006, the two nearest project intersections along Marina Drive (Marina Drive/2nd Street and Marina Drive/Studebaker Road) both operate at an acceptable LOS. In areas with high ambient CO concentrations, modeling of CO concentrations is recommended in determining a project's effect on local CO levels. Because the proposed project would result in fewer slips and would have minimal additional off-site vehicle trips, if any, no significant CO contributions would occur in the project vicinity. Therefore, no CO "hot spots" are expected, and modeling of CO emissions is not necessary.

Air Quality Management Plan Consistency. An AQMP describes air pollution control strategies to be taken by a city, county, or region classified as a nonattainment area. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. CEQA requires that certain proposed projects be analyzed for consistency with the AQMP. For a project to be consistent with the AQMP adopted by the SCAQMD, the pollutants emitted from the project should not exceed the SCAQMD daily threshold or cause a significant impact on air quality, or the project must already have been included in the

AQMP projection. However, if feasible mitigation measures are implemented and shown to reduce the impact level from significant to less than significant, a project may be deemed consistent with the AQMP. The AQMP uses the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the AQMP is based on local General Plans, projects that are deemed consistent with the General Plan are found to be consistent with the AQMP. The proposed project would not result in any population growth and is consistent with the City's General Plan. In addition, the proposed project is not expected to result in any increase in long-term regional air quality emissions. Therefore, the project will not conflict with the AQMP, and no significant impact will result with respect to implementation of the AQMP.

4.2.6.2 Potentially Significant Impacts

Construction Air Quality Impacts. Construction activities produce combustion emissions from various sources such as utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change. The use of construction equipment on site would result in localized exhaust emissions.

Equipment Exhaust and Related Construction Activities. Construction within the Marina has been split into 12 separate phases, each requiring up to 6 months to complete. Each of these phases has been further divided into multiple subphases, such as the removal of the existing gangways, dredging and pile removal, sea wall and riprap repair, and parking lot paving. Phase 1A will occur concurrently with Phase 1 and will include the excavation and construction of the open space/habitat mitigation site. The maximum exhaust emissions generated within each of the construction phases are listed in Table 4.2.E and detailed in Appendix B. This table shows that construction equipment/vehicle emissions would exceed the NO_X threshold during Phases 2 and 3, primarily due to the transport of contaminated dredge materials to an off-site landfill. Implementation of Mitigation Measure 4.2-1 would reduce the vehicle exhaust emissions during construction. However, the impact would remain significant and unavoidable for the duration of construction activities in Phases 2 and 3.

Table 4.2.E: Peak-Day Construction Emissions by Phase (lbs/day)

Construction Activity	CO	VOC	NO_X	SO_X	PM_{10}[1]	$PM_{2.5}$[1]	CO_2
Phases 1 and 1A	197.1	72.9	73.8	0.1	8.5	4.3	8,805.9
Phases 2, **Phase 2 and 3 would be the same now so I think we need to subtract phase 2 from these #s.** and 4 through 12	169.0	68.4	33.7	0.1	6.5	2.6	4224.8
Phases 2 and 3	169.0	68.4	293.0	0.3	15.8	10.7	33,327.5
SCAQMD Emissions Threshold	**550**	**75**	**100**	**150**	**150**	**55**	**N/A**[2]
Exceed Significance?	**No**	**No**	**Yes**	**No**	**No**	**No**	**N/A**

Source: LSA Associates, Inc., July 2009.
[1] Total PM daily emission rates with fugitive dust mitigation measures implemented.
[2] N/A = not applicable; no threshold has been established
CO = carbon monoxide
lbs/day = pounds per day
NO_x = nitrogen oxides
O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matte less than 2.5 microns in diameter
SCAQMD = South Coast Air Quality Management District
SO_x = sulfur oxides
VOC = volatile organic compounds

Fugitive Dust. Fugitive dust emissions are generally associated with land clearing, exposure, and cut-and-fill operations. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. Nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions. Fugitive dust would also be generated as construction equipment or trucks travel on unpaved areas of the construction site. Only the site preparation phase prior to paving the parking lots is anticipated to generate any measurable emissions of fugitive dust. PM_{10} and $PM_{2.5}$ emissions from grading operations during the site preparation phases are based on the LST analysis techniques published by the SCAQMD (see Appendix B). The PM_{10} and $PM_{2.5}$ emissions are included in construction emissions listed in Table 4.2.E. As shown, the emissions would not exceed the SCAQMD's thresholds. Therefore, no mitigation measures would be required.

Odors. Some objectionable odors may emanate from the operation of diesel-powered construction equipment during construction of the project. These odors, however, would be limited to the site only during the construction period and therefore would not be considered a significant impact.

During the dredging portion of Phases 2 and 3 of the proposed project, the contaminated dredged materials from Basin 1 will be spread out on site to dry before being hauled off site. It is anticipated that the dredged sediment will contain organic materials and that the decomposition of the organic matter when exposed to air may generate unpleasant odors. Therefore, the dredged material may result in odor impacts at the adjacent and nearby sensitive land uses. Implementation of Mitigation Measure 4.6-3 in Section 4.6, Hazards and Hazardous Materials, requires the application of a mixture of Simple Green and water to the excavated sediment as part of an overall Soil Management Plan. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions. Therefore, with implementation of Mitigation Measure 4.6-3, potential impacts related to odors would be reduced to a less than significant level. No additional mitigation is required.

Localized Significance. The following analysis was performed per SCAQMD Final Localized Significance Threshold Methodology (June 2003). The closest sensitive receptors to the various construction phases are located at a distance of approximately 50 m (164 ft). Thus, LST values for 50 m were used. Table 4.2.F shows the construction-related emissions of NO_X, CO, PM_{10}, and $PM_{2.5}$ compared to the LSTs for South Coastal Los Angeles County at distances of 50 m.

Table 4.2.F: Summary of Construction Emissions, Localized Significance by Phase

Construction Activity	Emission Rates (lbs/day)			
	CO	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Phases 1 and 1A	165.2	51.5	3.0	2.6
Phases 2, and 4 through 12	156.4	32.6	1.8	1.6
Phase 3	156.4	33.9	1.8	1.6
Localized Significance Threshold (at 50 m)	**1,158**	**64**	**21**	**7**
Exceed Significance?	**No**	**No**	**No**	**No**

Source: LSA Associates, Inc., July 2009.
CO = carbon monoxide lbs/day = pounds per day m = meters
NO_x = nitrogen oxides O_3 = ozone
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matte less than 2.5 microns in diameter

Table 4.2.F shows that the calculated emissions rates for the proposed construction activities are below the localized significance thresholds for NO_X, CO, PM_{10}, and $PM_{2.5}$. Therefore, the proposed construction activities would not cause any short-term, localized, significant air quality impacts. The overall project construction is below thresholds, and each phase of project construction would also be below thresholds. However, as stated above, the analysis was based on information provided by the project engineer indicating that no more than 1 ac of parking lot repaving would occur at any one time. Therefore, Mitigation Measure 4.2-2 has been proposed requiring that repaving areas do not exceed 1 ac at any one time. With implementation of Mitigation Measure 4.2-2, emission rates for each phase of project construction would remain below the thresholds, reducing potential impacts to a less than significant level.

Greenhouse Gas Emissions. Short-term GHG emissions would occur from construction activities, consisting primarily of emissions from equipment exhaust. The URBEMIS2007 model was used to calculate the CO_2 emissions that would be generated by the construction equipment. The emissions are summarized in Table 4.2.E. For this analysis only CO_2, is considered. This is due to the relatively large contribution of this gas in comparison to other GHGs produced during the project construction. Table 4.2.E indicates that the peak daily CO_2 emissions associated with construction equipment exhaust for the proposed project would be highest during Phases 2 and 3, generating up to 33,328 lbs/day of CO_2. Because construction activities are expected to generate an increase in CO_2 emissions, Mitigation Measure 4.2-3 has been proposed, requiring the Marine Bureau to incorporate CO_2 reduction measures in order to reduce CO_2 emissions associated with construction activities. Because GHG emissions during construction activities are relatively short term and would cease once construction activities end, construction-related GHG emissions are considered less than significant with incorporation of Mitigation Measure 4.2-3.

At build out, the proposed project would result in fewer boat slips than under existing conditions; it is likely that there will be an increase in larger vessels utilizing the slips. However, it would be speculative to forecast the usage patterns or engine efficiencies of the larger boats, similar to trying to predict the types of cars that utilize a given parking lot or the length of time that they would be parked. Therefore, it is too speculative to indicate that the change in the number or size of Marina slips would result in a change in contributions to GHG emissions, either positive or negative.

The proposed project includes renovations to all 13 restroom buildings on the project site. Ten of the 13 restroom facilities will be demolished and rebuilt, and 3 will be renovated in-place. All new projects in California are required to meet the standards of Title 24 (California Energy Code). The current standards significantly reduce energy consumption as compared to previously constructed projects, particularly those built before 1990, such as the existing restroom facilities on the project site. Compliance with these standards results in more

energy-efficient buildings that require less electricity, natural gas, and other fuels. Therefore, increased energy efficiency in the proposed buildings results in fewer GHG emissions.

The project will comply with all Title 24 requirements, thereby increasing the energy efficiency of all on-site restrooms. Therefore, the proposed project is not expected to result in a long-term increase in GHG emissions. Further, Mitigation Measures 4.2-4 and 4.2-5 have been proposed and will require the Marine Bureau to incorporate CO_2 reduction measures in order to reduce CO_2 emissions associated with building design and building operation/ maintenance to improve energy efficiency or reduce energy consumption. With implementation of Mitigation Measures 4.2-4 and 4.2-5, operation of the proposed project would not conflict with implementation of the GHG reduction goals under AB 32 or other State regulations. In addition, the proposed project is a less intense continuation of an existing land use. Therefore, with mitigation, operational GHG impacts are considered less than significant.

4.2.7 MITIGATION MEASURES

Implementation of the following mitigation measures will ensure that potential Air Quality impacts resulting from project implementation would be reduced to less than significant levels.

4.2-1 Prior to commencement of construction, the Marine Bureau Manager shall ensure that the final project plans and the construction contract include, but are not limited to, the following energy conservation and emission reduction measures:

Fugitive Dust Controls. The project construction contractor shall develop and implement dust-control methods that shall achieve this control level in a South Coast Air Quality Management District (SCAQMD) Rule 403 dust control plan, designate personnel to monitor the dust control program, and order increased watering, as necessary, to ensure a 90 percent control level. Their duties shall include holiday and weekend periods when work may not be in progress. Additional control measures to reduce fugitive dust shall include, but are not limited to, the following:

- Provide temporary wind fencing around sites being graded or cleared
- Cover truck loads that haul dirt, sand, or gravel or maintain at least 2 feet (ft) of freeboard in accordance with Section 23114 of the California Vehicle Code (CVC)
- Install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off tires of vehicles and any equipment leaving the construction site

- Suspend all soil disturbance activities when winds exceed 25 miles per hour (mph) as instantaneous gusts or when visible dust plumes emanate from the site and stabilize all disturbed areas
- Appoint a construction relations office to act as a community liaison concerning on-site construction activity, including resolution of issues related to particulate matter less than 10 microns in diameter (PM_{10}) generation
- Sweep all streets at least once a day using SCAQMD Rule 1186, 1186.1 certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water)
- Apply water three times daily, or nontoxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces or as needed to areas where soil is disturbed

Emission Controls for Nonroad Construction Equipment. Construction equipment shall meet the United States Environmental Protection Agency (EPA) Tier 4 nonroad engine standards, where feasible. The Tier 4 standards become available starting in 2012.

Best Management Practices (BMPs) for Construction Equipment. The construction contractor shall implement the following BMPs on construction equipment, where feasible, to further reduce emissions from these sources.

- Use of diesel oxidation catalysts and/or catalyzed diesel particulate traps, as feasible
- Maintain equipment according to manufacturer specifications
- Restrict idling of equipment and trucks to a maximum of 5 minutes (per California Air Resources Board [ARB] regulation)
- Use of high-pressure fuel injectors on diesel-powered equipment
- Use of electricity from power poles rather than temporary diesel- or gasoline-powered generators

Construction Traffic Emission Reductions. The construction contractor shall implement the following measures to further reduce emissions from construction.

- Trucks used for construction (a) prior to 2015 shall use engines certified to no less than 2007 nitrogen oxide (NO_x) emissions standards and (b) in 2015 and beyond shall meet EPA 2010 emission standards.

- Provide temporary traffic control such as a flag person during all phases of construction to maintain smooth traffic flow
- Schedule construction activities that affect traffic flow on arterial systems to off-peak hours where possible
- Reroute construction trucks away from congested streets or sensitive receptor areas
- Provide dedicated turn lanes for movement of construction trucks and equipment on and off site
- Configure construction parking to minimize traffic interference
- Improve traffic flow by signal synchronization
- All vehicles and equipment will be properly tuned and maintained according to manufacturer specifications.
- Reduce traffic speeds on all unpaved roads to 15 mph or less

Emission Controls for Construction Tugboats. All tugboats used in construction shall meet the EPA Tier 2 marina engine standards, and if feasible, use construction tugs that meet the EPA Tier 3 marine engine standards. The Tier 3 standards become available starting in 2009.

Construction Tugboat Home Fleeting. The construction contractor shall require all construction tugboats that home fleet in the San Pedro Bay Ports (SPBP) to (a) shut down their main engines, and (b) refrain from using auxiliary engines at dock or to use electrical shore power, if need be.

4.2-2 Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings include the following building design energy conservation measures:

- **Green Building Design for Restroom Buildings:** Incorporate measures from the Leadership in Energy and Environmental Design (LEED) certification program and other green building guidelines that reduce greenhouse gas (GHG) emissions through either development density/ design and/or energy conservation. The LEED for Retail–New Construction and LEED for Commercial Interiors programs developed by the United States Green Building Council are good sources for identifying measures and examples of energy conservation measures, including the following:
  - Meet or exceed Title 24 requirements
  - Incorporate ENERGY STAR-rated windows

- Incorporate ENERGY STAR-rated space heating and cooling equipment
- Incorporate hot water systems that are energy efficient
- Incorporate ENERGY STAR-rated light fixtures
- Incorporate ENERGY STAR-rated appliances
- Install/operate renewable electric generation systems, as appropriate and economically feasible

4.2-3 Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings of the building operations and maintenance plan include, but are not limited to, the following energy conservation measures:

- **Compact Fluorescent Light Bulbs:** All interior building lighting shall use compact fluorescent light bulbs. Fluorescent light bulbs produce less waste heat and use substantially less electricity than incandescent light bulbs.
- **Energy Audits:** Conduct a third-party energy audit every 5 years and install innovative power-saving technology where feasible, such as power factor correction systems and lighting power regulators. Such systems help to maximize usable electric current and eliminate wasted electricity, thereby lowering overall electricity use.

4.2-4 Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings and the construction contract indicate that no more than 1 acre (43,560 square feet) of parking lot pavement area shall be under construction for replacement at any one time during each phase of the project.

4.2-5 During all phases of demolition, dredging, and construction, the Marine Bureau Manager shall ensure that the contract to construct complies with the following rules for construction and operation to minimize the air quality impacts from the proposed project. The following measures are required and will reduce or minimize air pollutants generated by construction vehicles and equipment and fugitive dust emissions associated with earthmoving or excavation operations, or other soil disturbances, as identified in South Coast Air Quality Management District (SCAQMD) Rules 402 and 403. The following measures shall be printed on all final plans and drawings associated with the project:

During earthmoving or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust-preventive measures using the following procedures:

- All material excavated shall be sufficiently watered to prevent excessive amounts of dust. Watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after work is done for the day.
- All earthmoving or excavation activities shall cease during periods of high winds (i.e., winds greater than 20 miles per hour [mph] averaged over 1 hour).
- All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- The area disturbed by earthmoving or excavation operations shall be minimized at all times.

After earthmoving or excavation operations, fugitive dust emissions shall be controlled using the following measures:

- Portions of the construction area to remain inactive longer than a period of 3 months shall be revegetated and watered until cover is grown.
- All active portions of the construction site shall be watered to prevent excessive amounts of dust.

At all times, fugitive dust emissions shall be controlled using the following procedures:

- On-site vehicle speed shall be limited to 15 mph.
- Road improvements shall be paved as soon as feasible, watered periodically, or chemically stabilized.

At all times during the construction phase, ozone precursor emissions from mobile equipment shall be controlled using the following procedures:

- Equipment engines shall be maintained in good condition and in proper tune according to manufacturer's specifications.
- On-site mobile equipment shall not be left idling for a period longer than 60 seconds.

Outdoor storage piles of construction materials shall be kept covered, watered, or otherwise chemically stabilized with a chemical wetting agent to minimize fugitive dust emissions and wind erosion.

4.2.8 CUMULATIVE IMPACTS

The cumulative study area for air quality is the SCAB. As discussed above, projected emissions of criteria pollutants as a result of the proposed project are expected to be below the emissions thresholds established for the region. Cumulative emissions are part of the emission inventory included in the AQMP for the project area. Therefore, there would be no cumulatively considerable net increase of the criteria pollutants that are in nonattainment status in the Basin.

Construction emissions associated with the project would exceed the SCAQMD threshold for NO_X. Construction of the project would contribute cumulatively to the local and regional air pollutants, together with other projects under construction. The project would result in significant construction-related air quality impacts. Thus, it is anticipated that these additional emissions would result in significant cumulative air quality impacts.

The project would not result in increases in long-term operational emissions because capacity of the Marina would not be increased with the proposed project, and no additional boats would be added to the Marina. Therefore, the project would not contribute cumulatively to long-term local and regional air quality degradation.

GHG emissions are considered for their potential to contribute to GCC. The proposed project will result in short-term emissions associated with the use of construction equipment. There will be no ongoing increase in contribution to global warming because there are no on-site stationary sources, and there is essentially no increase in the number of vehicular trips coming to and from the project site. Therefore, the proposed project's contribution to GCC in the form of GHG emissions is limited to construction equipment/vehicle emissions. The project will not result in a new, ongoing source of GHG emissions; therefore, the project's contribution to cumulative GHG emissions and GCC is less than significant.

4.2.9 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Compliance with SCAQMD rules and regulations and implementation of Mitigation Measures 4.2-1 through 4.2-5 would reduce the proposed project's air quality impacts to the extent feasible. However, construction vehicle emissions would exceed the NO_X threshold during Phase 3, primarily due to the transport of contaminated dredge materials to an off-site landfill. Implementation of Mitigation Measure 4.2-1 would reduce the vehicle exhaust emissions during construction. However, the impact would remain significant and unavoidable.

4.3 BIOLOGICAL RESOURCES

INTRODUCTION

This section assesses the effects of the proposed project on the existing biological resources in the Marina. This section also addresses the proposed impacts to marine biological resources with consideration of local, State, and federal regulations and policies; provides recommended mitigation measures pursuant to the CEQA; and discusses Resource Agency permits and anticipated mitigation ratios/strategies required by the Resource Agencies. The biological resources impact analysis in this section is based on the following technical project-specific studies, which are contained in Appendix C:

- Marine Resources Environmental Assessment for the Alamitos Bay Marina Renovation Project (Coastal Resources Management [CRM], October 2009)
- Analysis of Potential Eelgrass Habitat Biotic and Abiotic Characteristics in Alamitos Bay Marina (CRM, October 2009)
- Waterbird Foraging and Nesting at Alamitos Bay Memo (LSA Associates, Inc., August 2009)
- Nesting Bird Survey for the Alamitos Bay Marina Memo (LSA Associates, Inc., July 2007; updated March 2009)

In addition to the project-specific reports listed above, the analysis in this section incorporates findings from the following studies:

- Alamitos Bay Marina Biological Evaluation (ESA, March 2007)
- Alamitos Bay Marina Redevelopment Preliminary Eelgrass and Caulerpa Dive Reconnaissance Survey (Weston Solutions, June 2007)

4.3.1 EXISTING ENVIRONMENTAL SETTING

The area around Alamitos Bay was originally a marsh, with the San Gabriel River and the Bay sharing a common opening into the ocean. Naples Island was developed in 1908–1909, which was followed by the separation of the San Gabriel River and the Bay with the construction of a rock jetty (early 1920s), the dredging of the Marine Stadium in 1932, and the construction of the Alamitos Bay Marina Basins between the mid-1950s and the mid-1960s. Marina Basins 1–7 contain approximately 1,967 slips and 476,839 square feet (sf) of dock area in their current configuration.

Alamitos Bay Marina is comprised of eight basins located throughout Alamitos Bay. However, the proposed project includes renovations only to Basins 1–7; Basin 8 is not included in the project. The land uses surrounding the basins are primarily residential, but also include areas of commercial development, marine-related commercial uses, restaurants, a shipyard, yacht and sailing clubs, and public beaches.

4.3.1.1 Land Side Environment

The proposed project includes the Alamitos Bay Marina and the adjacent land side areas, which are currently developed with parking lots and restroom facilities. The project includes new asphalt paving for the parking lot surfaces adjacent to the Marina slips in Basins 1, 2, 3, 4, 6-North (6-N), and 6-South (6-S). The proposed project would not relocate or alter any landscaped islands within the parking lot. Site surveys (LSA Associates, Inc., June 29, 2007, and March 7, 2009) indicated that Basins 5 and 7 and the proposed eelgrass mitigation site are completely developed and have essentially no vegetation. Basins 1, 2, 3, 4, 6-N, and 6-S are sparsely landscaped with nonnative vegetation and have a scattering of ornamental trees and shrubs typically used in Southern California park landscaping.

The ornamental trees and shrubs in these basins may be used by a number of species as small as hummingbirds and as large as the great blue heron. A complete list of vertebrate bird species observed is included in the Nesting Bird Memo, attached in Appendix C.

Water-Associated Birds. Birds that occur in Alamitos Bay are primarily water-associated species; that is, they are dependent on the marine habitat for food and other essentials. The Bay provides a limited habitat of trees and shrubs for feeding, resting, and nesting. The great blue heron (*Ardea herodias*) is the only water bird known to nest at the Alamitos Bay Marina. Other species are unlikely to do so, with the possible exception of the great egret (*Ardea alba*), snowy egret (*Egretta thula*), and black-crowned night-heron (*Nycticorax nycticorax*), all of which occasionally nest in association with great blue herons.

Many species of waterbirds forage and roost at the Marina, including some classified as endangered, of special concern, or special animals. For most of these species, special status is conferred only at nesting sites or communal roost sites. Two species listed by the State and federal governments as endangered and known to frequent Alamitos Bay are the California brown pelican (*Pelecanus occidentals californicus*) and the California least tern (*Sternula antillarum browni*). The least tern and several other special-status species nest within the Seal Beach Naval Weapons Station, probably forage regularly in Marina waters, and may form small roosting associations on occasion (e.g., on the seawalls of the basins). The brown pelican does not nest locally, as there is not suitable habitat for nesting on site, but does forage and roost in the area. The least tern is present only in the Harbor area during its breeding season, April to September, while the brown pelican is present throughout the year.

Sizable concentrations of foraging birds of various species may develop in response to bait conditions in the Marina.

The least tern is a migratory species and nests from April through August along the coast of California from San Francisco Bay south to Baja California. Least terns nest on sparsely vegetated substrates, including sandy beaches, salt flats, and dredge spoil, in colonies of a few to several hundred nesting pairs. This species relies on sight for foraging and usually requires relatively clear water to locate its preferred baitfish food sources, northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis*), and jacksmelt (*Atherinopsis californicus*). Although there is some field evidence to suggest that least terns would forage in turbid waters to which fish are attracted, the majority of foraging occurs in clearer waters.

The double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), black-crowned night-heron (*Nycticorax nycticorax*), long-billed curlew (*Numenius americanus*), Caspian tern (*Hydroprogne caspia*), Foster's tern (*Sterna forsteri*), and elegant tern (*Thalasseus elegans*), all listed as California Special Animals, are known to forage in the Marina area. Although the Nesting Bird Survey found no evidence of active nesting by most of these species of concern, 10 active nests of the great blue heron (*Ardea herodias*) were observed in the tops of ornamental fan palms within Basins 1 and 2. At the time of the first survey (June 2007), all nests contained large young not yet capable of flight.

4.3.1.2 Marine Environment

The Alamitos Bay project area intertidal habitats extend from the extreme low to extreme high water mark (-1.2 to +7.0 feet (ft) Mean Lower Low Water [MLLW]). The types of habitats in this zone include sandy intertidal, quarry rock (riprap), dock piles, and sloping cement bulkheads. Portions of or all of these shoreline types are exposed to both air and water during the tidal cycle. Habitats below the extreme low tide zone are "subtidal" and are never exposed. Project area subtidal habitats include unconsolidated soft bottom (sands and muds), which makes up the majority of the harbor's benthic (bottom) environment, portions of docks, pilings, bulkheads, and the water column. These habitats support marine plants, invertebrates, fishes, and birds.

Intertidal Sandy Beach. Sand beach habitat is found along the Alamitos Bay Peninsula and Bayshore Avenue, at Mothers Beach, End Beach in the Marine Stadium, and within the Cerritos Channel (Jack Dunster Marine Life Preserve). The sand beach environment is a low-energy environment that is affected primarily by wind waves and tidal action. Beaches along the Alamitos Bay Peninsula, Bayshore Avenue, and at Mothers Beach are groomed whereas the other sandy shorelines are not. The high intertidal portion of the groomed public beach supports few if any marine organisms in the sediments because of the infrequent tidal exposure and periodic cleaning and grooming. This higher elevation, however, provides resting habitat for

seabirds (gulls and pelicans). The middle and low intertidal zones provide more consistent tidal inundation and therefore support burrowing species of invertebrates (primarily clams, crustaceans, and polychaete worms). These organisms attract shorebirds to the beach, which utilize the invertebrates as their food sources.

Subtidal Soft Bottom Habitat. The subtidal soft bottom habitat supports communities of benthic infauna and epibenthic benthic organisms, as described below.

Benthic Infauna. The benthic (bottom-dwelling) invertebrate community of Bays and harbors is made up of a complex of species that live on the sediment surface (epibenthic) or in the soft bottom sediments (infauna). Bottom-feeding fishes and resident soft bottom-dwelling fishes (gobies, juvenile flatfish, and sand bass) rely upon these benthic organisms as food sources.

Common types of benthic organisms that are associated with Bay and harbor sediments include flat worms, amphipod crustaceans, crabs, snails, clams, polychaete worms (capitellids, spionids, cirratulids, and ophelliids), oligochaete worms, and brittle stars. Clam beds are found within Alamitos Bay, primarily in the mid-to-low tide zone of sandy beaches and shallow subtidal habitats. The most common species present are primarily Japanese littleneck clams (*Protothaca staminea*) "cockles" (*Chione californiensis* and *C. undatella*), and jackknife clams (*Tagelus* spp.) secondarily.

Clam beds are found within Alamitos Bay, primarily in the mid-to-low tide zone of sandy beaches and shallow subtidal habitats along the Peninsula, Bayshore Avenue, End Beach, Jack Dunster Marine Life Preserve, Mothers Beach and the inlet inshore of Basin 6-N on the Cerritos Channel.[1] The most common species present are primarily Japanese littleneck clams, and cockles, and secondarily, jackknife clams. A map of CRM's project area and a listing of all species observed by CRM biologists during the dives and remote video surveys are provided as an attachment to the Marine Resources Report contained in Appendix C.

Epibenthic, Soft-Bottom Benthic Organisms. The sediments in the Alamitos Bay Marina basins were uniformly silts with the exception of riprap lining the bulkheads. The most common species observed included large colonies of the ectoproct *Zoobotryon verticillatum*—a large, tree-like mass colonial species that is commonly found in high abundance during warm winter months attached to boat docks. However, when it breaks loose, it settles on the Bayfloor to form a "bolus" of biofouling debris. Other species that were observed but were not abundant included burrowing anemones (*Pachycerianthus*

[1] R. Ware, pers. Observations.

fimbriatus), octopus (*Octopus bimaculatus*), California horn snail (*Cerithidea californica*), Gould's bubble snails (*Bulla gouldiana*), predatory sea slugs (*Navanax inermis*), and tunicates. Of these, only the ectoproct *Zoobotryon* and burrowing anemones were common in the Marina basins. A species-poor community of benthic epibiota is not uncommon in unvegetated environments compared to vegetated bayfloors (i.e., eelgrass), where the added structure of eelgrass above and beneath the sediment surface provides habitat and a food source for many invertebrates.

Intertidal and Subtidal Hardscape Plants and Invertebrates. Humanmade substrates (bulkheads, seawalls, docks, pilings, jetties) in Alamitos Bay are not particularly biologically sensitive habitats. However, hard substrate provides surface area for sessile marine animals and plants and mobile macro invertebrates that would not be present in the absence of these structures. The hardscape of these structures support mussels, barnacles, sponges, and other types of invertebrates and plants that constitute the "biofouling community." The undersides of boat floats and docks are commonly colonized by green algae, barnacles, mussels, limpets, polychaete worms, moss animals (*ectoprocts*), and sea squirts (*tunicates*). Bay fishes are attracted to the biofouling habitat because it a constant source of food.

Hardscape-associated organisms observed during dive and remote video surveys included green algae (*Ulva intestinalis* and *U. californica*), brown algae (*Colpomenia perigrinus* and *Sargassum muticum*), red algae (*Corallina* spp., *Caulacanthus* sp, *Rhodymenia* sp. and turf red algae complex), sponges (*Haliclona* sp.), green anemones (*Anthopleura sola*), angled unicorn whelk (*Acanthina spirata*), mussels (*Mytilus galloprovincialis*), oysters (*Ostrea conchilcola*), barnacles (*Balanus glandula*, *Chthamalus fissus/dalli*), ectoprocts (*Zoobotryon verticillatum*), sea stars (*Pisaster ochraceus*), and tunicates (*Botryllus/Botrylloides* complex, *Ciona intestinalis*, and *Styela plicata*).

In general, the biota of the boat basin docks and floats were comprised of a light-to-moderate mussel mass, and the diversity of marine life was lower within the Marina basins than outside of the Marina. Subtidal rock riprap in the basins were covered with a light coating of sediments that were colonized primarily by low numbers of species, including ascidian tunicates, brown algae, limpets (*Collisella* spp), crabs (*Pachygrapsus crassipes*), and barnacles.

Water Column Biota. The project area water column habitat supports a plankton and fish community of species that are common to the bays and harbors of Southern California, as discussed below.

Plankton consists of algae (phytoplankton) and animals (zooplankton) small enough to be suspended in the water column and drift through tidal and oceanic currents. The phytoplankton community off the California coast primarily consists of diatoms,

dinoflagellates, silicoflagellates, and *coccolithophores,* while the zooplankton are those animals that spend part (meroplankton) or all (holoplankton) of their life cycle as plankton. Fish eggs and larvae (ichthyoplankton) are an important component of the zooplankton community. With the exception of a few fish species (e.g., the embiotocidae or surfperches that bear live young), most fish that occur in Southern California are present as larvae or eggs in the plankton community. Plankton abundances and distributions are directly tied to water temperature, nutrients, upwelling, and current movements, and for zooplankton, the amount of phytoplankton food resources.

Common water column fish species in Alamitos Bay include northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis*), queenfish (*Seriphus politus*), and white croaker (*Genyonemus lineatus*). Several other sciaenids such as black croaker (*Cheilotrema saturnum*) and yellowfin croaker (*Umbrina roncador*) are also reported to be present. Shiner surfperch (*Cymatogaster aggregata*), black perch (*Embiotoca jacksoni*) and white surf perch (*Phanerodon furcatus*) are common to abundant in the Bay (Coastal Resources Management, Inc. 2005).

Fishes. The types of fishes that commonly occur in the protected marinas and harbors of Southern California such as Alamitos Bay are a combination of species that are associated with soft-bottom habitat, hardscape of pilings, docks, cement bulkheads, and jetties, and open water (water column) species. In all, 46 species of fish are known to have been present in Alamitos Bay.

Bottom-dwelling species such as various gobies (*Gobiidae*), staghorn sculpin (*Leptocottus armatus*), sand bass (*Paralabrax nebulifer*), spotted sand bass (*P. maculatofasciatus*), California halibut (*Paralichthys californicus*), and diamond turbot (*Hypsopsetta guttulata*) are also representative of the soft-bottom Bay environment. Many of these species are also associated with eelgrass habitat, or the ecotone between the sandy bottom and vegetated eelgrass habitat.

Marinas provide additional structure (pilings, docks, and jetties) that attract different groups of fish. Hard substrate in marinas offer cover, protection, or sources of food for pile perch (*Damalichthys vacca*), pipefish (*Sygnathus* spp.), kelpfish (*Heterostichus* spp.), and opaleye (*Girella nigricans*), while the jetty riprap protecting Alamitos Bay provides a habitat for species such as kelp bass (*P. clathratus*), sargo (*Anisotremus davidsoni*), halfmoon (*Medialuna californiensis*), and cryptic species (blennies and sculpins).

Several previous marine surveys throughout the project area have been conducted.[1] The most common species previously observed in a Marine Stadium eelgrass survey included topsmelt (*Atherinops affinis*), black surfperch (*Embiotoca jacksoni*), shiner surfperch (*Cymatogaster aggregata*), unidentified gobies, round sting ray (*Urolophus halleri*), California halibut (*Paralichthys californicus*), and barred sand bass (*Paralabrax nebulifer*).

Fishes observed in the Colorado Lagoon included 12 species: topsmelt, arrow goby (*Clevelandia ios*), Bay pipefish, yellowfin goby (*Acanthogobius flavimanus*), shiner surf perch, shadow goby (*Quietula y-cauda*), round sting ray, California needlefish (*Stongylura exilis*), slough anchovy (*Anchoa delicatissima*, longjaw mudsucker (*Gillichthys mirabilis*), northern anchovy (2 individuals), and cheekspot goby (*Ilypnus gilberti*).

The results of the Haynes Generating Facility Study indicate seasonal variations in the plankton and ichthyofauna communities in Alamitos Bay. White croaker, queenfish, shiner surfperch (*Cymatogaster aggregata*), northern anchovy, and black perch (*Embiotoca jacksoni*) dominated fish collected near Basin 2. The study also sampled fish impinged on the pump chamber (intake) screens of each generating unit. The composition of the fish fauna collected on the intake screens at the plant differed somewhat from that collected near Basin 2. The species most commonly impinged and entrained were shiner surfperch, butterfish (*Peprilus simillimus*), white surfperch (*Phanerodon furcatus*), walleye surfperch (*Hyperprospon argenteus*), and topsmelt (*Atherinops affinis*). Most of these species are pelagic (commonly found in the near-surface water), and the perch are generally associated with pilings and other high-relief substrate.

During September 2007 dive surveys conducted for the proposed project, only a few fish species were observed within the Marina basins, or in the main channels of Alamitos Bay or the Cerritos Channel, in part due to poor water visibility. Those species observed included topsmelt (*Atherinops affinis*), black perch (*Embiotoca jacksoni*), unidentified flatfish, sand dabs (Citharichthys *stigmaeus*), and round sting ray (*Urolophus halleri*).

Invasive Species. The invasive algae *Caulerpa taxifolia* has a potential to cause ecosystem-level impacts on California's Bays and nearshore systems due to its extreme ability to outcompete 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 nonnative marine habitat. Based on marine biological surveys conducted by Coastal Resources Management, Inc. in September 2007 and October 2008 (see Appendix C, Marine

[1] Termino Avenue Drain Project Eelgrass Surveys (Coastal Resources Management, 2005); Colorado Lagoon Restoration Feasibility Study (Chambers Group, 2004); and the Haynes Generating Facility Entrainment/Impingement Study (Intersea Research Corporation, 1981), as referenced in the Alamitos Bay Marina Marine Biological Study (Appendix C).

Biology Reports), no *Caulerpa taxifolia* is present within the project area, which precludes the potential spread of this species during construction and/or the operation of the facilities.

The Water Resources Board, through the National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG), requires that projects that have the potential to spread this species through dredging and bottom-disturbing activities conduct preconstruction surveys to determine whether this species is present. The surveys must use standard agency-approved protocols and must have been conducted by NMFS/CDFG Certified Field Surveyors (NMFS 2008).

An additional invasive species, the brown macrophyte *Undaria pinnatifida*, has been recorded in Long Beach Harbor and Anaheim Bay. This species was not observed during the survey of the Marina basins or the temporary dock area.

Marine Mammals. The occurrences of any cetacean, including gray whales (*Eschricthius robustus*), would be uncommon within Alamitos Bay, although both bottlenose dolphins (*Tursiops truncatus*) and gray whales will occasionally be found in the Alamitos Bay entrance channel or the San Gabriel River mouth. California sea lions and harbor seals occasionally enter Alamitos Bay, although in very low numbers. Alamitos Bay is not considered a breeding habitat for pinnipeds but it is a potential secondary foraging area.

4.3.1.3 Sensitive Species

California Gray Whale (*Eschrichtius robustus*). Two distinct populations of gray whales occur in the North Pacific Ocean, a western and an eastern stock. The eastern stock occurs along the eastern Pacific coastline and is known as the California gray whale. In June 1994, the eastern Pacific population was removed from the Federal Endangered Species list due to recovery of population numbers to near the estimated sustainable population size. Gray whales are observed commonly in the nearshore waters in the San Pedro Channel, but rarely do individual whales enter Alamitos Bay.

Sea Turtles. Several species of federally listed threatened and endangered sea turtles could potentially occur in the nearshore open water habitats surrounding Alamitos Bay. There are no known nesting beaches for these species in the United States, but they have been observed off the coast of Southern California (California State Lands Commission 1998). These include the endangered leatherback sea turtle (*Dermochelys coriacea*), threatened green sea turtle (*Chelonia mydas*), loggerhead sea turtle (*Caretta caretta*), and olive ridley sea turtle (*Lepodochelys olivacea*).

In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south. Occasionally, green sea turtles

have been found offshore of Orange County and Los Angeles County, north of their more common southerly range limit due to movement during warmer water El Niño periods. Green sea turtles have been reported in the San Gabriel River, where they encounter the warmer, discharged waters of the power-generating facilities located farther up the River. According to the Long Beach Lifeguards and Marine Bureau staff, green sea turtles have been seen in Alamitos Bay. However, no records are kept as to where they have been seen, the time of year or occurrence, or the numbers observed.

There is no evidence that these species breed in the project area. Because Alamitos Bay has a productive eelgrass system, green sea turtles may be utilizing the seagrass beds located throughout the Bay as one source of their nutritional requirements, which are found throughout Alamitos Bay, extending into the Cerritos Channel. Green sea turtles have been stranded in the Long Beach area. In October 2004, three green sea turtles were stranded in the Belmont Shore area and one green sea turtle was stranded in the Treasure Island Marina area. The green sea turtle strandings described above occurred within 2 miles (mi) of Marine Stadium, which is located north of the project site. The nearest recorded sighting was documented using a satellite transmitter. Based on these data, the sea turtle was present within Alamitos Bay in October and December 2006, residing most frequently in the Long Beach Marina area. The turtle appears to have entered the Marine Stadium area on multiple occasions.

Fishes.

California Grunion (*Leuresthes Tenuis*). This fish species is not a formally listed species but is considered sensitive because of its beach-spawning activity and potential impacts from beach disturbances such as beach cleaning and beach nourishment. This species is also an important forage fish for several species that are protected or regulated. It uses the high intertidal sandy beach habitat of many Southern California beaches as spawning habitat. Grunion lay their eggs in the wet beach sands during the highest spring tides between late February or early March to as late as early September. The beaches on the ocean side of the Alamitos Bay Peninsula are known spawning areas; however, grunion are not know to utilize Alamitos Bay proper.

Steelhead Trout (*Onchorynchus Mykiss*). Steelhead trout are a federal endangered and California State species of special concern. The steelhead trout is an anadromous seagoing rainbow trout that lives approximately 2–4 years of its life (this period varies greatly) in the open ocean prior to returning to the stream where it was spawned. It is dependent on small clear-flowing but not rapid streams with gravel beds to complete its spawning cycle. The area must also have protective cover and an adequate food source. Steelhead populations are declining because of impacts on habitat such as dams, turbidity, and other habitat incursions.

Except for the colonization of a small population in San Mateo Creek in northern San Diego County, steelhead appear to have been completely extirpated from nearly all systems in the southern portion of the DPS range from Malibu Creek to the Mexican border.

Tidewater Goby (*Eucyclogobius newberryi*). The tidewater goby 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 parts per thousand (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 approximately 74 percent of the coastal lagoons from Morro Bay southward to San Diego. Habitat conducive to tidewater gobies is absent from Alamitos Bay.

California Halibut (*Paralichthys californicus*). Although it does not have a formal special status, the California halibut is considered a sensitive species by Resource Agencies because of its commercial value and a continued regionwide 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. Young-of-the-year fish (YOTY) prefer shallow waters between approximately -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 9 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. Juvenile to subadult halibut are known to occur through Alamitos Bay.

Eelgrass. While eelgrass is known to occur throughout many regions of Alamitos Bay and has been surveyed in many areas, eelgrass surveys were not conducted within the City of Long Beach Alamitos Bay Marina until CRM, Inc. mapped the distribution of eelgrass in 2007 for the proposed Alamitos Bay Marina Rehabilitation Project. In addition to the Marina basins and location of the proposed temporary/long dock, additional areas near the Marina but outside of the project site were surveyed. These locations include the shoreline north of the Davies Launch Ramp, the Marina Pacifica Side Channel, the west side of the Cerritos Channel south of Pacific Coast Highway (PCH) Bridge, and in the Cerritos Channel north of PCH Bridge.

The 2007 survey indicated that the amount of eelgrass for Basins 1–7 and the other locations that are not within the proposed project area resulted in a combined total of approximately 2.9 acres (ac) of eelgrass. Of this amount, only 1,373 sf (0.03 ac) of eelgrass vegetation is actually located within the project site in Basins 2, 4, and 6. The small patches of eelgrass in these three Basins grows on shoals at or near the maximum depth limit for eelgrass, where submarine light levels are low and near their limiting levels. Eelgrass within Basins 2, 4, and 6 occurs as low-density patches. Biologically, the value of these beds is very low. There is inadequate cover for cryptic species and invertebrates and very limited cover for food items for fishes that may utilize the eelgrass patches. There are no known species of Fisheries Management Plan (FMP) species of fish present within these Marina basins that would utilize either the vegetated or unvegetated sections of the Marina basins seafloor.

CRM conducted a second eelgrass survey in each of the Marina basins in October 2008 and determined that each of the areas mapped in 2007 was still vegetated with eelgrass, but there was no observable increase in areal cover, nor were there other areas in the Marina Basins where eelgrass had colonized. In addition, CRM surveyed the fairways within Basin 3 where some slips have been abandoned (due to safety issues) to determine whether a lack of vessel activity has resulted in any eelgrass colonization since the October 2007 survey. The results indicate that eelgrass has not colonized any of these areas, despite a range of depths (less than 8 ft) where eelgrass can grow, no limitations of light due to shading, or turbidity caused by vessel activities. The result of the 2008 survey concluded that the amount of eelgrass within the project site remained at 0.03 ac (1,373 sf), the same amount as mapped in 2007. While the Marina's initial design depths were below the depth limits known for eelgrass, shoaling in the Marina has resulted in depths that will support eelgrass and where light levels are sufficient to support eelgrass.

4.3.2 REGULATORY SETTING

4.3.2.1 United States Army Corps of Engineers

Section 404 of the Clean Water Act. The United States Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into waters of the United States (U.S.). The term "waters of the U.S." is defined at 33 Code of Federal Regulations (CFR) Part 328 and includes (*1*) *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce…*, (*2*) *all interstate waters and wetlands*, (*3*) *all other waters such as intrastate lakes, rivers, streams* (*including intermittent streams*), *mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce*, (*4*) *all impoundments of waters mentioned above*, (*5*) *all tributaries to waters mentioned above*, (*6*) *the territorial seas, and* (*7*) *all wetlands adjacent to waters mentioned above*. Wetlands are defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions."

Waters found to be isolated and not subject to Clean Water Act (CWA) regulation are often still regulated by the Regional Water Quality Control Board (RWQCB) under the State Porter-Cologne Water Quality Control Act (Porter-Cologne Act), as discussed below.

Section 10 of the Rivers and Harbors Act. Section 10 of the Rivers and Harbors Act requires authorization from the Corps for the creation of any obstruction to the navigable capacity of any of the waters of the U.S. Corps approval is necessary to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the U.S. In addition, Corps approval is necessary to excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of any port, roadstead, haven, harbor, canal, lake, harbor of refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the U.S.

4.3.2.2 Regional Water Quality Control Board (RWQCB)

Waters subject to the provisions of Section 404 of the CWA also require Water Quality Certification from the RWQCB pursuant to Section 401 of the CWA. Waters that do not fall under the jurisdiction of the RWQCB pursuant to Section 401 of the CWA may require authorization through application for waste discharge requirements (WDRs) or through waiver of WDRs, pursuant to the Porter-Cologne Act (California Water Code, Division 7).

4.3.2.3 United States Fish and Wildlife Service

The Federal Endangered Species Act (FESA) of 1973 sets forth a two-tiered classification scheme based on the biological health of a species. Endangered species are those in danger of becoming extinct throughout all or a significant portion of their range. Threatened species are those likely to become endangered in the foreseeable future; Special Rules under Section 4(d) can be made to address threatened species. Ultimately, the FESA attempts to bring populations of listed species to healthy levels so that they no longer need special protection.

If a federal action exists and the project may impact listed species or designated critical habitat, consultation with the United States Fish and Wildlife Service (USFWS) is required through Section 7 of the FESA. By law, Section 7 consultation is a cooperative effort involving affected parties engaged in analyzing the effects posed by proposed actions on listed species or critical habitats. The FESA prohibits the "take" of listed species by anyone unless authorized by the USFWS. Take is defined as "conduct which attempts or results in the killing, harming, or harassing of a listed species." Harm is defined as "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." Harassment is defined as an "intentional or negligent act or omission which creates the likelihood of

injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, including breeding, feeding, or sheltering." Therefore, in order to comply with the FESA, any proposed project should be assessed prior to construction to determine whether the project will impact listed species or, in the case of a federal action on the project, designated critical habitats.

4.3.2.4 California Department of Fish and Game

The CDFG, through Sections 1600–1603 of the California Fish and Game Code, is empowered to regulate all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFG defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." The CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFG. While seasonal ponds are within the CDFG definition of wetlands, if they are not associated with a river, stream, or lake, they are not subject to CDFG jurisdiction under Section 1602 of the California Fish and Game Code. No Streambed Alteration Agreement (SAA) is required for the proposed project.

The California Endangered Species Act (CESA; California Fish and Game Code Sections 2050–2098) was signed into law in 1984. It was intended to parallel the federal law. The CESA prohibits the unauthorized "take" of species listed as threatened or endangered under its provisions. However, a significant difference exists in the CESA definition of "take," which is limited to actually or attempting to "hunt, pursue, capture, or kill."

4.3.2.5 California Coastal Commission

The California Coastal Commission (CCC), through provisions of the California Coastal Act, is empowered to issue a Coastal Development Permit (CDP) for many projects located within the Coastal Zone. In areas where a local entity has a certified Local Coastal Program (LCP), such as the City of Long Beach, the CCC can issue a CDP only if it is consistent with the LCP. The CCC, however, has appeal authority for portions of LCPs and retains jurisdiction over certain public trust lands and in areas without an LCP.

The CCC regulates the diking, filling, and dredging of wetlands within the Coastal Zone. The Coastal Act Section 30121 defines wetlands as lands "within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." The waterside facility improvements associated with the proposed project are regulated and reviewed by the CCC.

Similarly, the placement of dredged material at federally managed ocean disposal locations such as the project's proposed use of the LA-2 ocean-dredged material disposal site (ODMD) requires issuance of a Federal Consistency Determination (FCD).

4.3.2.6 National Marine Fisheries Service

The National Oceanic and Atmospheric Administration Marine Fisheries Services (NOAA Fisheries [NMFS]]) receives its ocean stewardship responsibilities under many federal laws, including the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Most important are the FESA, which protects species determined to be threatened or endangered; the Marine Mammal Protection Act (MMPA), which regulates interactions with marine mammals; the Lacey Act, which prohibits fish or wildlife transactions and activities that violate State, federal, Native American tribal, or foreign laws; the Fish and Wildlife Coordination Act, which authorizes NOAA Fisheries to collect fisheries data on environmental decisions that affect living marine resources; and the federal Power Act, which allows NOAA Fisheries to minimize effects of dam operations on anadromous fish, such as prescribing fish passageways that bypass dams. Many other statutes, international conventions, and treaties also guide NOAA Fisheries activities.

Magnuson-Stevens Fishery Conservation and Management Act. The Magnuson-Stevens Fishery Conservation and Management Act (MSA) was amended in 1996 and requires the NMFS to identify, conserve, and enhance Essential Fish Habitat (EFH) for those species regulated under a federal FMP. The 1996 amendments to the MSA set forth a number of new mandates for the NFMS, eight regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The councils, with assistance from NMFS, are required to delineate EFH for all managed species. EFH is defined as the waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. Specifically, the MSA requires: (1) federal agencies to consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that could adversely affect EFH; (2) NMFS to provide conservation recommendations for any federal or state action that could adversely affect EFH; and (3) federal agencies to provide a detailed response in writing to NMFS within 30 days of receiving EFH conservation recommendations.

Essential Fish Habitat. The proposed project is located within a general area designated as EFH by two Fishery Management Plans (FMPs), the Coastal Pelagic and the Pacific Coast Groundfish FMPs. Species managed under the Highly Migratory Species FMP may have EFH within the project area, but EFH has not been designated for these species under the MSA. In addition, because these are highly mobile species, these species are likely to be transient rather than stationary at the project site. Salmonids have designated

EFH within another FMP, but because it is highly unlikely they would occur in the project area, they are not addressed further in this EIR.

Of the 86 species managed under all of the FMP, four are known to occur in the San Pedro Channel area and potentially within Alamitos Bay. Northern anchovy, the only Coastal Pelagic Management Plan species known to occur within Alamitos Bay, comprise a significant portion of nearshore otter trawl catches and contribute moderately to the nearshore fish biomass of the nearshore area of San Pedro Bay. Northern anchovy comprise a portion of the commercial bait fishery in San Pedro Bay. This species is a planktivore, and is preyed upon by larger fish and seabirds. Larvae of northern anchovy are also part of the Alamitos Bay ichthyofauna and icthyoplankton community.

Eight Pacific Groundfish FMP species have a potential to be present in Alamitos Bay. Of these, three species, the leopard shark, California sculpin, and Sebastes spp. have been reported within Alamitos Bay, each with very low occurrences. The potential presence of the Pacific Groundfish species occurring within the Alamitos Bay Marina project area is low due to a lack of suitable habitat. Of the three species that may occur in the project area, all are expected to be rare within the Marina habitat.

4.3.2.7 Species Protection under Regulatory and Local Policies

Nesting Birds. The federal Migratory Bird Treaty Act (MBTA) regulations and portions of the California Fish and Game Code prohibit the "take" of nearly all native bird species and their nests. While these laws and regulations were originally intended to control the intentional take of birds and/or their eggs and nests by collectors, falconers, etc., they can nevertheless be applied to unintentional take (e.g., destroying an active nest by cutting down a tree). It is sometimes possible to obtain a permit for relocating or removing a nest.

Sea Turtles. All sea turtle species listed under FESA are listed as either endangered or threatened. The USFWS and the NMFS are the federal agencies charged with the responsibility of enforcing the provisions of the FESA. FESA forbids the taking (including harassment, disturbance, capture, and death) of any sea turtles except as set forth in the Act. Therefore, none of the operational activities are legally permitted to disturb sea turtles or disrupt their activities or behavior in known migration routes, feeding areas, or breeding areas.

Marine Mammals. All marine mammals are protected by the MMPA. In addition, some marine mammal species are listed as endangered or threatened by the FESA. NMFS is the federal agency charged with the responsibility of enforcing the provisions of the MMPA. The MMPA forbids the taking (including harassment, disturbance, capture, and death) of any marine mammals except as set forth in the Act. Therefore, none of the construction activities

are legally permitted to disturb marine mammals or disrupt their activities or behavior in known migration routes, feeding areas, or breeding areas.

Local Tree Protection. The City of Long Beach Municipal Code (Ordinance C-7642) requires that a permit be obtained from the Director of Public Works prior to removal of trees from City-owned property. The City also requires that the trees be identified, mapped, and measured prior to removal. Landscape ornamental trees require replacement on a 1:1 basis, per the City's Tree Removal Ordinance.

4.3.3 METHODOLOGY

The potential impacts listed below were analyzed using results from project-specific marine biological assessments, bird surveys and field surveys. CRM conducted marine biological surveys in Alamitos Bay in support of an environmental assessment focused on eelgrass (*Zostera Marina*), an EFH analysis, and a comprehensive Marine Resources Environmental Assessment for the project. The eelgrass assessment was updated and expanded in May 2009. The CRM marine biological reports are contained in Appendix C.

The fieldwork supporting the Nesting Birds Survey Memo (Appendix C) was conducted by LSA Associates, Inc. on January 11, 2008, and updated by a revisit to the site in March 2009 to identify any species potentially nesting in the Marina project area. Lists of the bird species observed are included as an attachment to the Nesting Birds Survey Memo.

4.3.4 THRESHOLDS OF SIGNIFICANCE

The thresholds for biological resources used in this analysis are consistent with Appendix G of the State CEQA Guidelines. The effects of the project on biological resources may be considered significant if the proposed project:

- Would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-interest species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- Would 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 CDFG or USFWS.
- Would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Would 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.
- Would conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance.
- Would conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.
- Has 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, or reduce the number or restrict the range of a rare or endangered plant or animal.

4.3.4.1 Less Than Significant Impacts

Impacts to Sensitive Species.

Marine Mammals. All marine mammals are protected by the MMPA. The MMPA prohibits the intentional taking, import, or export of marine mammals without a permit. Several of the species that occur within the Southern California Bight (SCB) are also protected under the FESA. A species that is listed as threatened or endangered under FESA is categorized as depleted under the MMPA.

Vessel traffic related to the proposed construction of the project and the dredging program coming in and going out of Alamitos Bay (barges, tugs, work vessels) would be transiting to and from offshore waters where California sea lion, Pacific harbor seal, California gray whale, bottlenose dolphin, and other marine mammals occur. Work vessels transiting to and from Alamitos Bay Marina could collide with marine mammals (and sea turtles), or could expose these species to contaminants and interfere with foraging. However, marine mammals are mobile and are generally capable of avoiding boat traffic, especially at the slow speeds the vessels will likely be moving. Also, marine mammals in the local waters have likely habituated to vessel traffic since vessels commonly transit in and out of the harbor. Vessel operators are also trained to recognize the presence of marine mammals and avoid collisions, which reduces the potential for adverse impacts.

A total of 620 concrete production piles averaging 15 inches in diameter will be driven into the sediments. The use of concrete piles is an environmentally superior method (in terms of acoustic impacts) to the use of steel piles since it produces less noise from individual pile strikes (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009). However, pile extraction and pile driving will still result in the production of some underwater noise and vibrations within Alamitos Bay that marine mammals may be

capable of sensing. The initiation of pile driving could potentially result in a minor startle response from nearby marine mammals, and they would be expected to either move away from or avoid the immediate vicinity. Over time, marine mammals would acclimate to the noise.

If pinnipeds or cetaceans were present in Alamitos Bay, they would likely be located nearer to the entrance of the Alamitos Bay entrance channel (nearer to Basin 5) than within the other Alamitos Bay Marina basins. Although they would likely able to "sense" pile-driving noise, the magnitude and intensity of the source sounds are unlikely to result in any significant changes in behavior. Such types of sounds and their intensity levels are common throughout the range in which these marine mammals live.

Pile-driving noise could cause sea lions to temporarily move farther away from these activities, although the sea lions are anticipated to adapt to noise. Breeding would not be affected because sea lions do not breed in Alamitos Bay.

As stated above, few, if any, individual sea lions or marine mammals would be expected to be present with the Alamitos Bay Marina during dredging or pile replacement activities. In addition, the noise and vibration effects would be of short duration for each pile. The size of the piles to be driven for the project (average of 15-inch diameter pilings) is smaller in diameter than those typically used for commercial port shipping operations. In addition, the project proposes the use of cement production piles, which will produce less noise than steel piles.

Studies conducted for the Los Angeles Harbor Pacific LA Marine Terminal Project, in response to comments from the NMFS[1] regarding the effects of noise on pinnipeds relative to pile driving, determined that marine mammals could experience noise approaching harassment levels at around 330 ft from the pile driving. However, the pile-driving noise levels for the LA Marine Terminal Project accounted for the use of 48- to 54-inch steel piles and the power of the hammer that would be required to drive them.[2] Therefore, because significantly smaller 15-inch concrete production piles (and not steel piles) will used for the proposed project, the sound intensity produced, the area of noise reaching harassment noise levels, and the potential level of impact from pile-driving operations for the Alamitos Bay Marina project will be less than that of the Port of Los Angeles project. Because marine mammals would likely leave the area of disturbance, and because harassment noise levels will be localized to the immediate area of construction activity, potential noise impacts due to project dredging and pile replacement is considered less than significant.

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1 Pacific L.A. Marine Terminal LLC Crude Oil Terminal Final SEIS/SEIR Response to [NMFS] Comments (Port of Los Angeles 2008).

2 http://www.portoflosangeles.org/EIR/PacificLAMarine/SEIR/2_Project_Description.pdf, accessed September 26, 2009.

Because noise marine mammals are not expected to occur within areas where noise reaches harassment levels, and noise impacts on marine mammal are expected to be less than significant, an application to the NMFS for an Incidental Harassment Authorization, under Section 101 of the Marine Mammal Protection Act will not be necessary.

Noise from dredging activities would occur for an average of 50 days out of each 6-month construction phase and would be spread out over a 6-year period. Similar to pile driving, the dredging work would be conducted in different locations and at different times. The measured sound exposure levels of a clamshell dredge are estimated to range between 75–88 A-weighted decibels (dBA) at 50 ft. Animals have been observed flushing from dredging sites at a sound exposure level of less than 100 dBA, and it is possible that marine mammals may modify their behavior as a result of the noise produced by the pile-driving and dredging operations (NMFS 2009). However, similar to pile-driving noise, marine mammals are not expected to occur within the immediate areas of construction, and dredging operations are not expected to result in significant noise effects on sea lions or other marine mammals.

California Gray Whale (*Eschrichtius Robustus*). The gray whale is not anticipated to be in the immediate areas where pile removal and replacement will occur in the harbor and will not suffer any direct mortality resulting from pile removal or pile replacement. As discussed above, work vessels transiting to and from Alamitos Bay Marina could collide with marine mammals, such as the gray whale. However, marine mammals are mobile and are generally capable of avoiding boat traffic, especially at the speeds the vessels will likely be moving. Also, marine mammals in the local waters have likely habituated to vessel traffic since vessels commonly transit in and out of the harbor. Although it is unlikely, in the event a single gray whale is killed as consequence of a collision, the impact would be a locally significant impact, but it would not result in a population-level impact. Additionally, an occasional individual may be in close proximity to construction, but would leave the area if disturbed. Therefore, impacts to this marine mammal are considered to be less than significant.

California Grunion (*Leuresthes Tenuis*). The beaches on the ocean side of the Alamitos Bay Peninsula are known spawning areas for grunion; however, they are not known to utilize Alamitos Bay proper. Therefore, no construction-related impacts will occur to this species or its habitat. No mitigation is required.

Tidewater Goby(*Eucyclogobius newberryi*). Tidewater gobies are not known to occur within Alamitos Bay Marina, and therefore, no construction-related impacts will occur to this species or its habitat. No mitigation is required.

Steelhead Trout (*Onchorynchus mykiss*). There are no known populations of this species in Alamitos Bay, and therefore, no construction-related impacts on steelhead trout will occur to this species or its habitat. No mitigation is required.

California Halibut (*Paralichthys californicus*). Juvenile California halibut are found in many areas of Alamitos Bay, and they will potentially be present within the Marina basins. During pile installation, any juveniles in the immediate area of pile-driving activity will swim to areas outside the immediate impacted zone. No mortality is anticipated as a result of construction activities, and no mitigation is required.

4.3.4.2 Impacts to Riparian Habitat and Natural Communities

The land side portion of the project site is currently developed with parking lots and restroom facilities and is sparsely landscaped with nonnative landscape and ornamental vegetation. Because the proposed project does not increase capacity, long-term operations at the renovated Marina would result in conditions similar to the existing setting and would not have impacts on wildlife or habitat from ongoing Marina operations. However, construction activities could affect several species in the project area, as further discussed below.

4.3.4.3 Impacts Related to Local Policies and Ordinances

The proposed project would be constructed within an existing Marina that contains ornamental landscaping and nonnative vegetation. The City's Department of Parks, Recreation, and Marine has an adopted Tidelands Area Tree Trimming policy that provides guidelines and procedures for trimming trees within the Tidelands area. The guidelines contained in the policy restrict tree trimming within 100 ft of any tree containing an active nest or nesting activity during the period from January 15 to September 1. Although the project site is located within the Tidelands area identified in the pending policy, the procedures are intended for tree trimming activities. The proposed project does not include tree trimming; however, the renovations to the restroom facilities as currently planned would result in the removal of some ornamental trees. In accordance with the City's Municipal Code, Chapter 14.28, a ministerial permit from the Director of Public Works would be required before the removal of any trees on City-owned property. The tree removal permit would be obtained prior to any demolition or construction activities. Landscape ornamental trees require replacement on a 1:1 basis, per the City's Tree Removal Ordinance. Therefore, impacts related to this issue are considered less than significant, and no mitigation is required.

4.3.4.4 Impacts Related to Adopted Habitat Conservation Plans

The proposed project is located within the Coastal Pelagics Species and the Pacific Coast Groundfish Fishery FMPs. Three Pacific Groundfish FMP species, the leopard shark, California sculpin, and Sebastes spp. have been reported within Alamitos Bay, each with very low occurrences; all three are expected to be rare within Marina habitat due to a lack of suitable habitat. Because the potential for Pacific Groundfish species to be present within the Alamitos Bay Marina project area is low, impacts to these species are considered less than significant, and no mitigation would be necessary.

Northern anchovy is the only Coastal Pelagics FMP species known to occur within Alamitos Bay. Project activities that could affect the northern anchovy include increased water turbidity caused by the demolition and replacement of docks and bulkheads and dredging activities proposed for the project. These impacts could result in the northern anchovy temporarily avoiding the project areas and a minimal potential for mortality of larval anchovy. An increase in the suspended sediment load would temporarily increase the exposure of these species to potentially harmful levels of contaminants and clog their gills, resulting in a reduced ability to feed.

The numbers of northern anchovy within individual Marina basins of Alamitos Bay are not expected to be a major part of the northern anchovy population. The majority of the anchovy population is expected to occur both in the main water body of Alamitos Bay and outside of Alamitos Bay, in San Pedro Bay, at depths greater than 12 ft. Based upon these determinations, the proposed Marina Rehabilitation Project is unlikely to have adverse effects on populations of the northern anchovy species. Therefore, impacts to identified FMP species are expected to be less than significant, and no additional mitigation measures would be necessary.

4.3.4.5 Impacts Substantially Reducing the Habitat, Population, or Range of Fish, Wildlife, or Plant Species

Marina Construction Activities–Dredging Operations.

Benthic Community. Dredging will result in the temporary loss (mortality) of all benthic infauna and epibenthic species within the dredge footprint. The affected species are typical of other Bay and estuarine environments in Southern California and are dominated by species adapted to constant environmental stresses. Following the completion of dredging, benthic invertebrates will begin the recolonization process. Within 1–3 years, the benthic community in the dredge zone would be expected to recover to preimpact levels of species diversity and abundance, assuming successful recruitment and recolonization and assuming water quality and adequate flushing are maintained. Therefore, no long-term reductions in the amount of benthic soft-bottom

habitat or populations of benthic invertebrates would occur as a consequence of dredging, and project impacts are considered less than significant.

Dredging will generate temporary increases in turbidity, reductions in dissolved oxygen, and possible localized increases in the dissolved concentrations of sediment-bound contaminants. The City will implement the required dredging water quality monitoring plan as set forth by the RWQCB. Mitigation Measures 4.7-5 and 4.7-6 (as outlined in Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging Best Management Practices (BMPs) are incorporated into the project to ensure that impacts related to the effects of turbidity, construction dredging, and piling replacement are reduced to a less than significant level. Implementation of these measures will ensure that any localized increases in turbidity, decreases in dissolved oxygen, and/or increases in dissolved concentrations of some contaminants are temporary and less than significant. No additional mitigation is required. Water quality will return to baseline conditions once dredging is completed.

Piling organism biomass will be initially reduced with the removal of 808 piles. However, recolonization will begin immediately upon placement of 620 new piles, with full recovery expected within 1–6 years. Phasing of the work over the 6-year construction schedule will assist in reducing the impact to piling organisms. In addition, a reduction in the number of piles planned for the proposed project (808 existing piles to be replaced by 620 new piles) will result in a net increase of 293.38 sf soft-bottom benthic habitat and an increase of benthic biomass. This is a long-term beneficial impact.

The repair of approximately 8,200 linear feet of seawall will result in temporary impacts to hardscape species that will, however, fully recover following the completion of the repair work. Seawall repairs will not impact soft-bottom habitat. Other than eelgrass (discussed below in Section 4.3.6), there are no sensitive benthic species that will be affected by the project. There are no sensitive piling or riprap associated species. Furthermore, the reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface.

Marine Mammals. Dredging operations could disturb sediments containing contaminants that are potentially harmful to marine mammals. Exposure to contaminants that could cause acute toxicity or bioaccumulation to marine mammals, sea turtles, and sea birds would be avoided by implementation of standard conditions of the Corps permits requiring Section 401 water quality certification by the RWQCB. Mitigation Measures 4.7-5 and 4.7-6 (as outlined in Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging BMPs are incorporated into the project to ensure that impacts related to the effects of turbidity and dissolved concentrations of some contaminants are temporary and less than significant.

Implementation of these measures will ensure that any impacts to marine mammals related to contamination effects from dredging would be less than significant. No additional mitigation is required.

Water Column Biota–Plankton. Living in bays and harbors, with constant sources of turbidity from runoff and other sources, this community of marine organisms has acclimated, to some degree, to turbid conditions that might arise from pile removal and replacement. Increased turbidity will temporarily reduce the amount of submarine light levels, resulting in a short-term reduction of plankton productivity. Because plankton drift with the currents and turbidity is expected to be localized, there will be only short-term, less than significant impacts to the plankton community.

Mitigation Measures 4.7-5 and 4.7-6 (Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that dredging BMPs are incorporated into the project to ensure that impacts related to the effects of turbidity and any localized increases in turbidity, decreases in dissolved oxygen, and/or increases in dissolved concentrations of some contaminants are temporary and less than significant. Implementation of these measures will ensure that any impacts to these species due to contamination effects from dredging would be less than significant. No additional mitigation is required. Water quality will return to baseline once dredging is completed.

The reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface. Consequently, there will be a greater surface area of unshaded open water that will locally increase plankton production within each Marina basin. No long-term impacts to the plankton due to construction activities are expected, and no additional mitigation is required.

Fishes. There may be limited direct mortality of open water (schooling) fishes due to dredging. Water column fishes will avoid the immediate work area due to an increase in underwater pressure and noise levels from work equipment, but may be attracted to biofouling debris that is removed from piles that settles on the harbor floor. No mortality of bottom-dwelling species such as gobies is anticipated due to the mobile nature of fishes.

Secondary impacts of increased water turbidity due to dredging on fishes will be less than significant. A greater than ambient suspended sediment load related to higher turbidity may temporarily reduce the ability of both visual foraging fishes (i.e., surfperch and halibut) and planktivores (i.e., topsmelt, anchovy, juvenile surfperch, and juvenile sciaenid). Phasing of the dock and pile replacement over 6 years will allow fish to find

sources of food on nearby hard substrata not affected by turbidity. Due to the mobile nature of fishes, they will avoid areas of turbidity and find other sources of food.

Turbity and water column-dissolved oxygen concentrations would temporarily be affected due to the resuspension of organically enriched sediments. These impacts would physiologically stress the fish in the area and result in their movement out of the area to feed. Because fish will likely move out of the immediate zone of turbidity, their exposure to elevated levels of contaminants is expected to be minimal. Turbidity will return to ambient levels upon cessation of construction activities. Overall, potential impacts arising from dredging will result in less than significant impacts to the fish community.

Mitigation Measures 4.7-5 and 4.7-6 (Section 4.7, Water Quality and Hydrology) require that the appropriate dredging permits are obtained and that Dredging BMPs are incorporated into the project to ensure that impacts related to the effects of turbidity and any localized increases in turbidity, decreases in dissolved oxygen, and/or increases in dissolved concentrations of some contaminants are temporary and less than significant. Implementation of these measures will ensure that any impacts to fish from dredging would be less than significant. No additional mitigation is required. Water quality will return to baseline once dredging is completed.

Potential Eelgrass Habitat. Potential eelgrass habitat as defined by the Southern California Eelgrass Mitigation Policy (SCEMP, as amended 1991) defines potential eelgrass habitat as "areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc." It should be noted that there is no conclusive scientific basis for why eelgrass grows in some locations and not in others. It can be attributed to a combination of any of the environmental conditions listed above.

Further, in response to recent concerns regarding the interpretation of the SCEMP, correspondence between Rodney R. McInnis, Regional Administrator for the NMFS, and Mr. Jack Peveler, President of the California Association of Harbor Masters and Port Captains (contained in the Eelgrass Analysis Report, Appendix C), clarified that the potential eelgrass clause has been implemented only where "clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g., previous eelgrass surveys documenting presence)."

The eelgrass surveys conducted by CRM for the proposed project (contained in Appendix C) identified both the existing amount of eelgrass identified in the project area, the amount of existing eelgrass potentially affected by project-related dredging, and the

amount of potentially suitable soft-bottom habitat within the project area, relative to both biological and abiological features of the Marina's environment.

For the purpose of the EIR analysis, "potential eelgrass habitat" is defined as unshaded, unvegetated soft-bottom sediments within the depth range known to support eelgrass in Alamitos Bay Marina, meeting associated abiotic factors (i.e., water temperature, light, salinity) within basins where eelgrass may be expected (based on the historic or current presence of vegetation).

Because no dredging has occurred in the Marina, the depth levels in the basins are a result of shoaling over the past 50 years. Therefore, historically there was no eelgrass present within the Marina. However, because shoaling over the years has resulted in depths 8 ft and less, depth-suitable habitat areas have been created. Eelgrass surveys conducted in 2007 and 2008 by CRM are the only known eelgrass surveys conducted within the Marina Basins, and those surveys indicated that eelgrass was present only Basins 2, 4, and 6.

Therefore, it can be presumed that eelgrass can be expected to occur only within Marina Basins 2, 4, and 6 due to the defined environmental conditions considered conducive to supporting eelgrass. Further, because eelgrass vegetation only exists in seven fairways within these basins, those seven fairways are considered to be the only areas where depth suitable habitat exists.

During preparation of an Initial Study/Mitigated Negative Declaration for the proposed project, comments were received from the CDFG and NMFS indicating that "potential eelgrass habitat" should be included in the project impacts.[1] During coordination conducted with the CDFG, and based on surveys in the Bay indicating that depth limit for eelgrass was approximately -8 MLLW, the City was directed to survey all soft-bottom habitat within the affected basins that was less than 8 ft deep.

The amount of soft-bottom habitat was subsequently calculated (CRM 2008) for areas meeting the following conditions in the Alamitos Bay Marina: within the project's dredging footprint; water depths less than -8 ft MLLW; where no shading occurs; and fairways where eelgrass already exists but is currently unvegetated (Basins 2, 4, and 6). The area mapped under these parameters was calculated to be 1.47 ac. However, CRM's remote video surveys in October 2008 concluded that each of the areas mapped in 2007 was still vegetated with eelgrass, but that there was no observable increase in areal cover, and eelgrass had not colonized in any other areas in the Marina.

[1] Letter from CDFG is attached to Analysis of Potential Eelgrass Habitat Biotic and Abiotic Characteristics Report prepared by Coastal Resources Management and contained in Appendix C.

Therefore, based on these two (and only available) surveys indicating that eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically have been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging. Therefore, impacts to potential eelgrass habitat are considered less than significant, and no mitigation is required.

4.3.4.6 Marina Construction Activities–Dock and Pile Removal and Replacement

Intertidal and Subtidal Hardscape Plants and Invertebrates. The removal of docks and dock pilings will result in an initial loss of biofouling (pile dwelling) associated flora and fauna on each of the 808 piles and the 476,839 sf of dock space. Because the Marina redevelopment will occur over several phases, losses will be site-specific and will not occur throughout the harbor at the same time, limiting the overall impact to a particular area within each phase over a 6-year period. Some of the biofouling cover will be dislodged during the pile removal process, creating a zone of organic debris on the harbor bottom in the immediate vicinity of the docks. However, most of the biofouling organisms will be removed and transported off site to a proper disposal area, eliminating a significant localized impact related to an accumulation of decaying organic material on the harbor seafloor. Removal of the pilings is unlikely to result in the release of a significant amount of contaminants; most contaminants present on the pilings would be bound up within the tissues of the organisms being removed.

Once the new piles and docks are reinstalled, they will be recolonized by similar types of organisms that were initially removed. The conceptual project plans include removal of 808 piles to be replaced by 620 concrete piles, averaging 15 inches in diameter. The process of recolonization will begin immediately upon placement; however, reestablishment of mature communities on the 620 new piles will be phased over a period of 1–6 years. Therefore, removal and replacement of pilings and docks will have a temporary but less than significant impact on the biofouling community. There are no sensitive species associated with the piling community that would be impacted by Marina renovations. Furthermore, the reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface.

Repairs made to the 8,250 linear feet of seawall and riprap will result in short-term reductions of hard-bottom associated species such as mussels, barnacles, limpets, sea squirts, and algae. Marine organisms will begin to repopulate the seawall and riprap upon completion of seawall repairs, with no expected long-term impacts to hard-bottom benthic algae, invertebrate, or fish populations. Consequently, seawall repairs will have a temporary but less than significant impact on these resource groups. All repairs will be made within the existing footprint of the hardscape of the riprap and will not impact soft-bottom ESH habitat.

New piles will be driven into the sediments. These activities could increase the levels of water turbidity, including sediment-bound contaminants, as each phase of the project is being conducted. Higher turbidity is expected to be limited to the specific basin where dock improvements will be made, and the turbidity plume will dissipate as a function of tidal exchange within the basins. While the impact is expected to be short term and have a less than significant impact on water quality within each specific phase, the project will be conducted over a period of 6 years. Thus, site-specific turbidity levels may be above ambient levels within a portion of Alamitos Bay for an extended period. Mitigation Measure 4.7-6 (Section 4.7, Water Quality and Hydrology) requires adherence to BMPs for all dredging activities, including the use of silt curtains where feasible, and would reduce impacts to water quality and prevent the spread of any turbidity plume out of the area. Implementation of this measure would reduce the level of water degradation and ensure that potential construction turbidity impacts on marine resources are less than significant. No additional mitigation is required.

4.3.5 POTENTIALLY SIGNIFICANT IMPACTS AND MITIGATION MEASURES

4.3.5.1 Impacts to Sensitive Species

California Brown Pelican (*Pelecanus occidentalis*). Construction activities may disturb the California brown pelican, if present during such activities. However, construction will be achieved in approximately 12 phases extending over 6 years and will disturb small areas of the Marina at any one time, leaving available other open water areas for this species. In addition, there are no nesting sites within the vicinity of the proposed project activities. Therefore, due to the lack of nesting sites, and because construction is temporary and will be phased over 6 years and not impact the entire Marina at any one time, potential impacts to California brown pelicans are considered less than significant. However, to ensure that any potential impacts remain less than significant, mitigation has been proposed requiring a qualified biologist to monitor special-status waterbirds prior to any significant construction activities. Implementation of Mitigation Measure 4.3-1 would ensure that impacts to these species remain less than significant.

Due to the reduction of dock area, project implementation will result in an additional 2,600 sf of open-water foraging habitat for the endangered California brown pelican. This is considered a beneficial effect of project implementation.

California Least Tern (*Sterna antillarum browni*). Construction activities may disturb the California least tern, if present during such activities. However, construction will be achieved in approximately 12 phases extending over 6 years and will disturb small areas of the Marina at any one time, leaving available other open water areas for this species. The least tern may choose to avoid the immediate construction work area. Shallow water foraging areas for the

least tern would be available in other areas of the Harbor, as construction will be phased at each of the eight basins at separate times. Further, the area affected by pile-driving noise would be a small portion of the Bay waters, and installation of the piles may or may not occur when the least terns are present. No individuals would be lost, and their populations would not be adversely affected by construction activities. Therefore, due to the phased construction plans and because of the temporary nature of construction activities, potential impacts to California least terns are considered less than significant due to the phased construction plans and the temporary nature of construction. However, to ensure that any potential impacts remain less than significant, mitigation has been proposed requiring a qualified biologist to monitor least terns and other special-status waterbirds prior to any significant construction activities. Implementation of Mitigation Measure 4.3-1 would ensure that impacts to these species remain less than significant.

Due to the reduction of dock area, project implementation will result in an additional 2,600 sf of open water foraging habitat for the endangered California least tern. This is considered a beneficial effect of project implementation.

Sea Turtles. Construction activities associated with the Marina basins would occur in the mid-region of Alamitos Bay, where reports from the Marine Department indicate that sightings of green sea turtles occur. In addition, dredge disposal barge activity entering and leaving Alamitos Bay would be transiting the area in which green sea turtles also enter and leave Alamitos Bay. Therefore, there is a potential that green sea turtles may be in the general project area when Marina renovations are occurring, phased over a 6-year period.

Although an occasional green turtle may be in Alamitos Bay at the time of Marina renovations, the likely potential for adverse impacts to an individual is low. Dredging, dock reconstruction, vessel movements, and construction of the temporary dock near the Long Beach Yacht Club could potentially result in a behavioral modification to this species that would include a likely change in swimming behavior to avoid excessive noise, turbidity, or the vessel movements. Sea turtles forage in Alamitos Bay outside the Marina basins due to the availability of larger, higher-quality eelgrass beds as compared to those in Basins 2, 4, and 6. No mortality would be expected to occur as a result of the proposed project, and no operational impacts to green sea turtles would occur as a result of normal Marina operations.

However, due to the potential for sea turtles to be present in the project area during the Marina renovation, Mitigation Measure 4.4-2 has been proposed, requiring a biologist to monitor the site during construction and be empowered to stop construction to avoid negative effects on sea turtles. Implementation of Mitigation Measure 4.4-2 would reduce potential construction impacts to sea turtles to a less than significant level.

Eelgrass. Project-related dredging to depths of -10 ft MLLW in Basins 2, 4, and 6 would result in removing eelgrass and deepening the basins to depths beyond the normal depth ranges for eelgrass survival. Removal of this eelgrass through dredging will result in a long-term but mitigatable impact on EFH.

Dredging will remove approximately 0.03 ac (1,373 sf) of eelgrass. Project plans have avoided and minimized impacts to eelgrass to the maximum extent practicable, but in order to return the Marina to its original design depth, and provide safe navigation, some impacts to existing eelgrass will occur during dredging. The loss of eelgrass is considered a localized, significant impact that can be mitigated to a less than significant level with the successful transplantation of eelgrass within Alamitos Bay at a mitigation ratio of 1.2 to 1. Anticipated impacts from current surveys show that 0.03 ac (1,373 sf) of eelgrass will be removed, resulting in a need for 1,648 sf to be successfully transplanted. A 5-year monitoring program will be completed to ensure the survival of at least the minimum amount of eelgrass to be mitigated. The total eelgrass mitigation amount will be determined from preconstruction, postconstruction and control site surveys, according to the Southern California Eelgrass Mitigation Policy (NMFS 1991, as amended). The City has designated an eelgrass mitigation site adjacent to the northern end of Marine Stadium. Several other sites within and outside of Alamitos Bay were analyzed and determined to be unsuitable. See Section 5.0, Alternatives, for a description of these rejected mitigation sites.

Based upon site surveys of where eelgrass occurs and does not occur in Alamitos Bay and on historical eelgrass survey information for Alamitos Bay, the City has identified a site at the northeast end of Marine Stadium to create an open water habitat for eelgrass mitigation. The proposed eelgrass mitigation site involves abandoning a portion of a City-owned storage yard. An area of 218 x 105 ft would be excavated to a depth of -2 to -3 ft MLLW. The existing rock revetment along Marine Stadium would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel (see Figure 3.14 in Section 3.0, Project Description). A wave attenuator (nonaccessible dock with pilings) would be installed to protect the habitat area and to delineate the edge of Marine Stadium, while allowing for sufficient tidal flushing of the habitat site.

Mitigation Measure 4.3-2, requiring 1,648 sf of eelgrass vegetation to be successfully transplanted in accordance with the SCEMP, is proposed to reduce potential impacts to eelgrass marine resources to a less than significant level. Implementation of Mitigation Measure 4.4-2 will reduce impacts related to eelgrass to a less than significant level.

The proposed project also includes components that will benefit EFH, including the reduction in overwater coverage by 2,600 sf and the reduction in the total number of piles by 188. Reducing overwater coverage will reduce shading in the project area and result in a net increase in productivity. A reduction in the number of piles will reduce the fill area and expand uncovered benthic habitat. These are considered beneficial impacts related to the proposed project.

4.3.5.2 Impacts To Wildlife Movement and Nursery Sites

The proposed project site is not currently a highly functioning movement corridor for wildlife species and does not contain any significant high-value nursery habitat sites, as reported in project marine biology reports conducted by CRM (Appendix C). Areas that may be impacted by the proposed project are substantially disturbed and subject to frequent intense human activity under current conditions. Eelgrass beds provide nursery habitat for some species of invertebrates and fish. Impacts related to eelgrass habitat were previously addressed.

The project includes relocation of several trees to accommodate the restroom renovations. In addition, construction activities could cause the potential abandonment of nests by migratory birds. The great blue heron is considered a California Special Animal at colonial nesting sites such as Alamitos Bay. Construction activities associated with the proposed project may result in some temporary disruptions to the roosting activities of these species. In addition, the renovations to the restroom facilities and parking lot areas have the potential to cause a direct loss of nesting trees or the abandonment of nests in those trees. However, the great blue herons currently nesting within the Alamitos Bay Marina are considered a loose colony using multiple trees throughout the harbor for nesting and roosting. Although some of the great blue herons may be disturbed by construction activities, there are many trees within the colony's existing area that could provide alternative nesting and roosting habitat. The great blue herons present in the project area are currently coexisting with Marina users and are accustomed to human intrusion and noise. However, to ensure that potential impacts to the great blue heron as well as other California species of concern listed above are reduced to a less than significant level, Mitigation Measure 4.4-5 has been proposed, restricting the removal of trees and vegetation during the nesting season and requiring surveys, as necessary, prior to construction. Implementation of Mitigation Measure 4.4-5 would ensure that potential impacts to migratory birds are reduced to a less than significant level.

4.3.5.3 Impacts Degrading the Quality of the Environment or Substantially Reducing the Habitat, Population, or Range of Fish, Wildlife, or Plant Species

Invasive Species. The potential spread of the *Caulerpa taxifolia* invasive species during construction and/or operation of the facilities is not anticipated since no *Caulerpa taxifolia* was present within the project area at the time project-specific surveys were conducted. However, although this species was not observed, a *Caulerpa taxifolia* algae survey will be required according to the NMFS Caulerpa Control Protocol prior to construction to confirm that this species is not present, as outlined in Mitigation Measure 4.3-6. If this species is found, then protocols for the eradication of *Caulerpa taxifolia* will be implemented to remove this species from the project area.

Undaria pinnatifida does not currently exist in Alamitos Bay. There are no accepted procedures for the eradication of this species at the current time. In the event this species is found during preconstruction and postconstruction surveys, the CDFG and the MMFS will be consulted to determine if, and how to deal with any infestation.

Zostera japonica will not be impacted by this project. There are no accepted procedures for eradication of this species at the current time. In the event this species is found during preconstruction and postconstruction surveys, the CDFG and the NMFS will be consulted to determine if and how to deal with any infestation.

The other invasive species, brown macrophyte (*Undaria pinnatifida*), was not observed during the survey of the Marina basins or the temporary dock area; therefore, it is unlikely to be spread as a consequence of the renovation of the Marina. No additional mitigation is required.

4.3.6 MITIGATION MEASURES

Implementation of the following mitigation measures will ensure that potential impacts to biological resources resulting from project implementation would be reduced to less than significant levels.

The following measure is proposed to ensure that potential impacts to special-status water birds remain less than significant.

4.3-1 Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that a qualified biologist has been retained and shall be on site to assess the roosting (and foraging) behavior of waterbirds at the Marina immediately prior to any major construction disturbance. In the event of an imminent threat to a special-status species, the monitor shall immediately contact the Construction Manager. In the event the Construction Manager is not available, the monitor shall have the authority to redirect or halt construction activities if determined to be necessary.

The following mitigation measure is proposed to reduce potential impacts to green sea turtles to a less than significant level.

4.3-2 Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract in order to further reduce any potential impacts to green sea turtles:

- A qualified marine biologist shall be on site during the construction period to monitor the presence of endangered species. The on-site biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.
- Construction crews and work vessel crews shall be briefed on the potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.
- In the event that a sea turtle is sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle is safely outside the outer perimeter of construction. The on-site biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.
- The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his/crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS).

The following mitigation measure is proposed to reduce potential impacts to eelgrass marine resources to a less than significant level.

4.3-3 Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall ensure that an Eelgrass Mitigation Plan has been included in the contract for construction. The Plan shall require that any direct losses to eelgrass will be mitigated at a ratio of 1.2:1 according to the Southern California Eelgrass Mitigation Policy (SCEMP) requirement. According to current surveys, eelgrass to be impacted by the project is 1,373 square feet (sf), which would result in 1,648 sf to be mitigated at the 1.2:1 mitigation ratio. As detailed in the SCEMP, the actual amount of eelgrass to be mitigated shall depend on preconstruction surveys, postconstruction surveys, and surveys at a control site at the appropriate time prior to the beginning of project activities. The preferred mitigation area is located adjacent to the northeast end of Marine Stadium on a City of Long Beach-owned storage site. A qualified biologist shall monitor the successful establishment of the eelgrass mitigation site for a period of 5 years, in accordance with the Southern California Eelgrass Mitigation Policy.

The following mitigation measures are proposed to avoid potential impacts to marine biological resources.

4.3-4 Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall provide verification that the following provision has been included in the contract for project construction: that a qualified biologist has been retained to implement the following measures, which shall be incorporated during all phases of construction in order to minimize impacts on eelgrass and other biological resources:

- Impacts to eelgrass beds shall be avoided where practical and feasible. A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone. To assist the construction crew in avoiding unnecessary damage to eelgrass, the project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques.
- Barges and work vessels shall avoid impacts to eelgrass beds in Basins 2 and 4. Barges and work vessels shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.
- A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality best management practices (BMPs) are implemented and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within 30 days after the project is completed, a post-construction marine biological survey shall be conducted to determine the extent of any construction impacts on eelgrass habitat. The survey report will be completed within 30 days and shall be submitted to the California Coastal Commission and the United States Army Corps of Engineers.

4.3-5 Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract. The construction contractor shall be responsible for ensuring that the following measures are implemented during all phases of construction in order to minimize impacts on biological resources:

- No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil. Any construction debris within the temporary cofferdam area shall be removed from the site at the end of each construction day.

- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. Such measures include deployed oil booms and a silt curtain around the proposed construction zone at all times to minimize the spread of any accidental fuel spills, turbid construction-related water discharge, and debris. Other measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits.
- All trash shall be disposed of in the proper trash receptacles at the end of each construction day. Any construction debris shall be removed from the site.
- During construction, floating booms shall be used to assist in containing debris discharged. Any debris discharged shall be removed as soon as possible but no later than the end of each day.
- If turbid conditions are generated during construction, including dredging or pile driving, a silt curtain shall be utilized to control turbidity. The City of Long Beach shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column.
- Construction methods shall be used that are the least damaging to benthic sediments and organisms.
- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. The City of Long Beach shall have adequate equipment available to contain such spills immediately.

The following mitigation measure is proposed to avoid and minimize impacts to nesting birds subject to the protection of the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code.

4.3-6 Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall ensure that the following provisions are incorporated into the final project plans and construction contract for the purpose of protecting nesting birds within the study area during construction:

- Tree and vegetation removal shall be restricted to outside the likely active nesting season (January 1–September 1) for those bird species present or potentially occurring within the project area. That time period is inclusive of most other birds' nesting periods, thus maximizing avoidance of impacts to any nesting birds. If construction must be completed during the breeding season listed above, surveys for nesting birds shall be conducted

at least 15 days prior to construction. Should an occupied nest be detected, the City will consult with the California Department of Fish and Game (CDFG) to determine an appropriate means for reducing impacts to nesting birds prior to tree removal. If nesting birds are observed within the vicinity, a buffer from the nest shall be established. The size of the buffer is dependent on the species and shall be determined by a qualified biologist. The buffer shall be delineated by roping the boundaries of construction and shall remain in place until the nest is abandoned or the young have fledged.

4.3-7 The Marine Bureau Manager shall ensure that a field survey to investigate the presence of the invasive algae *Caulerpa taxifolia* is conducted 30 to 60 days prior to commencement of construction by qualified divers certified by the California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) to conduct such surveys. The preconstruction *Caulerpa* surveys will be conducted according to the accepted criteria of the Southern California *Caulerpa* Action Team (SCCAT) for conducting surveys for the invasive algae and in accordance with the NMFS and CDFG *Caulerpa* survey protocols. In accordance with the recommendations of the SCCAT, and according to the NMFS *Caulerpa* Control Protocol (Version 3, adopted March 12, 2007 [NMFS 2007]), a survey must be conducted in harbor areas that may be disturbed. In areas that are expected to be free of *Caulerpa*, a 20 percent visual Surveillance Level survey is required prior to any dredging. The survey will also identify any other marine vegetation in the proposed construction area, including eelgrass. The Marine Bureau Manager, or his/her designee, will transmit the survey results via *Caulerpa* Survey Reporting Form to NMFS and the CDFG within 48 hours of completion of the survey. If *Caulerpa* is identified in the project area, the City, NMFS, and CDFG will be notified within 24 hours of completion of the survey. In the event that *Caulerpa* is detected, disturbance shall not be conducted until such time as the infestation has been isolated, treated, or the risk of spread from the proposed disturbing activity is eliminated in accordance with Section F of the *Caulerpa* Control Protocol.

4.3.7 CUMULATIVE IMPACTS

The cumulative study area for this project would be the project area, the Greater Alamitos Bay area, and Southern California coastal marine environs. The proposed project has the potential to result in a cumulative impact due to the loss of eelgrass habitat. However, Mitigation Measure 4.3-2, requiring successful transplanting of eelgrass, will reduce potential impacts to eelgrass habitat to a less than significant level. The creation of a specific eelgrass mitigation site will be beneficial to natural habitats and the special-interest species

they support within Alamitos Bay as well as adjoining marine environments. Therefore, overall adverse impacts to eelgrass communities will not be cumulatively significant.

Impacts to all species and habitats as a result of project construction and implementation will be temporary. No other project effects on marine, estuary, or avian habitats will occur, nor will there by any contribution to area or regional cumulative effects on habitat or sensitive species. Therefore, the proposed project would not contribute to cumulative losses of sensitive species or habitat, and no significant cumulative biological impacts would occur as a result of implementation of the proposed project.

4.3.8 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

With implementation of the above mitigation measures, all impacts to biological resources for project impacts and cumulative impacts will be reduced to a level below significance.

4.4 CULTURAL AND HISTORIC RESOURCES

INTRODUCTION

This section provides a discussion of the existing historic, archaeological, and paleontological resources within the Alamitos Bay area and an analysis of potential impacts from implementation of the proposed project. This cultural resource section is based on the Cultural Resource Assessment Report prepared by LSA Associates, Inc. (July, 2009) and included as Appendix D**.**

4.4.1 EXISTING ENVIRONMENTAL SETTING

The proposed project is located within the Alamitos Bay. Alamitos Bay, located in the southeastern portion of the City of Long Beach, is connected directly to the Pacific Ocean, and lies adjacent to the northwest of the mouth of the San Gabriel River. Alamitos Bay is composed of Marine Stadium, a recreation facility used for boating, water skiing, rowing, and special events; Long Beach Marina, which contains seven smaller basins for recreational craft and a boatyard; a variety of public and private berths; and the Bay proper, which includes several small canals, a bathing beach, and several popular clamming areas.

4.4.4.1 Project Area History

In 1923, the low-lying tidelands of Alamitos Bay were first dredged of more than 7 million cubic yards (cy) of sand, silt, and mud to create the Bay, and other water bodies. In 1932, Marine Stadium was officially engineered and constructed for use in the 10th Olympic Games. Marine Stadium is unique in its design, accommodating four competing rowing teams in one heat. During the 1932 Olympic Games, the United States rowing team won the gold medal in Marine Stadium. Since its development, the stadium has been utilized for recreational and competitive rowing and diving, including various Olympic events.

In 1955 the Second Street Bridge (also referred to as the Davies Bridge) was constructed over the boating channel, which changed the original dimensions of Marine Stadium, effectively eliminating it as a venue for the 1984 Olympic Games. The Marina was also formed in the 1950s, when portions of the bay were dredged to form a circular waterway and the existing basins and boat slips were constructed.

In 1968, the City remodeled Marine Stadium for the Olympic rowing and canoeing team trials and constructed the current boathouse. The boathouse that was used during the 1932

Olympics still remains (located on the southeast corner of E. Colorado and Neito Avenue). This building is noteworthy due to the Olympic history; however, it has been extensively remodeled and is not listed as a historical landmark.

In the late 1960s, the area between what is now the north end of Marine Stadium and the south end of the Colorado Lagoon (which was also the end of the original Olympic course) was filled and the existing underground box culvert constructed, thereby separating the Colorado Lagoon from Marine Stadium. This was done as part of the construction for the then-proposed Pacific Coast Freeway. The freeway was never built and the "filled" area is now Marina Vista Park.

Despite the fill, which relocated the Olympic course's finish line, Marine Stadium still provides 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing. Marine Stadium is the only rowing venue specifically built for the sport in the United States and it continues to be a center for training United States Olympic Rowing Teams. While not eligible as an Olympic venue due to modifications resulting from construction of the Second Street Bridge, the 1984 Women's Olympic Sculling trials were held in Marine Stadium. Marine Stadium is also the location from which aviators Clyde Schlieper and Wes Carroll set off when they set a world record for longest sustained flight (30 days) in 1939. In addition, Marine Stadium is significant because it and the Los Angeles Coliseum are the only two surviving 1932 Olympic structures. For these reasons, Marine Stadium was designated a California Registered Historical Landmark (No. 1014) on April 29, 1995, and is listed in the California Register.

4.4.4.2 Historical/Paleontological/Archaeological Resources

Record searches and an archaeological survey have been conducted to determine the known existence and assess the potential existence of cultural resources within the project area. The record search found that a total of 37 previous studies have been conducted within 0.25 mile radius of the project area; however none of these studies have included any portion of the project area. Seven resources have been identified, including six archaeological sites and one historic resource. None of the archaeological sites are located within the project area.

However, as described above, Marine Stadium is a historic resource, and a portion of the Stadium is located adjacent to the project area. The Marine Stadium is listed on the California Register of Historical Resources (California Register), the California Historical Landmarks (CHL; No. 1014), and the California Points of Historical Interests (PHI; No. 19-186115). However, due to its lack of integrity, it was found to be ineligible for the National Register by the United States Army Corps of Engineers in 1990.

4.4.2 METHODOLOGY

4.4.4.1 Cultural Resources Records Search and Research

Records searches were conducted for the Alamitos Bay Marina Project, and also for the adjacent Colorado Lagoon Restoration project on October 30, 2008, and October 17, 2007, respectively. These two records searches encompass the entire Alamitos Bay Marina Rehabilitation Project area and a 0.25 mi radius around it. Both records searches took place at the SCCIC of the California Historical Resources Information System, located at California State University, Fullerton. The records searches included a review of all recorded cultural resources located within the 0.25 mi radius as well as a review of known cultural resource survey and excavation reports. In addition, the California Points of Historical Interest (PHI), CHL, California Register, National Register of Historic Places (National Register), and California State Historic Resources Inventory (HRI) listings were reviewed.

Research indicated that the boundary for Marine Stadium had been plotted inaccurately at the SCCIC due to the limited information provided in the CHL nomination form when it was submitted to the OHP in 1993. Based on conversations with SCCIC personnel, the City Historic Preservation Officer, and the OHP, the boundaries have been revised to reflect those defined by the City in its Municipal Code (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West) and other documents. Additional detail regarding the boundaries of Marine Stadium is provided in (Appendix D, Cultural/Historic Resources Assessment).

4.4.4.2 Field Survey

A pedestrian field survey was not conducted because the areas to be impacted are entirely paved and previously disturbed, or consist of the water bodies that comprise Alamitos Bay and Marine Stadium. No undisturbed native soil is visible. This was confirmed by examination of historic and modern aerial photos and a cursory inspection of the project area by vehicle.

4.4.3 THRESHOLDS OF SIGNIFICANCE

Pursuant to Section 15064.5 of the California Environmental Quality Act (CEQA), a project may have a significant effect on the environment if the project may cause substantial adverse change to a historic, archaeological, or paleontological resource. An impact may be considered significant if it can be reasonably argued that the project would:

- Cause a substantial adverse change in the significance of a historic resource as defined in Section 15064.5;

- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those found outside of formal cemeteries.

4.4.4.1 Evaluation of Cultural Resources under CEQA

The criteria for listing resources on the California Register are based on those developed by the National Park Service for listing in the National Register. The federal criteria have been modified in order to include a broader range of resources that better reflect the history of California. A property must be significant at the local, State, or national level under one or more of the following four criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.
2. It is associated with the lives of persons important to the nation or to California's past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important to the prehistory or history of the State and the nation.

4.4.4.2 Integrity

Integrity is the authenticity of a property's physical identity, evidenced by the survival of characteristics that existed during the property's period of significance. Properties eligible for listing in the California Register must retain enough of their historic character or appearance to be recognizable as historic properties and convey the reasons for their significance.

Integrity is judged in relation to location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a property is thought to be eligible. Alterations to a property, or changes in use, may themselves have historical, cultural, or architectural significance.

It is possible that such properties may not retain sufficient integrity to meet National Register standards, yet they may still be eligible for listing in the California Register. Properties that have lost their historic character of appearance may still have integrity if they maintain a

potential to yield significant scientific or historical information, if the archaeological resources retain integrity, or if the resource retains substantial cultural value even though some major constituents have been removed or disturbed.

4.4.4 IMPACTS AND MITIGATION MEASURES

Alamitos Bay Marina will continue to operate as a Marina after project implementation. Therefore, this discussion is limited to potential impacts to cultural resources during construction as the proposed project would not involve operational activities that would disturb or destroy underlying archaeological or paleontological remains or other cultural/scientific resources.

4.4.4.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and determined to be less than significant.

Historic Resources. As described above, Marine Stadium is a historic resource and located adjacent to the project boundaries. Marine Stadium is listed on the California Register of Historical Resources (California Register), the California Historical Landmarks (CHL; No. 1014), and the California Points of Historical Interests (PHI; No. 19-186115). The basis for these designations is the stadium's history as the official rowing site of the 1932 Olympic Games. It was also the location of several other Olympic trials in the years following the 1932 event, and is the only water body constructed specifically for rowing events.

Subsequent to the 1932 Olympic Games, Marine Stadium underwent a series of changes. Figure 4.4.1 illustrates this by comparing aerial photos of the stadium from 1928, 1938, 1952, 1972, and 2008. The most significant of these was construction of the Second Street Bridge in 1955. Construction of the bridge changed the dimensions of the stadium, effectively eliminating it from consideration as a rowing venue for the 1984 Olympic Games. The northern end of the stadium has also been reconfigured since the 1932 Olympic Games. Figure 4.4.1 illustrates how that area was filled for the formation of Marina Vista Park, in comparison to where the finish line that was used in 1932 was located (Figure 4.4.2). The area surrounding Marine Stadium no longer retains integrity of setting; extensive alterations have been made to the environment that existed at the time of the 1932 Olympic Games for which the resource is significant.

Likewise, Marine Stadium retains little integrity because the physical characteristics that existed during the 1932 Olympic Games, which is the property's period of significance, have been compromised. Due to this lack of integrity, Marine Stadium was determined to be

ineligible for the National Register by the United States Army Corps of Engineers during its evaluation of the property in 1990.

Also as a result of the series of changes, and lack of integrity, the boundaries for Marine Stadium have changed. As it is defined in the City's Municipal Code (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West), Marine Stadium proper extends from 50 feet (ft) northwest of the centerline of the Second Street Bridge. This area is not within the project improvement area, and therefore will not be affected by the project's proposed Marina improvements. Improvements are included for the boat slips in Basins 1–7; it should be specifically noted that Basins 3 and 4 are located southeast of the bridge and are not within the boundaries of Marine Stadium. All other improvements will be on dry land outside of the body of water that defines Marine Stadium and will not alter its size or character as it currently exists. Although the eelgrass mitigation area will affect the current configuration of Marine Stadium, it is located outside of the boundaries of Marine Stadium as it existed during the 1932 Olympic Games (Figure 4.4.1). As described previously, the boundaries at the time of the Olympics are the contributing factor to the stadium's eligibility as a California Point of Historical Interest and its automatic listing in the California Register. The area to be impacted did not exist in its current form at that time, but has been created in modern times to its current dimensions. It retains no original integrity and does not contribute to the eligibility of Marine Stadium. Therefore, direct impacts to Marine Stadium will be less than significant.

No indirect impacts to Marine Stadium are anticipated. The area surrounding Marine Stadium no longer retains integrity of setting; nothing remains of the environment that existed at the time of the 1932 Olympic Games for which the resource is considered significant. The proposed project will not alter the character of the current surrounding area. Therefore, there will be no indirect impacts to Marine Stadium.

Archaeological Resources. The cultural resources record search concluded that there are no recorded archaeological resources located within the project boundaries. The presence of prehistoric cultural material is unlikely because the improvements would be located in areas that were previously disturbed or dredged. The Marina was formed from a series of dredging activities that began in the early 1900s. In the 1950s, portions of the bay were dredged to form a circular waterway and the existing basins and boat slips were constructed. Dredging that would occur along with the proposed project would not be deeper than the original Marina design depths and/or original basin depths. Similarly, the land side improvements include revitalizing the restroom facilities and parking lots, are located within existing developed and previously graded areas. Ground disturbance in the parking lot areas is anticipated to be less than 2 ft deep and will also be conducted within areas that have been previously disturbed and graded. Therefore, no native soil will be disturbed and potential

impacts to unknown archaeological resources is unlikely. As such, the project is not anticipated to impact any archaeological resources, and impacts are considered less than significant. No mitigation is required.

Paleontological Resources. The record search concluded that there are no recorded paleontological resources located within the project boundaries. Similarly, the presence of fossils is unlikely because the project area is previously disturbed or dredged. As described previously, the project would excavate in areas of previous, dredge, fill, disturbance, and or grading and does not involve excavation that would extend deep enough into the project area soils to reach native sediments. Therefore, no native soil will be disturbed and potential impacts to unknown paleontological resources is unlikely. As such, impacts to paleontological resources would be less than significant, and no mitigation is required.

Human Remains. Human remains are unlikely to be located in the project area due to previous disturbance of project area soils and waters, as described previously. However, in the unlikely event that human remains are encountered during construction activities, State Health and Safety Code Section 7050 requires ground disturbance to stop and the County Coroner be notified immediately. Adherence to existing standard construction regulations, including State Health and Safety Code Section 7050.5, would reduce potential adverse impacts to human remains to less than significant levels, and no further mitigation is necessary.

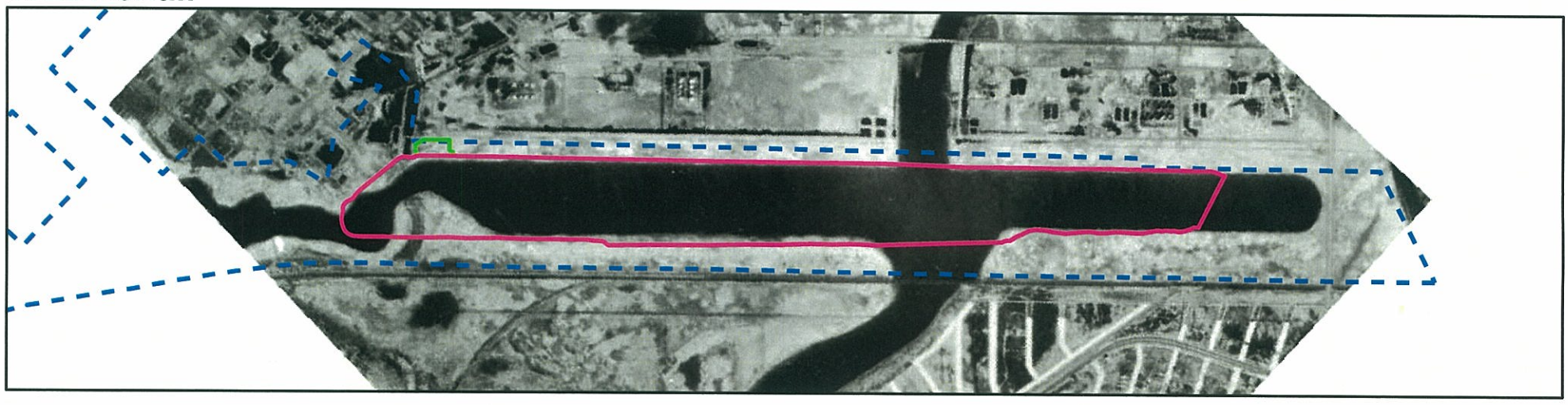
4.4.5 CUMULATIVE IMPACTS

The cumulative study area for cultural resources is generally localized and does not affect the vicinity surrounding the proposed project site. Therefore, cumulative cultural resource impacts involve the immediate project site and consideration of whether project implementation would result in the direct loss of such resources. As discussed above, implementation of the proposed project would have a less than significant impact on known historic resources and unknown cultural and paleontological resources. Therefore, because significant impacts would not result, the proposed project would not incrementally contribute to potential cumulative impacts related to cultural resources.

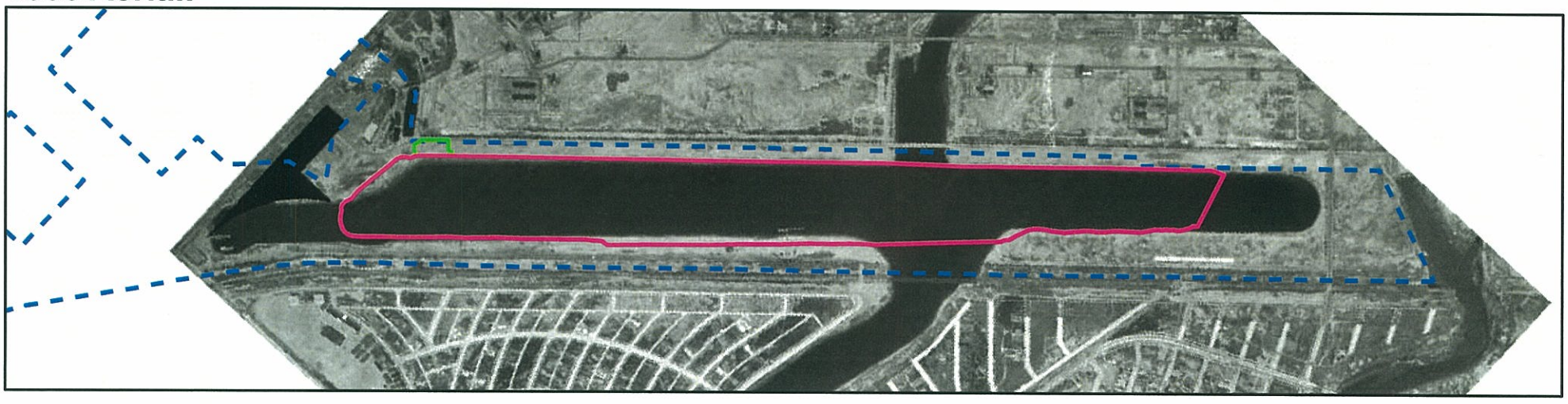
4.4.6 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

No potentially significant historic, archaeological, or paleontological resource impacts have been identified. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to cultural resources.

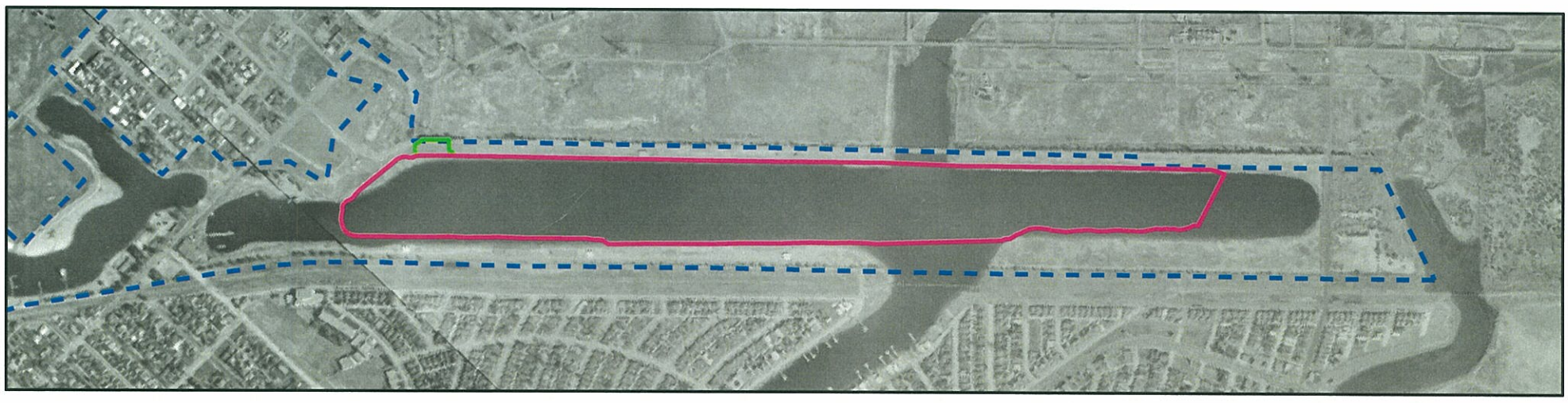
1928 Aerial:



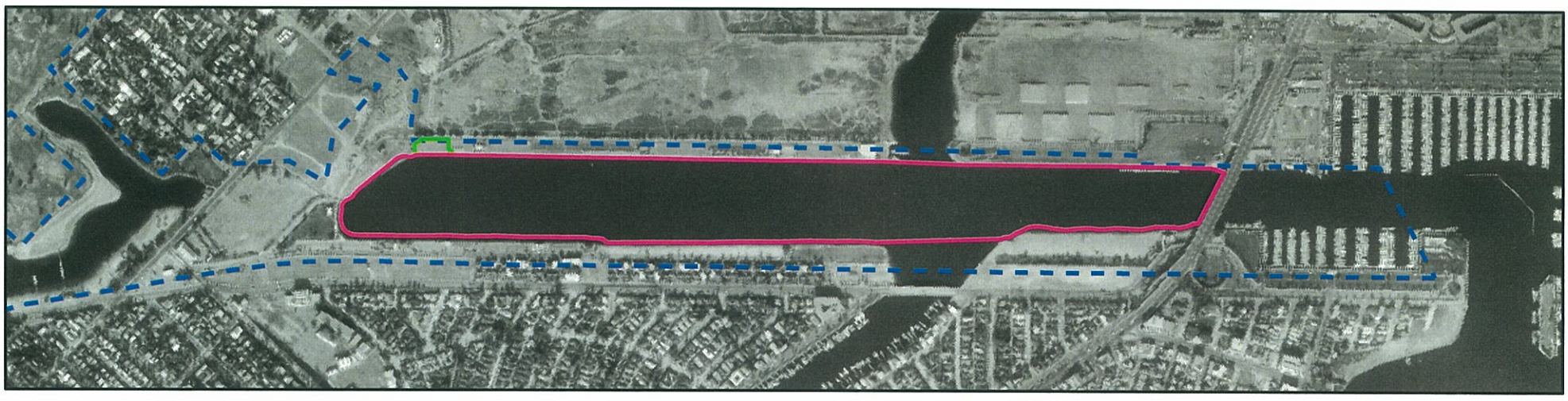
1938 Aerial:



1952 Aerial:



1972 Aerial:



2008 Aerial:

LSA

LEGEND

1932 Recreational Park Boundary from USGS

Current Marine Stadium Boundary

Eel Grass Mitigation Area

0 500 1000

FEET

FIGURE 4.4.1

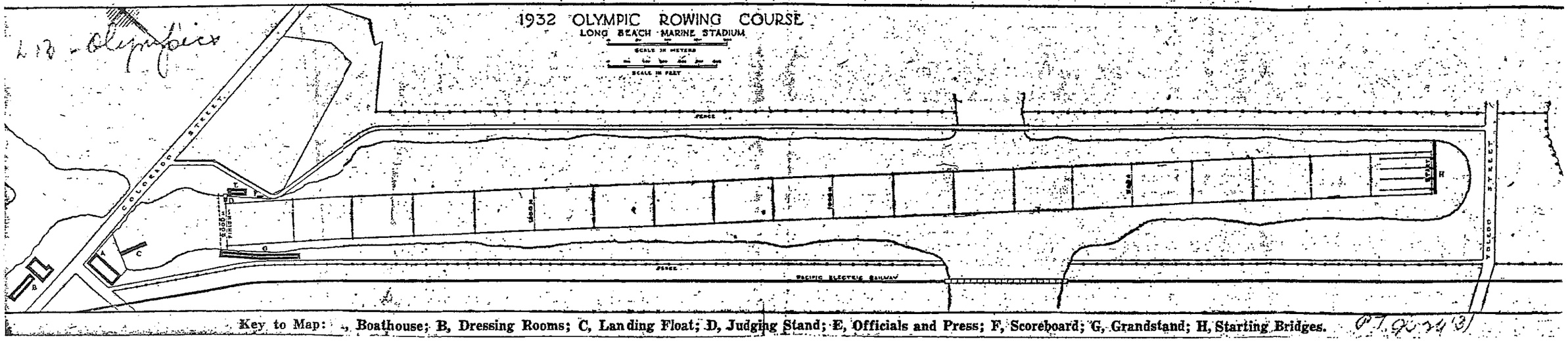
Alamitos Bay Marina Rehabilitation Project

Aerial Comparison of Marine Stadium Boundary
1928 to Present

SOURCE: Fairchild (1928); ASCS (5/1938); HistoricAerials.com (1952, 1972); (MSVE (2008)

I:\tsy0701\GIS\Historic_Aerials441.mxd (7/23/2009)

LB. MAP SHOWS LAYOUT OF OLYMPIC GAMES STRUCTURES LB.



LSA

FIGURE 4.4.2

Alamitos Bay Marina Rehabilitation Project

Layout of 1932 Olympic Rowing Course

4.5 GEOLOGY AND SOILS

INTRODUCTION

This section provides a discussion of the existing geologic and soils environment and an analysis of potential impacts from implementation of the proposed Alamitos Bay Marina Rehabilitation project. This section also addresses the potential for damage to occur to the project site due to the local geology underlying the proposed project site, as well as slope stability, ground settlement, soil conditions, and regional seismic conditions. The following geology and soils information is based on the *Geotechnical Evaluation for the Alamitos Bay Marina Improvement Project* (Geotechnical Evaluation) prepared by Ninyo and Moore (February 9, 2007) and included as Appendix E to this EIR.

4.5.1 EXISTING ENVIRONMENTAL SETTING

4.5.1.1 Regional Geology

The project site lies within the southwestern block of the Los Angeles Basin in the coastal plain of the Peninsular Ranges Geomorphic Province. The Geomorphic province encompasses an area that extends approximately 125 miles (mi) from the Transverse Ranges and the Los Angeles Basin south to the Mexican border and the tip of Baja California. The Peninsular Ranges vary in width from approximately 30 to 100 mi and are generally characterized by northwest-trending mountain ranges separated by subparallel fault zones. The major structural fault systems bounding this area include the southern onshore segment of the Newport-Inglewood Fault, located approximately 0.6 mi northwest of the site, as well as the potentially active Los Alamitos and Norwalk Fault Zones, located approximately 3 mi northeast and 10.8 mi northeast, respectively. Regional geologic mapping indicates that the project area is underlain by Holocene-age stream channel, alluvial fan, and floodplain deposits consisting of clay, silt, sand, and cobbles.

4.5.1.2 Site Geology

The Alamitos Bay Marina lies to the northwest of the San Gabriel River and south of the outlet of the Los Cerritos Channel. The San Gabriel River borders the southeastern perimeter of the Marina and trends in a northeast-southwest direction. The Los Cerritos Channel roughly trends in a northeast-southwest direction and joins the Marina at its northern tip. Published geologic maps and literature indicate that the site is underlain by artificial fill consisting of sand and silty sand.

Subsurface explorations revealed fill materials to depths ranging from approximately 7 to 15.5 feet (ft) in onshore borings. The fill materials generally consisted of medium dense, clayey sand, medium dense, silty sand, and very stiff, sandy clay with trace gravel, wood shards, and shells. Alluvial deposits were encountered beneath the fill to the explored depth of approximately 83.5 ft. The alluvial deposits generally ranged from loose to very dense silty sand and medium dense, poorly graded sand to silty sand. The clay material encountered generally ranged from very soft to hard, silty clay and sandy clay. The silt generally ranged from very loose to dense sandy silt and firm to hard clayey silt.

4.5.1.3 Structural Geology

The proposed project area is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 1986). However, based on the current understanding of the geologic framework of the area, ground shaking resulting from an earthquake occurring along regional faults is the seismic hazard with the highest probability of affecting the project site. A fault is described as the area where two tectonic or continental plates meet. An "active" fault is defined by the State of California as having had surface displacement within the Holocene time (i.e., within the last 11,000 years). A "potentially active" fault is defined as showing evidence of surface displacement during the Quaternary time (i.e., during the last 1.6 million years). These terms are, however, used by the State primarily for use in evaluating the potential for surface rupture along faults and are not intended to describe possible seismic activity associated with displacement along a fault. These definitions are not applicable to blind thrust faults that have only limited, if any, surface exposures.

Because the subject site is located in a seismically active area, the potential for strong ground motion at the site is considered significant. The nearest known active fault is the Newport-Inglewood Fault, located approximately 0.6 mi northwest of the project site. Table 4.5.A lists selected principal known active faults that may affect the subject site and the maximum moment magnitude as published by the California Geological Survey.

The principal seismic hazards at the subject site are ground shaking, seismically induced liquefaction, and various manifestations of liquefaction-related hazards. A brief description of these hazards and the potential for their occurrences on site are discussed below.

Table 4.5.A: Nearby Active Faults

Fault	Approximate Fault to Site Distance (miles)	Maximum Moment Magnitude
Newport-Inglewood	0.6	7.1
Palos Verdes	7.9	7.3
San Joaquin Hills	10.9	6.6
Puente Hills	12.9	7.1
Whittier	16.9	6.8
Upper Elysian Park	21.4	6.4
San Jose	23.9	6.4
Raymond	25.4	6.5
Hollywood	26.3	6.4
Verdugo	26.3	6.9
San Andreas	49.5	7.8

Source: *Geotechnical Evaluation for the Alamitos Bay Marina Improvement Project* prepared by Ninyo and Moore, February 9, 2007.

Ground Motion. The Geotechnical Evaluation included an evaluation of ground shaking hazards, including a review of a probabilistic seismic hazard assessment that consisted of statewide estimates of peak horizontal ground accelerations conducted for California. In addition, a site-specific probabilistic seismic hazard analysis was performed to evaluate anticipated peak ground accelerations (PGAs). The PGA is a commonly used parameter to represent the level of observed and/or estimated ground shaking at a particular site. The probabilistic seismic hazard analysis estimates that a PGA of 0.34g (acceleration due to gravity) is applicable to the project site conditions for a 10 percent probability of exceedance in 50 years (475-year return period). The "predominant earthquake" that contributes most to the ground-shaking hazard at 10 percent probability of exceedance in 50 years is a magnitude (Mw) 7.5 event on a fault zone located within 62 mi of the project site.

Liquefaction. Soil liquefaction is a phenomenon that occurs during strong ground shaking, most commonly in generally low- to medium-density, saturated, low-cohesion soils where the soils experience a temporary loss of strength and behave essentially as a fluid. Areas most susceptible to liquefaction-induced damage are underlain by loose, water-saturated, granular sediment within 50 ft of the ground surface. Saturated conditions reduce the effective normal stress, thereby increasing the likelihood of earthquake-induced liquefaction. One of the major types of liquefaction-induced ground failures is lateral spreading of mildly sloping ground. Lateral spreading involves movement of earth materials due to ground shaking and is evidenced by near-vertical cracks with horizontal movement of the soil. Liquefaction-induced ground failure has historically been a major cause of earthquake damage in Southern California.

Due to the variability of the on-site soils, the potential for liquefaction varies across the site. The liquefaction analysis indicated that some of the granular soil layers located below the historic high groundwater level may liquefy during the design seismic event up to depths of approximately 48 ft below the ground surface (bgs) for the onshore portions of the site and to depths of approximately 14 ft bgs in the offshore portions of the site.

Lateral Spreading. Lateral spreading of the ground surface during an earthquake usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spread has generally been observed to take place in the direction of a free-face (i.e., retaining wall, slope, channel) but has also been observed to a lesser extent on ground surfaces with gentle slopes. For sites located in proximity to a free-face, the amount of lateral ground displacement is strongly correlated with the distance of the site from the free-face. Other factors, such as earthquake magnitude, distance from the earthquake epicenter, thickness of the liquefiable layers, and the fine content and particle sizes of the liquefiable layers also affect the amount of lateral ground displacement. Based on the Geotechnical Evaluation, seismically induced lateral spread of approximately 1–11 ft is estimated to occur.

Subsidence. The phenomenon of soil liquefaction may result in several hazards, including liquefaction-induced settlement. The amount of soil settlement during a strong seismic event depends on the thickness of the liquefiable layers and the density and/or consistency of the soils. Based on the geotechnical analysis, post-earthquake dynamic ground settlements ranging from approximately 5 to 27 inches are estimated to occur in relatively saturated soils located below the historic high groundwater to depths of up to approximately 48 ft.

4.5.2 METHODOLOGY

This section addresses the potential for structural damage due to the local geology underlying the proposed project area, as well as slope instability, ground settlement, unstable soil conditions, and regional seismic conditions. Geologic/geotechnical conditions affecting the site are summarized from compiled information and analyses, including referenced documents/publications and the site-specific Geotechnical Evaluation (Ninyo and Moore 2007), included in Appendix F of this EIR.

4.5.3 THRESHOLDS OF SIGNIFICANCE

The impact significance criteria used for this analysis are based primarily on Appendix G of the State CEQA Guidelines. Project implementation may be considered to have a significant effect related to geology and soils if it would result in one or more of the following:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death, involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault, strong seismic ground shaking, and seismic-related ground failure, including liquefaction or landslides
- Substantial soil erosion or the loss of topsoil
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-site or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property, or
- Be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater

4.5.4 IMPACTS AND MITIGATION MEASURES

The following impacts of the proposed project have been identified based on project characteristics and the significance thresholds defined above.

4.5.4.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and determined to be less than significant.

Wastewater Disposal. The proposed project would utilize the existing sewer system. The project does not include the use of septic tanks or alternative methods for disposal of wastewater into the subsurface soils. The project area is currently, and will continue to be, sewered by the City of Long Beach (City). Wastewater is transported via underground lines to treatment plants. Therefore, no soil or subsurface impacts related to this issue would occur, and no mitigation is required.

Landslides. The project area is surrounded by flat developed areas, and site topography is relatively level; therefore, the possibility of a seismically induced landslide is not possible. Additionally, the site is not located near any known historical landslides. According to the California Department of Conservation's Seismic Hazard Zones Map for the *Long Beach, Seal Beach, and Los Alamitos, California* quadrangles, the project area does not fall within any earthquake-induced landslide zones. Therefore, impacts from slope instability and/or landslides are not expected and are considered less than significant. No mitigation is required.

4.5.4.2 Potentially Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and determined to be potentially significant.

Erosion Potential. The majority of construction involves the replacement of Marina dock facilities in the water and does not involve significant disruption of land side soils. However, there is the potential for soil erosion to occur at the site during project implementation. Construction of the proposed project includes excavation of land side soils to develop the open space/habitat mitigation site, minor grading of land side soils associated with repaving of parking areas, trenching for utilities, and reconstruction of the restrooms.

The project includes the replacement of the paved parking lot surfaces in Basins 1, 2, 3, 4, 6-North (6-N), and 6-South (6-S). The existing asphalt surface would be demolished, broken down, and reused, to the extent possible, as fill for the base course under the new asphalt paving. Repaving areas total approximately 930,622 square feet. However, in order to accommodate the Marina operations, no more than 1 acre of parking lot pavement area would be replaced at any one time. No landscaped islands within the parking lot areas would be removed or altered in size.

All excavation, trenching, and compaction activities would be performed under the observation of a qualified engineer. The project would be required to adhere to all applicable construction standards with regard to erosion control. Erosion control measures typically identify how all construction materials, wastes, or demolition debris, etc., shall be properly covered, stored, and secured to prevent transport into local drainages or coastal waters by wind, rain, tracking, tidal erosion, or dispersion.

In addition, the project would be subject to the Storm Water Pollution Prevention Plan (SWPPP) requirements for erosion and sedimentation control during construction (refer to Section 4.7, Hydrology and Water Quality). Best management practices (BMPs) would be undertaken to control runoff and erosion from any earthmoving activities such as excavation and compaction. The objective of erosion control BMPs is to achieve no net change in the amount of sediments that could impact water quality. Mitigation measures as included in this EIR are required to reduce fugitive dust and transport of soil (refer to Section 4.2, Air Quality, and Section 4.7, Hydrology and Water Quality, respectively). With implementation of these standard control and mitigation measures, soil erosion potential related to construction activities will be reduced to less than significant levels.

Operation of the Marina facilities would not create a potential for soil erosion because the primary use of the project is for waterside recreation in the harbor waters. The repaving of the parking lot areas and reconstruction/remodeling of the restrooms would not result in any

increase in or new impervious areas; the existing landscaped islands within the parking lot areas would not be removed or altered in size. Therefore, long-term operations on site would not result in any soil erosion impacts, and no mitigation is required.

Seismic Considerations. The project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, nor is it currently identified by the regulatory community as being located within zones of either primary or secondary co-seismic surface deformation (e.g., pressure ridges, escarpments, or fissures). Therefore, the site is not expected to experience primary surface fault rupture or related ground deformation.

However, since the site is located approximately 0.6 mi northwest of the Newport-Inglewood Structural Zone, significant ground shaking or secondary seismic ground deformation effects could occur at the site should a major seismic event occur along the Newport-Inglewood Structural Zone. A peak ground acceleration of 0.34g can be expected at the site, with a 10 percent chance of exceeding that rate in 50 years. The "predominant earthquake" that contributes most to the ground-shaking hazard at 10 percent probability of exceedance in 50 years is an Mw 7.1 event on the nearby portion of the Newport-Inglewood Fault Zone. This strong ground-motion potential could result in significant seismic ground shaking. As with most areas in Southern California, damage to Marina facilities and infrastructure could be expected as a result of significant ground shaking during a strong seismic event in the region. However, due to the nature of the project being floating docks and slips, impacts to the dock facilities due to earthquakes are expected to be minimal. In addition, one of the project's primary objectives is to renovate the deteriorating Marina facilities in accordance with current codes and seismic requirements.

The project would not change the existing uses on site and would not affect any habitable structures; no new buildings are proposed other than the replacement/remodeling of several restroom structures. The restroom structures will be designed and built in conformance with the adopted California Building Code (CBC), including seismic safety standards. All structures must comply with the seismic requirements of the CBC and the recommended engineering design measures. The project would incorporate current codes and seismic requirements in the replacement and/or renovation of the docks, dock bulkhead landings/ platforms, pilings, Marina restrooms, parking lots, and sea wall repairs. Although compliance with these standard measures is anticipated to limit hazards from seismic ground shaking to less than significant levels, Mitigation Measure 4.5-1 has been proposed to ensure that potential seismic ground-shaking impacts are reduced to less than significant levels.

Liquefaction. Damage from earthquakes may result from liquefaction, which occurs when loose, unconsolidated, water-laden soils are subject to shaking, causing the soils to lose cohesion, and the soil behaves as a fluid for a short period of time. Liquefaction is known generally to occur at depths shallower than 50 ft bgs.

The Geotechnical Evaluation for the proposed project determined that due to the variability of the on-site soils, the potential for liquefaction that would vary across the site. The evaluation indicates that some of the granular soil layers located below the historic high groundwater level (8 ft below the existing ground surface) may liquefy during a seismic event[1] at depths of up to approximately 48 ft bgs for the onshore portions of the site and to depths of approximately 14 ft bgs in the offshore portions of the site. Liquefaction-induced ground settlement is estimated to be in the range of approximately 5–27 inches in the upper 48 ft of the onshore areas of the project site.

As stated above, the proposed project would be designed and implemented in accordance with the City's design standards and all applicable building codes, including the seismic requirements of the CBC and the recommended engineering design measures. Since no habitable structures would be constructed (other than the restroom structures), applicable regulations would primarily involve soil compaction and piling design requirements. Although compliance with these standards is anticipated to limit hazards from seismic liquefaction to less than significant levels, implementation of Mitigation Measure 4.5-1, requiring incorporation of engineering recommendations into final design plans, would ensure that potential seismic ground failure, including liquefaction hazards, is reduced to less than significant levels.

Lateral Spreading and Subsidence. The renovation and replacement of the Marina dock facilities will be undertaken in their present location, where they have been in operation for approximately 50 years. As stated above, land side grading consists of minor disturbance associated with the removal of parking lot pavement and the excavation of soils to develop the open space/habitat mitigation site. For this step of the process, and impacts related to unstable soil conditions are not anticipated. Although there are no geologic units or soils that would become unstable as a result of the proposed project, the Geotechnical Evaluation determined that a seismically induced lateral spread of approximately 1–11 ft could occur during an earthquake event and that with implementation of the engineering design recommendations and compliance with the CBC, the proposed project is feasible. Therefore, Mitigation Measure 4.5-1, requiring compliance with the recommendations contained in the Geotechnical Evaluation, has been proposed to ensure that potential impacts related to unstable soils are reduced to less than significant levels.

Expansive Soils. The soils underlying the project site include sand, clay, and silt. The clay material, which is considered expansive, ranges from very soft to hard silty clay and sandy clay. However, because groundwater levels are historically 8 ft bgs at the project site, the

[1] The design seismic event evaluated in the Geotechnical Report was a 7.5 magnitude earthquake with a peak ground acceleration of 0.34g.

soils are anticipated to remain relatively wet, which would reduce the potential effects of the expansive soils on site. In addition, the project primarily involves waterside construction; land side improvements are limited to shallow excavation of paved areas and construction of the restroom buildings, which are the only structural components of the project. The Geotechnical Report concluded that the restroom structures can be designed on shallow footings with proper preparation on compacted fill.

As stated previously, the Geotechnical Evaluation determined that with implementation of the engineering design recommendations and compliance with the CBC, the proposed project is feasible. Mitigation Measure 4.5-1, requiring compliance with the recommendations contained in the Geotechnical Evaluation, requires the City to review final design plans for structural engineering compliance and to approve the plans prior to the development of the structural components of the proposed project, such as the restroom facilities. Therefore, with implementation of Mitigation Measure 4.5-1, potential impacts related to hazards from geologic and soil conditions will be reduced to less than significant levels.

4.5.4.3 Mitigation Measure

Implementation of the following mitigation measure will ensure that potential geological and soil impacts resulting from project implementation would be reduced to less than significant levels.

4.5-1 Prior to issuance of building permits, the Marine Bureau Manager shall demonstrate to the satisfaction of the Director of Development Services, or designee, that recommendations contained in the Geotechnical Evaluation prepared for the proposed project (Ninyo and Moore, February 2007) have been incorporated into final construction drawings. Design and grading construction shall be performed in accordance with the most current California Building Code in use by the City of Long Beach, the most current local grading regulations, and recommendations of the project geotechnical consultant.

4.5.5 CUMULATIVE IMPACTS

The cumulative study area for Geology and Soils is the project site and the immediately adjacent properties that physically abut the project site. The study area is essentially the area that could be affected by proposed project activities and the areas affected by other projects whose activities could directly or indirectly affect the geology and soils of the proposed project site. The project site encompasses several areas throughout the harbor; however, the majority of the project site is isolated from areas of potential development. In addition, there are no other known activities or projects with activities that would affect the geology and soils at the project site (e.g., projects requiring significant structural blasting or drilling, high vibration activities, deep excavation).

As discussed above, there are no geotechnical conditions on site that will prohibit construction, and no activities associated with the project that would contribute to any incremental effects such as risk of ground failure, slope failure, or settlement problems in the project vicinity. Implementation of Mitigation Measure 4.5-1 ensures that the proposed project complies with recommendations in the Geotechnical Evaluation and that the project would have a less than significant impact on Geology and Soils. Therefore, with implementation of the proposed mitigation, the project's geological impacts are considered less than cumulatively considerable.

4.5.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The mitigation measure described above will reduce potential geologic, seismic, and soil-related impacts to below a level of significance. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to Geology and Soils.

4.6 HAZARDS AND HAZARDOUS MATERIALS

INTRODUCTION

The following discussion is based on the Tier III Sediment Characterization Performed with Samples from Alamitos Bay Marina (Weston Solutions, Inc. 2007) and the Supplemental Sampling and Analysis Report (Anchor QEA, May 2009) both included in Appendix F, and a First Search Environmental Database Report included in Appendix G.

This section describes known and potentially hazardous materials conditions in the vicinity of the project area, related potentially significant adverse public health impacts anticipated as a result of the proposed project, and includes mitigation measures for the impacts as appropriate. This section also addresses the proposed impacts with consideration of local, State, and federal regulations and policies and provides recommended mitigation measures pursuant to California Environmental Quality Act (CEQA).

4.6.1 EXISTING ENVIRONMENTAL SETTING

4.6.1.1 Project Site Conditions

The majority of the structures on site date to the late 1950s/early 1960s. The Marina provides accommodation for 1,997 boat slips. The Marina offers recreational boaters, State residents, tourists, and others a number of recreational activities. Boat refueling occurs at a fuel dock located west of Basin 1, just inside the entrance to Alamitos Bay Marina.

Marina-related uses may involve the storage and use hazardous materials such as cleaning agents, solvents, oils, and fuel. The storage, use, transport, and disposal of such hazardous materials are subject to local, State, and federal regulations. All boats potentially carry solvents, paints, cleaners, oils, and fuel. In addition, boats may include bottom treatments and/or paints that contain heavy metals or other compounds that, when released into the water, provide a source of contamination. There are also ongoing boat-related maintenance practices that may contribute either indirectly or directly to the potential for a spot and/or temporary hazardous material condition within the Marina, such as:

- Oil and fuel handling
- Boat cleaning, painting, and maintenance
- Underground storage tanks
- Hazardous material disposal stations

No physical presence of hazardous materials on adjacent properties was visibly evident during a site inspection conducted by LSA Associates, Inc. (LSA) on April 10, 2007. In addition, no unusual or suspicious materials handling or storage practices were observed with respect to adjacent properties. The surrounding properties contain sites where hazardous materials are generated, stored, handled, and/or treated, including sites of existing and past land uses that used, stored, and disposed of hazardous materials and wastes such as the nearby power plants and gasoline stations. Additionally, several off-site properties have been listed for activities associated with hazardous materials (transferring, storing, subsurface releases, remediation, etc.).

4.6.1.2 Surrounding Conditions

The land uses surrounding the Marina basins include residential, commercial development, marine-related commercial uses, a shipyard, yacht and sailing clubs, and recreation uses.

Basins 1, 2, and 3 are surrounded by harbor parking areas and commercial uses, including several restaurants and marine-related retail uses. The Navy Yacht Club of Long Beach and the Seal Beach Yacht Club are both located on Marina Drive near Basin 2 of the Marina. Commercial uses, including a hotel, are located across Marina Drive from Basins 2 and 3. A fuel dock is located west of Basin 1, just inside the entrance to Alamitos Bay Marina.

Basin 4, located across the water from Basin 3 on Naples Island, is surrounded by residential uses and is adjacent to the Long Beach Yacht Club. Basin 5 is located at the southeast end of the Alamitos Bay Peninsula, adjacent to Alamitos Bay Yacht Club.

Land uses adjacent to Basin 6-North (Basin 6-N) include the Marina Pacifica Mall commercial center located on PCH. Residential uses and private slips are located across the channel from Basin 6-N. Basin 6-South (Basin 6-S) is adjacent to the residential community of Marina Pacifica, with additional residential uses located across the channel from the basin.

Land uses surrounding Basin 7 include residential uses on the Alamitos Bay Peninsula and residential uses across the channel on Naples Island. The United States Sailing Center Long Beach is located adjacent to Basin 7.

Land uses adjacent to the proposed habitat mitigation site on the northeast shore of Marine Stadium consist of a City-owned storage yard, the waters of Marine Stadium, and recreation trails.

4.6.1.3 Sediment Quality in the Marinas

According to the Tier III Sediment Characterization Performed with Samples from Alamitos Bay Marina (Weston Solutions, Inc. 2007), sediments within the Alamitos Bay Marina were analyzed in April 2007. The purpose of the sampling and analysis was to determine whether dredged materials resulting from the proposed project would be suitable for disposal at the United States Environmental Protection Agency's (EPA) designated Ocean Dredged Material Disposal Site (ODMDS) known as LA-2, located off the coast of San Pedro, California. The sediment samples from Alamitos Bay Marina were compared to LA-2 reference material results as well as Effects Range-Low (ER-L) and Effects Range-High (ER-H) values. Weston's reference level of ER-L is derived from Sediment Quality Guidelines (SQGs) developed informally for the National Status and Trends Program (NSTP) to rank sediment toxicity. The term "Effects Range-Low" indicates that the concentrations present in the sediment evaluated are below the threshold where adverse effects would occur.

Results of the 2007 chemical analysis of dredge materials indicated that metal constituents were present in Alamitos Bay sediments at levels below or consistent with ER-L reference values with the exception of metals commonly associated with urban runoff (i.e., copper, lead, mercury, and zinc), which were detected at nominally elevated concentrations throughout the Marina. Other metals that were detected at levels exceeding ER-Ls include zinc, which was only found at elevated levels in Basins 4, 5, and 6. Arsenic was also found in Basin 1 at a concentration exceeding the ER-L for this contaminant by 10 percent.

In general, the elevated concentrations of metals did not exceed the ER-L values by any substantial degree, and with the exception of concentrations of mercury detected in Basin 1, none of the metal concentrations approached ER-M levels. Mercury was detected in the finer-grained sediments of Basin 1, exceeding the ER-M by 0.12 milligram per kilogram (mg/kg). Due to the elevated levels of mercury, Basin 1 sediments were retested in May 2009 by Anchor Environmental. The results of the May 2009 testing also indicated that mercury levels exceeded acceptable thresholds for disposal at LA-2. An evaluation of the overall area indicates that high concentrations of mercury were found within all areas of Basin 1 with the exception of the southeast and northwest corners of Basin 1, which had predominantly low (ERL or below) mercury concentrations.

Approximately 59,242 cubic yards (cy) of sediment will be removed through dredging from Basin 1. Out of the 59,242 cy of sediment, approximately 33,738 cy of material qualifies for disposal at LA-2. The remaining approximate 25,504 cy that contain elevated concentrations of mercury (as high as 2.59 milligrams per liter [mg/L]) would be required to be tested and disposed of at an appropriate State-certified landfill, confined aquatic disposal site, or an upland confined disposal facility. The preliminary plans call for the contaminated materials to be dried on a barge or at one of the construction staging areas and then trucked off site. Because the final determination of where these materials will go is still under discussion, the EIR has assumed a worst-case scenario that the materials will be trucked to Kettleman Hills

Hazardous Waste Facility, a commercial chemical waste site located in Kings County, California.

Organic constituents within the Marina waters were below acceptable levels of detection, with the exception of dichloro-diphenyl-trichloroethane (DDT) and a few polynuclear aromatic hydrocarbon (PAH) compounds. DDT was detected at concentrations consistent throughout all docking basins, but at relatively low levels. The total PAH concentrations were substantially lower than levels of ecological concern.

In summary, other than sediments from Basin 1, the concentrations of constituents found in the samples occurred at levels that only slightly exceed ER-L values. Therefore, all of the dredge materials, with the exception of 25,504 cy from Basin 1, will be barged and disposed offshore at LA-2.

4.6.1.4 Contaminated Sites from Prior Known Hazardous Releases

According to the Environmental First Search report provided by Track Info Services (June 2007), a total of seven recorded releases of contaminants into the environment, consisting of five recorded leaking underground storage tank (LUST) sites and two State Spill sites, are listed within 0.25 mile (mi) of the project site. Three of the five LUST sites have been issued closure letters from the Regional Water Quality Control Board (RWQCB), indicating that the existing soil and groundwater contamination do not pose a significant enough risk to the underlying groundwater resources to require further remediation. The remaining two LUST sites that will likely pose a potential concern to groundwater underneath the project site are described below.

The Oil Shale Corporation (TOSCO) 76 Station No. 5379. The former TOSCO gasoline station is listed at 6280 2nd Street in the City of Long Beach, California, and is located adjacent to the project site, immediately west/northwest of Basin 3.

Exxon No. 7-3047. The former Exxon gasoline station is listed at 6401 East Pacific Coast Highway in the City of Long Beach, California, and is located approximately 0.l mi north/northeast of Basin 3 at the project site.

Termo Oil Company. According to the Environmental FirstSearch Site Detail Report, the Termo Oil Company is listed twice under the same address of 6301 East Pacific Coast Highway in the City of Long Beach, California, and is located approximately 0.2 mi north/ northeast of the project site. Verification monitoring and postremediation monitoring is underway to identify current total petroleum hydrocarbon (TPH) concentrations in the soil and potentially in the groundwater.

J's Cleaners. According to the Environmental FirstSearch Site Detail Report, J's Cleaners is listed at 6481 Pacific Coast Highway in the City of Long Beach, California, located approximately 0.1 mi north/northeast of the project site. J's Cleaners is currently undergoing a site assessment for volatile organic compounds (VOCs) that have been released into the environment. No other information regarding the release was available in the FirstSearch report.

All LUST and State Spill sites listed above have completed or are currently undergoing remedial action for known soil and/or groundwater contamination. According to depth to groundwater information obtained from a leaking underground fuel tank (LUFT) report for a site located approximately 0.2 mi northeast of the project site, depth to groundwater has been encountered between 5.5 and 10.9 ft below ground surface (bgs). Although groundwater impacts may be present at the project site, the proposed project does not require excavations below a depth of approximately 2 ft bgs.

4.6.1.5 Asbestos and Lead-Based Paints

The majority of the existing structures in the Marina were built in the late 1950s and early 1960s; therefore, there is a potential for asbestos-containing materials (ACMs) and/or lead-based paints (LBPs) to be present in existing building materials.

4.6.1.6 Polychlorinated Biphenyls (PCBs)

Some marine-related uses (boat maintenance) that may contain PCBs are located on or within the immediate vicinity of the project site. Properties associated with boat maintenance and repair may use hydraulic lifts and associated fluids, which are susceptible to subsurface leakages; if so, they may result in health impacts. If old electrical transformers and light ballasts remain on site, they may contain PCBs. Pole-mounted transformers and hydraulic lifts associated with boat maintenance and repair facilities were observed on site. However, no visible signs of staining or leakage from transformers were observed on-site. The primary concern with hydraulic lifts is the potential for subsurface leakages of hydraulic fluids from the lift's piston.

4.6.1.7 Lead

Lead has been used in commercial, residential, roadway, and ceramic paint products; in electric batteries and other devices; as a gasoline additive; for weighting, in gunshot; and for other purposes. It is recognized as toxic to human health and the environment and is widely regulated in the United States. Structures constructed prior to 1978 are presumed to contain LBP unless proven otherwise, although buildings constructed after 1978 may also contain LBP. Lead is regulated as a criteria pollutant under the Clean Air Act (CAA), which has led to its elimination from automotive fuels. Aerially deposited lead (ADL) from past use of leaded fuels is a concern in unpaved areas adjacent to highly traveled roads. Lead is also regulated as a toxic pollutant under the federal Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act as well as under the federal and California safe drinking water acts.

Release of LBP into the environment is a violation of several laws, including OSHA, Resource Conservation and Recovery Act (RCRA), the CAA, and the CWA. For the purposes of this analysis, it is assumed that LBP is present on site.

The SCAQMD and the City of Long Beach Health Department are the enforcement agencies for the project site.

4.6.1.8 California Clean Marina Toolkit Programs

The *California Clean Marina Toolkit* (Toolkit), which was produced by the California Coastal Commission, is a guidebook designed to help a Marina operator manage and operate a "clean Marina." A "clean Marina" complies with environmental laws and regulations and also strives to maintain a healthy, pollution-free environment by providing services that support clean boating, educating customers about clean boating practices, and training staff to be partners in the clean Marina program. The Toolkit recommends practices for addressing particular pollution problems and also provides guidelines to assist with educating Marina customers to be partners in clean Marina programs. The Toolkit also provides information of diverse Marinas in California and what they have done to operate as clean Marinas as well as sources for additional information.

The Clean Marinas California Program is administered through the Marina Recreation Association. The Alamitos Bay Marina was certified as a "Clean California Marina" on June 13, 2006. To obtain this designation, Alamitos Bay Marina implemented a number of best management practices (BMPs) that help reduce water pollution. Examples of BMPs implemented at Alamitos Bay Marina include good boat-keeping practices, education, signs, notices, Marina Rules and Regulations, waste receptacles, bilge pad exchange programs, and spill prevention and rapid clean-up plans. The program requires Certified Marinas to follow

guidelines for Marina activities including, but not limited to, emergencies, topside boat maintenance and cleaning, and underwater boat hull cleaning. The Long Beach Marina Environmental Policies prohibit certain activities which could contribute to poor water quality. This includes prohibiting rebuilding, hull painting, and other major repairs, as well as restrictions for sanding, painting, and the use of chemicals on a boat while the boat is moored at the Marina. Owners and contractors are required to follow policies that specify proper methods of in-water boat maintenance and require contractors to be registered and carry identification for any in-water repairs or maintenance services.

4.6.2 REGULATORY SETTING

Federal regulations related to hazardous materials and wastes include:

- Occupational Safety and Health, Title 29, Code of Federal Regulations (CFR), Regulations for General Industry (Part 1910) and Construction (Part 1926)
- United States Environmental Protection Agency (EPA), Title 40 CFR, National Emissions Standard for Hazardous Air Pollutants (NESHAPS), Part 61, Subpart A
- EPA, Title 40 CFR 700–799 (Toxic Substances Control Act)
- United States Department of Transportation (USDOT) Regulations, Title 49 CFR

State and local regulations related to hazardous materials and wastes include:

- Title 8 California Code of Regulations (CCR), California Occupational Safety and Health Administration (Cal-OSHA) Regulations, Chapter 4, Division of Industrial Relations, General Industry Safety Orders and Construction Safety Orders
- Title 22 CCR, Social Security, Division 2, Department of Social Services—Department of Health Services, and Division 4, Environmental Health
- Title 17 CCR, Public Health, Division 1, State Department of Health Services, Chapter 6—Lead Poisoning Prevention Program
- South Coast Air Quality Management District (SCAQMD), Rules and Regulations

4.6.2.1 Standard Regulatory Requirement – Handling and Storage of Hazardous Substances

Federal, State, and local codes for the handling and storage of any hazardous substances, including petroleum hydrocarbons, are to be followed at all times. This requirement shall apply both during construction and throughout the length of the project. These include proper storage and spill containment procedures. Prior to issuance of any building permits, the

project applicant shall obtain permits from the City of Long Beach Fire Department and any other applicable regulatory agency for the storage or handling of any hazardous substances.

4.6.2.2 California Code of Regulations Title 22 Criteria

Hazardous materials and wastes are defined by the regulations listed within the California Code of Regulations (CCR), Title 22, Sections 66261.1–66261.126. Hazardous materials and wastes are defined in the CCR, Title 22, Sections 66261.1 through 66261.126. In accordance with these regulations, a waste is classified as hazardous if it exhibits ignitability, corrosivity, reactivity, or toxicity. Section 66261.24 states that a waste is considered toxic if: (1) it contains certain metals or organic substances at soluble concentrations greater than federal regulatory levels using a test method called the toxicity characteristic leaching procedure (TCLP); (2) it contains total concentrations of certain substances greater than the total threshold limit concentration (TTLC) or soluble concentrations greater than the soluble threshold limit concentration (STLC); (3) it contains specified carcinogenic substances at a single or combined concentration of 0.001 percent; or (4) testing indicates toxicity greater than the specified criteria.

4.6.3 METHODOLOGY

Project impacts related to hazards and hazardous materials were evaluated based on the potential to expose sensitive receptors, including nearby residents and construction workers, as well as the surrounding environment, to hazards or hazardous materials during construction activities and after construction of the Marina. A basic site reconnaissance and a Records Search (Environmental First Search Report, Track Info Services, June 12, 2007) were conducted to determine any existing hazardous waste release issues related to former or current operations within the project limits and in the surrounding vicinity.

On November 2, 2008, LSA conducted a site visit, which included a visual observation of Alamitos Bay Marina and surrounding properties. The objective of the site reconnaissance was to identify recognized environmental conditions (RECs), including hazardous substances and petroleum products on the property (including soils, surface water, and groundwater) on site and on immediately adjacent properties. Multiple structures were observed within the boundaries of the project site. On-site structures were utilized for recreation, commercial, storage, and as maintenance facilities. The structures appeared to be in fair to good condition; were constructed of wood frame with either stucco, brick, or wood siding; and are all situated on concrete foundations. Many of the structures and associated lots are separated by concrete block, wood, or chain-link fencing.

Based on the findings of the screening, site visit, and project-specific sediment analyses, impacts were evaluated and mitigation measures were developed to address recognized environmental concerns as well as use and disposal of hazardous materials.

4.6.4 THRESHOLDS OF SIGNIFICANCE

The impact significance criteria used for this analysis are based primarily on Appendix G of the State CEQA Guidelines. The project may be considered to have a significant effect related to hazards and hazardous materials if implementation would result in one of more of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials
- 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
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mi of an existing or proposed school
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment
- Be located within an airport land use plan, or where such a plan has not been adopted within 2 mi of a public airport or public use airport, resulting in a safety hazard for people residing or working in the project area
- Be located within the vicinity of a private airstrip, resulting in a safety hazard for people residing or working in the project area
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
- 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 residents are intermixed with wildlands

The project site is not located within an airport land use plan area, within 2 mi of a public airport or within the vicinity of a private airport, and is not located adjacent to wildlands. In addition, the project is a continuation of existing land uses and does not result in an intensification of use or alter access on or in the vicinity of the project site. Therefore, the Initial Study previously prepared by the City determined that the proposed project would not have a significant impact with respect to the following CEQA thresholds: projects located within an airport land use plan, within 2 mi of a public airport, or within the vicinity of

private airstrip; the project's potential to interfere with an adopted emergency response plan or emergency evacuation plan; or proximity to and hazards from wildland fires. Therefore, these issues are not addressed further in this EIR.

4.6.5 IMPACTS AND MITIGATION MEASURES

4.6.5.1 Less than Significant Impacts

Hazardous Materials during Operation. The operation of the Marina as proposed would involve the use of small amounts of hazardous materials typical of such uses. The handling, use, storage, transport, and disposal of small amounts of substances used for boat cleaning and maintenance such as cleaners, solvents, and paints are subject to existing applicable federal, State, and local regulations. Because the uses on site postproject would remain the same as under current conditions, substantial changes to the operational characteristics and types of potentially hazardous materials present on site are not anticipated.

Likewise, the regulations and BMPs related to water quality and boat maintenance activities will not change. As stated above, the Long Beach Marina Environmental Policies, as well as the requirements to retain the Clean Marina Certification, prohibit certain activities that could contribute to poor water quality. This includes prohibiting boat and engine rebuilding, hull painting, and other major repairs, as well as restrictions for sanding, painting, and the use of chemicals on a boat while the boat is moored at the Marina. Owners and contractors are required to follow policies that specify proper methods of in-water boat maintenance and require contractors to be registered and carry identification for any in-water repairs or maintenance services. Therefore, impacts related to the use of hazardous materials under operational conditions are considered less than significant, and no mitigation is required.

4.6.5.2 Potentially Significant Impacts

Hazardous Materials during Waterside Construction. The proposed project includes dredging that would remove the accumulated sediment in order to return each of the Marina's seven basins to their original design depths and/or original basin depths to allow unencumbered maneuvering of recreational vessels. The Alamitos Bay Marina construction program involves dredging Basins 2 through 7 to a target depth of -10 ft Mean Lower Low Water (MLLW). Basin 1 will be bisected and dredged to target depths ranging from -12 ft MLLW to -15 ft MLLW. The estimated total volume of dredged material to be removed from the seven basins is approximately 287,120 cy.

As stated above, the materials resulting from the proposed dredging activities in Basins 2–7 are suitable for disposal at the EPA's designated ODMDS known as LA-2. Therefore, because the sediment within Basins 2–7 has been determined to be nonhazardous, it is unlikely that any dredging activities in those basins will pose a concern through the routine

transport, use, or disposal of sediment material. In addition, all material proposed for dredging will be evaluated for ocean disposal suitability in accordance with federal and regional guidelines outlined in the Ocean Testing Manual (EPA/United States Army Corps of Engineers [Corps] 1991) and the Draft Regional Implementation Agreement for the Evaluation of Dredged Material for Ocean Dumping (Corps/EPA 1993). Dredging and disposal of dredged materials into waters of the United States are subject to the regulatory authority of the Corps under Section 404 of the federal Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act. The requirements for these permits are described in detail in Section 4.7, Hydrology and Water Quality. Impacts related to dredging in the Marina and disposal of dredged material at the LA-2 site would be less than significant with implementation of Mitigation Measure 4.7-1, as outlined in Section 4.7, Hydrology and Water Quality.

Testing of sediments in Basin 1 in 2009 confirmed that mercury levels exceeded acceptable thresholds for disposal at LA-2. An evaluation of Basin 1 sediments indicates that a high concentration of mercury was found within all areas of Basin 1 with the exception of the southeast and northwest corners. Because of the high mercury levels in Basin 1, approximately 25,504 cy would be required to be tested and disposed of at an appropriate State-certified landfill.

During dredge operations, Basin 1 would be isolated by a silt curtain to help maintain water quality. Clamshell/bucket-type dredging equipment would be used. The dredged material would be temporarily stockpiled in the construction staging area until it was loaded onto trucks. Plastic tarps and containment structures would be placed under and around the stockpile areas to prevent runoff back into Alamitos Bay. Additionally, dust will be minimized on site during the sediment evaporation process through application of a nontoxic soil stabilizer or watering, as required in Mitigation Measure 4.2-1, Air Quality.

Prior to disposal, dredge materials from Basin 1 must be tested to determine whether concentrations of mercury are considered hazardous by state and federal (RCRA) levels. Mitigation Measure 4.6-1 will require that dredge materials be tested prior to disposal at a land side facility. Per state standards, any soluble constituent concentration exceeding the Title 22 STLC is classified as hazardous material. If results from additional testing indicate that levels of mercury within Basin 1 exceed the STLC for mercury at 0.2 mg/L, the dredge materials from Basin 1 would be considered hazardous under California's Title 22 regulations. In order to determine whether the sediments within areas of Basin 1 would be considered hazardous by federal standards under the RCRA, leaching potential would be required to be evaluated using the TCLP testing method prior to disposal. If results of the

TCLP extract indicate concentrations of mercury that exceed the federal threshold of 0.2 mg/L, the sediment would be considered hazardous under federal guidelines.[1]

If testing (as required by Mitigation Measure 4.6-1) indicates that concentrations of mercury within Basin 1 exceed state and federal (RCRA) levels, the dredge materials would be disposed of at a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) approved, Class I landfill. The closest Class I landfill facility is the Kettleman Hills Landfill located in Kings County on the Interstate 5 (I-5) corridor, north of the City of Bakersfield. In addition, a Human Health Risk Assessment, required by Mitigation Measure 4.6-2, will be conducted to evaluate the potential health risks for construction workers working on site from the exposure to potentially hazardous concentrations of mercury in dredge material.

In order to ensure that all materials being stored on site would not be accidentally released into the environment, soil stockpiles will be covered in accordance with the Soil Management Plan required in Mitigation Measure 4.6-3. After the loading, covering, and manifesting the trucks containing the impacted soils, the trucks destined for the Kettleman Hills Landfill will be routed. The implementation of Mitigation Measures 4.6-1, 4.6-2, and 4.6-3 would ensure that construction impacts related to the handling, routine transport, and disposal of potentially impacted sediments would be less than significant.

Hazardous Materials during Landside Construction. Construction of the proposed project would involve the routine use, handling, storage, transport, and disposal of hazardous materials such as fuels, paints, and solvents, consistent with applicable federal, State, and local regulations. In compliance with existing federal, State, and local regulations, the amounts of these materials present during construction would be limited and would not pose a significant adverse hazard to workers or the environment. The construction contractor would be required to implement standard BMPs regarding hazardous materials storage, handling, and disposal during construction in compliance with the State General Permit to protect water quality.

As discussed above, the FirstSearch Environmental Database search indicated that two LUST sites and three State spill sites are located within 0.25 mi of the project site. These sites are currently undergoing remediation and may contribute to groundwater quality impacts underneath the project site. Although groundwater impacts may be present at the project site during construction activities, the proposed project does not require excavations below a depth of approximately 2 ft bgs. Therefore, it is unlikely that impacted groundwater will be accidentally released into the environment during the excavation and replacement of the

[1] Colorado Lagoon: Sediment Testing and Material Disposal Report, Kinnetic Laboratories, Inc., July 30, 2004 (Revised October 27, 2006).

existing parking lots. However, in the event that contaminated groundwater is encountered during grading or excavation activities, Mitigation Measure 4.6-4, requiring all construction subcontractors to comply with the appropriate health and safety measures, is proposed. Implementation of Mitigation Measure 4.6-4 will help minimize potential health and safety risks for the City's contractors in the event that accidental release of impacted soil or groundwater occurs during construction activities to a less than significant level.

Asbestos-Containing Materials and Lead-Based Paints. Because the existing restroom structures that are proposed to undergo remodeling and/or demolition were constructed in the late 1950s and early 1960s, there is a potential for ACMs and/or LBPs to be present in existing building materials. Therefore, all building materials that will be remodeled or demolished during the proposed project shall be tested for ACMs and LBPs and appropriately removed prior to the start of such activities. The implementation of Mitigation Measures 4.6-5, 4.6-6, and 4.6-7 will help minimize potential health and safety risks associated with exposure to potential ACMs and LBPs and reduce potential impacts to less than significant levels.

Polychlorinated Biphenyl. Proposed replacement of the existing parking lot may include the disturbance or removal of existing transformer-mounted utility poles. Impacted soil or groundwater from leaking transformers containing PCBs, if present on site, may pose a concern to worker safety. In the event that these utility poles are disturbed or removed, implementation of Mitigation Measure 4.6-8 will help minimize potential health and safety issues from the accidental release of or exposure to PCBs in soil or groundwater and will reduce impacts to a less than significant level.

Hazardous Emissions within 0.25 Mile of an Existing or Proposed School. Basin 7 of the project site is located approximately 0.25 mi south of Naples Elementary School; the other six basins are located within 1 mi of Naples Elementary School.[1] However, as stated above, the uses proposed are similar to existing land uses on site and are not expected to introduce significant amounts of hazardous materials or waste. Mitigation Measures 4.6-1 through 4.6-8 have been proposed to ensure that any hazardous emissions, materials, or substances would not pose a potentially significant impact on an existing or proposed school. Compliance with Mitigation Measures 4.6-1 through 4.6-8 would reduce any hazardous waste impacts to a less than significant level. Therefore, there would be no significant adverse hazard to the public

[1] Long Beach Unified School District, Facility Master Plan, http://www.dejongprojects.com/documents/Long%20Beach/lbusd_area_f.pdf, accessed June 27, 2007.

or the environment through the routine handling, storage, transport, use, or disposal of hazardous materials and/or wastes as a result of the proposed project.

4.6.6 MITIGATION MEASURES

Implementation of the following mitigation measures will ensure that potential hazard and hazardous materials impacts resulting from project implementation would be reduced to less than significant levels.

The following measures are proposed to reduce hazards related to potentially hazardous dredge materials from Basin 1 to a less than significant level.

4.6-1 Prior to issuance of any permits allowing dredging in Basin 1, the City of Long Beach (City) shall conduct additional laboratory testing of the sediment materials from Basin 1. Additional testing shall be conducted prior to disposal of the contaminated soils to determine if concentrations of mercury exceed the Soluble Threshold Limit Concentration (STLC) for mercury at 0.2 milligrams per liter (mg/L) and are considered hazardous by State standards (California Code of Regulations [CCR], Title 22, Section 66261.1–66261.126), and/or are considered hazardous by federal standards (Resource Conservation Recovery Act [RCRA]), where mercury concentrations exceed the federal threshold of 0.2 mg/L, as determined from toxicity characteristic leaching procedure (TCLP) extract testing (TCLP method shall be determined by leaching potential).

4.6-2 Prior to issuance of any permits allowing dredging in Basin 1, the City of Long Beach shall conduct a Human Health Risk evaluation to determine the level of exposure to potentially hazardous levels of mercury during construction activities.

4.6-3 **Soil Management Plan:** The Office of Environmental Health Hazard Assessment (OEHHA) shall review the dredge materials removal workplan and shall list any additional requirements. Implementation of the workplan shall be overseen by the OEHHA for compliance with local, State, and federal regulations. Any additional sampling or contaminant material removal shall be subject to these same regulations. As part of the soil management plan, all disposal material will be characterized prior to disposal at a State landfill site. All hazardous waste will be disposed of in a Class I landfill. All other soils or solid waste will be disposed of at an unclassified landfill. In addition, during construction activities of the potentially impacted soils on site, monitoring

will be required by the South Coast Air Quality Management District (SCAQMD).

After removal of the contaminated materials from Basin 1 and during the drying process of these sediments/soils, a mixture of Simple Green and water (10:1) shall be lightly applied to the excavated sediments/soils. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions.

The following measures are proposed to reduce hazards related to land side construction activities to a less than significant level.

4.6-4 During all excavation activities, the Marine Bureau Manager shall ensure that all construction subcontractors comply with the appropriate health and safety measures required by the Occupational Safety and Health Administration (OSHA). In the event that groundwater is encountered during grading or excavation activities, all construction activities shall be terminated in the immediate area until the groundwater is investigated for potentially hazardous content. In the event that suspicious odors are observed in soil, construction shall also be terminated until the soil is properly characterized for hazardous waste content. Appropriate measures shall be taken in compliance with all applicable regulations for the characterization and disposal of hazardous materials.

4.6-5 Prior to the issuance of any demolition permits and at least 10 days prior to any demolition work for proposed improvements, the Marine Bureau Manager shall notify and submit fees to the South Coast Air Quality Management District (SCAQMD) in compliance with SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities. Contractors shall adhere to the requirements of SCAQMD Rule 1403 during all construction and demolition activities.

The following measures are proposed to reduce hazards related to asbestos-containing materials and lead-based paints to a less than significant level.

4.6-6 Prior to the issuance of any demolition permits, the Marine Bureau Manager shall provide evidence that a certified asbestos consultant has conducted an asbestos survey of the existing concrete materials. If asbestos-containing material (ACM) is found, it shall be removed and disposed of by a licensed and certified asbestos abatement contractor in accordance with requirements outlined by the local county health department.

4.6-7 Prior to the issuance of any demolition permits, the Marine Bureau Manager shall provide evidence that a certified lead-based paint (LBP) consultant has conducted LBP surveys in the areas where paint materials may be removed or disturbed on existing structures. If LBPs are found, they shall be removed and disposed of by a licensed and certified LBP contractor in accordance with requirements outlined by the local county health department.

The following measure is proposed to reduce hazards related to leaking transformers containing PCBs to a less than significant level.

4.6-8 Prior to the issuance of any demolition permits, the City of Long Beach shall conduct the inspection of utility pole-mounted transformers within the project area for leaks. Leaking transformers shall be considered a potential for polychlorinated biphenyl (PCB) hazard unless tested and shall be handled accordingly. If the removal of utility poles is anticipated, all treated wooden poles may have a potential for creosote. Areas immediately surrounding the utility pole shall be tested and handled accordingly.

4.6.7 CUMULATIVE IMPACTS

The cumulative study area for hazardous materials consisted of: (1) the area that could be affected by proposed project activities, and (2) areas on the proposed project site affected by other projects whose activities could directly or indirectly affect the presence or impact of hazardous materials. In general, only projects occurring adjacent to or very close to the project site are considered due to the limited potential impact area associated with release of hazardous materials into the environment. Currently, the following projects that have been proposed or approved but are not yet fully constructed are within the cumulative study area for the proposed project:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project
- Proposed Home Depot Project at Loynes Drive and Studebaker Road
- Termino Drain Project, various segments terminating at the northern end of Marina Stadium

Because the proposed project is scheduled to begin in 2011 and be implemented over 6 years, it is possible that the construction activity for the proposed project and construction for one of the cumulative projects identified above may occur at the same time. However, none of the cumulative projects listed above are in close enough proximity to the proposed project

site that they could be affected by proposed on-site project activities or directly or indirectly affect the presence or fate of hazardous materials on site.

Dredging activities associated with the proposed project do not pose a concern through the routine transport, use, or disposal of sediment material because the majority of the dredged basin materials will be disposed via barge to an ocean disposal site and will not be in proximity to the identified cumulative projects. Additionally, the contaminated dredge materials from Basin 1 will be tested prior to disposal and handled accordingly, as required by Mitigation Measures 4.6-2 and 4.6-3. Therefore, with implementation Mitigation Measures 4.6-2 and 4.6-3, the proposed project's transport, use, or disposal of contaminated sediment material will be reduced to a less than significant level and will not, in combination with the cumulative projects, cumulatively contribute to potential hazardous materials impacts.

Similarly, the potential health and safety risks related to the presence of ACMs and/or LBPs in existing building materials on site, and the release of potentially contaminated groundwater during construction, will be reduced with implementation of Mitigation Measures 4.6-6, 4.6-7, and 4.6-8. Therefore, these site-specific conditions will not, in combination with the cumulative projects, cumulatively contribute to potential hazardous materials impacts.

The proposed project includes the continuation of Marina uses that involve the use of limited amounts of hazardous materials and would not present a significant hazard to the environment with regulatory compliance procedures in place. In addition, because there will be a reduction in boat slips, there are projected to be fewer boats, with less possibility of contributing to cumulative environmental effects. Based on the distance to the nearest cumulative project and the amount of hazardous materials use associated with the proposed project and other hazardous materials effects from past, present, and reasonably foreseeable projects within the City, the project's contribution to cumulative impacts would be considered to be less than significant.

Furthermore, for the proposed project and all other projects in the area to be approved, each project is required to be consistent with the existing plans, programs, and policies related to hazards and hazardous materials. Consistency with these plans prevents this and other projects from creating cumulative impacts in terms of hazards and hazardous materials. Therefore, upon project compliance with the applicable existing local, State, and federal hazardous materials regulations and implementation of Mitigation Measures 4.6-1 through 4.6-8, the project's impacts related to hazards and hazardous materials are considered less than cumulative considerable.

4.6.8 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

There are no significant unavoidable adverse hazards or hazardous materials impacts associated with the proposed project.

4.7 HYDROLOGY AND WATER QUALITY

INTRODUCTION

This section describes the environmental and regulatory setting of the project site and vicinity with respect to surface water hydrology and quality. This analysis addresses potential impacts to hydrology and water quality resulting from implementation of the proposed project. This project is required to meet drainage and water quality requirements for surface water runoff.

4.7.1 EXISTING SETTING

4.7.1.1 Regional Watershed

The project site is located in the San Gabriel River watershed. The watershed drains 689 square miles from Los Angeles, Orange, and San Bernardino Counties and is bounded by the San Gabriel Mountains to the north, a large portion of San Bernardino and Orange Counties to the east, the Los Angeles River watershed to the west, and the Pacific Ocean to the south. The San Gabriel River's headwaters originate in the San Gabriel Mountains, while the lower part of the river flows through a concrete-lined channel before becoming a soft-bottom channel near its termination at the Pacific Ocean. The project site is located within the Los Cerritos Channel and Alamitos Bay Water Management Area (WMA) of the San Gabriel River watershed. The WMA is located between the Los Angeles and San Gabriel Rivers and drains to the same general area as the San Gabriel River. The Los Cerritos Channel and Alamitos Bay represent the main water bodies of the WMA.[1]

4.7.1.2 Project Watershed

The proposed project is located within the Alamitos Bay Watershed. Alamitos Bay, located in the southeastern portion of the City of Long Beach (City) near the Los Angeles County/Orange County border, is connected directly to the Pacific Ocean. Alamitos Bay is composed of Marine Stadium, a recreation facility used for boating, water skiing, and jet skiing; Long Beach Marina, which contains seven smaller basins for recreational craft and a boatyard; a variety of public and private berths; and the Bay proper, which includes several small canals, a bathing beach, and several popular clamming areas.

[1] County of Los Angeles, Department of Public Works, San Gabriel River Watershed, http://dpw.lacounty.gov/wmd/watershed/sg/ accessed January 30, 2007.

4.7.1.3 Project Site Drainage Pattern

There are no streams or rivers located on site; however, the San Gabriel River runs east of the project site, and the Los Cerritos Channel drains into the project site.

There are several storm drain lines running through and surrounding the project site. Several of the lines run under the parking lot and discharge directly into Alamitos Bay. In 2007, the City, working in partnership with Los Angeles County, arranged for three of the four main storm drain pump stations that empty low-flow effluent into Alamitos Bay from the surrounding areas to be diverted into the sewer system. This diverted approximately one million gallons of contaminated water per month from the storm drain system into the sewer system.

4.7.1.4 Surface Water Quality

The Long Beach storm water monitoring program for Alamitos Bay was initiated during the 2001/2002 annual program review with Regional Board staff. A pilot-receiving water program was first conducted during the 2002/2003 season. Since the initial pilot program, the receiving water study in Alamitos Bay has been included as a part of the storm water monitoring program. The primary objectives of the receiving water program are to (1) define the general vertical and horizontal extent of storm water in Alamitos Bay, Marine Stadium, and Los Cerritos Channel, and (2) evaluate toxicity and associated water quality characteristics of the storm water plume. The program was intended to be conducted once during the early portion of the wet weather season. The study area included all of Alamitos Bay, Marine Stadium, and the Los Cerritos Channel up to the first upstream bridge. Initiation of field sampling is intended to occur 12 to 24 hours following the end of rainfall.

A total of five storm water plume tracking studies have been conducted in Alamitos Bay receiving waters since the initial pilot program in 2002. These studies are typically conducted in association with an early season storm event. Since the first study, monitored events have ranged from relatively small events (0.3–0.5 inches [in] of rain), where the storm water plume was limited mostly to the Los Cerritos Channel, to very large events (1.6–1.8 in) that impacted all of Alamitos Bay and extended out into San Pedro Bay. In contrast to similar studies conducted to monitor storm water plumes in Santa Monica Bay and San Diego Bay, none of these surveys, including the most recent, has shown evidence of widespread toxicity within Alamitos Bay as a result of the storm water plumes. Based on the plume characteristics, the Los Cerritos Channel was determined to be the major source of storm water entering Alamitos Bay. Measured surface salinity within Alamitos Bay ranged from 3.88 to 35.3 parts per thousand (ppt). The lowest salinities were found within the lower reaches of the Los Cerritos Channel near the Pacific Coast Highway (PCH) Bridge. The higher surface salinities occurred nearer the Bay entrance and the western half of Alamitos

Bay. The upper reaches of Marine Stadium had near open coast salinities, indicating that there was no significant plume from this portion of the watershed during this moderate event.

Total metal concentrations generally increased with decreasing salinity (or increasing storm water influence) for each of the metals tested. Total zinc concentrations exceeded the California Ocean Plan 2002 daily maximum concentration of 80 micrograms per liter (µg/L) for the two stations most influenced by the storm water plume. With the exception of cadmium, dissolved metals also showed a clear pattern of storm water influence. Dissolved metal concentrations increased as the salinity decreased. Dissolved copper concentrations exceeded the California Toxics Rule for Saltwater Criterion Maximum Concentration (CMC) of 4.8 µg/L at two stations and the Criterion Continuous Concentration (CCC) of 3.1 µg/L at all receiving water stations. The sea urchin fertilization test was used to evaluate potential toxic effects of the storm water plume. Tests conducted on plume samples from each of the four receiving water stations showed no evidence of a toxic response.

4.7.1.5 Basin Sediment Quality/Characterization[1]

The analytical chemistry results showed that metals associated with urban runoff (i.e., copper, lead, mercury, and zinc) were detected at nominally elevated concentrations across all basins. The only metal detected at a level significantly different from other sample areas was mercury measured in Basin 1. Organic constituents, with the exception of dichloro-diphenyl-trichloroethane (DDT) and a few polycyclic aromatic hydrocarbon (PAH) compounds, were below acceptable levels of detection. DDT was detected at concentrations consistent throughout all basins, but at relatively low levels. The total PAH concentrations were substantially lower than levels of ecological concern. The sediments proposed for dredging in Basins 2 through 7 are suitable for disposal at the United States Environmental Protection Agency's (EPA) designated Ocean Dredged Material Disposal Site (ODMDS) (known as LA-2, located off the coast of San Pedro, California). However, supplemental testing indicates that portions of Basin 1 dredge materials contain elevated levels of mercury and would not be acceptable at LA-2. Therefore, approximately 25,504 cubic yards (cy) of dredge materials from Basin 1 would need to be trucked off site and disposed of at an approved landfill, confined aquatic disposal site, or upland confined disposal facility.

[1] Discussion based on the Results of a Tier III Sediment Characterization Performed with Samples from Alamitos Bay Marina, prepared by Weston Solutions, July 2007.

4.7.1.6 Alamitos Bay Tidal Circulation/Flushing Characteristics[1]

Water quality in a marina basin depends largely on how well the basin is flushed, which depends in turn on how well water circulates within the marina. Studies have shown that adequate flushing improves water quality in marina basins, reduces or eliminates water stagnation, and helps maintain biological productivity and aesthetic appeal. Flushing can reduce pollutant concentrations in a marina basin by anywhere from 70 percent to almost 90 percent over a 24-hour period.[2]

An important variable in circulation of Alamitos Bay is the operational condition and related pumping intake rates of the two local power plants (the AES and Haynes plants) that draw water from the Bay for use in cooling. Pumping by the power plants affects water movement throughout the Bay, but their effects had not previously been clearly defined or quantified until the City recently conducted a study of water circulation throughout the Bay to identify potential causes of stagnation or other conditions that could lead to poor flushing and poor water quality. In summary, the study showed that higher pumping rates by each plant dramatically increased the flushing within Alamitos Bay.

In general, the residence times (i.e., the average time a particle resides in a hydraulic system) are shorter for locations relatively close to the ocean entrance and longer for areas farther upstream and into the Bay such as Colorado Lagoon and Spinnaker Bay. Under high pumping rate conditions, the residence times are relatively short and are approximately less than one day at the Mother's Beach area and throughout lower Alamitos Bay. Under low pumping rate conditions, the residence times are approximately five days, compared to one day under the high pumping rate condition. This comparison indicates that power plant pumping, especially at the AES plant, plays a very important role in moving and replacing water within Alamitos Bay. The pumping rate of the Haynes plant is relatively stable, while that of the AES plant varies more over the year. The data from 2006 on pumping rates for the AES plant showed a pumping rate peak in the summer months.

4.7.1.7 Groundwater

The County of Los Angeles overlies 15 groundwater basins, as established by the Los Angeles Regional Water Quality Control Board (RWQCB) Water Quality Control Plan (WQCP) for the Los Angeles region (1994). The project site is situated within the Los Angeles-San Gabriel Hydrologic Unit, which covers most areas of the County as well as some small areas of southeastern Ventura County. Within this hydrologic unit, the project

[1] Discussion based on the Alamitos Bay Circulation Study, prepared by Moffatt & Nichol, August 2007.

[2] National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating, United States Environmental Protection Agency, November 2001.

site is located in the Coastal Plain of Los Angeles Groundwater Basin and overlies the West Coast Subbasin (Basin No. 4-11.03).[1] The West Coast Subbasin covers an area of 142 square miles and is bound by the Ballona Escarpment to the north, the Newport-Inglewood Fault Zone to the east, and the Pacific Ocean and Palos Verdes Hills to the south and west. Groundwater recharge occurs primarily as a result of underflow from the Central Subbasin. Water spread in the Central Subbasin percolates into aquifers and eventually crosses through and over the Newport-Inglewood Fault Zone, supplementing the groundwater supply in the West Coast Subbasin. The general regional groundwater flow pattern is southward and westward from the Central Coastal Plain toward the ocean.[2]

According to the California Department of Mines and Geology, historic high water groundwater is estimated to be approximately 8 feet (ft) below the existing ground surface. However, fluctuations in groundwater levels may occur due to tidal fluctuations, variations in precipitation, ground surface topography, subsurface stratification, irrigation, and other factors that may not be easily identified.

4.7.1.8 Potential Pollutants Associated with Marinas[3]

Because marinas are located right along the water's edge, pollutants created by marina activities are released directly into the water. Although it is not one of the leading sources of polluted runoff, pollution from marinas can have a significant impact on local water quality. The pollutants that might be generated at a marina and enter a marina basin include:

- **Petroleum Contaminates.** Fuel can be easily spilled into surface waters from the fuel tank air vent while fueling a boat, and oil can be easily discharged during bilge pumping.
- **Boat Sewage.** Sewage from boats is more concentrated than that from either combined sewer overflows or sewage treatment plants because marine sanitation systems use little water for flushing. Use of marine sanitation holding tanks in an improper manner can result in sewage entering the water. Both improperly installed marine sanitation devices and improper disposal practices (pumping overboard within 3 nautical miles of the nearest land) are illegal.

1 California Department of Water Resources, Groundwater Bulletin 118, Coastal Plain of Los Angeles County Groundwater Basin, West Coast Subbasin, February 27, 2004.
2 Ibid.
3 National Management Measures to Control Nonpoint Source Pollution from Marinas and Recreational Boating, United States Environmental Protection Agency, November 2001.

- **Trash and Marine Debris.** Solid waste can collect at marinas and boat ramp sites if litter is not continuously picked up, if trash receptacles are not provided or conveniently located, and/or insufficient attention is given to controlling waste produced during boat cleaning, maintenance, and repair activities.
- **Hazardous Waste.** In-water vessel cleaning and maintenance require the use of solvents, paints, and varnishes, which can contribute to pollution entering the water. Use of a variety of boat cleaners, such as detergents, teak (wood) cleaners, and fiberglass polishers can also contribute to pollution and nutrients entering the water.
- **Fish Waste.** The amount of fish waste disposed into a small enclosed basin such as a marina can exceed that which exists naturally in the water at any one time. In sufficient quantities where water circulation is restricted, the decomposition of this fish waste can deplete the water of dissolved oxygen, leading to water quality degradation and fish kills.
- **Storm Water Runoff.** Water runoff from marina parking lots and maintenance areas can carry pollutants into the Bay. Paint chips, sawdust, metal filings, oils, grease, or fuel on the ground can be swept into surface waters by storm events. Unless the runoff is controlled or treated in some manner, these pollutants will end up in the marina basin.

On June 13, 2006, the Alamitos Bay Marina (Marina) was certified as a Clean Marina. This means that the Marina has been certified by the Clean Marinas California Program as a facility that has implemented practices that help to ensure the Marina operates in an environmentally responsible manner.

4.7.1.9 LA-2 Disposal Site

The LA-2 site is located approximately 5 nautical miles southwest of the breakwater at San Pedro, just south of the San Pedro Valley submarine canyon. The site is near the top edge of the continental slope in approximately 360 to 1,115 ft of water. The LA-2 site is a permanently designated ODMDS that has been historically managed at an annual disposal quantity of 200,000 cy for the disposal of material dredged primarily from the Los Angeles/Long Beach Harbor complex.

4.7.2 REGULATORY SETTING

4.7.2.1 Federal Regulations

Clean Water Act. The Clean Water Act (CWA) is a comprehensive piece of legislation that generally includes reference to the Federal Water Pollution Control Act. Overall, the CWA seeks to protect the nation's water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the United States. These water quality standards are enforced by the EPA. The CWA also provides for

development of municipal and industrial wastewater treatment standards and a permitting system to control wastewater discharges to surface waters. The CWA is the primary federal statute governing the discharge of dredged and/or fill material into waters of United States. Relevant sections include the following:

- **Section 404.** The United States Army Corps of Engineers (Corps) regulates discharge of dredged or fill material into waters of the United States under Section 404 of the CWA. Activities requiring Section 404 permits are limited to discharges of dredged or fill materials into the waters of the United States. The proposed project will require a 404 permit from the Corps for the discharge of dredged materials from the Bay.
- **Section 401.** Section 401 of the CWA specifies that any applicant for a federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency a certification from the State in which the discharge originates or will originate from the State agency with jurisdiction over those waters (Los Angeles RWQCB) that the project will comply with water quality standards, including beneficial uses, water quality objectives, and the State antidegradation policy. The proposed project will require a 401 Permit in order to obtain the Section 404 Permit from the Corps for the disposal of dredged materials from the Bay.
- **Section 402.** In 1972 the Federal Water Pollution Control Act (later referred to as the CWA) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the CWA was again amended to require that the EPA establish regulations for the permitting of storm water discharges (as a point source) by municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

  The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, fishing) along with water quality criteria necessary to support those uses. Water quality criteria are set concentrations or levels of constituents (such as lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that supports a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, the EPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).
- **Section 303(d).** Section 303(d) of the CWA requires identifying and listing those water bodies that are water quality impaired. Once a water body has been deemed impaired, a

total maximum daily load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (often with a "factor of safety" included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body. The receiving water for the project site, as described in greater detail below, is 303(d) listed and is considered impaired for specific constituents.

Rivers and Harbors Act. Section 10 of the Rivers and Harbors Act requires authorization from the Corps for the construction of any structure in or over any navigable water of the United States, the excavation/dredging or deposition of material in these waters or any obstruction or alteration in "navigable water." The proposed project will require a Section 10 Permit from the Corps for the disposal of dredged material, the placement of pile structures for the dock system, and the placement of any riprap for the seawall repairs.

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972. Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 requires authorization from the Corps for the transportation of dredged material for the purpose of disposal in the ocean, where it is determined that the disposal will not unreasonably degrade or endanger human health, welfare, or amenities; the marine environment or ecological systems; or economic potentialities. A Section 103 permit will be required because the material is planned to be disposed of at the LA-2 disposal site.

4.7.2.2 State Regulations

Porter-Cologne Water Quality Control Act. The federal CWA places the primary responsibility for the control of water pollution and for planning the development and use of water resources within the states, although it does establish certain guidelines for states to follow in developing their programs.

California's primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and the RWQCB broad powers to protect water quality and is the primary vehicle for implementation of California's responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCBs the authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting

requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste. The RWQCBs are also authorized to enforce discharge limitations, take actions to prevent violations of these limitations from occurring, and conduct investigations to determine the water quality status of any of the waters of the State within their region. Civil and criminal penalties are also applicable to persons who violate the requirement of the Porter-Cologne Act or SWRCB/RWQCB orders.

California Ocean Plan. The SWRCB has adopted a WQCP for ocean waters of California called the California Ocean Plan. With the exception of wildlife habitat, the Ocean Plan identifies the same beneficial uses as the Los Angeles Basin Plan (Basin Plan). The Ocean Plan has similarly established water quality objectives for bacteriological, physical, chemical, radioactive, and biological characteristics. The Plan also incorporates general requirements for the management of wastes discharged directly into the ocean, effluent quality requirements for waste discharges directly into the ocean, discharge prohibitions, and general provisions. The Ocean Plan is incorporated by reference into the Basin Plan.

Water Quality Control Plan, Los Angeles River Basin Plan. The RWQCB has adopted a Basin Plan for its region of responsibility, which includes the City. The agency has delineated water resource area boundaries based on hydrological features. For purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the hydrologic areas described in the Basin Plan. The Basin Plan also establishes implementation programs to achieve water quality objectives to protect beneficial uses and requires monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Beneficial uses of water are defined in the Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. Examples of beneficial uses include drinking water supplies; swimming, industrial and agricultural water supply; and the support of freshwater and marine habitats and their organisms.

The following list summarizes the beneficial uses for Alamitos Bay as designated by the RWQCB:

- **Industrial Service Supply (IND):** Uses of water for industrial activities that do not depend primarily on water quality, such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.
- **Water Contact Recreation (REC-1):** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, waterskiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
- **Noncontact Water Recreation (REC-2):** Uses of water for 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, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
- **Wildlife Habitat (WILD):** Uses of water that support terrestrial ecosystems, including but not limited to preservation and enhancement of terrestrial habitats, vegetation, wildlife (i.e., mammals, birds, reptiles, amphibians, invertebrates), and wildlife water and food sources.
- **Rare, Threatened, or Endangered Species (RARE):** Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal law as rare, threatened, or endangered.
- **Commercial and Sport Fishing (COMM):** Uses of water for commercial or recreation collection of fish, shellfish, or other aquatic organisms.
- **Navigation (NAV):** Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
- **Estuarine Habitat (EST):** Uses of water that support estuarine ecosystems, including but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
- **Marine Habitat (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 (e.g., marine mammals, shorebirds).
- **Shellfish Harvesting (SHELL):** Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sports purposes.
- **Wetland Habitat (WET):** Uses of water that support wetland ecosystems, including but not limited to preservation or enhancement of wetland habitats, vegetation, fish, shellfish, or wildlife, and other unique wetland functions that enhance water quality, such as

providing flood and erosion control, stream bank stabilization, and filtration and purification of naturally occurring contaminants.

The RWQCB has designated narrative or numerical water quality objectives for all of its inland surface waters and enclosed bays and estuaries for the following parameters: ammonia; bacteria (coliform); bioaccumulation; biochemical oxygen demand (BOD); biostimulatory substances; chemical constituents; chlorine; color; exotic vegetation; floating material; methylene blue activated substances (MBASs); mineral quality; nitrogen (nitrate, nitrite); oil and grease; dissolved oxygen; pesticides; pH; polychlorinated biphenyls (PCBs); radioactive substances; solid, suspended, or settable solids; taste and odor; temperature; toxicity; and turbidity. These objectives are listed in Table 4.7.A. If these objectives are exceeded, the RWQCB can use its regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. The RWQCB utilizes water quality criteria, in the form of "scientific information developed by the EPA regarding the effect a constituent concentration has on human health, aquatic life, or other uses of water," to develop its water quality objectives (RWQCB 1995).

The RWQCB employs water quality standards from the California Toxics Rule (40 Code of Federal Regulations [CFR] §131.38) for potentially toxic constituents, primarily trace (heavy) metals and organic compounds, to determine whether beneficial uses are affected by storm and dry weather runoff. The values represent the numeric limits in receiving waters that will protect the "presence of, as well as the uses of, both fresh and salt water organisms."

That is, these values represent concentrations within a water body. The State has developed bacteriological standards to monitor water quality at public beaches. These are based on legislation adopted in 1999 (Assembly Bill 411) and are promulgated in the California Health and Safety Code, Section 115880. In the "Guidance for Beaches and Recreational Waters," the bacteriological standards are defined in Appendix A, Article 4, Healthfulness. Table 4.7.A, Water Quality Standards and Benchmarks, provides a comparison of standards and benchmarks for concentrations of constituents in runoff or in receiving waters.

Clean Water Act, Section 303, List of Water Quality Limited Segments. Section 303(d) specifically requires the State to develop a list of impaired water bodies and subsequent numeric TMDLs for whichever constituents impair a particular water body. These constituents include inorganic and organic chemical compounds, metals, sediments, and biological agents. The TMDL is the total amount of a constituent that can be discharged while meeting water quality objectives and protecting beneficial uses. It is the sum of the individual load allocations for point-source inputs (e.g., an industrial plant), load allocations for nonpoint-source inputs (e.g., runoff from urban areas), and natural background, with a margin of safety (RWQCB 2002).

Table 4.7.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Ammonia	Numeric objectives have only been established for COLD and WARM beneficial uses. Shall not be present at levels that, when oxidized to nitrate, pose a threat to groundwater.	N/A[3]	N/A
Bacterial, Coliform	REC-1: Fecal coliform concentration shall not exceed a log mean of 200/100 milliliters (mL) (based on a minimum of not less than four samples for any 30-day period), nor shall more than 10 percent of samples collected during any 30-day period exceed 4,000/100 mL. SHELL: The median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 mL, nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three-tube decimal test is used.	N/A	Fecal coliform: 200/100 mL Total coliform: 1,000/100 mL
Bioaccumulation	Toxic pollutants shall not be present at levels that will bioaccumulate in aquatic life to levels that are harmful to aquatic life or human health.	See levels for metals	N/A
Biological Oxygen Demand (BOD)	Waters shall be free of substances that result in increases in the BOD, which adversely affect beneficial uses.	N/A	N/A
Biostimulatory Substances	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.	N/A	N/A
Chemical Constituents	Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use.	Includes pesticides and PCBs	N/A

Table 4.7.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Chemical Oxygen Demand (COD)	N/A	N/A	N/A
Chlorine, Total Residual	Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses.	N/A	N/A
Color	Waters shall be free of coloration that causes nuisance or adversely affect beneficial uses.	N/A	N/A
Total Copper	N/A	0.009	
Exotic Vegetation	Exotic vegetation shall not be introduced around stream courses to the extent that such growth causes nuisance or adversely affects beneficial uses.	N/A	N/A
Floating Material	Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.	N/A	N/A
Total Lead	N/A	0.025	N/A
Methylene Blue Activated Substances (MBASs)	Waters shall not have MBAS concentrations greater than 0.5 mg/L in waters designated MUN.	N/A	N/A
Mineral Quality	No waterbody specific objectives	N/A	N/A

Table 4.7.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Nitrogen (Nitrate, Nitrite)	Waters shall not exceed 10 mg/L nitrogen as nitrate-nitrogen plus nitrite-nitrogen, 45 mg/L as nitrate, 10 mg/L as nitrate-nitrogen, or 1 mg/L as nitrite-nitrogen.		
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water that cause nuisance or adversely affect beneficial uses.	N/A	N/A
Oxygen, Dissolved	SPWN: Waters shall not be depressed below 7 mg/L as a result of waste discharges.	N/A	N/A
Pesticides	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.	Chlordane: max conc., 2.4; continuous conc., 0.0043	N/A
pH	Inland water shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharges. Ambient pH levels shall not be changed more than 0.5 units from natural conditions as a result of waste discharge.	N/A	N/A
Total Phosphorus	N/A	N/A	N/A

Table 4.7.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Polychlorinated Biphenyls (PCBs)	Pass-through or uncontrollable discharges to waters, or at locations where the waste can subsequently reach waters, are limited to 70 pg/L (30-day average) for protection of human health and 14 ng/L (daily average) to protect aquatic life in inland fresh waters.	N/A	N/A
Radioactive Substances	Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.	N/A	N/A
Solid, Suspended, or Settleable Materials	Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses.	N/A	N/A
Total Suspended Solids (TSS)	N/A	N/A	N/A
Total Dissolved Solids (TDS)	N/A	N/A	N/A
Tastes and Odors	Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible aquatic resources, cause nuisance, or adversely affect beneficial uses.	N/A	N/A

Table 4.7.A: Water Quality Standards and Benchmarks

Constituent	Basin Plan Objectives	California Toxics Rule (mg/L)[1]	Assembly Bill 411[2]
Temperature	The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated that such alteration in temperature does not adversely affect beneficial uses.	N/A	N/A
Toxicity	All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life.	N/A	N/A
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in natural turbidity attributable to controllable water quality factors shall not exceed the following limits: • Where natural turbidity is between 0 and 50 National Turbidity Units (NTU), increases shall not exceed 20 percent. • Where natural turbidity is greater than 50 NTU, increases shall not exceed 10 percent.	N/A	N/A
Total Zinc	N/A	0.12	N/A

Source: *Water Quality Control Plan, Los Angeles Region* (1995).

[1] Chronic toxicity values (over a four-day period) in water with a hardness of 100 mg/L.

[2] Values are based on the log mean of at least five weekly samples during any 30-day sampling period.

[3] Not applicable. No standard or benchmark listed.

mg/L = milligrams per liter
pH = percentage of hydrogen (acidity level)
ng//L = nanograms per liter
pg/L = picograms per liter

The 2006 list of impaired waters (303[d] list) was approved by the SWRCB on October 25, 2006, and the EPA on November 30, 2006. Alamitos Bay was not included on the list of impaired waters. On March 8, 2007, the EPA partially disapproved California's 2004-2006 303(d) list; that is, it disapproved the State's omission of impaired waters that met federal listing regulations or guidance. EPA added 64 waters and 37 associated pollutants to the State's 303(d) list. Alamitos Bay is on the list of waters added to the 2006 303(d) list. Listings relevant to the project site are described in Table 4.7.B.

Table 4.7.B: Impaired Waters

Name	Watershed	Pollutant/ Stressor	Source	Proposed TMDL Date
Alamitos Bay (four segments: Shore float; 1st & Bayshore; 2nd Street Bridge & Bayshore; 56th Place – Bayside)	San Gabriel	Indicator Bacteria	Urban Runoff	2019

Source: United States Environmental Protection Agency (EPA), Region 9 Water Program, EPA's Final Decision Regarding Waters Added to California's 2004-2006 303(D) List. http://www.epa.gov/Region09/Water/Tmdl/303d-pdf/Ca-06-303d-List-Final-06-28-07-Combined.pdf, accessed November 28, 2007.

4.7.2.3 State Requirements under Section 402 of the CWA

General Construction Activity NPDES Permit (General Permit). On September 2, 2009, the SWRCB adopted the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated Construction and Land Disturbance Activities* (General Construction Permit). In accordance with NPDES regulations, the State of California requires that any construction activity disturbing 1 ac or more of soil comply with the General Construction Permit. To obtain authorization for proposed storm water discharges pursuant to this permit, the landowner (discharger) is required to submit Permit Registration Documents, which include a Notice of Intent (NOI), risk assessment, site map, SWPPP, annual fee, and signed certification statement to the SWRCB. Dischargers are required to implement BMPs meeting the technological standards of BAT and BCT to reduce or eliminate storm water pollution. BMPs include programs, technologies, processes, practices, and devices that control, prevent, or remove or reduce pollution. Permittees must also maintain BMPs and conduct inspection and sampling programs as required by the permit. Dischargers are also required to comply with monitoring and reporting requirements to ensure that discharges comply with the numeric action levels and numeric effluent limitations specified in the permit.

Resolution No. 2001-046. On September 15, 2000, the Superior Court issued a judgment and writ of mandate to modify the provisions of the General Permit to require permittees to implement specific sampling and analysis procedures to determine whether BMPs implemented on construction sites are preventing sediment and other nonvisible pollutants from causing or contributing to exceedances of water quality objectives. The SWPPP will include provisions for performing sampling and analysis during rainfall events.

Groundwater Dewatering Permit. On August 7, 2003, the Los Angeles RWQCB approved the *Waste Discharge Requirement for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order No. R4-2003-0111, NPDES No. CAG994004). For coverage under this permit, a discharger is required to submit an application for coverage under the permit to the Los Angeles RWQCB. Under this permit, discharges must comply with discharge specifications, receiving water limitations, and monitoring and reporting requirements detailed in the permit.

4.7.2.4 Local Requirements under Section 402 of the CWA

Construction and operation of the proposed project is subject to requirements of the following local permits and regulations.

Municipal NPDES Permit. The City has its own municipal NPDES Permit, *Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the City of Long Beach*, Order No. 99-060 (NPDES No. CAS004003). This permit specifies that all new development and redevelopment projects that fall under specific priority project categories must comply with the Los Angeles County Standard Urban Storm Water Mitigation Plan (SUSMP).

The following projects are subject to SUSMP requirements: hillside projects; home subdivisions of 10 units or more; new commercial developments of 100,000 square feet (sf) or more of impermeable areas; and projects located adjacent to or discharging into environmentally sensitive areas. The proposed project is subject to the SUSMP requirements because it discharges to a designated environmentally sensitive area (Alamitos Bay).[1]

The SUSMP includes requirements for Site Design BMPs, Source Control BMPs, and Treatment Control BMPs. As labeled, Site Design BMPs are BMPs that are incorporated into the design of the project, such as conserving natural areas and properly designing trash

[1] City of Long Beach Municipal Code Section 18.95.

storage areas. Source Control BMPs are pollution prevention BMPs that can be structural or nonstructural practices. Examples include good housekeeping, stenciling of catch basins, protecting slopes from erosion, and maintenance of BMPs. Treatment Control BMPs are physical devices that remove pollutants from storm water and include biofilters, water quality inlet devices, detention basins, etc.

The specific SUSMP requirements are as follows:

- Postdevelopment peak storm water runoff discharge rates shall not exceed the estimated predevelopment rate for developments where the increased peak storm water discharge rate will result in increased potential for downstream erosion.
- Conserve natural areas.
- Minimize storm water pollutants of concern. This requires the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the maximum extent practicable.
- Properly design outdoor material and trash storage areas.
- Properly design trash storage areas.
- Provide proof of ongoing BMP maintenance.
- Protect slopes and channels from erosion.
- Provide storm drain stenciling and signage.
- Design postconstruction structural or Treatment Control BMPs (unless specifically exempted) to mitigate (infiltrate or treat) a set volume of runoff using any of four methods (in general, the 85th percentile storm in a 24-hour period).

4.7.2.5 City of Long Beach

A compliance summary of the City's NPDES and SUSMP regulations are set forth in Chapter 18.95 of the City Municipal Code.[1] The Long Beach Storm Water Management Plan (SWMP) provides the methods for implementing the requirements of the City's Municipal NPDES Permit.

4.7.3 THRESHOLDS OF SIGNIFICANCE

The impact significance criteria used for this analysis are based primarily on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines and the City's CEQA

[1] City of Long Beach Municipal Code, Chapter 18.95, http://www.longbeach.gov/cityclerk/lbmc/title-18/frame.htm, accessed December 14, 2007.

Checklist. The project may be considered to have a significant effect related to water quality if implementation would result in one of more of the following:

- Violation of any water quality standards or waste discharge requirements;
- 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 level (e.g., the production rate of preexisting nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted).
- Substantial alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding on or off site;
- Creation or contribution of runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or
- A significant adverse impact on groundwater quality or other substantial degradation of water quality.

The Initial Study previously prepared for this project determined that the proposed project would not have a significant impact with respect to the following: groundwater resources; housing or structures within a 100-year flood zone; significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; and inundation by seiche, tsunami, or mudflow. Therefore, these issues are not addressed further in this EIR.

4.7.4 IMPACTS AND MITIGATION

This section addresses the potential impacts related to the dredging, restroom replacement or remodeling, seawall repairs, dock and piling replacement, temporary docks, parking lot rehabilitation and use of the rehabilitated Marina by boaters and the general public. This section also addresses the effects of operational changes resulting from project implementation.

4.7.4.1 Less than Significant Impacts

Long-Term Water Quality Impacts (Operational).

Waste Discharge into Marina Waters. Marina operations and boater activities have the potential to significantly impair water quality in the long term if BMPs that are listed in the Long Beach Marina Environmental Policies are not implemented by boaters and Marina employees. For example, the potential for the discharge of gray (galley, bath, and shower water) and black water (sewage) exists within all marinas. If some boaters do not discharge their waste into pump-out stations, but rather discharge human waste directly into marine waters, significant water quality impairments could occur.

The Marina provides four sewage pump-out stations that are operated by the City; two at the Harbormasters Dock, one near the fuel dock, and one in Basin 6. There is no cost to utilize these stations, and they are available at all times. Therefore, because adequate pump-out facilities are provided by the City to Marina patrons, discharge of boater waste directly into marine waters is less likely.

The proposed project will ultimately result in the loss of approximately 321 slips. This loss of slips has the potential to result in an improvement over existing water quality since fewer boats will be berthed in the Marina. Fewer slips will result in fewer live-aboard permits being available Marinawide. The Marina's live-aboard policy is that no more than 10 percent of the Marina (slips) can be issued live-aboard permits, and boats must be 30 ft or longer. The existing number of live-aboards is approximately 88 and is currently restricted by the limited utilities. Although the overall number of permits would be reduced with fewer slips, the Marina anticipates that approximately 75 additional live-aboard permits may be issued once the Marina upgrades are completed. Although there could potentially be more live-aboards, there is no reason to expect that this would cause improper use of the Marina that could lead to degraded water quality. In addition, because the City is a participant in the Clean Marina Program, each Marina patron is educated by the City on proper disposal/containment of hazardous materials/practices that may impair water quality. Therefore, even without the reduction in slips, long-term impacts to water quality from Marina activities are considered less than significant and no mitigation is required.

Alteration to Flushing Rate within Alamitos Bay. Dredging the basins to original design depths and/or original basin depths (generally to -10 Mean Lower Low Water [MLLW]) will result in an increase in the volume of water (tidal prism) within the Marina. This increase in the Marina's tidal prism could potentially provide for greater flushing of Marina waters, thereby potentially increasing the water quality in the Marina. Likewise, the increased tidal prism is important for maintaining access for boats utilizing the Marina. Long-term effects of dredging activities would be beneficial and would

potentially result in an improvement of existing water quality due to increased tidal flushing. Therefore, long-term impacts to water quality from dredging activities are considered less than significant and no mitigation is required.

4.7.4.2 Potentially Significant Impacts

Short-Term Water Quality Impacts (Construction). Construction activities will occur on the waterside and land side of the project area. Impacts to each area are discussed separately below.

Landside Construction. The land side improvements include repaving the parking lot, and replacing or remodeling the existing restroom buildings. Construction activities associated with the land side improvements have the potential to impact water quality in Alamitos Bay. The potential impacts of construction activities on water quality focus primarily on sediments, turbidity, and pollutants that might be associated with sediments (e.g., phosphorus and legacy pesticides). Construction-related activities that are primarily responsible for sediment releases are related to exposing soils to potential mobilization (erosion) by rainfall/runoff and wind. Nonsediment-related pollutants that are also of concern during construction include waste construction materials; chemicals, liquid products, and petroleum products used in building construction or the maintenance of heavy equipment; and concrete-related waste streams.

The proposed land side improvements would be required to comply with all applicable federal, State, and regional regulations to protect water quality during construction as well as during the life of the project. Since the project site covers an area greater than one acre, a SWPPP is required. During construction, the City will adhere to the General Construction Permit and will utilize typical BMPs specifically identified in the SWPPP for the project in order to prevent construction pollutants from contacting storm water and to keep all products of erosion from moving off site into receiving waters. Under NPDES Permit 99-060, issued to the City, the project proponent must submit an NOI to the SWRCB prior to commencement of construction activities. In addition, the SWPPP must be implemented at the project site and revised as necessary if administrative or physical conditions change. The SWPPP would include BMPs, in accordance with the SUSMP for Los Angeles County, that address source reduction and provide measures and controls necessary to mitigate potential pollutant sources. Required elements of the SWPPP include:

- A site description addressing the elements and characteristics specific to the site;
- Descriptions of BMPs for erosion and sediment controls;
- BMPs for construction waste handling and disposal;

- Implementation of approved local plans;
- Proposed postconstruction controls, including a description of local postconstruction erosion and sediment control requirements; and
- Nonstorm water management.

The site is subject to inspection by the RWQCB during construction (General Construction Activity Permit). The General Construction Activity Permit requires the discharger (the City) to inspect the site prior to an anticipated storm, during extended storm events, and after actual storm events to ensure that BMPs are functioning properly. Corrective measures are to be implemented immediately, and the RWQCB must be notified within 48 hours. Construction BMPs act as physical barriers to prevent sediment and other construction-related pollutants from leaving a construction site. By adopting this permit, the SWRCB has determined that adherence to the provisions of the General Construction Activity Permit will prevent significant impacts to water quality during project construction.

Mitigation Measures 4.7-1 and 4.7-2 have been proposed to ensure compliance with BMPs as outlined in the SWPPP and the General Construction Activity NPDES permit. Mitigation Measure 4.7-3 is required to ensure that a SUSMP for the project is prepared in accordance with the Los Angeles County SUSMP and the Municipal NPDES Permit. With implementation of Mitigation Measures 4.7-1 through 4.7-3 potential waste discharge and water quality violations related to runoff during construction will be reduced to less than significant levels.

Waterside Construction. Construction activities associated with the waterside improvements of the proposed project may impact water quality temporarily due to the impacts associated with the dredging activities, removal of the docks and piles, construction of the new docks and piles, and repair of the sea wall. Each of these impacts is discussed in more detail below.

The City would be required to obtain a Section 10 permit from the Corps for dredging and placement of piles and riprap in navigable waters, a Section 404 permit from the Corps for the discharge of dredged materials, and a Section 103 permit from the Corps for the transportation of dredged material for ocean disposal. In addition, the City would be required to obtain a RWQCB water quality certification for the federal permits listed above.

A RWQCB water quality certification would specify methods for ensuring the protection of water quality during construction activities in Alamitos Bay. In addition, specific conditions would include the use of BMPs to minimize the discharge of construction

materials from on-land construction activities, control of floating debris, discharge of displaced water produced during construction of the concrete pilings to minimize discharge of pollutants to the Alamitos Bay, placement of fueling activities such that they would not affect water quality, and provision of spill containment and cleanup equipment to control potential accidental spills.

Water Quality Impacts Related to Dredging and Pile Replacement. The proposed maintenance dredging involves the removal of accumulated sediment in order to return each of the Marina's seven basins to the original design depth and/or basin depth, which will allow unobstructed maneuvering of recreational vessels. The Marina construction program involves dredging Basins 2–7 to a target depth of -10 MLLW; and Basin 1 to target depths to -12 to -15 MLLW. The estimated total volume of dredged material to be removed from the seven basins is approximately 287,120 cy.

Construction dredging, disposal of dredged materials, and removal and replacement of pile structures could affect water quality if water quality protection measures were not implemented. Proposed dredging activities and pile removal and replacement in Alamitos Bay would result in short-term disturbance of localized Bay sediments. As is typical for maintenance dredging projects, the dredging of Bay sediments could adversely affect water quality by temporarily resuspending sediments, thereby increasing turbidity. In addition, chemicals that are present in the sediments could be released to the water column during resuspension, which could temporarily degrade water quality. Suspended sediments in the water column can lower levels of dissolved oxygen, increase salinity, increase concentrations of suspended solids, and possibly release chemicals present in sediments into the water. The degree of turbidity resulting from the suspended sediments would vary substantially with the quantity and duration of the dredging and construction activity and would also depend on the methods used, the quality of equipment, and the care of the operator. In most cases, increased turbidity levels would be relatively short-lived and generally confined to within a few hundred yards of the activity. After initial high-turbidity levels, sediments would disperse and background levels would be restored. The length of disturbance caused by construction activities would vary depending on the basin under construction and the tidal conditions in the Bay.

The water quality in the basins closer to the entrance of the Bay would recover more quickly than basins further back in the Bay, such as Basins 6-North and 6-South (Basins 6-N and 6-S). The water quality near Basins 6-N and 6-S may take up to several days to recover if construction activities occurred at the same time that the power plant pumping rates were low. If these basins were under construction during high pumping rates, the water quality would recover in less than one day due to the

increased tidal flushing that occurs when the power plants are pumping at a high rate. However, Basins 6-N and 6-S are planned for construction after all other basins have been completed (Phase 12 of 12). By that time, dredging of the other basins would have occurred, which could potentially provide a greater tidal prism (water volume exchange) that may shorten the residence time of water in that area somewhat. However, it is unlikely to increase the tidal flushing significantly, and based upon current conditions, it could take up to several days for these two basins to recover under low pumping rates. Because recreational water quality in Alamitos Bay generally improves with higher pumping rates, the City entered into a contract with AES Power Plant to operate its circulating water pumps above a pre-established level. When AES' pumping rate drops below that level, the contract is activated and the City pays AES to increase the rate of pumping to improve water quality.[1] In the event that water quality remains impaired beyond 2 days after dredging within Basins 6-N and 6-S, the City will activate the contract with AES to increase the rate of pumping to improve water quality (Mitigation Measure 4.7-4).

Implementation of BMPs would reduce water quality impacts associated with dredging and pile removal and replacement. Common BMPs utilized during dredging include Silt Curtains, Gunderbooms, and Operational Controls.[2] These BMPs are further described in Appendix F of this document. Although temporary water quality impacts related to suspended solids in the water column would be expected, impacts related to resuspension of sediments would be reduced to a less than significant level with implementation of Mitigation Measures 4.7-5 and 4.7-6, which require that the appropriate dredging permits are obtained and that Dredging BMPs are incorporated into the project. Implementation of Mitigation Measures 4.7-5 and 4.7-6 will ensure that impacts related to construction dredging and pile removal and replacement are less than significant.

1 Heal the Bay 2007 California Summer Beach Report Card, City of Long Beach, September 27, 2007.

2 Long-Term Management Strategy for the Placement of Dredged Materials in the San Francisco Bay Region, Management Plan 2001, United States Army Corps of Engineers, http://www.spn.usace.army.mil/ltms2001/, accessed December 18, 2007.

Dock Removal and Replacement. Removal of the existing dock system consists of separating the slips in the water and floating the structures to a vessel that will remove the slip structures from the water and transport the discarded material off site for disposal. This process does create some debris that has the potential to impact water quality if it is not contained and disposed of properly. Implementation of a trash and debris containment boom, as described in Mitigation Measure 4.7-7, will contain the dock debris within the construction area, where the material can be easily recovered by the vessel operator for proper disposal. Implementation of Mitigation Measure 4.7-7 will ensure that impacts related to trash and debris from dock removal and replacement are less than significant.

Sea Wall Repairs. The sea wall system that exists in Alamitos Bay generally consists of a retaining wall with rock revetment covering the slope. Normal tidal and wave action from boats and storms in the Bay have caused erosion of sediment from under the sea wall footings, creating voids. The voids deteriorate the sea wall integrity, further allowing the surrounding water to wash away soils. This process removes support for existing structures. It is anticipated that 8,250 linear feet (lf) of sea wall repair will be required as part of the proposed project. The repairs are primarily focused on restoring the eroded bearing surface and reestablishing the rock revetment along the slope to the basin floor. Sea wall repairs will be conducted in phases that correspond with each basin's dock and piling replacement work. The proposed repairs will provide long-term protection of the Bay's infrastructure as well as protection of water-oriented recreational uses.

Specifically, the repairs are limited to reestablishing the rock riprap slope adjacent to the sea wall by installing polyvinyl chloride (PVC) grout injection pipes, and filling existing voids with grout beneath the footings of the concrete panels that make up the sea wall. The materials used for the sea wall repairs are relatively benign (filter, fabric, backing material, armor rock, or PVC pipe). The grout mixture will be prevented from mixing with Bay waters due to the injection process. Injection ports (through PVC pipes) will first be inserted into the void to be filled at a maximum interval. The rock slope will be reestablished by placing filter fabric along the face of the sea wall footing, around the injection ports, and extending it down to the bottom of the existing slope. Backing will be placed over the filter fabric to provide protection and holding in place. Armor rock will then be installed over the bedding layer. Both the backing and armor rock will be transported to the site by truck and placed using an excavator. Bulk storage will be located at one of the construction staging areas in a container, and individual pallets of bags of materials will be transported to each void location using a forklift. The grout will then be mixed and pumped into the voids from the sidewalk behind the sea wall using the PVC injection ports. The filter fabric and rock will cover the void openings to prevent the grout from

being released into Bay waters. In addition, Mitigation Measure 4.7-5, which requires that appropriate permits be obtained for both dredging activities and the placement of piles and riprap, will reduce impacts to water quality from sea wall repairs to a less than significant level.

Long-Term Water Quality Impacts (Operational).

Landside Drainage and Water Quality. The land side improvements include repaving the parking lot, and replacing or remodeling the existing restroom buildings. The surface area of the parking lot is not being increased, and therefore no increase in storm water runoff is expected. In addition, the project plans indicate that the existing parking lot surfaces will be removed and reused as a base for the new pavement. However, because the proposed project discharges into Alamitos Bay, the proposed project will be required to comply with the Los Angeles County SUSMP. The SUSMP includes requirements for Site Design BMPs, Source Control BMPs, and Treatment Control BMPs.

In order to comply with waste discharge requirements, the project SUSMP will target control of pollutants in runoff typically produced by that land use. In order to comply with water quality standards and prevent further degradation of water quality, the project SUSMP will address pollutants that have impaired receiving waters for the project as applicable. Treatment Control BMPs will be incorporated into the design of the on-site storm drain system to treat project runoff in accordance with the SUSMP standards.

The proposed project includes installation of storm drain inserts (filters) into the storm drains located in the parking lot. Storm drain inserts can be a variety of devices that are used in storm drain conveyance systems to reduce pollutant loadings in stormwater runoff. Most storm drain inserts reduce oil and grease, debris, and suspended solids through gravity, centrifugal force, or other methods. Storm water collection and treatment prior to discharge into the Marina will reduce contaminant levels and protect the existing water quality. As a result, the proposed project will result in improved drainage and storm water treatment over existing conditions. Implementation of a project SUSMP, as specified in Mitigation Measure 4.7-3, which addresses these pollutants of concern to the maximum extent practicable, is required to reduce potential water quality impacts to a less than significant level.

4.7.5 MITIGATION MEASURES

Implementation of the following mitigation measures will ensure that potential Hydrology and Water Quality impacts resulting from project implementation would be reduced to less than significant levels.

4.7-1 Prior to issuance of a grading permit, the Marine Bureau Manager shall demonstrate to the satisfaction of the Director of Long Beach Development Services, or his/her designee, that construction plans for the project include features meeting the applicable construction activity Best Management Practices (BMPs) and erosion and sediment control BMPs published in the *California Storm Water BMP Handbook—Construction Activity* or equivalent. The construction contractor shall be required to submit a Storm Water Pollution Prevention Plan (SWPPP) to the City that includes the BMP types listed in the handbook or equivalent. The SWPPP shall be prepared by a civil or environmental engineer and will be reviewed and approved by the City Building Official prior to the issuance of any grading or building permits. The SWPPP shall reduce the discharge of pollutants to the maximum extent practicable using BMPs, control techniques and systems, design and engineering methods, and such other provisions as appropriate. A copy of the SWPPP shall be kept at the project site.

The SWPPP shall meet the requirements of the General Construction Permit and shall identify potential pollutant sources associated with construction activities; identify non-storm water discharges; develop a water quality monitoring and sampling plan; and identify, implement, and maintain BMPs to reduce or eliminate pollutants associated with the construction site. The BMPs identified in the SWPPP shall be implemented during project construction. The SWPPP Notice of Termination (NOT) shall be submitted to the State Water Resources Control Board (SWRCB) upon completion of construction and stabilization of the site.

4.7-2 Prior to issuance of demolition and grading permits, the Marine Bureau Manager shall demonstrate to the Director of Long Beach Development Services, or their designee, that compliance with the provisions of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Construction and Land Disturbance Activities*, and any subsequent permit as they relate to construction activities for the project has been obtained. This will include submission of the Permit Registration Documents, including a Notice of Intent (NOI), a risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (SWRCB) at least 14 days prior to the start of construction.

4.7-3 Prior to issuance of demolition and grading permits, the Marine Bureau Manager shall provide evidence that a Standard Urban Storm Water Mitigation Plan (SUSMP) for the project has been prepared in accordance with the Los Angeles County SUSMP and the Municipal National Pollutant

Discharge Elimination System (NPDES) Permit. The project SUSMP shall identify all of the Nonstructural and Structural Best Management Practices (BMPs) that will be implemented as part of the project in order to reduce impacts to water quality to the maximum extent practicable by addressing typical land use pollutants and pollutants that have impaired the Alamitos Bay. The SUSMP shall be reviewed and approved by the City of Long Beach Building Official prior to issuance of a grading permit.

4.7-4 Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification in the record that approval to initiate the City's contract with AES (to increase pumping rates) has been incorporated into project plans and will be implemented in the event that water quality standards are exceeded during construction activities associated with Basins 6-North and 6-South (Basins 6-N and 6-S). The construction contractor shall be responsible for notifying the Marine Bureau Manager in the event that increased flushing in the Bay is needed, should water quality remain impaired **(**i.e.**,** water quality standards are exceeded) beyond 2 days after dredging in Basins 6-N or 6-S.

4.7-5 Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification that authorization has been obtained from: (1) the United States Army Corps of Engineers (Corps) under the Section 404 Permit program for the discharge of fill material into jurisdictional waters; (2) the Corps, under Section 10 of the Rivers and Harbors Act for the disposal of dredged material and placement of piles and riprap; and (3) the Corps, under Section 103 of the Marine Protection Research and Sanctuaries Act for the transportation of dredged material for ocean disposal. In addition, standard conditions of the Corps permits require Section 401 water quality certification by the Regional Water Quality Control Board (RWQCB). In order to obtain these authorizations, the City shall develop a mitigation plan subject to review and approval by the appropriate resource agencies (Corps, United States Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], California Department of Fish and Game [CDFG], and RWQCB).

4.7-6 Prior to the issuance of any construction permits, the Marine Bureau Manager shall demonstrate in the record that Best Management Practices (BMPs) for all dredging activities, as listed in Appendix F of this document, have been incorporated into project plans in order to reduce impacts to water quality to the maximum extent practicable. The construction contractor shall be responsible for performing and documenting the application of BMPs identified in this document.

4.7-7 Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification in the record that a trash and debris containment boom has been incorporated into project plans and will be implemented during all dock removal and replacement activities in order to reduce impacts to water quality to the maximum extent practicable. The construction contractor shall be responsible for performing and documenting the application of the trash and debris containment boom.

4.7.6 CUMULATIVE IMPACTS

The cumulative study area for hydrology and water quality impacts consists of: (1) affected areas where drainage or dredging disposal from proposed project activities could have an impact; and (2) areas in Alamitos Bay or the immediate area of the ocean near the mouth of Alamitos Bay that could be affected by drainage or tidal fluctuation, thereby affecting water quality conditions combined with other nearby project activities or operations. Currently, the following projects that have been proposed or approved but are not yet fully constructed would be considered within the project's cumulative study area for land use impacts:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project
- Proposed Home Depot Project at Loynes Drive and Studebaker Road
- Termino Drain Project, various segments terminating at the northern end of Marina Stadium

Cumulative development in the Alamitos Bay Watershed is a continuation of the existing urban pattern of development that has already resulted in extensive modifications to watercourses in the watershed. Many of the watershed's watercourses have been channelized, and drainage systems have been engineered to respond to the urbanization that has occurred in the Long Beach area. Therefore, the cumulative analysis related to hydrology and water quality includes the cumulative projects listed above as well as the project's combined effect with all potential projected development discharging to Alamitos Bay. Because cumulative hydrology and water quality impacts are caused by build out of properties that increase impervious area and pollutant loads, cumulative development is considered to be the build out of the Alamitos Bay Watershed over an extended time period.

New development and redevelopment can result in increased urban pollutants in dry weather and storm water runoff from project sites. Each project must comply with NPDES permitting requirements and include BMPs to avoid impacts to water quality and local hydrology in compliance with local ordinances and plans adopted to comply with the MS4 Permit (DAMP and LIP) and other permits (e.g., De Minimus Permit, General Construction Permit). Each

project must consider impaired receiving waters and annual TMDL loads for receiving waters. The TMDL program is designed to identify all constituents that adversely affect the beneficial uses of waterbodies and then identify appropriate reductions in pollutant loads or concentrations from all sources so that the receiving waters can maintain/attain the beneficial uses in the Basin Plan. Thus, the regional control measures are designed to account for the cumulative effects of proposed development.

The project is the rehabilitation of existing Marina dock and slip facilities and the continuation of existing Marina land uses consistent with the City's General Plan and the RWQCB Basin Plan. Implementation of the proposed project would not alter the on-site drainage pattern and would not increase on- or off-site erosion, or significantly contribute to impaired water quality in the region. Therefore, storm water flows will not be increased with project implementation and will be contained within an existing drainage system. In addition, as outlined in Mitigation Measures 4.7-1, 4.7-2, 4.7-3, and 4.7-5, the project is required to obtain appropriate permits, including a Section 404 Permit; incorporate Construction BMPs as identified in a SWPPP; obtain an NPDES permit; and comply with the SUSMP requirements, as are other new construction projects in the cumulative study area. Compliance with these regional programs and the General Construction Permit constitutes compliance with programs intended to address cumulative hydrological and water quality impacts. Therefore, the project would not contribute to long-term cumulative impacts and may in fact have a positive impact on water quality due to the increased tidal prism (water volume) resulting from the proposed dredging activities.

Short-term water quality impacts would be limited to the immediate project area, since construction activities would generally be confined to the proposed construction corridor and individual basins within the Marina. Construction dredging, disposal of dredged materials, and removal of the dock system could adversely affect water quality by temporarily disturbing sediments and/or releasing chemicals that are present in the sediments, and by creating floating debris in the Bay that could temporarily degrade water quality. In addition to the measures discussed above, Mitigation Measures 4.7-4 through 4.7-7 require implementation of increased pumping rates (in regard to Basins 6-S and 6-N only), BMPs, and trash and debris containment during construction activities, will further reduce impacts to water quality to less than significant levels. Therefore, the project would not contribute to short-term cumulative water quality impacts.

Implementation of the proposed mitigation measures will ensure that construction and operation of the proposed project would have a less than significant impact related to water quality. Therefore, with implementation of the proposed mitigation, the project's water quality impacts are considered less than cumulatively considerable.

4.7.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Implementation of Mitigation Measures 4.7-1 through 4.7-7, described above, would reduce potential project and cumulative hydrology and water quality impacts to less than significant levels. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to hydrology and water quality.

4.8 LAND USE

INTRODUCTION

This section describes the existing land uses on the proposed Alamitos Bay Marina Rehabilitation Project site and in its vicinity and evaluates the compatibility of the proposed project with surrounding land uses and relevant policy and planning documents. Information presented in this section is based on information provided in the City of Long Beach (City) General Plan, Zoning Code, Alamitos Bay Marina Master Plan, and the City Parks, Recreation, and Marine Strategic Plan.

4.8.1 EXISTING ENVIRONMENTAL SETTING

The Alamitos Bay Marina (Marina) project area lies adjacent to and northwest (upshore) of the mouth of the San Gabriel River at the Pacific Ocean. The Marina facilities are operated by the City of Long Beach Marine Bureau and are primarily accessible from Pacific Coast Highway (PCH) and Second Street. Alamitos Bay Marina was constructed and opened in the late 1950s and early 1960s. From the ocean, the Marina entrance is approached from the south between two jetties, each marked by a light on the seaward end. There are currently 1,997 slips located throughout the Marina.

Alamitos Bay contains 7 miles (mi) of inland waterways for recreational water-related uses and includes private dock and slip facilities, guest slips, and a fuel dock. The Marina comprises eight basins, as illustrated on Figure 3.2, Alamitos Bay Marina Basin Locations (see Section 3.0, Project Description). The proposed project includes renovations to Basins 1–7. Basin 8 is not included in the project. Basins 1 through 3 are located adjacent to Marina Drive, south of Second Street. Basin 4 is located along East Appian Way on the southeast corner of Naples Island, adjacent to the Long Beach Yacht Club. Basin 5 is located adjacent to the Alamitos Bay Yacht Club on Ocean Boulevard. Basin 7 is located on Ocean Boulevard to the northwest of Basin 5. Basin 6 comprises two separate areas known as Basin 6-South (Basin 6-S) and Basin 6-North (Basin 6-N). Basin 6-S is located at the northernmost end of Marina Pacifica Drive and Basin 6-N is located northeast of Basin 6-S, adjacent to the Marina Pacifica Mall on PCH. Each of the seven basins has a differing number of slips available to boaters, ranging from 20 to 120 feet (ft) in length.

The project area also includes a proposed water open space/habitat mitigation site on the northeast shore of Marine Stadium. The open space/habitat mitigation site is located within a City-owned storage area that is currently used, in part, to store impounded items. An area of

approximately 218 ft by 105 ft would be excavated, and the existing rock revetment along Marine Stadium would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel (see Figure 3.14, in Section 3.0, Project Description). The new open space area would be planted with eelgrass to mitigate the project's potential impacts to this marine resource.

4.8.1.1 Land Uses Surrounding the Project Area

The land uses surrounding the basins are primarily residential, but also include areas of commercial development, marine-related commercial uses, a shipyard, yacht and sailing clubs, and public beaches.

Basins 1, 2, and 3 are surrounded by harbor parking areas and commercial uses, including several restaurants and marine-related retail uses. The Navy Yacht Club of Long Beach and the Seal Beach Yacht Club are both located on Marina Drive near Basin 2. Commercial uses, including a hotel, are located across Marina Drive from Basins 2 and 3. A fuel dock is located west of Basin 1, just inside the entrance to the Marina.

Basin 4, located across the water from Basin 3 on Naples Island, is surrounded by residential uses and is adjacent to the Long Beach Yacht Club. Basin 5 is located at the southeast end of the Alamitos Bay Peninsula, adjacent to the Alamitos Bay Yacht Club.

Land uses adjacent to Basin 6-N include the Marina Pacifica Mall commercial center, which is located on PCH. Residential uses and private slips are located across the channel from Basin 6-N. Basin 6-S is adjacent to the residential community of Marina Pacifica, with additional residential uses located across the channel from the basin.

Land uses surrounding Basin 7 include residential uses on the Alamitos Bay Peninsula and residential uses across the channel on Naples Island. The United States Sailing Center Long Beach is located adjacent to Basin 7.

Land uses adjacent to the project eelgrass mitigation area on the northeast shore of Marine Stadium include: open space/trails along Marine Stadium to the north, City-owned boat storage areas to the south along Marine Stadium, and a City-owned storage area on Boathouse Lane to the southeast.

4.8.2 REGULATORY SETTING

4.8.2.1 State Sovereign Lands/State Tidelands Grant

The State of California (State) acquired ownership of all previously ungranted tidelands, submerged lands, and beds of navigable waterways upon its admission to the United States in

1850. The State holds these lands for the benefit of all the people of the State for waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space purposes. The State Lands Commission (SLC) has the review responsibility for tidal and submerged lands legislatively granted in trust to local jurisdictions. All tidelands and submerged lands, granted or ungranted, are subject to the Common Law Public Trust, which is a sovereign public property right held by the State-delegated trustee for the benefit of all people. The City's ordinances and land use regulations govern land uses in and around the project area.

The tidelands at the Marina are held in trust by the City in accordance with the State Tidelands Grant, which grants to the City "all the tide lands and submerged lands, whether filled or unfilled, within the present boundaries of said city, and situation below the line of mean high tide of the Pacific Ocean, or of any harbor, estuary, bay or inlet within said boundaries, to be forever held by said city..."

4.8.2.2 California Coastal Act/Local Coastal Program/Coastal Development Permit

The California Coastal Act of 1976 (Coastal Act) was created to: (1) protect, maintain, and, where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and man-made resources; (2) ensure orderly, balanced utilization and conservation of Coastal Zone resources that take into account social and economic needs; (3) maximize public access to and along the coast and public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners; (4) ensure priority for coastal-dependent development over other development on the coast; and (5) encourage State and local cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses in the Coastal Zone. The Coastal Act requires all cities located within the Coastal Zone to adopt a Local Coastal Program (LCP). The LCP is used by cities to regulate local land uses and development in a manner that is consistent with the goals of the Coastal Act. Specifically, LCPs identify the location, type, densities, and other land use policies for future development within the Coastal Zone of a jurisdiction.

The project site is located entirely within the Coastal Zone, as shown on Figure 4.8.2, and is under the land use planning and regulatory jurisdiction of the City and the California Coastal Commission (CCC). An LCP governing land uses within and around the Marina was adopted by the City Council on February 12, 1980, and certified by the CCC on July 22, 1980. After the CCC has certified an LCP, the primary responsibility for issuing Coastal Development Permits (CDPs) is transferred from the CCC to the local government for all nonshore/ nonwater projects in the Coastal Zone. However, the CCC retains permanent coastal permit authority over areas on the water, immediate shoreline, tidelands, submerged lands, and coastal-oriented bodies of water, such as the Marina. The CDP process regulates improvements in the Coastal Zone. Projects proposed within the Coastal Zone are required to

obtain a CDP prior to commencement. Because the proposed project area includes open coastal water and tidal and submerged lands, the CCC is the agency that would act upon the CDP request for this project.

4.8.2.3 Southern California Association of Governments Regional Comprehensive Plan

The Southern California Association of Governments' (SCAG) Regional Comprehensive Plan (RCP) is a regional policy document that responds to Southern California's housing, traffic, water, air quality, and other regional challenges. The plan is a collaborative effort to address the region's challenges and set a path forward. The RCP ties together SCAG's role in transportation, land use, and air quality planning and further promotes environmental policies. Second, it recommends key roles and responsibilities for the public and private sectors and requests that reasonable policies be implemented.

The RCP's objective is to balance resource conservation, economic vitality, and quality of life. The plan lays out a long-term planning framework that responds to growth and infrastructure challenges in a comprehensive way. Local governments are asked to consider the plan's recommendations in General Plan updates, municipal code amendments, design guidelines, incentive programs, and other actions.

4.8.2.4 SCAG Regional Transportation Plan

The SCAG Regional Transportation Plan (RTP) is a regional policy document that responds to Southern California's regional traffic challenges. The goals of the RTP are to maximize mobility and accessibility, ensure safety and reliability, preserve our transportation system, maximize productivity of our transportation system, protect the environment and encourage land use and growth patterns that complement the transportation system. The RTP policies were developed to guide the development and reflect the transportation priorities of the region. Through its policies, the SCAG RTP relies on a number of strategies to address the region's transportation needs. These include an increased focus on operational, management, and preservation strategies; land use integration with transportation investments; strategic system expansion investments; and innovative financing mechanisms.

4.8.2.5 SCAG Compass Blueprint

This planning program presents the comprehensive Growth Vision for the six-county SCAG region. The Compass Blueprint aspires to link land use and transportation planning in the region, and is a planning tool for regional growth. The Compass Blueprint encourages focusing growth in existing and emerging centers and along major transportation corridors, creating significant areas of mixed-use development and walkable communities, targeting

growth around existing and planned transit stations, and preserving existing open space and stable residential areas.

4.8.2.6 City of Long Beach General Plan

The City General Plan (General Plan) provides goals, objectives, and policies that guide City decision-makers in directing future growth and development. A General Plan must contain at least seven elements: Land Use, Transportation, Housing, Conservation, Noise, Open Space and Recreation, and Safety. The City's Seismic Safety and Air Quality Elements are optional components of its General Plan. Each element discusses in detail official policies and programs the City has adopted regarding each topic.

Land Use Element. The Land Use Element of the General Plan was adopted in 1989. The Land Use Element regulates the types of use and land use intensity within the City. Figure 4.8.1 illustrates the General Plan land use designations for the project site and adjacent areas. The General Plan land use designation for most of the project site is "Open Space and Parks" Land Use District (LUD) No. 11 by the Land Use Element of the General Plan. The Open Space and Park District is intended to provide for "preserving natural habitat areas and promoting the mental and physical health of the community through recreational, cultural, and relaxation pursuits. Parks are characterized by open spaces devoted to leisure activities including the enjoyment of nature, wildlife, cultural heritage, sports, and similar activities."

A small portion of the site, located on the northeast shore of Marine Stadium, is designated as "Mixed Use" LUD No. 7 in the Land Use Element of the General Plan. The mixed-use land use accommodates a wide range of uses including residential, commercial, and public.

City of Long Beach Open Space and Recreation Element. The City's Open Space and Recreation Element of the General Plan designates the project site as a "Special Use Park" because of the Marina's boating amenities. There are several goals/objectives, policies, and programs in the element that are applicable to the proposed project, as listed below:

- Preserve, enhance and manage open areas to sustain and support marine life habitats. (Goals/Objectives 2.4)
- Provide the recreational resources the public wants. (Goals/Objectives 4.4)
- Make all recreation resources environmentally friendly and socially and economically sustainable. (Goals/Objectives 4.5)

- Create additional recreation open space and pursue all appropriate available funding to enhance recreation opportunities. (Open Space and Recreation Element, Policy 4.1)
- Fully maintain public recreation resources. (Goals/Objectives 4.7)
- Provide access to recreation resources for all individuals in the community. (Goals/Objectives 4.10)
- With the help of the community, plan and maintain park facilities at a level acceptable to the constituencies they serve. (Open Space and Recreation Element, Policy 4.6)
- Give special consideration to handicapped and disadvantaged residents in accessing public recreation resources. (Open Space and Recreation Element, Policy 4.13)

City of Long Beach Conservation Element. The Conservation Element of the City's General Plan was adopted in 1973. The Conservation Element addresses the management of natural resources and areas of special interest within the City. There are several goals in the element that are applicable to the proposed project, as listed below:

- To assure that the waters of San Pedro and Alamitos Bays and Colorado Lagoon are maintained at the highest quality feasible in order to enhance their recreational, and commercial utilization.(Water Resource Management Goal)
- To enforce existing controls and ordinances regulating waste discharge from vessels. (Water Resource Management Goal)
- To preserve and enhance the open space opportunities offered by the inland waterways of the City through improved access and beautification (Water Resource Management Goal)

4.8.2.7 City of Long Beach Zoning Code

Zoning is the division of a City into districts and the application of development regulations specific to each district. It is the intent of the City to have consistency between the General Plan Land Use Element and the Zoning Ordinance in order to ensure that long-term goals and objectives are implemented through land use regulations and other tools. The zoning ordinance and zoning designations of the land are primary tools implementing the City's General Plan. Figure 4.8.3 illustrates the existing zoning designations for the project site and surrounding areas. The project area includes water areas and land areas that are zoned Park (P), Southeast Area Development and Improvement Plan – SEADIP (PD-1), and Long Beach Marina Planned Development Plan (PD-4).

Planned development districts in the City were established to allow flexible development plans to be prepared for areas of the City that may benefit from the formal recognition of unique or special land uses and the definition of special design policies and standards not

otherwise possible under conventional zoning district regulations. As shown on Figure 4.8.3, Basins 1 through 3 are in the PD-4 zoning district, and their respective parking areas are zoned PD-1. The intent of the PD-4 designation is to provide a set of land use regulations specific to the Marina, due to its unique land use.

4.8.2.8 City of Long Beach Parks, Recreation, and Marine Strategic Plan

The City Department of Parks, Recreation and Marine developed a departmental Strategic Plan in April 2003. The departmental Strategic Plan assessed recreation needs and objectives citywide. There are several strategies in this plan that apply to the proposed project, as listed below:

- Focus on improving the level of safety within City parks and recreational facilities. (Strategy 7, page 45)
- Focus on improving the condition of Department parks and recreational facilities. (Strategy 8, page 54)
- Establish lifetime use opportunities. Recreation programs and facilities will be designed to develop and serve a lifetime user through active, passive, and educational experiences. (Strategy 9, page 62)
- Improve and modernize marina conditions, infrastructure, and amenities. (Strategy 18, page 75)
- Improve the level of safety within City marinas. (Strategy 20, page 75)

4.8.2.9 Alamitos Bay Master Plan

In 1999, the City Planning Commission recommended the completion of an Alamitos Bay Master Plan (included in Appendix H). As part of the process, discussion regarding the reconstruction of the Marina ensued, which included discussion of slip mix. The popular opinion was that the Marina should continue to be recognized as a small craft Marina and, as such, should include slips as small as 20 ft. The Alamitos Bay Master Plan (adopted July 2001) did not include specific slip mix recommendations, but did initiate the evaluation of slip mix in the Marina.

City staff coordinated with CCC staff at that time to discuss the Master Plan and the future slip mix. As a result, the proposed project's slip mix reflects a Marina that contains approximately 25 percent slips 25 ft and less (20s and 25s), 39 percent slips 30 ft and less (20s, 25s, and 30s), 58 percent slips 35 ft and less (20s, 25s, 30s, and 35s), and 81 percent slips 40 ft and less. These are cumulative percentages of slip sizes, meaning that each range of slip sizes includes the cumulative total of all boats in that range and smaller.

The following recommendations were included in the Master Plan and are applicable to the proposed project:

- Due to significant safety and visibility concerns, slips protruding further into the Bay in 1 and 2 should not be included in the Marina rebuild.
- The current ratio of "boat length to slip length" overhang rules should be retained for the rebuild of the Marina.
- The City should make a guarantee to the current slip renters that they will not be displaced as part of a rebuild except within the Marina.
- The current marine safety/fire vessel slips should be reconfigured and enhanced in order to accommodate the dredge and docks now posing a channel-narrowing eyesore under the Davis Bridge. If this is not possible, another parking for the dredge and supporting docks should be identified.
- The width of the navigable channel should be maintained in all cases.
- In the reconstruction of the Marina, every effort should be made to preserve the use of as many existing pilings, head walls, and sea walls as possible.
- All nondockside mooring should continue to be prohibited.
- As the Marina is rebuilt, it should be dredged to the original construction depth. If possible, the dredged material should be disposed of outside the Bay to prevent rapid refill.
- Boat owners' restrooms should be remodeled and brought up to current standards, and a separate restroom facility for the public should be added at each location.
- As a general statement, the Marina and land areas of Alamitos Bay should be developed to enable their highest and best use, responding to market forces and the desires of the community, while remaining sensitive to the need for prudent management and consideration of the unique characteristics of the site.
- Construction should incorporate durable, high-quality materials and workmanship utilizing contemporary design standards, and should be completed at a reasonable cost, incorporating new and/or existing infrastructure. The completed project should be functional and inviting, and should meet the needs of users and lessees.
- The City should aggressively pursue State, federal, and private grant funds for development and maintenance of the Marina.

4.8.3 METHODOLOGY

Land use impacts are assessed based on physical effects related to land use compatibility (e.g., air quality, aesthetics, and circulation) and consistency with adopted plans and regulations. Specifically, this section of the EIR addresses the potential environmental impacts related to:

- **Land Use**
  - On-site land uses
  - Adjacent land uses
- **Plans and Regulations**
  - Coastal Act
  - City of Long Beach LCP
  - City of Long Beach General Plan
  - City of Long Beach Parks, Recreation, and Marine Strategic Plan
  - City of Long Beach Alamitos Bay Marina Master Plan
  - City of Long Beach Zoning Code

4.8.4 THRESHOLDS OF SIGNIFICANCE

The proposed project may have a significant impact on the environment if any of the following occur:

- Physically divide an established community
- 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, LCP, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect
- Substantially conflict with existing on-site or adjacent land uses
- Conflict with any applicable Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP)

4.8.5 IMPACTS AND MITIGATION MEASURES

4.8.5.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and are considered less than significant.

Physically Divide an Established Community. The project site is presently used for park and recreation activities. The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within Alamitos Bay. In addition, the proposed project would develop an eelgrass habitat area on the northeast shore of Marine Stadium. The proposed project would maintain recreational uses within the project area. The Marina is an existing recreational/open space use that would continue with implementation of the proposed project. The new habitat area would convert a portion of City-owned storage area to a habitat area adjacent to Marine Stadium. This change is limited to a small portion of the project site. Therefore, the proposed project would not divide an established community or disrupt the existing physical arrangement of the surrounding area. Hence, impacts related to this issue would not occur.

Conflict with Existing Land Uses at Alamitos Bay Marina. Existing on-site facilities include 13 restrooms, parking, boat slips, and associated Marina facilities. The proposed project consists of a number of improvements to the existing Marina, including: dredging the Marina seafloor, replacing and/or upgrading 13 restrooms and the associated water and sewer lines, repairing the sea wall, complete dock and piling replacement, replacing the pavement in the Marina parking lots, and development of an eelgrass habitat area. The proposed project involves improvements to the existing amenities within the Marina, and would not involve changes to, or conflicts with, the existing land uses within the project area. The project is specifically intended to upgrade and extend the useful life of the existing Marina uses. In addition, the proposed project would not be in conflict with the existing recreation opportunities, open space, or natural resource uses at the Marina. Therefore, project implementation would not result in land use conflicts within the project area.

Conflict with Existing Adjacent Land Uses. Land use compatibility and operational conflicts are considered significant if they lead to substantial physical impacts on persons living or working in the area. Such incompatibilities and conflicts are characterized by substantial nuisances, such as significant unmitigated increases in traffic, noise, odor, activity level, or substantial incongruity and conflict (physical and visual) with adjacent land uses.

As described previously, the proposed project consists of various infrastructure and recreational improvements to the project area. The land uses and intensity of uses on the

project site will remain generally the same after implementation of the Marina improvements. The only change in use involves development of the open space/habitat mitigation site, which would convert a City-owned storage area (located adjacent to Marine Stadium's northeast shore) to an eelgrass habitat mitigation area. The development of the open space/eelgrass habitat area would be consistent with the existing low-intensity uses and would complement the marine environment of Marine Stadium and the open space/ recreational uses to the adjacent north, which contain walking trails. The newly developed habitat area would be adjacent to the City's existing storage area to the south and bound by Boathouse Lane on the northeast side, as shown in Figure 3.14 in Section 3.0, Project Description.

Because there are no new uses being proposed other than the eelgrass mitigation site, and because the proposed project would not alter the Marina's physical recreational environment, the proposed project would not result in any adverse impacts to adjacent properties. Conversely, the proposed project is anticipated to benefit the surrounding area as the recreation and open space environment of the Marina would be improved and enhanced in the numerous ways detailed above. Therefore, significant land use impacts to adjacent properties would not occur with implementation of the project, and no mitigation is necessary.

Compatibility with Land Use Plans. The project site is under the land use planning and regulatory jurisdiction of the City and the CCC. The Marina is owned and operated by the City, which has the primary authority for development, maintenance, and operation of uses within the Marina. The City's Marine Bureau is responsible for the daily operations within the Marina. The proposed renovations to the existing Marina facilities are intended to enhance the public's access and recreational opportunities provided within the Marina and are a continuation of existing land uses, consistent with existing land use plans, policies, and regulations. The proposed project's consistency with applicable City and CCC land use plans and policies is discussed in more detail below.

State Sovereign Lands/State Tidelands Grant. The proposed project will not conflict with the State Tidelands Grant and does not entail the sale or conveyance of any tidelands to a private entity; the Marina will remain under the control of the City. In accordance with the conditions in the Tidelands Grant for the City, the proposed project entails the maintenance and the improvement of a harbor and ensures that the lands will remain available for public use as outlined. In addition, the project would ensure that the existing recreation and commercial fishing uses continue, consistent with the Tidelands Grant requiring that actions associated with the harbor be necessary or convenient to accommodate commerce and navigation. Therefore, impacts related to consistency with

the State Tidelands Grant are considered less than significant, and no mitigation is required.

California Coastal Commission/California Coastal Act/Local Coastal Program. The Bay Marina is located entirely within the Coastal Zone as defined by the Coastal Act. The Coastal Act was created to: (1) protect, maintain, and, where feasible, enhance and restore the overall quality of the Coastal Zone environment and its natural and man-made resources; (2) ensure orderly, balanced utilization, and conservation of Coastal Zone resources, taking into account the social and economic needs; (3) maximize public access to and along the coast and maximize public recreational opportunities in the Coastal Zone consistent with sound resource conservation principles and constitutionally protected rights of private property owners; (4) ensure priority for coastal-dependent development over other development on the coast; and (5) encourage State and local cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses in the Coastal Zone.

The Coastal Act requires all cities located within the Coastal Zone to adopt an LCP. The LCP is used by cities to regulate local land uses and development in a manner that is consistent with the goals of the Coastal Act. The City has an LCP that was certified by the CCC in 1980 and that governs permitted uses, activities, and development within Alamitos Bay and the existing basins/Marina facilities. The proposed renovation project is consistent with the policies and guidelines contained in the LCP, which state that the use of Alamitos Bay should be primarily recreational.

Although the City-certified LCP includes the project area, the CCC retains jurisdiction over all areas seaward of the mean high tide line, tidelands, and submerged lands (Section 30519 of the Coastal Act). Basins and Marinas included in this project are under the jurisdiction of the CCC. Projects proposed within the Coastal Zone are required to obtain a CDP prior to commencement (e.g., demolition or construction). Therefore, the appropriate standard for review is the project's consistency with the Coastal Act.

The Coastal Act identifies Coastal Resources Planning and Management Policies (Chapter 3, Section 30200 et seq.) that address the following issue areas:

- Public Access
- Recreation
- Marine Environment
- Land Resources

- Development
- Industrial Development

Table 4.8.A outlines the applicable Coastal Act policies and discusses the project's consistency with each applicable policy. Several policies are not included in Table 4.8.A because they address issues that are not relevant to the proposed Marina renovations and do not apply to an existing and operating Marina facility. Policies not included in the discussion include the following: access and development policies for new development projects; development of private, upland, and agricultural lands; construction altering the natural shoreline; water supply and flood control projects; and policies related to industrial developments.

As indicated above, the policies within Chapter 3 of the Coastal Act are intended to provide protection for suitable ocean front lands to be used for water-oriented and recreational purposes. The proposed project is consistent with the intent of these policies. The project consists of improvements to the existing water-oriented, recreational- and visitor-serving facilities within the basins of the harbor. In addition, the proposed project would further increase public recreational opportunities by providing an upgraded facility that is Americans with Disabilities Act (ADA) compliant and consistent with current boating needs and market trends. As indicated in Table 4.8.A, the proposed project is consistent with applicable Coastal Act policies, and impacts are therefore considered less than significant.

SCAG's Regional Policies. As detailed previously, SCAG's Regional Policy documents respond to Southern California's housing, traffic, water, air quality, and other regional challenges. The RCP's objective is to balance resource conservation, economic vitality, and quality of life. The RTP is a regional policy document that responds to Southern California's regional traffic challenges. In addition, the SCAG Compass Growth Vision provides policies to direct growth related to mobility, livability, prosperity, and sustainability.

These plans include various policies that are applicable to the proposed project. Table 4.8.B outlines the applicable policies and discusses the project's consistency with each applicable policy. Some SCAG policies are not included in Table 4.8.B because they address issues that are not relevant to the proposed project. However, some seemingly irrelevant policies have been included in Table 4.8.B at the request of SCAG in response to the Notice of Preparation for the proposed project.

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
Section 30210: In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs, and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.	The proposed project provides for enhanced public access through the rehabilitation of the Alamitos Bay Marina's (Marina) access facilities including docks and gangways. The project includes installation of Americans with Disabilities Act (ADA) compliant facilities, including ramp access to the docks, thereby increasing public access and improving public safety. Therefore, the proposed project is consistent with California Coastal Act (Coastal Act) Section 30210.
Section 30211: Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.	The project will not interfere with the public's right of access. The project will upgrade the existing Marina facilities and provide additional access through the installation of new ADA-compliant facilities. The project will maintain the existing coastal access for the public, which will serve local and regional visitors and enhance the existing public recreational opportunities. Therefore, the proposed project is consistent with Coastal Act Section 30211.
Section 30213: Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. The commission shall not: (1) require that overnight room rentals be fixed at an amount certain for any privately owned and operated	The proposed project includes renovations to several publicly accessed areas and walkways within the Marina. In addition, the project does not remove or preclude the use of passive recreational activities currently available in the Marina, such as sightseeing, and ensures that public access to low-cost recreational facilities is protected and enhanced. Therefore, the proposed project is consistent with Coastal Act Section 30213.

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
hotel, motel, or other similar visitor-serving facility located on either public or private lands; or (2) establish or approve any method for the identification of low or moderate income persons for the purpose of determining eligibility for overnight room rentals in any such facilities.	
Section 30220: Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.	The Marina has been in operation since the late 1950s/early 1960s. Renovating the docks, restrooms, and parking areas shows a commitment by the City of Long Beach (City) to the long-term use of this area as a water-oriented recreational facility, consistent with Coastal Act Section 30220.
Section 30221: Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.	See Response to Coastal Act Section 30220. The City utilizes the protected waters of Alamitos Bay to provide long-term recreational uses to complement similar facilities in the greater Long Beach Harbor, including Long Beach Shoreline Marina (Downtown Marina) and Rainbow Harbor (Rainbow Marina). As demand for water-oriented recreational facilities in Los Angeles County remains high, conversion to other uses is not under consideration or very likely. This is consistent with Coastal Act Section 30221, protecting such recreational facilities for the long term.
Section 30224: Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space	The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the harbor. The project encourages boating use by providing upgraded ADA-compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation and would accommodate changes in the boating needs of the

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.	public by providing longer average slip lengths. The dock and slip facilities were developed 50+ years ago, when the average length of recreational boating slips was shorter than current boater demand. However, providing longer slips will reduce the total number of slips within the Marinas. In 1999, in response to criticism regarding a proposed boutique hotel, the City Planning Commission recommended the completion of an Alamitos Bay Master Plan. As part of that process, discussion regarding the rebuild of the Marina ensued, which included discussion of slip mix. Popular opinion was that the Marina should continue to be recognized as a small craft Marina and as such should include slips as small as 20 feet (ft). The Alamitos Bay Master Plan (adopted July 2001) did not include specific slip mix recommendations, but did initiate the evaluation of slip mix in the Marina. City staff coordinated with CCC staff at that time to discuss the Alamitos Bay Master Plan and the future slip mix. As a result, the proposed slip mix reflects a Marina that contains 23 percent slips 25 ft and less (20s and 25s), 39 percent slips 30 ft and less (20s, 25s, and 30s), 58 percent slips 35 ft and less (20s, 25s, 30s, and 35s), and 82 percent slips 40 ft and less. Although the proposed project would result in a reduction in the total number of boat slips, the Marina facilities would provide increased recreational opportunities because the renovated facility would be designed to meet existing and anticipated future market needs and would facilitate/continue public use within the Coastal Zone. Additionally, the

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
	project does not involve any changes in land uses or other issues that would preclude boating. Therefore, the proposed project is consistent with the intent of Coastal Act Section 30234.
Section 30230: Marine resources shall be maintained, enhanced, and where feasible restored. Special protection shall be given to areas and species of special biological or economic 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 educational purposes.	As outlined in this Environmental Impact Report (EIR), a number of steps will be taken to protect the waters of Alamitos Bay and the marine resources located within the Bay and ocean waters. The proposed project provides for the conservation of marine resources by requiring biological surveys prior to any construction activities and limitations on hours of construction to ensure minimal noise disruptions to wildlife species (see Section 4.3, Biological Resources, and Section 4.9, Noise). Any loss of epibiota species during removal of docks and pilings and bulkhead repairs will be short term. These subtidal species are expected to reestablish themselves to healthy populations following disturbance. In addition, the loss of any eelgrass habitat will be mitigated for in accordance with the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service).The proposed habitat mitigation area included in the project will establish a productive eelgrass habitat intended to enhance the abundance and diversity of the marine life as well as serve a nursery function for many juvenile fishes. Therefore, the proposed project is consistent with Coastal Act Section 30230.

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
Section 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 wastewater discharges and entrainment, controlling runoff, preventing depletion of groundwater supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.	See Response to Coastal Act Section 30230. Harbor and coastal waters will be protected through implementation of the water quality program, including implementation of best management practices (BMPs) both during construction and operation. BMPs as outlined in Section 4.7, Hydrology and Water Quality, of this EIR are designed to ensure that water quality is not adversely impacted and that biological productivity is maintained. During construction, BMPs will prevent soil and sediment, construction debris, and chemicals from entering surface water flows. During operation, BMPs will keep pesticides, oil and automotive products residue, and trash from surface water flows. Surface water flow is not significantly altered by the project since the replacement of docks and pilings will result in conditions similar to existing conditions. Marine organisms displaced during the renovations are expected to return to optimum populations following disturbances. Therefore, the proposed project is consistent with Coastal Act Section 30231.
Section 30232: Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.	The coastal waters around the project site are impaired by pollution associated with water runoff and other urban sources. However, accidental spillage of hazardous substances during construction is controlled through implementation of appropriate National Pollutant Discharge Elimination System (NPDES) or other regulatory measures to ensure against any impacts resulting from accidental spills. During operational activities, spillage of solvents and fuels on site can

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
	occur through the use associated with the parking areas, and spillage in the waterways can occur from boating activity. However, the uses on site are not changing, and the project does not increase capacity. Prevention and cleanup would continue to be subject to the enforcement activities of the Alamitos Bay/Long Beach Marine Patrol. In addition, implementation of operational BMPs and enforcement of existing Marina regulations regarding the transportation and disposal of such wastes would ensure effective containment of accidental spills. Therefore, the project is consistent with Coastal Act Section 30232.
Section 30233: The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.	The proposed project includes the dredging of Marina basins to original design depths in order to restore safe navigation within the Marina. No less damaging alternatives exist to restore the basins to their original and safe navigable depths. Appropriate dredging permits and mitigation are required by the project (see Section 4.7, Hydrology and Water Quality). Therefore, the proposed project is consistent with Coastal Act Section 30233.
Section 30234: Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate	The proposed project is the renovation and upgrading of recreational boating facilities, as specified in Coastal Act Section 30234. The preferred project design accommodates current changes in the boating needs of the public and responds to the market trend of increased demand for larger slips. The proposed project would result in an increased average slip length; however, the additional length would reduce the total number

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.	of slips (additional detail regarding slip reduction is provided in Section 3.0, Project Description). The proposed project is consistent with the intent of Coastal Act Section 30234 because the project design is in response to market demand and commercial fishing would not be affected.
Section 30234.5: The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.	See Response to Coastal Act Section 30234. Commercial and recreational fishing opportunities will be protected and preserved. The project does not impact any commercial fishing activities. Implementation of the proposed project would enhance the facilities within the Marinas that support the existing fishing activities. Specifically, the new docks, gangways, and restrooms would be ADA compliant, allowing more people to participate in fishing activities. Hence, the proposed project would not adversely affect the economic, commercial, and recreational importance of fishing activities. Therefore, the proposed project is consistent with Coastal Act Section 30234.5.
Section 30235: Revetments, breakwaters, groins, harbor channels, sea wall, cliff retaining walls, and other construction that alters natural shoreline processes shall be permitted when required to serve coastal dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline and sand supply.	The proposed project does not include any construction that would alter natural shoreline processes. The existing sea walls within the Marina will be repaired as necessary in order to protect existing Marina access and facilities. Therefore, the proposed project is consistent with Coastal Act Section 30235.

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
Section 30240: Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat and recreation areas.	No environmentally sensitive habitat areas are adjacent to the project area. Impacts to the eelgrass habitat impacted by the project will be mitigated as required by the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service) and as outlined above and in Section 4.3, Biological Resources. The project site itself is a recreation area, and the project objective is to renovate the existing facilities to ensure the long-term viability of the recreational facilities. Therefore, the proposed project is consistent with Coastal Act Section 30240.
Section 30244: Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.	As discussed in this EIR, Section 4.4, Cultural Resources, no archaeological or paleontological resources as identified on the California State Historic Resources Inventory would be impacted by project implementation. Therefore, the proposed project is consistent with Coastal Act Section 30244.
Section 30251: The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coast areas, to minimize the alteration of natural landforms, to be visually compatible with the character of	The proposed project does not affect the existing public vistas or any natural landforms. The improvements proposed for the project ensure protection of on-site and off-site public views and the retention of visual qualities associated with a Marina. The proposed Marina facilities will be visually compatible with the character of the surrounding areas and similar, if not identical, to existing viewsheds in and around the Marina. Preservation of the scenic marine character is consistent with the objectives of the California Coastline Preservation and Recreation Plan. Therefore,

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
surrounding areas and where feasible to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.	the proposed project is consistent with Coastal Act Section 30251.
Section 30253: New development shall: (1) minimize risks to life and property in areas of high geologic, flood, and fire hazard; (2) assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area, or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs; (3) be consistent with requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development; (4) minimize energy consumption and vehicle miles traveled; and (5) where appropriate, protect special	The proposed project provides for implementation of Marina improvements in a manner that minimizes risks to life and property through the implementation of site-specific recommendations and specifications prepared by professional engineers and others. In addition, a geotechnical evaluation was prepared for the proposed project which, together with compliance with the seismic requirements of the Uniform Building Code (UBC) and the recommended engineering design measures, would ensure stability, structural integrity, and protection of the site and surrounding area. Additional detail regarding geologic hazards is provided in Section 4.5. As discussed in Section 4.1, Aesthetics, the proposed project will protect new and existing coastal access, thereby enhancing visitor-serving recreation opportunities. The project will be implemented consistent with federal, State, and local

Table 4.8.A: Consistency with Coastal Act Policies

Coastal Act Policies	Discussion/Analysis of the Proposed Project
communities and neighborhoods which, because of their unique characteristics, are popular visitor destination points for recreational uses.	rules and regulations addressing public health and safety, including requirements from the South Coast Air Quality Management District (SCAQMD). Based on the above reasons, the project is consistent with Coastal Act Section 30253.
Section 30255: Coastal-dependent developments shall have priority over other developments on or near the shoreline. Except as provided elsewhere in this division, coastal dependent developments shall not be sited in a wetland. When appropriate, coastal related developments should be accommodated within reasonable proximity to the coastal-dependent uses they support.	The proposed project enhances an existing coastal-dependent recreational- and visitor-serving use. No coastal-dependent developments will be impacted by the proposed project. Therefore, the proposed project is consistent with Coastal Act Section 30255.

Table 4.8.B: Consistency with SCAG Regional Policies

Policy Number	Policy Text	Consistency with RCP Policies
RCP Growth Management Chapter		
3.01	The population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and polices, shall be used by SCAG in all phases of implementation and review.	The proposed project would implement improvements to the existing Marina facilities on the project site. The project would not change the existing uses on site, would not develop residential uses, and would not create new jobs. Also, the project does not involve infrastructure improvements that could induce population growth. Therefore, the proposed project does not conflict with adopted forecasts or this SCAG policy.
3.20	Support the protection of vital resources such as wetlands, groundwater recharge areas, woodlands, production lands, and land containing unique and endangered plants and animals.	The objective of the proposed project is to protect and enhance the existing recreation resources within the project area. However, project components, such as dredging contaminated soils from the Marina bottom, would protect the existing water, biological resources, and habitat quality. Further, the quality of storm water that enters Alamitos Bay would be improved through the use of storm drain treatments. The project also includes planting eelgrass, which would increase the biological productivity and quality of the water and assist in maintaining optimum populations of marine organisms. Therefore, the proposed project would support the protection of vital resources on the project site and is furthering the objective of this policy.
3.23	Encourage mitigation measures that reduce noise in certain locations, measures aimed at preservation of biological and ecological resources, measures that would reduce exposure	The proposed project includes mitigation measures to reduce all adverse impacts to the extent feasible. Within this EIR, Section 4.9 includes construction noise mitigation measures; Section 4.3 includes construction mitigation measures to reduce biological impacts; and Section 4.5 includes mitigation measures to reduce exposure to seismic hazards and

Table 4.8.B: Consistency with SCAG Regional Policies

Policy Number	Policy Text	Consistency with RCP Policies
	to seismic hazards, minimize earthquake damage, and to develop emergency response and recovery plans.	reduce earthquake damage. Therefore, the proposed project is consistent with Policy 3.23.
RCP Air Quality Chapter		
5.11	Through the environmental document review process, ensure that plans at all levels of government (regional, air basin, county, subregional, and local) consider air quality, land use, transportation, and economic relationships to ensure consistency and minimize conflicts.	The proposed project is consistent with Policy 5.11. The proposed project does not change the existing uses on the project site. The purpose of the project is to enhance the existing recreational qualities of the project area. Therefore, as the site uses would not change, the project would not create an inconsistency between air quality, land use, transportation, and economic relationships. This EIR details the project's potential effects on these topics, and mitigation measures are included as necessary to reduce any adverse effects. Sections applicable to this policy include: Section 4.8, Land Use; Section 4.2, Air Quality; and Section 4.12, Traffic and Circulation.
RCP Open Space and Conservation Chapter		
9.1	Provide adequate land resources to meet the outdoor recreation needs of the present and future residents in the region and to promote tourism in the region.	The project area is an existing outdoor recreation area. The proposed project would enhance the natural resources and existing recreational uses on site. In addition, recreation amenities will be enhanced through development of upgraded amenities, such as restrooms and parking, and improved ADA-accessible facilities, such as gangways and docks. Therefore, the proposed project is consistent with Policy 9.1.

Table 4.8.B: Consistency with SCAG Regional Policies

Policy Number	Policy Text	Consistency with RCP Policies
9.2	Increase the accessibility to open space lands for outdoor recreation.	The proposed project would maintain the existing accessibility to the project site's open space lands that are used for outdoor recreation. The project area would not be enclosed by a fence and would be kept open to the public. Adequate access to the Marina will be maintained through implementation of the phased construction plan. Also, the project will provide increased access through development of ADA-compliant facilities. The open space recreational uses of the project area will continue to serve local and regional visitors; therefore, the proposed project is consistent with Policy 9.2.
9.3	Promote self-sustaining regional recreation resources and facilities	The objective of the proposed project is to improve the existing project site, which provides recreation resources. The project would enhance the existing self-sustaining recreation resources. Therefore, the proposed project is consistent with Policy 9.3.
9.4	Maintain open space for adequate protection to lives and properties against natural and manmade hazards	The proposed project is consistent with Policy 9.4 because the project would maintain the site's existing open space. To reduce any project-related risk related to natural and man-made hazards, appropriate mitigation measures have been included. Potential risks and mitigation measures are detailed in Section 4.5, Geology and Soils, and Section 4.6, Hazards and Hazardous Materials.
9.8	Develop well-managed viable ecosystems or known habitats of rare, threatened and endangered species, including wetlands.	The proposed project would improve water quality by dredging contaminated soils, and the quality of storm water that enters the Bay would be improved through the use of storm drain treatments. The project also includes planting eelgrass, which would increase the biological productivity and quality of the water and assist in maintaining optimum

Table 4.8.B: Consistency with SCAG Regional Policies

Policy Number	Policy Text	Consistency with RCP Policies
		populations of marine organisms. Therefore, the proposed project is furthering the objective of this policy.
RCP Water Quality Chapter		
11.05	Support regional efforts to identify and cooperatively plan for wetlands to facilitate both sustaining the amount and quality of wetlands in the region and expediting the process for obtaining wetlands permits.	Water quality would be improved by dredging contaminated soils and through the use of storm drain treatments. Therefore, the proposed project is furthering the objective of this policy.
RTP Goals		
RTP G1	Maximize the mobility and accessibility for all people and goods in the region.	The proposed project would implement improvements to the existing Marina facilities on the project site. The project would not change the existing uses on site, would not develop residential uses, and would not create new jobs. Also, the project does not involve infrastructure improvements that could induce population growth. The project does not include a transportation component and would not otherwise result in significant impacts to transportation, mobility, and/or accessibility within the region (refer to Section 4.12). These RTP policies are not applicable to the proposed project, and the project does not conflict with any of these SCAG policies.
Compass Growth Visioning Principals		
GV P1.1	Encourage transportation investments and land use decisions that are mutually supportive.	The proposed project would implement improvements to the existing Marina facilities on the project site. The project would not change the existing uses on site, would not develop residential uses, and would not

Table 4.8.B: Consistency with SCAG Regional Policies

Policy Number	Policy Text	Consistency with RCP Policies
		create new jobs. Also, the project does not involve infrastructure improvements that could induce population growth. The project does not include a transportation component and would not otherwise result in significant impacts to transportation, mobility, and/or accessibility within the region (refer to Section 4.12). This Compass Growth Vision policy is not applicable to the proposed project, and the project does not conflict with any of the SCAG Growth Vision policy.

ADA = Americans with Disabilities Act
EIR = Environmental Impact Report
GV = Growth Visioning
RCP = Regional Comprehensive Plan
RTP = Regional Transportation Plan
SCAG = Southern California Association of Governments

As detailed in Table 4.8.B, the proposed project is consistent with, or furthers the intent of, all applicable SCAG regional policies. Therefore, the proposed project would not result in an impact related to this issue and no mitigation is required.

General Plan Land Use Element. The General Plan land use designation for a majority of the project site is "Open Space and Parks" (Land Use Designation No. 11 in the Land Use Element of the General Plan). The Open Space and Parks use is intended to provide for "preserving natural habitat areas and promoting the mental and physical health of the community through recreational, cultural, and relaxation pursuits. Parks are characterized by open spaces devoted to leisure activities including the enjoyment of nature, wildlife, cultural heritage, sports, and similar activities." The portion of the project area located on the northeast shore of Marine Stadium is designated as Mixed Use.

The proposed project would continue existing uses, activities, and facilities while enhancing the existing Marina. Continuing Marina and related uses in the project area is consistent with the existing land use designations. The project would improve the character of the open space/recreation areas and would further the objective of supporting recreation uses. The proposed project would result in improved ADA-compliant facilities, which would increase the overall value of the project site as a recreation and open space resource consistent with the designations within the General Plan Land Use Element.

General Plan Open Space and Recreation Element. The City's Open Space and Recreation Element defines the Marina as a special-use park because of the Marina's boating amenities. As listed previously in Section 4.8.2, there are several objectives and policies in the Open Space and Recreation Element that are related to the proposed project. The proposed project is consistent with the element's objectives and policies for the project area because the proposed project would enhance the recreation opportunities and facilities on the project site (i.e., improving ADA-compliant facilities, improving old docks/slips/waterways, and meeting the needs and desires of current/future boating trends). As indicated, all of the proposed improvements will be in compliance with the ADA (Policy 4.13). Therefore, the proposed project is consistent with, and furthers the intent of, the policies within the Open Space and Recreation Element. Hence, no adverse impacts to open space and recreation amenities would result, and mitigation measures are not necessary.

Conservation Element. The City's Conservation Element contains several Water Resource Management Goals (previously listed in Section 4.8.2) that are applicable to the proposed project. The proposed project would be consistent with water quality goals for Alamitos Bay through the project's continued compliance with the Long Beach Marina

Environmental Policies and the Clean Marina Program. In addition, sewage pump-out stations will continue to be available to Marina patrons, provided by the City to protect the bay waters from potential waste discharge of boater waste directly into marine waters. All regulatory water quality standards and permits will be adhered to during construction of the project. Because the purpose of the project is to rehabilitate and upgrade the Marina facilities, the Conservation Element goal to preserve and enhance the open space and recreational opportunities of the Bays' inland waterways will be implemented. Therefore, the proposed project is considered consistent with the applicable goals of the Conservation Element, and impacts are considered less than significant.

City of Long Beach Zoning Code. The project site encompasses areas zoned P, PD-1, and PD-4. Figure 4.8.3 illustrates the existing zoning designations for the project site and surrounding areas. As stated above, the PD zoning designation was established to allow flexible development plans for areas of the City that represent unique or special land uses. As shown on Figure 4.8.3, Basins 1 through 3 are in the PD-4 zoning district. The intent of the PD-4 designation is to provide a set of land use regulations specific to the Marina, due to its unique land use as a Marina. The area is also of interest to the surrounding community and therefore warrants public review of each development proposal. The land side portions (parking areas) adjacent to Basins 1 through 3 and Basins 6-South and 6-North are within the SEADIP PD-1 area, consistent with the land uses surrounding those areas.

The existing zoning of the project area is consistent with the Marina's recreational and open space uses within the project area. The proposed project would continue the open space and recreational boating uses, activities, and facilities while enhancing the existing Marina. The continuation of passive and active recreational uses in the project area is consistent with the existing zoning designations. The project would improve the character of the open space/recreation areas and would further the objective of supporting coastal recreation uses. The proposed project would implement ADA-compliant facilities, which would increase access to the project site for recreation and open space users. Therefore, no impacts related to zoning consistency would occur with implementation of the proposed project.

City of Long Beach Parks, Recreation, and Marine Strategic Plan. The City's Parks, Recreation, and Marine Department developed a Strategic Plan in February 2003. The departmental Strategic Plan assessed recreation needs and objectives citywide and identified strategies to provide recreation opportunities and improve water quality and City beach areas. Specific strategies that are applicable to the proposed project are listed in Subsection 4.8.1, Existing Environmental Setting. The proposed project is consistent with and furthers the intent of these strategies. Specifically, the proposed project would:

- Provide active, passive, and educational recreational opportunities by providing ADA access and improved navigational access to the Marina facilities (Strategy 9);
- Improve and modernize marina condition, infrastructure, and amenities through the replacement of deteriorated facilities with new docks, slips, restrooms, parking surfaces and seawall repairs (Strategy 8 and 18); and
- Improve the level of safety within City marinas by replacing older infrastructure and providing ADA compliant new docks and gangways (Strategy 20).

Therefore, the proposed project would not conflict with the City Parks, Recreation, and Marine Strategic Plan, and no adverse impacts related to this topic would occur.

Alamitos Bay Master Plan. The future rebuild of the Marina was considered during development of the Alamitos Bay Master Plan. The proposed project is consistent with Master Plan recommendations listed in Subsection 4.8.1, Existing Environmental Setting, above. Specifically, the proposed project involves the following components:

- The proposed project does not include slips protruding further into the Bay in Basins 1 or 2.
- The current ratio of "boat length to slip length" overhang rules are retained under the current proposal.
- The City has guaranteed current slip renters that they will not be displaced outside of the Marina and that at project completion there will be a slip for every existing Marina tenant.
- The dredge vessels and docks currently located under the Davis Bridge will be relocated during or before Phase 1 of the proposed project.
- The width of the navigable channel will be maintained in all cases.
- The rehabilitation will incorporate the reuse of as many pilings, head walls, and sea walls as possible, or will recycle such products in compliance with the City's construction/demolition waste program.
- All nondockside mooring will still be prohibited.
- The proposed project includes maintenance dredging to the original design depths and/or original basin depths. All dredged material, except a portion of contaminated Basin 1 material, will be disposed of outside the Bay at LA-2.
- The 13 restroom buildings will be rebuilt or remodeled and brought up to current standards.

- The proposed project will provide a greater percentage of longer slips in response to market forces evident by the historical wait list for larger slips and the vacancies associated with the 25 ft and under slips. The proposed slip mix is consistent with other recently rebuilt Marinas and will ensure the highest and best use of the facility.
- Preliminary construction plans have utilized durable, high-quality materials to ensure the longest possible life of the facilities while endeavoring to keep maintenance costs low, thereby meeting the needs of users and tenants.
- The City is financing portions of the proposed project with State grant funds from the California Department of Boating and Waterways.

Conflict with Any Applicable Habitat Conservation Plan or Natural Community Conservation Plan. There are no adopted HCPs or NCCPs applicable to the project site; therefore, the proposed project would not result in impacts or be in conflict to an adopted HCP or NCCP.

4.8.5.2 Potentially Significant Impacts

No potentially significant impacts related to land use resulting from the proposed project have been identified, and no mitigation is required.

4.8.6 CUMULATIVE IMPACTS

As defined in Section 15130 of CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for land use. Long Beach is a heavily urbanized area with a wide variety of established land uses. In considering cumulative project impacts, environmental effects from nearby projects and the project's contribution to any cumulative effects are considered. Because the proposed project has little to no land use effect, the cumulative impact study area is very limited.

The land use patterns around the project site have been long-established with recreational, open space, residential, and small areas of commercial development. The proposed project involves improvements to an existing Marina, and the immediate area surrounding the project is largely built out. Currently, the following projects that have been proposed or approved but are not yet fully constructed would be considered within the cumulative study area for land use impacts the proposed project:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project

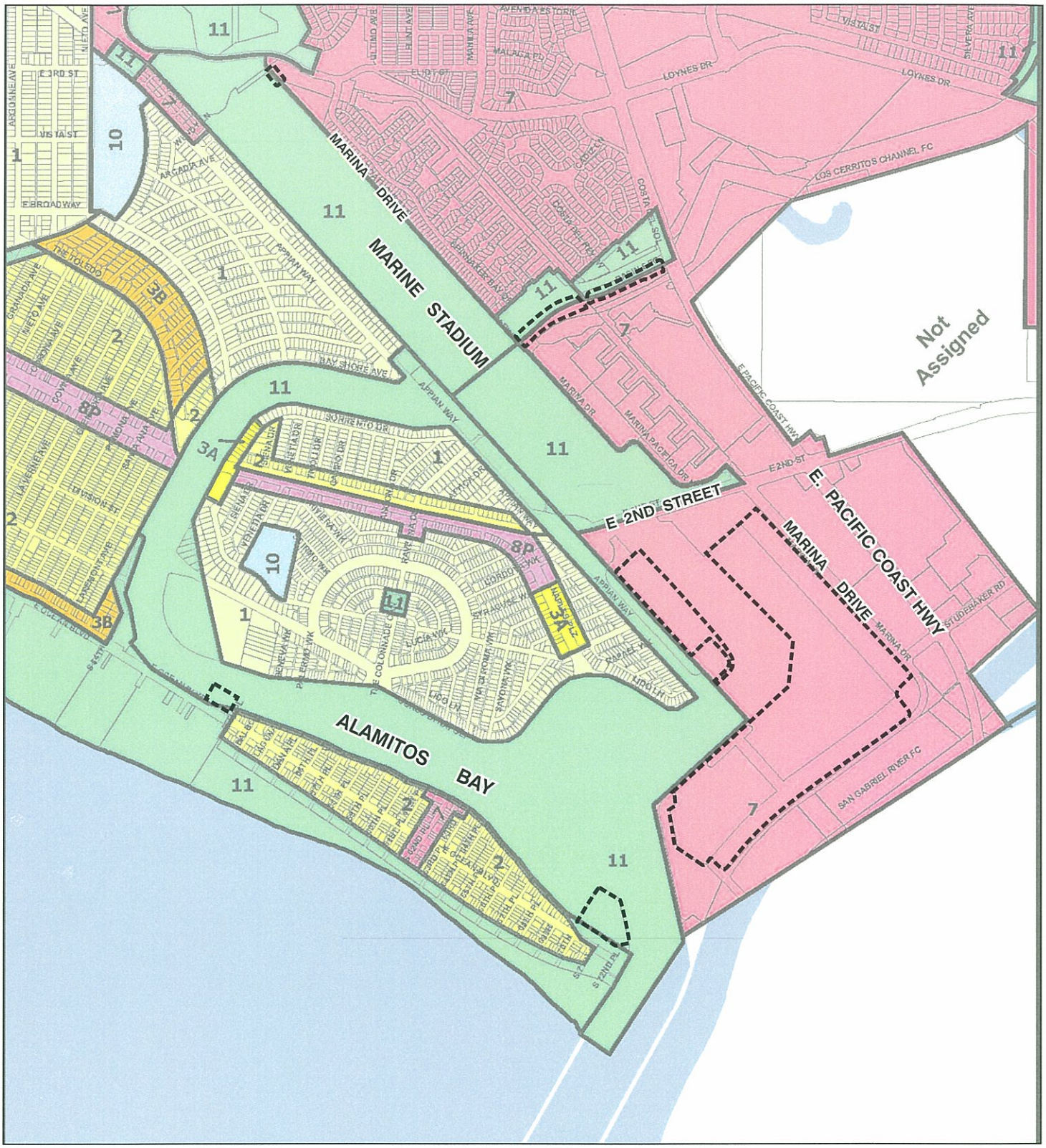
- Proposed Home Depot Project at Loynes Drive and Studebaker Road

The proposed project would not increase boater activity, vehicle trips to the Marina, or additional recreational use of the project area amenities. Because the Marina activities would not increase and the land uses within the Marina would remain the same, the proposed project would not result in on- or off-site land use changes. There are no incompatibilities between the proposed project and planned future land use projects. Therefore, the contribution of the proposed project to potential cumulative land use compatibility impacts in the project area is considered less than significant.

The proposed improvements would not alter land use patterns or intensities in other areas of the City and would not contribute to cumulative land use impacts to the City's land use patterns and character. Therefore, the contribution of the proposed project to potential cumulative land use compatibility effects with other projects in the study area is considered less than significant.

4.8.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

No potentially significant impacts related to land use resulting from the proposed project have been identified, and no mitigation is required. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to land use.



LSA

FIGURE 4.8.1

Alamitos Bay Marina Rehabilitation Project

Land Uses in the Project Vicinity

SOURCE: City of Long Beach Dept. of Planning & Building and Dept. of Technology Services

I:\TSY0701B\G\LandUse.cdr (2/2/09)

LSA

FIGURE 4.8.2

COASTAL ZONE SUBAREAS

PROJECT BOUNDARIES

CITY PERMIT JURISDICTION

APPEALABLE AREA

STATE PERMIT JURISDICTION

N

0 400 800

FEET

SOURCE: City of Long Beach, CA.

Alamitos Bay Marina Rehabilitation Project

Coastal Zone

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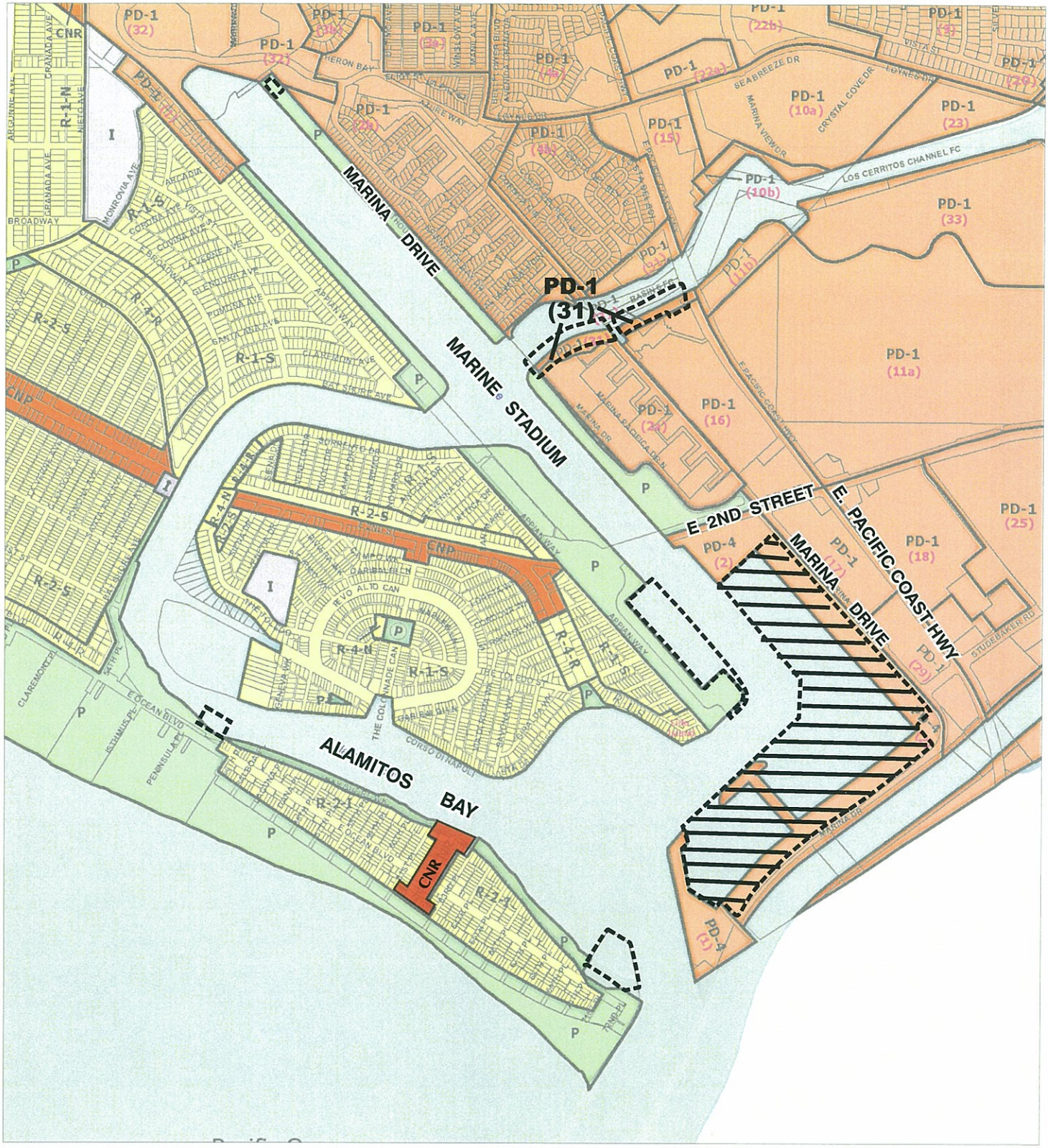

LSA

LEGEND

PROJECT BOUNDARY
I INSTITUTIONAL
R RESIDENTIAL

P PARK
PD-1 SOUTHEAST AREA DEVELOPMENT AND IMPROVEMENT PLAN (SEADIP)
CNR NEIGHBORHOOD COMMERCIAL & RESIDENTIAL
CNP NEIGHBORHOOD PEDESTRIAN COMMERCIAL
PD-4 LONG BEACH MARINA PLANNED DEVELOPMENT

0 400 800
FEET

SOURCE: City of Long Beach Dept. of Planning & Building and Dept. of Technology Services

I:\TSY0701B\G\Zone map.cdr (7/22/09)

FIGURE 4.8.3

Alamitos Bay Marina Rehabilitation Project

Zoning Designations in the Project Vicinity

4.9 NOISE

INTRODUCTION

This section evaluates the potential short-term construction and long-term operational noise impacts of the proposed Alamitos Bay Marina Rehabilitation Project. This analysis is intended to satisfy the City of Long Beach's requirement for a project noise impact analysis by examining the short-term construction and long-term operational impacts on on-site and off-site land uses involving sensitive receptors and evaluating the effectiveness of proposed mitigation measures. Noise calculation sheets developed during preparation of the following noise analysis are included in Appendix I.

4.9.1 EXISTING ENVIRONMENTAL SETTING

4.9.1.1 Fundamentals of Noise

Noise Definition. Noise impacts can be described in three categories. The first is audible impact, which refers to increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 decibels (dB) or greater, because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise levels of less than 1.0 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant and adverse.

Characteristics of Sound. Sound is increasing in the environment and can affect quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. To the human ear, sound has two specific characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations (or cycles per second) of a wave, resulting in the tone's range from high to low. Loudness is the strength of a sound and describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves, combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with

instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent noise sensitive land uses.

Measurement of Sound. Sound intensity is measured through the A-weighted scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's deemphasis of these frequencies. Unlike linear units, such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve.

For example, 10 dB are 10 times more intense than 1 dB, 20 dB are 100 times more intense, and 30 dB are 1,000 times more intense. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 A-weighted decibels (dBA) (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source, such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard-site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. The predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels, denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Another noise scale often used together with the L_{max} in noise ordinances for enforcement purposes is noise standards in terms of percentile noise levels. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Psychological and Physiological Effects of Noise. Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160–165 dBA will result in dizziness or loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in less-developed areas.

Vibration. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as motion of building surfaces, rattling of items on shelves or wall hangings, or a low-frequency rumbling noise. The rumble noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Groundborne vibration is usually measured in terms of vibration velocity, either the root-mean-square (rms) velocity or peak particle velocity (PPV). Root-mean-square is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Ground vibrations from construction activities do not often reach the levels that can damage structures, but they can achieve the audible and sensate ranges in buildings very close to the site. Problems with groundborne vibration from construction sources are usually localized to areas within approximately 100 feet (ft) from the vibration source.

4.9.1.2 Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others. Examples of these include residential uses, educational facilities, hospitals, childcare facilities, outdoor recreation areas, and senior housing. The sensitive land uses within the vicinity of the proposed project include the existing residences and Marina Park within the Marina. These land uses are located within 100 to 250 ft of the on-site construction areas.

4.9.1.3 Overview of the Existing Noise Environment

The primary existing noise sources in the project area are from vehicle traffic on project area roadways and from boating activities. Traffic on Pacific Coast Highway and Second Street contribute to area ambient noise levels.

4.9.2 REGULATORY SETTING

4.9.2.1 City of Long Beach General Plan Noise Element

The Noise Element of the General Plan contains noise standards for mobile noise sources. These standards address the impacts of noise from adjacent roadways and airports. The City specifies outdoor and indoor noise limits for residential uses, places of worship, educational facilities, hospitals, hotels/motels, and commercial and other land uses. The noise standard for exterior living areas is 65 dBA CNEL. The indoor noise standard is 45 dBA CNEL, which is consistent with the standard in the California Noise Insulation Standard.

4.9.2.2 City of Long Beach Municipal Code

The City has adopted a quantitative Noise Control Ordinance, No. C-5371, Long Beach 1977 (Municipal Code, Chapter 8.80). The ordinance establishes maximum permissible hourly noise levels (L_{50}) for different districts throughout the City. Tables 4.9.A and 4.9.B list exterior noise and interior noise limits for various land uses. For the purposes of analyzing the proposed project, the exterior noise standard of 70 dBA L_{max} has been applied to all of the sensitive land uses, the residences, the preschool, and the open space recreation areas located within the vicinity of the project construction areas.

Table 4.9.A: Exterior Noise Limits, L_N (dBA)

Receiving Land Use	Time Period	L_{50}	L_{25}	L_8	L_2	L_{max}
Residential (District One)	Night: 10:00 p.m.–7:00 a.m.	45	50	55	60	65
	Day: 7:00 a.m.–10:00 p.m.	50	55	60	65	70
Commercial (District Two)	Night: 10:00 p.m.–7:00 a.m.	55	60	65	70	75
	Day: 7:00 a.m.–10:00 p.m.	60	65	70	75	80
Industrial (District Three)	Anytime[1]	65	70	75	80	85
Industrial (District Four)	Anytime[1]	70	75	80	85	90

[1] For use at boundaries rather than for noise control within industrial districts.
dBA = A-weighted decibels
L_{max} = maximum sound level
L_N = percentile noise exceedance level
L_{50} = Noise level representing the median noise level; half the time the noise level exceeds this level and half the time it is less than this level
L_{25} = the noise level exceeded 25 percent of the time during a stated period
L_2 = the noise level exceeded 2 percent of the time during a stated period

Table 4.9.B: Maximum Interior Sound Levels, L_N (dBA)

Receiving Land Use	Time Interval	L_8	L_2	L_{max}
Residential	10:00 p.m.–7:00 a.m.	35	40	45
	7:00 a.m.–10:00 p.m.	45	50	55
School	7:00 a.m.–10:00 p.m. (while school is in session)	45	50	55
Hospital and other noise-sensitive zones	Anytime	40	45	50

dBA = A-weighted decibels
L_{max} = maximum sound level
L_N = percentile noise exceedance level
L_8 = the noise level exceeded 8 percent of the time during a stated period
L_2 = the noise level exceeded 2 percent of the time during a stated period

The City's Noise Control Ordinance (Section 8.80.202) governs the time of day that construction work can be performed. The Noise Ordinance prohibits construction, drilling, repair, remodeling, alteration, or demolition work between the hours of 7:00 p.m. and 7:00 a.m. on weekdays or federal holidays (considered a weekday) if the noise would create a disturbance across a residential or commercial property line or violate the quantitative provisions of the ordinance, except for emergency work authorized by the building official.

The Noise Ordinance prohibits construction, drilling, repair, remodeling, alteration, or demolition work between the hours of 7:00 p.m. on Friday and 9:00 a.m. on Saturday and after 6:00 p.m. on Saturday, except for emergency work authorized by the building official. No construction, drilling, repair, remodeling, alteration, or demolition work shall occur at anytime on Sundays, except for emergency work authorized by the building official.

4.9.3 METHODOLOGY

An evaluation of noise impacts associated with a proposed project typically includes the following:

- Determine the short-term construction noise impacts on on-site and off-site noise-sensitive uses with industry-recognized noise emission levels for construction equipment.
- Determine the long-term operational noise impacts, including vehicular traffic and aircraft activities, on on-site and off-site noise-sensitive uses.
- Determine the required mitigation measures to reduce short-term and long-term noise impacts from all sources.

4.9.4 THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, the following thresholds were used to assess the significance of potential noise impacts:

- 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.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The applicable noise standards governing the project site are the criteria in the City of Long Beach General Plan Noise Element and the City of Long Beach Municipal Code.

4.9.5 IMPACTS AND MITIGATION MEASURES

Implementation of the proposed project would result in short-term construction noise impacts. Once the project has been completed, the noise generated by on-site activities would

return to preexisting levels. The following focuses on the increase in noise associated with construction of the proposed project.

4.9.5.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and considered less than significant.

Long-Term Operational Noise Impacts. Rehabilitation of the Alamitos Bay Marina would reduce the number of boat slips from 1,967 to 1,646. Therefore, it is not expected that the proposed project would increase the number of vehicle trips on local roadways or boats using the docks. The proposed project would not result in any long-term noise impacts.

Airport Noise Impacts. The project site is located approximately 6 miles south of Long Beach Airport. The project will not create any new noise-sensitive land use or add any sensitive users. Construction workers will follow standard procedures regarding hearing protection to prevent exposure to excessive airplane noise, as necessary. Therefore, no impacts related to aircraft noise would occur as a result of the project.

Short-Term Construction-Related Vibration Impacts. The primary source of vibration during construction would be generated by the proposed pile driving. The closest pile-driving activities to a sensitive receptor would occur during Phase 12 at a distance of 100 ft from the nearest residence. Using Equation 9 and Table 17 from the Caltrans *Transportation and Construction-Induced Vibration Guidance Manual* (Jones & Stokes, June 2004), it was estimated that the vibration level at these residences would be 0.08 inches per second (in/sec). This construction vibration level would exceed the 0.02 in/sec threshold of perception. However, this level would be below the 0.1 in/sec annoyance threshold, below which there is virtually no risk of resulting in architectural damage to normal buildings. Therefore, the proposed project would not result in any significant vibration impacts.

Exposure of Sensitive Land Uses along the Haul Truck Routes. Land uses involving sensitive receptors located along the proposed haul truck routes such as residences, parks, and schools would be exposed to noise levels of up to 86 dBA L_{max} at a distance of 50 ft. Project construction during Phases 2 and 3 is expected to require 1,435 truck trips to remove dredge material from Basin 1 over a 12-month period, or an average of approximately three truck trips per hour. The trucks would depart from the staging areas on Marina Drive and be routed north on Marina Drive, east on 2nd Street, and north on Studebaker Road. This route traverses primarily commercial areas and does not affect any sensitive receptors.

Furthermore, the addition of three truck trips per hour to the local roadways would not result in a perceptible change in traffic noise.

Removal of excavated soils from the open space/habitat mitigation during Phase 1A is estimated to require 585 truck loads over 33 days, or an average of approximately 9 trucks trips per hour. Trucks from the open space/habitat mitigation site will be routed west on Eliot Street, west on Colorado Street, north on Park Avenue, and east on Seventh Street. There are residential uses along this haul route, and there will be short-term intermittent high noise levels associated with trucks passing by from the project site. However, the addition of nine truck trips per hour to the local roadways would not result in a perceptible change in traffic noise. Additionally, because the length of construction for each of these phases is limited, construction truck noise is a short-term impact and will cease once construction of each phase is completed. Therefore, the noise from haul trucks traveling along local roadways would be less than significant.

4.9.5.2 Potentially Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and considered potentially significant.

Short-Term Construction-Related Noise Impacts. Two types of short-term noise impacts would occur during project construction. The first is the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site. The pieces of heavy equipment for grading and construction will be moved to the site and remain as needed for the duration of each construction phase. The increase in traffic flow on the surrounding roads due to construction traffic is expected to be small. The associated increase in long-term traffic noise will not be perceptible. However, there will be short-term intermittent high noise levels associated with trucks passing by from the project site.

The second type of short-term noise impact is related to the noise generated by heavy equipment operating within the project area. The proposed Marina rehabilitation will be divided into 12 phases throughout Alamitos Bay. Each phase of construction will consist of multiple tasks. The activities that will occur during these tasks will include:

- Removal of the existing gangways
- Installation of new gangways
- Installation of temporary docks
- Dredging and pile removal

- Seawall and riprap repair
- Restroom replacement
- Parking lot pavement

The following construction equipment will be required to complete the above tasks:

- Backhoes
- Loaders
- Bobcats
- Paving equipment
- Heavy-duty trucks
- Gas skiffs
- Cranes
- Clam buckets
- Diesel tenders
- Pile drivers

Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table 4.9.C lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 ft between the equipment and a noise receptor.

Pile driving will be the noisiest activity on site, generating up to 93 dBA L_{max} at a distance of 50 ft. Other construction equipment used on site, such as loaders and backhoes, would generate up to 86 dBA L_{max} at a distance of 50 ft.

Table 4.9.C: Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft)
Pile drivers, 12,000 to 18,000 ft-lb/blow	81–96	93
Rock drills	83–99	96
Jackhammers	75–85	82
Pneumatic tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul trucks	83–94	88
Cranes	79–86	82
Portable generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-end loaders	77–90	86
Hydraulic backhoe	81–90	86
Hydraulic excavators	81–90	86
Graders	79–89	86
Air compressors	76–89	86
Trucks	81–87	86

Source: Noise Impact Analysis, May 2008.
dBA = A-weighted decibels
ft = feet
ft-lb/blow = foot-pounds per blow

The following land uses are located within the vicinity of the proposed construction activities:

- **Residential Development.** The nearest sensitive receptors, residential homes located around Alamitos Bay, are located at a distance of approximately 100 ft and may be subjected to short-term noise reaching 87 dBA L_{max} generated by construction activities. Homes located within 315 ft of the standard construction equipment and 706 ft of the pile driving would be exposed to noise levels in excess of the City's daytime exterior noise standard of 70 dBA L_{max}.
- **Open Space Recreation Uses.** Open space recreation uses such as Marina Park are located at a distance of approximately 250 ft from construction areas and may be

subjected to short-term noise reaching 79 dBA L_{max} generated by construction activities. Sensitive open space uses located within 315 ft of the standard construction equipment and 706 ft of the pile driving would be exposed to noise levels in excess of the City's daytime exterior noise standard of 70 dBA L_{max}.

Due to the distance between construction activities and the existing sensitive receptors, project construction activities would result in a significant noise impact; however, the noise impact would be intermittent and temporary. Construction-related, short-term noise levels would be higher than existing ambient noise levels in the project area but would no longer occur once construction of the project is completed. The City of Long Beach Municipal Code allows elevated construction-related noise levels as long as the construction activities are limited to the hours specified. Adherence to the City's noise regulations and implementation of Mitigation Measures 4.9-1 through 4.9-5 would reduce construction noise impacts to sensitive receptors; however, the construction noise impacts would remain significant and unavoidable due to intermittent high levels of noise and the disturbance that noise will have on nearby residents and the public using outdoor recreation open space.

4.9.6 MITIGATION MEASURES

All construction activities shall be carried out in accordance with the City's Noise Ordinance. The following mitigation measures are incorporated to offset potentially significant adverse construction-related noise impacts of the proposed project.

4.9-1 Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirements are printed on all final project plans: Consistent with the City of Long Beach (City) Noise Ordinance, construction activity that produces loud or unusual noise that could impact a reasonable person of normal sensitivity shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and federal holidays, and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall occur on Sundays.

4.9-2 Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: during construction and demolition, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

4.9-3 Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: the project contractor shall place all stationary construction equipment

so that emitted noise is directed away from sensitive receptors nearest the project site.

4.9-4 Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: the construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

4.9-5 Prior to issuance of a grading permit, the Director of Parks, Recreation, and Marine shall hold a community preconstruction meeting in concert with the Construction Contractor to provide information regarding the construction schedule. The construction schedule information shall include the duration of each construction activity and the specific location, days, frequency, and duration of the pile driving that will occur during each phase of the project construction. Public notification of this meeting shall be undertaken in the same manner as the Notice of Availability mailings for this Draft Environmental Impact Report (EIR).

4.9.7 CUMULATIVE IMPACTS

The cumulative study area for construction noise impacts is localized to the immediate project site adjacent to construction activities. In general, only projects occurring adjacent to or very close to the project site are considered due to the localized effects of noise. Currently, the following projects that have been proposed or approved but are not yet fully constructed are within the cumulative study area for the proposed project:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project
- Proposed Home Depot Project at Loynes Drive and Studebaker Road
- Termino Drain Project, various segments terminating at the northern end of Marine Stadium

Because the proposed project is scheduled to begin in 2011 and be implemented over 6 years, it is possible that the construction activity for the proposed project and construction for one of the cumulative projects identified above may occur at the same time. However, noise from construction of the proposed project and the cumulative projects would be localized to each project site and would not combine to create a cumulative noise impact. In addition, pile

driving, which will be the noisiest activity on site, does not occur with any of the other cumulative projects.

Although there will be short-term intermittent high noise levels associated with trucks passing by from the project site, the increase in traffic flow on the surrounding roads due to construction traffic is expected to be small. Off-site construction vehicles would not contribute to a cumulative increase in traffic noise along roadways in the project area.

On-site construction and operations are point sources of noise and would not contribute to off-site cumulative noise impacts from construction or operation of other planned and future projects. In addition, construction noise is exempt in the City's Noise Ordinance, would be temporary, and would cease upon construction completion.

The proposed project would not increase the Marina or open space uses of the project site and is not anticipated to lead to an increase in the number of visitors or vehicles to the project area. Therefore, the long-term ambient noise levels associated with increased traffic are not anticipated to change as a result of the proposed project, and the proposed project would not contribute to off-site cumulative noise impacts from other planned and future projects. Therefore, impacts related to operational noise would be less than cumulatively significant.

4.9.8 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Operational project impacts related to noise are less than significant. Implementation of Mitigation Measures 4.9-1 through 4.9-5 would reduce temporary and intermittent construction-related noise impacts; however, construction noise impacts to on-site sensitive receptors and to off-site residential uses would remain significant and unavoidable.

4.10 PUBLIC SERVICES AND UTILITIES

INTRODUCTION

The following section provides an analysis of utilities, public services, and public facilities for the proposed Alamitos Bay Marina Rehabilitation project in the City of Long Beach (City). Utilities associated with the Marina include the provision or disposition of water, wastewater, and solid waste disposal services. Public services include law enforcement and fire protection services. Public facilities included in this discussion address public schools and public libraries.

4.10.1 EXISTING ENVIRONMENTAL SETTING

4.10.1.1 Police Protection

The Long Beach Police Department (LBPD) provides a full range of law enforcement services throughout the City of Long Beach. The LBPD operates a helicopter program; a canine unit; a full-service, 24-hour jail facility; a communications/dispatching center; an investigation bureau; and a police academy including a firing range. Community-oriented police activities include community relations, traffic and parking enforcement, a Neighborhood Watch Program, crime prevention, bicycle patrol, Marine Patrol Unit, Port Police Unit (on the water), SWAT team, and a DARE Program.

There are currently 1,020 budgeted sworn officers within the LBPD service area. This provides an officer-to-population ratio of approximately 2 officers per 1,000 residents. It is the goal of the LBPD to strengthen that ratio to 2.5 officers per 1,000 residents. The average citywide response time to Priority 1 calls (life or property in imminent danger) for service is 4.5 minutes. The LBPD goal for average police response times for Priority 1 calls is 5 minutes or less.

The Patrol Bureau of the LBPD is divided into four geographic divisions (North, South, East, and West). The project site is located within the East Patrol Division and is served by the eastern substation. The eastern substation full-service police station, which opened in January 1994, has a maximum capacity of 145 employees. It currently operates at approximately 88 percent capacity (128 employees). In addition, the Marine Patrol provides services the Marina and Alamitos Bay and is located in the Marina adjacent to Basin 1. The Police Department facilities located in proximity to the project location are listed below, and shown on Figure 4.10.1.

- Marine Patrol Headquarters: 205 Marina Drive, located adjacent to Basin 1
- East Patrol Division Substation: 4800 Los Coyotes Diagonal, approximately 4.11 mi from the Marina
- Community Police Center: 1206 East Anaheim Street, approximately 5.69 mi from the Marina
- Community Police Center: 1004 East 7th Street, approximately 5.71 mi from the Marina

The LBPD is part of the Los Angeles County Law Enforcement Mutual Aid Organization, which is overseen by the Los Angeles County Sheriff's Department. In the event that mutual aid is needed, the Emergency Operations Bureau of the Sheriff's Department would be notified, and in turn they would notify appropriate response agencies. The City also has mutual aid relationships with the City of Signal Hill Police Department, California State University Long Beach Police Department, Veteran's Hospital Police, and the United States Coast Guard.

4.10.1.2 Fire Protection

The City of Long Beach Fire Department (Fire Department) provides fire and emergency medical response, marine safety and lifeguards, fire prevention, hazardous materials spill response, and hazardous materials regulatory enforcement services to the project area. The Fire Department consists of four bureaus (Administration, Operations, Fire Prevention, and Support Services) and maintains a staff of approximately 450 fire personnel. The Operations Bureau includes the Emergency Medical Services Division (EMS) and the Marine Safety Division. The Marine Safety Division is responsible for management of the lifeguards and other emergency personnel that service the City's beaches, waterways, and marinas. This includes the services currently provided within Alamitos Bay.

The Fire Department maintains the following facilities and equipment: 23 fire stations, a Fire Training Center, 22 engines, 4 trucks, 9 paramedic rescue vehicles, 1 foam apparatus, 3 airport firefighting and rescue vehicles, two harbor fireboats, and one technical rescue vehicle. Several fire stations serve the project area. Fire Station No. 21 and Fire Station No. 8 are the two closest stations to the project site. Table 4.10.A lists the fire stations located in proximity to the project site, all of which are shown on Figure 4.10.1.

Table 4.10.A: Fire Stations in Proximity to the Project Site

Station	Location	Distance from Project Site[1]	Response Time Approximately	Equipment
Fire Station 14	5200 East Eliot Street	2.29 miles	4 minutes	Engine company with a paramedic rescue
Fire Station 4	411 Loma Avenue	3.23 miles	6 minutes	Engine
Fire Station 8	5365 East 2nd Street	2.17 miles	2 minutes	Engine
Fire Station 21	225 Marina Drive	In Marina	-	Engine, Truck and Vessel
Beach Operations	2101 East Ocean Boulevard	4.21 miles	9 minutes	

Source: www.longbeach.gov/fire/station_locations.asp. Downloaded 12/07.
[1] Distances of facilities from the site are measured from the nearest Marina Basin.

The average citywide emergency response time from dispatch to arrival is less than 5 minutes. The Fire Department goal for emergency response times is to have the first engine arrive within 4 minutes of dispatch and for the first Paramedic Rescue to arrive within 8 minutes. Six personnel are dispatched for life-threatening medical responses, and a minimum of 19 personnel are dispatched for initial response to structure fires.

The Fire Department maintains mutual aid agreements with the Los Angeles County Fire Department, City of Los Angeles Fire Department, and Orange County Fire Department. The Fire Department is also part of the California Office of Emergency Services Master Mutual Aid system.

4.10.1.3 Public Schools

The Long Beach Unified School District (LBUSD) provides public school services to the project area. Of the 96 schools in the LBUSD, Lowell Elementary School, Rogers Middle School, and Naples Bayside Academy are located less than 2 miles (mi) from the nearest Basin in the project area as illustrated on Figure 4.10.1. Enrollment in the LBUSD in 2006–2007 totaled 90,663 students in grades Kindergarten through Grade 12. For the past 3 years the student population within LBUSD has decreased (1.3 percent decrease in 2004–2005, 2.8 percent decrease in 2005–2006, 3.1 percent decrease in 2006–2007, and 2.7 percent decrease in 2007–2008).

4.10.1.4 Libraries

The project area is served by the Long Beach Public Library System, which is composed of one main library and 11 neighborhood branch libraries. The main library, which serves as a State and federal depository, is located at 101 Pacific Avenue in downtown Long Beach, adjacent to City Hall. This library includes a Family Learning Center that provides homework assistance for students in grades Kindergarten through Grade 8, and facilities for Family and Preschool Storytime Programs and a Children's Film Program.

While the main library serves the entire City, neighborhood libraries serve smaller areas, generally located within a 1 mi radius of the library. There are several neighborhood libraries located near the project site, as listed in Table 4.10.B and illustrated in Figure 4.10.1. All of these libraries offer computers with Internet access, the library catalog, a community resource file, and various online reference resources.

Table 4.10.B: Public Libraries in the Project Area

Library	Location	Distance to Project Site[1]
Bay Shore Library	195 Bay Shore Avenue	1.14 miles
Los Altos Library	5614 Britton Drive	2.80 miles
Brewitt Library	4036 East Anaheim Street	2.90 miles
Alamitos Library	1836 East 3rd Street	4.50 miles
Mark Twain Library	1401 East Anaheim Street	4.56 miles

Source: www.lbpl.org. Downloaded 12/07.
[1] Distances of facilities from the site are measured from the nearest Marina Basin.

4.10.1.5 Water

The Long Beach Water Department (LBWD) provides water service to the entire city through a system of underground pipelines. The City provides both potable and reclaimed water. Reclaimed water is wastewater that has been treated to a sufficient degree to be used for specific nonpotable uses, such as irrigation. Reclaimed water is conveyed in a separate system to maintain the quality of the potable water.

The LBWD obtains its water supply from LBWD-operated wells and imported water from the Metropolitan Water District (MWD). The LBWD satisfies almost 42 percent of its demand by pumping its own wells and about 50 percent by importing water from the MWD. The remaining 8 percent of the water supply is tertiary treated reclaimed water from the Sanitation Districts of Los Angeles County (LACSD) Long Beach Water Reclamation Plant

(WRP) that is used for nondrinking purposes. The Long Beach WRP provides approximately 21 million gallons per day (mgd) of reclaimed water. As shown in Figure 4.10.2, LBWD's potable water lines are located in the streets surrounding the Marina basins and currently provide water supply to the Marina.

4.10.1.6 Sewer

The City of Long Beach is a member of the Los Angeles County Sanitation Districts (LACSD), a confederation of independent special districts that provide wastewater and solid waste services in Los Angeles County. The LACSD serves about 5.4 million people in the County. The LACSD service area covers approximately 800 square miles and encompasses 78 cities and unincorporated territory within the County.

The proposed project is located within the jurisdictional boundaries of the LACSD District 3. The existing wastewater flowing from the project area is generated from boat pumpouts and flows from the existing restrooms. The 13 existing restrooms are dispersed throughout the Marina and discharge to the City's existing sewer system, as shown in Figure 3.11, Section 3.0, Project Description.

The wastewater generated by the project site is treated at the Joint Water Pollution Control Plant (JWPCP) located at 24501 South Figueroa Street in the City of Carson, which has a design capacity of 400 mgd and currently processes an average flow of 310.9 mgd. The JWPCP provides full secondary treatment to all wastewater received.

4.10.1.7 Storm Water Drainage

Surface water runoff within the project area occurs as overland runoff into curb inlets and catch basins, and as sheet flow. As shown, on Figure 4.10.2, there are many storm drain lines running through and surrounding the project site. Several of the lines run under the parking lot and discharge directly into Alamitos Bay.

4.10.1.8 Solid Waste

As previously stated, the City is a member of the LACSD. Within Long Beach and at the project site, solid waste collection services are provided by the City's Environmental Services Bureau. In 2008, residents and businesses in Long Beach disposed of 511,046 tons of solid waste. This disposal amount reflects a diversion rate of approximately 69 percent. A large majority of Long Beach's solid waste is disposed of at two LACSD facilities: Puente Hills Landfill and the Southeast Resource Recovery Facility (SERRF).

The Puente Hills Landfill is the closest Class III landfill operated by LACSD that could be used to dispose of waste generated at the project site. The Conditional Use Permit (CUP) for the Puente Hills Landfill authorizes the disposal of a maximum of 13,200 tons per day. Typically, the landfill closes early due to this permit-imposed tonnage restriction. The facility has an estimated remaining capacity of 49,348,500 cubic yards (cy). Disposal operations will continue under the CUP until October 31, 2013, at which time the site will stop accepting waste for disposal. As indicated in Table 4.10.C, 175,685 tons, or 29 percent of the solid waste disposed of by Long Beach residents and businesses, were disposed of at the Puente Hills Landfill.

Table 4.10.C: City of Long Beach Solid Waste Disposal by Facility, 2005

Facility Name (County)	Disposal Amount (tons)	Percent of Total
CWMI-B18 Nonhazardous Codisposal (Kings Waste and Recycling Authority)	1,413	0.23%
Antelope Valley Public Landfill (Los Angeles)	2,740	0.44%
Azusa Land Reclamation Co., Inc. (Los Angeles)	4,213	0.69%
Waste Management of Lancaster Sanitary Landfill (Los Angeles)	1,507	0.25%
Chiquita Canyon Sanitary Landfill (Los Angeles)	21,613	3.54%
Puente Hills Landfill #6 (Los Angeles)	175,685	28.77%
Commerce Refuse to Energy Facility (Los Angeles)	577	0.09%
Sunshine Canyon Sanitary Landfill County Extension (Los Angeles)	18,966	3.10%
Southeast Resource Recovery Facility (Los Angeles)	241,242	39.49%
Bradley Landfill West and West Extension (Los Angeles)	1,450	0.24%
Prima Deshecha Sanitary Landfill (Orange)	38,298	6.27%
Olinda Alpha Sanitary Landfill (Orange)	50,154	8.21%
Frank R. Bowerman Sanitary Landfill (Orange)	4,810	0.78%
El Sobrante Sanitary Landfill (Riverside)	35,127	5.75%
Simi Valley Landfill-Recycling Center (Ventura)	2,167	0.35%
Total	**610,838**	**100.00%**

Source: CIWMB, Disposal Reporting System, Jurisdiction Disposal and Alternative Daily Cover Tons by Facility for the City of Long Beach, 2005. Downloaded 12/07.

The Puente Hills Materials Recovery Facility (PHMRF), which is located next to the Puente Hills Landfill, is also owned and operated by LACSD. The purpose of the PHMRF is to recover recyclable materials from commercial waste and to provide efficient transfer of

residual waste to permitted landfills for proper disposal. The facility is permitted to accept 4,400 tons per day or 24,000 tons per week of municipal solid waste.

The City of Long Beach and the LACSD have a Joint Powers Agreement to operate SERRF, which is located at 120 Pier S Avenue in Long Beach. SERRF is a refuse-to-energy transformation facility that is permitted to accept 2,240 tons of refuse per day. The facility reduces the volume of solid waste by approximately 80 percent while creating electrical energy. The SERRF produces 36 megawatts of electricity for Southern California Edison (SCE), which is enough to supply 35,000 homes with electrical power. In 2005, approximately 241,242 tons of the solid waste (39.5 percent) disposed of by Long Beach residents and businesses were disposed of at SERRF. Table 4.10.C lists all of the solid waste disposal sites that may be used to dispose of waste generated at the proposed project site.

In addition to the facilities discussed above, the United States Environmental Protection Agency (EPA) designated offshore disposal site, known as LA-2, is utilized by agencies such as the City to discharge dredge materials that meet specific environmental standards. This site is located approximately 5.8 miles south-southwest of the entrance to Los Angeles Harbor on the outer continental shelf margin. The depth of this site ranges from approximately -360 ft MLLW to -1,115 ft MLLW. Up to 1.4 mcy of dredge material may be disposed of at this site annually (Port of Los Angeles Channel Deepening Project Draft EIR/EIS, July 2008).

Los Angeles County faces a potentially large landfill capacity shortfall. As detailed in the Final Municipal Service Review for the LACSD (May 2005, prepared by the Los Angeles County Local Agency Formation Commission [LAFCO]), the amount of solid waste in need of disposal is forecasted to exceed the combined daily capacity of all Class III landfills and refuse-to-energy facilities in 2013. Due to this, the LACSD has expanded recycling, secured additional disposal capacity, researched additional solid waste conversion technologies, and implemented a remote waste-by-rail landfill system. The waste-by-rail system will consist of transfer stations and intermodal railyards that will transfer solid waste to new landfills in Riverside and Imperial Counties for disposal.

Eagle Mountain Landfill in Riverside County is currently planned, but not yet operational. Mesquite Regional Landfill in Imperial County is permitted to receive up to 20,000 tons per day of municipal solid waste. Mesquite Regional Landfill, which is owned and will be operated by the LACSD, is under construction and expected to be ready for landfill operations in 2009. Construction of the rail spur and railyard necessary to receive waste by rail is expected to be complete in 2011/12. With implementation of the waste-by-rail landfill system, Los Angeles County would be able to meet the projected landfill needs.

State legislation (Assembly Bill 939 [AB 939]) requires that every city and county in California implement programs to recycle, reduce refuse at the source, and compost solid

waste in order to achieve a 50 percent reduction in solid waste disposed of at landfills. AB 939 also requires that all cities conduct a Solid Waste Generation Study (SWGS) and prepare a Source Reduction Recycling Element (SRRE). In accordance with AB 939, local agencies must submit an annual report to the California Integrated Waste Management Board (CIWMB) summarizing its progress in diverting solid waste disposal.

Senate Bill 1374 (SB 1374) also requires that the annual report submitted to CIWMB include a summary of the progress made in diversion of construction and demolition waste materials. In addition, SB 1374 requires the CIWMB to adopt a model ordinance suitable for adoption by any local agency that requires 50 to 75 percent diversion of construction and demolition waster materials from landfills by March 1, 2004. Local jurisdictions are not required to adopt their own construction and demolition ordinances, nor are they required to adopt the CIWMB's model by default. However, adoption of such an ordinance may be considered by the CIWMB when determining whether to impose a fine on a jurisdiction that has failed to implement its SRRE.

Waste haulers are expected to contribute by recycling residential and commercial waste they collect, and project developers are expected to employ measures to reduce the amount of construction-generated waste by 50 percent or more. During reporting year 2006, which is the most recent data posted by the CIWMB, the City was in full compliance with waste diversion goals set by the State of California and had a diversion rate of 69 percent. The CIWMB has not approved or accepted diversion rates reported by the City since the 2004 report. However, a biennial review indicates that the City's diversion rate for 2005 was approximately 53 percent. The City also receives a 10 percent waste diversion credit through use of the SERRF, thereby further raising the City's waste diversion rate.

To ensure that the City maintains compliance with solid waste regulations, the City provides recycling services such as residential curbside recycling and commercial pickup service through a private contractor. In addition, each of the 21 permitted private waste haulers operating in Long Beach are required to have a City-approved recycling program in order to meet applicable waste diversion requirements. In order to maintain compliance goals, contractors will be required to reuse construction supplies where practicable or applicable, reuse soils on site, and reuse landscape containers to the extent feasible.

4.10.2 METHODOLOGY

This EIR section includes information concerning current levels of service to the project site and information on possible constraints or impacts to services during construction and at project build out. The impact analyses are based on the project description, information available on agency websites, and through phone and email conversations with City staff.

4.10.3 THRESHOLDS OF SIGNIFICANCE

The following thresholds for impacts to public services and utilities are based on Appendix G of the State CEQA Guidelines. The effects of the proposed project on public services and utilities may be considered significant if the proposed project would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or the need for new or physically altered 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 public services including fire protection, police protection, schools, libraries, or other public facilities;
- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board (RWQCB);
- 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;
- 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;
- Require new or expanded water entitlements to have sufficient water supplies available to serve the project;
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has inadequate capacity to serve projected demand in addition to the provider's existing commitments;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not be in compliance with federal, State, and local statutes and regulations related to solid waste.

4.10.4 IMPACTS AND MITIGATION MEASURES

4.10.4.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and are considered less than significant.

Police Protection. The proposed project would renovate the existing Marina facilities and would not expand or increase any existing uses on the project site. The proposed project would result in a loss of approximately 321 boat slips; no increase in marina capacity would result from the proposed project. The proposed project would enhance the safety and useful life of the facilities and would retain the existing recreation and open space uses of the project site. The project also does not incorporate new active uses that would attract a greater number of Marina users on a regular basis. In addition, the proposed project would not create additional jobs nor would it include the construction of new residential units that would generate additional population in the area. As a result of the reduction of total boat slips, the proposed project is not anticipated to increase Marina attendance and/or patterns of use. Therefore, police resources are not anticipated to increase with implementation of the proposed project. The project would not result in the need for additional officers or law enforcement equipment or facilities to maintain adequate and appropriate response capabilities.

As described, the proposed project is not anticipated to result in an increase in calls for police services or require additional personnel to maintain acceptable service ratios, response times, or other performance objectives. Similarly, the project will not require new or expanded police facilities. Therefore, impacts related to police protection services are considered less than significant, and no mitigation is required.

Fire Protection. The proposed project would implement improvements to the existing Marina facilities. As described above the proposed project would not result in an increased capacity to the Marina, expand active uses, or add additional jobs. The proposed project would retain the existing recreation and open space uses of the project site. Therefore, the on-site population and/or recreation users that could be endangered by possible fire or emergency medical events would not be increased. The project does not include residential units, public facility buildings, or other structures that would increase the existing fire hazards on site. Therefore, the project is not anticipated to result in an increase in calls for emergency fire services. As a result, the proposed project would not create a need to expand or construct new facilities to maintain acceptable service ratios, response times, or other performance objectives. Hence, impacts to fire protection would be less than significant, and no mitigation is required.

Schools. Generally, analysis of potential impacts to school facilities focuses on impacts associated with demand for new or expanded public education facilities resulting from construction of new housing units. The proposed project would implement renovations and improvements to the existing Marina facilities and does not involve the construction of residential units or include components that would create additional jobs in the project area. As such, the proposed project will not increase demand or negatively impact capacity in the

LBUSD. Specifically, the available capacity of the schools in the vicinity of the proposed project will not be affected by the project. Therefore, the proposed project would not create a need to expand or construct new school facilities to maintain acceptable service levels, and no mitigation is required .

Libraries. Impacts to libraries are typically associated with development projects that include the construction of residential units because new residential units generate a permanent increase in residential population. Conversely, nonresidential projects are typically viewed as having relatively limited impacts attributable to occasional and incidental use of area library facilities.

The proposed project would implement renovations and improvements to the existing Marina facilities and would retain the existing recreation and open space uses of the project site. The proposed project does not involve the construction of residential units or include components that would create additional jobs in the project area. As such, the proposed project will not result in an increase of population in the project area that would result in increased demands on the existing library facilities. Therefore, the proposed project is not expected to have a significant impact on library services in Long Beach or to create a need for the expansion of library facilities or staffing levels. No mitigation is required.

Water – Short-Term Construction Impacts. Construction of the proposed project improvements largely involves dredging and construction in the Marina waters. Because a large portion of the dredge and excavation materials will be wet, there will be limited need for additional water for fugitive dust control during a large portion of the construction activities. However, during demolition and reconstruction of the restrooms and parking lots, additional water for construction activities, including fugitive dust control, would be required. In order to accommodate the Marina operations, no more than 1 ac of parking lot pavement area would be replaced at any one time. This would result in a lower daily demand for construction water than if the project components were being implemented simultaneously. Overall, the project's demolition and construction activities are not expected to have any adverse impacts on the existing water system or availability of water supplies. In addition, water required during land side construction activities would be limited to the construction phase associated with these improvements. Therefore, impacts associated with short-term construction activities will be less than significant, and no mitigation is required.

Solid Waste – Long-Term Operational Impacts. The proposed project would implement facility improvements to the existing Marina and would not result in an increase in capacity or provide a new use that would generate additional solid waste. Conversely, the proposed project would result in the loss of approximately 321 boat slips, which may result in less

solid waste generated on site. For example, the Puente Hills Landfill, which is the closest Class III landfill and currently accepts solid waste from the project area, has an estimated remaining capacity of 49,348,500 cubic yards (cy). Therefore, because the existing land use will not change, and because implementation of the proposed project is not anticipated to increase the amount of solid waste generated, solid waste impacts due to operation of the proposed project will be less than significant, and no mitigation is required.

Storm Water Drainage. Storm water runoff on the docks will continue to discharge directly into the Marina, similar to existing conditions. There is no significant change in the impervious area within the project site since the proposed project involves repaving of existing surfaces and no increase in the landscaped areas. Because the surface areas of the parking lots are not increasing, no increase in storm water runoff is expected. The proposed project includes the replacement of existing storm drain catch basins within the parking areas, but does not create additional demands for storm water drainage. In addition, the project will not 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. Therefore, impacts related to new or expanded storm water facilities are considered less than significant, and no mitigation is required. Water quality related to storm water runoff is discussed further in Section 4.8, Hydrology and Water Quality.

4.10.4.2 Potentially Significant Impacts

Water – Long-Term Operational Impacts. The LBWD currently provides water services to the proposed project site. Water supply lines are in place and do not need to be extended in order to serve the project. The proposed project would implement improvements to the existing Marina facility, resulting in a reduction of approximately 321 boat slips and thereby reducing the number of boats requiring water service/supply. No additional facilities or capacities are being created by the proposed project, and demand for water from recreational users is not anticipated to increase.

The proposed project also includes replacing and/or renovating the 13 restrooms buildings within the Marina. The existing water and sewer lines will also be replaced due to age. Three restroom buildings would be remodeled and renovated in place, and 10 will be demolished and replaced in nearby locations with similar structures containing toilet, shower, and laundry facilities. The changes to the restroom facilities will add additional restroom fixtures such as showers and toilets to several restroom structures in the Marina. All of the restrooms will be equipped with low-flow faucets, showers, toilets, and laundry facilities (pursuant to Title 24 of the California Administrative Code) that would reduce the amount of water consumed by the fixtures. Mitigation Measure 4.10-1 has been included to ensure that water conservation measures such as low-flow and low-flush restroom fixtures are incorporated into the project design.

As a result of the reduction of total boat slips, the proposed project is not anticipated to increase Marina attendance and/or patterns of use. In addition, due to the use of low-flow restroom facilities (Mitigation Measure 4.10-1), the restroom component of the project would not result in a significant increase in water use. The project will not necessitate new or expanded water entitlements or infrastructure as significant increases in water demands would not result from the proposed project. Therefore, project impacts associated with an increase in water demand or an extension of supply infrastructure are less than significant.

Sewer. Wastewater generated by the project site is treated at the LACSD JWPCP located in the City of Carson. The proposed project would implement renovations and improvements to the existing Marina facilities. The project would result in an overall loss of slips and would not result in an increase in capacity or the addition of new uses or additional facilities in the Marina. The proposed project would not change or intensify the existing recreation uses of the project site or increase Marina attendance and/or patterns of use.

As described previously, the proposed project includes replacing and/or renovating the restrooms in the Marina. The existing water and sewer lines will also be replaced due to age and capacity. The new 6 in diameter sewer laterals will connect from the restrooms to the existing City sewer mains. The new sewer lines will have the capacity to accommodate the anticipated maximum wastewater demand. The changes to the restroom facilities will add additional restroom fixtures such as showers and toilets to several restroom structures in the Marina. All of the restrooms will be equipped with low-flow faucets and toilets (pursuant to Title 24 of the California Administrative Code) that would reduce the amount of water consumed by the fixtures, thereby also reducing the amount of wastewater generated per fixture. Mitigation Measure 4.10-1 has been included to ensure that water conservation measures such as low-flow and low-flush restroom fixtures are incorporated into the project design.

In summary, project-generated wastewater will not exceed the existing capacity of the sewer delivery system and will not require the construction of new sewer delivery facilities other than those to be constructed on site for the new restroom facilities. In addition, based on the anticipated flows and existing available capacity of the JWPCP, the proposed project would not exceed wastewater treatment requirements of the Los Angeles RWQCB or require the construction or expansion of the JWPCP facilities. Likewise, the proposed project is not anticipated to result in a determination by the LACSD that inadequate capacity exists to serve the project in addition to existing commitments. Therefore, project impacts to wastewater infrastructure and wastewater treatment requirements is considered less than significant.

Solid Waste – Short-Term Construction Impacts. Construction of the project would result in solid waste that would need to be disposed of in off-site facilities. The types of solid waste that would be generated include: dredge material, pilings, dock materials, asphalt, concrete, demolished restroom waste, and building materials.

As part of the proposed project, the Marina would be dredged to the original design depths and/or original basin depths. The dredge quantity is approximately 287,120 cy of sediment. The dredging work would be phased by basin along with the dock and piling replacement work. Dredge materials from Marina Basins 2–7 will be barged to the EPA designated offshore disposal site, known as LA-2, with material discharged via a dump barge. However, due to high levels of mercury discovered during preliminary sampling in Basin 1, approximately 25,504 cy will need to be trucked off site from this basin and, depending on testing results, will be disposed of at an appropriate State-approved landfill facility. All of the dredge material and other construction waste will be removed by a California State licensed contractor and disposed of in accordance with applicable laws and regulations.

The amount of the project's construction-related solid waste would be spread out over the anticipated 6 years of construction and is not anticipated to result in a significant impact to the capacity of LA-2 or the land side solid waste facilities. For example, the Puente Hills Landfill, which is the closest Class III landfill, has an estimated remaining capacity of 49,348,500 cy and will be able to accommodate the solid waste generated from construction of the project site. Prior to disposal of the contaminated dredge soils from Basin 1, Mitigation Measures 4.6-1 and 4.6-3 (as outlined in Section 4.6, Hazards and Hazardous Materials) require sediment testing and review and approval of a Soils Management Workplan (including requirements for disposal of all hazardous in a Class I landfill).

As previously stated, AB 939 requires that every city and county in California implement programs to recycle, reduce refuse at the source, and compost waste to achieve a 50 percent reduction in solid waste being taken to landfills. In order to assist in meeting this goal, the proposed project will be required to incorporate the collection of recyclable materials into project design and to require contractors to reuse construction supplies where practicable or applicable to the extent feasible. Mitigation Measure 4.10-2 will assist the City in its effort to meet its waste reduction goals by facilitating recycling on site during construction and operation of the proposed project. Therefore, solid waste generated during construction of the proposed project would not result in significant impacts related to landfill capacity or prevent compliance with federal, State, and local statutes and regulations related to solid waste.

4.10.5 MITIGATION MEASURES

The proposed project will not result in significant or potentially significant impacts to public services and utilities; therefore, mitigation is not required. Precautionary mitigation measures

have been included to ensure that water conservation and recycling measures are implemented.

The following mitigation measure will ensure that impacts related to operational water use are less than significant.

4.10-1 Prior to the issuance of building permits, the Marine Bureau Manager shall demonstrate on the final construction plans that applicable interior and exterior water conservation measures have been incorporated into all aspects of this project. At a minimum, measures shall include low-flush toilets, low-flow faucets and shower heads, and the installation of efficient irrigation systems to minimize runoff and evaporation.

The following mitigation measure will ensure that impacts related to solid waste generated during construction activities are less than significant.

4.10-2 Prior to the issuance of any demolition permit, a solid waste management plan for the proposed project shall be developed by the Marine Bureau, and submitted to the Environmental Services Bureau for review and approval. The plan shall identify methods to promote recycling and reuse of construction materials as well as safe disposal consistent with the policies and programs outlined by the City of Long Beach. The plan shall identify methods of incorporating source reduction and recycling techniques into project construction and operation in compliance with State and local requirements such as those described in Chapter 14 of the California Code of Regulations and Assembly Bill (AB) 939.

4.10.6 CUMULATIVE IMPACTS

Currently, the following projects that have been proposed or approved but are not yet fully constructed are within the cumulative study area for the proposed project:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project
- Proposed Home Depot Project at Loynes Drive and Studebaker Road
- Termino Drain Project, various segments terminating at the northern end of Marine Stadium

The cumulative study area for public services and utilities is generally defined as each provider's service area, as further discussed below.

4.10.6.1 Police and Fire Protection

The geographic area for cumulative analysis of police protection services is defined as the service territory for the LBPD. A net increase of up to approximately 79,702 residents and 19,740 housing units is forecast for the City by 2035.[1] These growth projections are generated by the SCAG using the latest census data, local input, and historical growth trends, and reflect reasonably foreseeable developments and growth. Similar to the cumulative analysis area for police protection services, the geographic area for cumulative analysis of fire protection (including marine safety/lifeguard) services is defined as the service territory for the Long Beach Fire Department. As stated above, a net increase of up to approximately 79,702 residents and 19,740 housing units is forecast for the City by 2035.[2]

As stated above, the proposed project would improve the existing marina/recreation uses on the project site, and the proposed project is not anticipated to increase Marina attendance and/or patterns of use. As a result,, the project would not be anticipated to generate additional calls for police services or an increased demand for fire, lifeguard, or emergency medical services. The cumulative projects identified above are generally improvements to existing facilities, infill residential projects, or an expansion of commercial development. These future projects will likely include specific features designed to reduce impacts on police and fire protection services and may be assessed additional mitigation measures specific to the given project's impacts. The need for additional police and fire protection services associated with cumulative growth will be addressed by the City through its annual budgeting process when budget adjustments may be made to meet changes in demand for police and fire services. Therefore, the combined impact associated with the project's incremental effect and the effects of other projects in the area is considered less than cumulatively significant.

4.10.6.2 Public Schools and Libraries

The geographic boundary for the cumulative analysis for schools is the area within the LBUSD. The geographic area for the cumulative analysis of impacts to library facilities is the City of Long Beach. The proposed project would improve the existing marina/recreation uses on the project site. The proposed project does not involve the construction of residential units or include components that would result in population growth or create additional jobs in the project area. As such, the proposed project will not increase demand for the provision of

1 The change in the number of residents and jobs was measured using the California Department of Finance 2007 population estimate for the City of Long Beach and growth forecasts from the Southern California Association of Governments, Draft 2008 RTP Baseline Growth Forecast.

2 Ibid.

library services or impact capacity in the LBUSD. Therefore, the project's effects on schools and library services are considered less than cumulatively considerable.

4.10.6.3 Water/Sewer/Solid Waste

The geographic area for the cumulative analysis for the supply of potable and reclaimed water is defined as the LBWD service territory. Because the proposed project would improve an existing facility, which includes installation of low-flow facilities, the project would not increase long-term demand for potable water or impact water supplies. In addition, implementation of Mitigation Measure 4.10-1, requiring water conservation measures to be incorporated into project plans, will reduce potential impacts related to water service to a less than significant level. Therefore, impacts on water services are considered less than cumulatively significant.

The geographic area for the cumulative analysis for sewer treatment is defined as the LACSD service territory. Within its service area, the LACSD uses SCAG forecasts for future population and employment growth to project needed capacity. Because the LACSD projects that its existing and programmed wastewater treatment capacity will be sufficient to accommodate the growth forecasted by SCAG within its service area, development that is generally consistent with this forecast can be adequately served by LACSD facilities. The proposed project does not increase capacity and is consistent with SCAG projections for the City of Long Beach and the County of Los Angeles. Therefore, impacts on wastewater/sewer services are considered less than cumulatively significant.

Development associated with future projects in the City of Long Beach will contribute to increased demand for landfill capacity for solid waste from construction activities and operations. Unclassified landfills that accept inert waste (construction debris), including waste created by the proposed project, have remaining capacity. In addition, implementation of Mitigation Measure 4.10-2, requiring a solid waste management plan (SWMP) for the proposed project, will reduce potential impacts related to solid waste to a less than significant level.

As discussed above, although there is insufficient capacity within the existing system serving Los Angeles County to provide for long-term nonhazardous solid waste disposal needs, the Mesquite Regional Landfill is under construction, and was expected to be ready for landfill operations in 2009 and waste-by-rail operations in 2011/12. With operation of the Mesquite Regional Landfill, the LACSD would be able to meet the projected landfill needs. Therefore, the project's impacts related to solid waste, when coupled with solid waste generated by planned and future projects, is considered less than cumulatively significant.

4.10.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Implementation of Mitigation Measures 4.10-1 and 4.10-2, described above, would reduce potential project and cumulative public service and utilities impacts to less than significant levels. Therefore, no significant unavoidable adverse impacts of the proposed project related to public services and utilities have been identified.

LSA

LEGEND

Project Locations

0 1250 2500
FEET

SOURCE: MSVE (2008); TBM (2008); City of Long Beach (1/09)

I:\tsy0701\GIS\Public_Services.mxd (9/24/2009)

Police

1. LBPD eastern substation- 4800 Los Coyotes Diagonal
2. Marine Patrol Headquarters 205 Marina Drive
3. Community Police Center 1206 E. Anaheim Street
4. Community Police Center 1004 E. 7th Street

Fire Stations

5. Station 21- 225 Marina Drive
6. Station 8- 5365 E. 2nd Street
7. Station 4- 411 Loma Avenue
8. Station 14- 5200 Eliot Avenue
9. Beach Operations- 2101 E. Ocean Boulevard

Schools

10. Bryant Elementary- 4101 E. Fountain Street
11. Freemont Elementary- 4000 E. 4th Street
12. Lowell Elementary- 5201 E. Broadway
13. Mann Elementary- 257 Coronado Avenue
14. Jefferson Middle School- 750 Euclid Avenue
15. Rogers Middle School- 365 Monrovia Avenue
16. Wilson High School- 4400 E. 10th Street
17. Tincher Elementary- 1701 Petaluma Avenue
18. Hill Classical Middle School- 1100 Iroquois Avenue
19. Kettering Elementary- 550 Silvera Avenue
20. Naples Bayside Elementary- 5537 The Toledo

Libraries

21. Brewitt Library- 4036 E. Anaheim Street
22. Bay Shore Library- 195 Bay Shore Avenue

FIGURE 4.10.1

Alamitos Bay Marina Rehabilitation Project EIR

Public Service Facility Locations

LSA

LEGEND

- Project Locations
- Potable Water Lines
- Reclaimed Water Lines
- Existing Storm Drain Pipelines
- Existing City Sewer Lines
- Storm Drain Device

0 400 800
FEET

SOURCE: DigitalGlobe (4/08); City of Long Beach (2008, 1/09)

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FIGURE 4.10.2

Alamitos Bay Marina Rehabilitation Project EIR

Water & Sewer Lines in the Project Vicinity

4.11 RECREATION

INTRODUCTION

This section provides an analysis of potential impacts that project implementation may have on existing recreation facilities. This section also addresses the proposed impacts to recreation resources with consideration of local, State, and California Coastal Commission (CCC) policies; and provides recommended mitigation measures pursuant to the California Environmental Quality Act (CEQA). Information presented in this section is based on the Open Space and Recreation Element of the City of Long Beach General Plan and the Long Beach Department of Parks, Recreation, and Marine Departmental Strategic Plan. These documents are available for review at the City of Long Beach Department Development Services Department.

4.11.1 EXISTING ENVIRONMENTAL SETTING

4.11.1.1 Alamitos Bay Facilities

The proposed project is located within the Alamitos Bay, which is connected directly to the Pacific Ocean, and lies adjacent to the northwest of the mouth of the San Gabriel River. Alamitos Bay contains 7 miles (mi) of inland waterways for recreational water-related uses and is recognized as a regional recreation facility that offers a wide range of recreational opportunities to local and regional boaters, as well as the general public. The recreational activities and facilities are intended to meet the diverse interests of existing and future residents of the City as well as visitors.

Alamitos Bay is comprised of Marine Stadium, a recreation facility used for boating, water skiing, rowing and special events and containing a rowing center, green open space, coastal viewing, benches, and picnic tables; Alamitos Bay Marina (Marina), which contains eight basins for recreational boating craft and a boatyard; a variety of public and private berths; a fuel dock; and the Bay proper, which includes several small canals, a bathing beach, and several popular clamming areas.

4.11.1.2 Project Site Facilities

The Marina facilities are operated by the City of Long Beach (City) Marine Bureau and are primarily accessible from Pacific Coast Highway (PCH) and Second Street. From the ocean, the Marina entrance is approached from the south between two jetties, each marked by a light on the seaward end. The Marina comprises eight basins, as illustrated on Figure 3.2 (see

Section 3.0, Project Description). There are currently 1,997 slips located throughout the eight basins in the Marina. However, the proposed project only includes renovations to Basins 1–7. Basin 8 is not included in the project. There are currently 1,967 boat slips in Basins 1–7. Marina Basins 1–7 also include 13 restrooms buildings, parking lots, and other associated Marina facilities. Each of the seven basins has a differing number of slips available to boaters, ranging from 20 to 120 feet (ft) in length.

Basins 1 through 3 are located adjacent to Marina Drive, south of Second Street. Basin 4 is located along East Appian Way on the southeast corner of Naples Island, adjacent to the Long Beach Yacht Club. Basin 5 is located adjacent to the Alamitos Bay Yacht Club on Ocean Boulevard. Basin 7 is located on Ocean Boulevard to the northwest of Basin 5. Basin 6 comprises two separate areas known as Basin 6-South (Basin 6-S) and Basin 6-North (Basin 6-N). Basin 6-S is located at the northernmost end of Marina Pacifica Drive and Basin 6-N is located northeast of Basin 6-S, adjacent to the Marina Pacifica Mall on PCH. The project area also includes an open space/habitat mitigation site on the northeast shore of Marine Stadium. The open space/habitat mitigation site is located within a City-owned storage area accessed from Boathouse Lane that is currently used, in part, to store impounded items.

4.11.1.3 Project Area History and Background

In 1923, the low-lying tidelands of Alamitos Bay were dredged of more than 7 million cubic yards (cy) of sand, silt, and mud to create the Bay, Marine Stadium, and Colorado Lagoon. Since the water body development, the area has been utilized for recreational and competitive rowing and diving, including various Olympic events.

Marine Stadium was officially engineered and constructed for use in the 1932 Olympic Games. Marine Stadium is unique in its design, accommodating four competing rowing teams in one heat. During the 1932 Olympic Games, the United States rowing team won the gold medal in Marine Stadium.

In 1955 the Second Street Bridge (also referred to as the Davies Bridge) was constructed over the boating channel, which changed the original dimensions of Marine Stadium, effectively eliminating it as a venue for the 1984 Olympic Games. The Marina was also formed in the 1950s, when portions of the bay were dredged to form a circular waterway and the existing basins and boat slips were constructed.

In 1968, the City remodeled Marine Stadium for the Olympic rowing and canoeing team trials and constructed the current boathouse. The boathouse that was used during the 1932 Olympics still remains (located on the southeast corner of E. Colorado and Neito Avenue); however, it has been extensively remodeled and is not listed as a historical landmark.

Alamitos Bay Marina (Marina) was opened in the late 1950s and early 1960s and is comprised of eight basins located throughout Alamitos Bay containing 1,997 boat slips. The existing dock and slip facilities in the Marina were developed 50+ years ago, when the average length of recreational boating slips was shorter and narrower than current boater demand.

In 1999 the City of Long Beach Planning Commission recommended the completion of an Alamitos Bay Master Plan, which was completed and adopted in July 2001(included in Appendix H). As part of the process, discussion regarding the rebuild of the Alamitos Bay Marina ensued, which included discussion of slip mix. Popular opinion was that the Marina should continue to be recognized as a small craft Marina, and as such, should include slips as small as 20 ft. The Alamitos Bay Master Plan did not include specific slip mix recommendations, but did initiate the evaluation of slip mix in the Marina. At that time City staff coordinated with California Coastal Commission (CCC) staff to discuss the Master Plan and the future slip mix. As a result, the proposed project's slip mix reflects a Marina that contains approximately 25 percent slips 25 ft and less (20 ft and 25 ft), 39 percent slips 30 ft and less (20 ft, 25 ft, and 30 ft), 58 percent slips 35 ft and less (20 ft, 25 ft, 30 ft, and 35 ft), and 81 percent slips 40 ft and less.

The proposed project consists of a number of improvements to the existing Marina and includes the following: (1) dredging the Marina basins down to original design depths and/or original basin depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) completing dock and piling replacement, including installation of 1,646 slips, resulting in the loss of approximately 321 slips; and (5) replacing the pavement in the Marina's parking lots. The project includes two construction staging areas: one located in a parking lot on Marina Drive near Basin 2; and the second staging area would be located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard. Each of these project components is described in greater detail in Section 3.0, Project Description.

4.11.1.4 Other Marina Facilities Provided by the City

In addition to the Alamitos Bay Marina, the City's Department of Parks, Recreation, and Marine own and operate two other Marina facilities, as listed below.

- **Shoreline Marina:** The Shoreline Marina is located between the Queen Mary and the Long Beach Convention Center in downtown Long Beach. The Shoreline Marina opened in 1982 and has 1,764 slips for recreational boaters.
- **Rainbow Harbor/Marina:** Rainbow Harbor/Marina is located next to the Aquarium of the Pacific, in downtown Long Beach and has 87 slips for commercial/recreational

vessels, (12) 150 ft docks for commercial vessels, and a 200 ft long dock for day guests. All guest mooring is first come, first serve.

4.11.2 REGULATORY SETTING

4.11.2.1 California Coastal Act

The Recreation Policies contained in Article 3 of the California Coastal Act (Coastal Act) are intended to provide protection for suitable ocean front land to be used for recreational purposes as well as maintaining upland areas to support coastal recreation uses, where feasible. The policies prioritize water-oriented recreational activities and encourage increased recreational boating use of coastal waters by developing support facilities. The policies also place priority on the use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industries.

4.11.2.2 City of Long Beach Open Space and Recreation Element

The Long Beach City Council adopted the most recent Open Space and Recreation Element of the General Plan on October 15, 2002. The project site is currently designated as a "Special Use Park" because of the Lagoon's swimming amenity. There are several Goals/ Objectives, Policies, and Programs in the Element that are applicable to the proposed project, as listed below:

- Provide the recreational resources the public wants. (Goals/Objectives 4.4)
- Make all recreation resources environmentally friendly and socially and economically sustainable. (Goals/Objectives 4.5)
- Create additional recreation open space and pursue all appropriate available funding to enhance recreation opportunities. (Open Space and Recreation Element, Policy 4.1)
- Fully maintain public recreation resources. (Goals/Objectives 4.7)
- Provide access to recreation resources for all individuals in the community. (Goals/ Objectives 4.10)
- With the help of the community, plan and maintain park facilities at a level acceptable to the constituencies they serve. (Open Space and Recreation Element, Policy 4.6)
- Give special consideration to handicapped and disadvantaged residents in accessing public recreation resources. (Open Space and Recreation Element, Policy 4.13)

4.11.2.3 City of Long Beach Parks, Recreation, and Marine Strategic Plan

The City Department of Parks, Recreation and Marine developed a Departmental Strategic Plan in February 2003. The Departmental Strategic Plan assessed recreation needs and objectives citywide. There are several strategies in the Plan that apply to the proposed project, as listed below:

- Focus on improving the level of safety within City Parks and Recreational Facilities. (Strategy 7, page 45)
- Focus on improving the condition of Department parks and recreational facilities. (Strategy 8, page 54)
- Establish lifetime use opportunities. Recreation programs and facilities will be designed to develop and serve a lifetime user through active, passive, and educational experiences. (Strategy 9, page 62)
- Improve and modernize marina condition, infrastructure, and amenities. (Strategy 18, page 75)
- Improve the level of safety within City marinas. (Strategy 20, page 75)

4.11.3 METHODOLOGY

The analysis in this section addresses issues relating to recreation facilities and the provision of recreation opportunities and services that may be affected by the proposed project. Impacts to recreational facilities in and around Alamitos Bay Marina were determined by comparing goals and policies adopted in the Coastal Act, the City's General Plan Open Space and Recreation Element, and the City Department of Parks, Recreation and Marine Strategic Plan with the proposed improvements within the Marina.

4.11.4 THRESHOLDS OF SIGNIFICANCE

In accordance with CEQA, recreation impacts are assessed primarily based on the physical effects of the proposed project on existing recreation facilities in the project vicinity. In addition, the project is analyzed relative to any adverse physical effects on the environment that might result from implementation of the proposed project. The impact significance criteria used for this analysis are based primarily on Appendix G of the State CEQA Guidelines. The proposed project may have a significant impact on the environment if the project would:

- Increase demand on the City Department of Parks, Recreation, and Marine's services and facilities beyond its capacity, thereby accelerating or leading to substantial physical deterioration of existing recreation facilities; or

- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

4.11.5 IMPACTS AND MITIGATION MEASURES

The following impacts of the proposed project have been identified based on project characteristics and the significance thresholds defined above. This discussion focuses on potential recreational impact issues. Other issues related to and affecting adjacent and on-site recreational facilities are discussed in the applicable EIR sections such as air quality, noise, traffic/parking, and aesthetics.

4.11.5.1 Less Than Significant Impacts

The following impacts that could result from implementation of the proposed project were evaluated and determined to be less than significant.

Increased Demand on Existing On-Site Facilities. The objective of the project is to renovate the existing Marina facilities that are 50+ years old and have physically deteriorated over time. The primary goal of the proposed project is to renovate the docks and slips, seawall, utilities, parking areas, and restroom facilities that are in a physical state of decline, thereby extending the Marina's useful life and improving the safety for recreational users. In addition, the proposed project incorporates the Americans with Disabilities (ADA) access requirements for recreational facilities, thereby increasing accessible coastal recreation opportunities. The project would also improve navigation and safety throughout the Marina basins by dredging to the original design and/or basin depths.

The Marina Rehabilitation Project would also accommodate changes in the boating needs of the public by providing longer average slip lengths. The dock and slip facilities were developed 50+ years ago, when the average length of recreational boating slips was shorter and narrower than current boater demand. One of the objectives of the proposed project is to eliminate the vacancy trends in the 20 ft and under slip category and meet the demand for larger slips. According to the Marine Bureau, vacancies in the 20 ft and under category historically run between 100 and 200 slips; currently there is a 4-year waiting list for the 50 ft slips, a 6-year waitlist for the 60 ft slips, an 8-year waitlist for the 70 ft slips, and a 7-year waitlist for the 80 ft slips.

As discussed above, during preparation of the Alamitos Bay Master Plan, a discussion regarding the slip mix for the rebuild of the Alamitos Bay Marina ensued. Popular opinion was that the Marina should continue to be recognized as a small craft Marina and as such should include slips as small as 20 ft. Although the Alamitos Bay Master Plan did not include

specific slip mix recommendations, City staff coordinated with CCC staff at that time to discuss the Master Plan and the future slip mix. As a result of those discussions, the proposed slip mix reflects a Marina that contains approximately 25 percent slips 25 ft and less (20s and 25s), 39 percent slips 30 ft and less (20s, 25s, and 30s), 58 percent slips 35 ft and less (20s, 25s, 30s, and 35s), and 81 percent slips 40 ft and less. These are cumulative percentages of slip sizes, meaning that each range of slip sizes includes the cumulative total of all boats in that range and smaller.

The proposed project proposes a total of approximately 1,646 slips and would result in a loss of 321 slips, primarily in the smaller slip sizes (30 ft and smaller). However, the City of Long Beach has made an assurance to its Alamitos Bay Marina customers that they will not be forced out of the Marina due to the project, even if the City has to put a small vessel in a larger slip until a small slip is available. In order to ensure that this guarantee can be met, the City started an "attrition program" approximately 2 years ago that holds open slips that would not be replaced with the rebuild. As of the date of this EIR, there are 1,430 customers in the Marina, so there would be a slip for every customer once the renovations are complete. However, should the number of correctly sized slips not be available at project completion, those customers would be placed in alternate slips until the appropriately sized slips become available.

These project components would improve the physical condition of the existing recreational facility and increase the Marina's value as a recreational resource by making the facility better suited to meet existing needs and future boating trends. The proposed project would result in a decrease in capacity and would not increase demand on existing facilities within the Marina. Therefore, because the proposed project would not increase capacity and is not anticipated to increase use of the existing on-site facilities, impacts related to the increased demand on, or capacity of, those existing facilities is considered less than significant, and no mitigation is required.

Increased Demand on Alamitos Bay Recreational Facilities. As discussed above, the proposed Marina improvements are not anticipated to result in any substantial increased use of the Marina facilities. Similarly, the proposed project is not anticipated to result in increased usage of other recreational amenities or activities in the bay, including: beaches, boat launches, park areas, and Marine Stadium.

As stated above, the project would result in the loss of 321 slips, primarily from the smaller slip sizes. However, according to the Marine Bureau, vacancies in the 20 ft and under category historically run between 100 and 200 slips while, currently, there is a waiting list ranging from 4 to 8 years for slips in the 50 ft and over categories. The Marina expects the vacancy trend in the smaller slip sizes to continue. In addition, the City of Long Beach has made an assurance to its Alamitos Bay Marina customers that they will not be forced out of

the Marina due to the project, even if the City has to put a small vessel in a larger slip until a small slip is available. In order to ensure that this guarantee can be met, the City started an "attrition program" approximately 2 years ago that holds open slips that would not be replaced with the rebuild. During construction, all displaced Marina tenants will be accommodated at other available slips in the Marina or at the temporary dock, included as part of the proposed project. This will ensure that there is not an increased demand or impact on other recreational facilities, including other marinas, boat storage facilities, or boat launch facilities. Additionally, as part of the renovation in the Basin 4 (Phase 1 of the construction schedule) parking lots, approximately 23 dry storage spaces for 30 ft and under boats will be created.

The proposed project would not substantially affect any of the existing off-site, adjacent recreational uses and activities such as surrounding City, County and State parks. The Marina Rehabilitation project does not include residential development or other factors that would increase employment nor increase the permanent population that would utilize the existing recreational facilities in the project vicinity. Hence, the proposed project would not increase demand on City Department of Parks, Recreation, and Marine services and facilities beyond existing capacity or preclude the use of any existing recreation facilities in the project vicinity. Therefore, the proposed project would have less than significant impacts related to increased demand on existing parks and recreation facilities, and no mitigation is required.

Construction (Short-Term) Impacts on Recreation. Short-term construction-related effects have the potential to result from development of the proposed improvements. Components that have the potential to affect on-site uses at the Marina during construction include: dredging the Marina basins, improvements to the restrooms, dock and piling replacement, and parking lot replacement.

Implementation of the proposed project would occur in a 12-phase program, extending over approximately 6 years. Each basin would be dredged after removal of the docks and slips within that respective basin. Sea wall repair would occur as necessary within each phase. Rehabilitation of the restroom facilities and the parking lot replacement would be completed after installation of all dock facilities and related utilities. In order to accommodate the Marina operations, no more than 1 ac of parking lot pavement area would be replaced at any one time (see Mitigation Measure 4.2-4 in Section 4.0, Air Quality). Additionally, Mitigation Measure 4.12-1 (see Section 4.12, Traffic and Circulation) requires that a Construction Area Traffic Management Plan be implemented to ensure that construction activities do not impact the ongoing use of the recreational facilities at the project site and in the project vicinity. The current number of parking spaces in the Marina basin parking lots exceeds the City's parking requirements by more than 1,000 spaces. With implementation of the Construction Management Plan and limits to the amount of parking area being disturbed, construction

activities are expected to have less than significant impacts on access to the existing recreational facilities. No additional mitigation is required.

In addition, as stated above, the proposed project includes a temporary dock to accommodate displaced boaters during construction activities. All displaced Marina tenants will be accommodated at other available slips in the Marina or at the temporary dock. Therefore, proposed project construction would have less than significant impacts on recreation activities.

Therefore, even though construction activities would occur in the Marina during implementation of the project, the use of the project area for recreational activities would not be adversely impacted during the construction phases of the project. Hence, the proposed project would not result in significant short-term construction use impacts, and no mitigation is required.

Operational (Long-Term) Impacts on Recreation Facilities. The proposed project would result in improvements to the existing recreation facilities on site. The primary goal of the proposed project is to renovate the docks and slips, seawall, utilities, parking areas, and restroom facilities that are in a physical state of decline, thereby extending the Marina's useful life and improving safety for recreational users. The Marina has not been completely dredged since its original opening; the proposed dredging of the Basins will greatly increase navigation and safety, as well as contribute to better water quality conditions due to the increased depths and tidal flushing. Planned improvements, including filters installed in the storm water basins, will also contribute to better water quality conditions. Additionally, the project encourages recreation and boating use by providing upgraded ADA-compliant facilities, increasing accessible coastal recreation opportunities.

The proposed project would result in the addition of 9 parking spaces, for a total supply of 2,524 spaces. Based on the proposed number of slips, 23 ADA-accessible parking spaces are required and will be provided. The overall number of spaces provided at project completion exceeds the City's requirements by 1,289 spaces; therefore, access to recreational facilities would not be adversely affected.

The rebuild will result in 1,646 slips. As of the date of this DEIR, there are 1,430 customers in the Marina, so there would be a slip for every customer once the renovations are complete. However, should the number of correctly sized slips not be available at project completion, the City would place those customers in alternate slips until the appropriately sized slips become available.

Although the number of slips would decrease, the proposed project would not adversely impact other recreational opportunities in the project area. The proposed project would

eliminate the historic and present vacancy trends in the 20 ft and under slip category and meet the demand for larger slips, as discussed above. By designing the Marina for long-term trends in the boating industry, recreational boating will be encouraged. In addition, all current customers in the Marina will continue to have a slip once the proposed project is implemented. Therefore, no long-term impacts related to operation of the Marina are anticipated, and no mitigation is required.

California Coastal Act Policies. Several provisions of the Coastal Act pertain to recreational facilities in the Coastal Zone. As discussed in Section 4.8 (Land Use), the proposed project must be approved as part of a Coastal Development Permit (CDP) issued by the CCC prior to project construction. An application for a CDP will be submitted following certification of the EIR and approval of the Alamitos Bay Marina Rehabilitation Project by the City. Each applicable Coastal Act policy and its consistency with the proposed project is outlined on Table 4.8.A in Section 4.8, Land Use. As stated in the analysis for the project's consistency with Coastal Act recreation policies, renovation of the docks, restrooms, and parking areas shows a commitment by the City to the long-term use of this area as a water-oriented recreational facility. In addition, the project will upgrade the existing Marina facilities and provide additional access through the installation of new ADA-compliant facilities. A brief discussion is included here as it relates specifically to recreation policies.

Coastal Act Article 1 contains general policies and is not applicable to a recreation discussion. Similarly, Article 5 (Land Resources), Article 6 (Development), and Article 7 (Industrial Development) are not applicable to the recreational component of the project.

The following sections of the Coastal Act pertain to recreational facilities and are applicable to the proposed project:

Coastal Act Article 2, Public Access:

- *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs, and the need to protect public rights, rights of private property owners, and natural resource areas from overuse. (Coastal Act Section 30210)*
- *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. (Coastal Act Section 30213)*

The remaining policies contained in Article 2 address new development, distribution of development, and implementation of public access policies, and are not applicable to the discussion of the project's potential recreational impacts.

Coastal Act Article 3, Recreation:

- *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses. (Coastal Act Section 30220)*
- *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area. (Coastal Act Section 30221)*
- *Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land. (Coastal Act Section 30224)*

The remaining policies contained in Article 3 address new development, coastal aquaculture, and upland areas, and are not applicable to the discussion of the project's potential recreational impacts.

Coastal Act, Article 4, Marine Environment:

- *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses 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 educational purposes.(Coastal Act Section 30230)*
- *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate*

substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry. (Coastal Act Section 30234)

- *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected. (Coastal Act Section 30234.5)*

The remaining policies contained in Article 4 address biological productivity, water quality, hazardous materials, diking, alteration of the natural shoreline, water supply, and flood control, and are not applicable to the discussion of the project's potential recreational impacts.

As discussed in detail in Section 4.8, the proposed project is consistent with Coastal Act Sections regarding recreation resources. Proposed project elements that ensure compatibility with Coastal Act policies include the following:

- The proposed project provides for enhanced public access through rehabilitation of the Marina's access facilities, including docks and gangways. The project includes installation of ADA-compliant facilities, including ramp access to the docks, thereby increasing public access and improving public safety (Coastal Act Section 30224).
- The proposed project would enhance the existing water-oriented recreational activities of the Bay and Marina facilities. The proposed project, which is adjacent to the ocean and ocean front land, would enhance the existing recreational uses of the Bay and Marina (Coastal Act Section 30224).
- The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the Bay. The project does not involve any changes in land use or other issues that would preclude boating (Coastal Act Section 30221).
- The proposed project would accommodate changes in the needs of boaters, including slight increases in the average slip length. The dock and slip facilities were developed 50+ years ago when the average length of recreational boats was shorter and boats were narrower. Although there would be a loss of smaller slip sizes, all existing customers in the Marina are guaranteed a slip once the project is completed. In addition, the project includes 23 additional dry storage spaces in Basin 4. The Marina facilities would provide increased recreational opportunities because the renovated facilities would facilitate continued public use within the Coastal Zone (Coastal Act Sections 30221 and 30224).
- The Marina renovation and improvement would provide continued support for water-dependent business opportunities in the Bay (Coastal Act Sections 30234 and 30234.5).

As indicated above, the policies within Chapter 3 of the Coastal Act are intended to provide protection for suitable ocean front lands to be used for water-oriented and recreational purposes. The proposed project is consistent with the intent of these policies. The project consists of the improvement of the existing water-oriented recreational and visitor serving facilities within the Marina. In addition, the proposed project would further increase public recreational opportunities by providing facilities that satisfy ADA requirements. Therefore, based on the above discussion, the proposed project is considered consistent with Coastal Act policies, and impacts are considered less than significant. No mitigation measures are required.

City of Long Beach General Plan, Open Space and Recreation Element. As listed previously in Section 4.11.2, there are several Goals/Objectives, Policies, and Programs in the Element that are applicable to the proposed project**.** The proposed project is consistent with the Element's objectives and policies because the project would continue and enhance the existing recreation and open space uses within the project site. Specifically, the proposed project would renovate the existing Marina facilities, thereby enhancing the existing recreational boating facilities to continue meeting the recreation needs of existing and future residents. Implementation of the proposed project would make the project site (which is a recreation area) environmentally friendly and sustainable, and protect the existing recreation resource. The proposed project does not change the existing types of recreational and/or open space on site. The existing Marina-related recreation uses have been ongoing at the site for 50+ years, and the proposed project would therefore be consistent with the existing marine and water-related recreational uses on site. In addition, the project encourages boating use by providing upgraded ADA facilities in response to the diverse recreation interests of the citizens.

As detailed above, the proposed project does not conflict with the City's Open Space and Recreation Element. Therefore, no adverse impacts would result, and no mitigation measures are required.

The City Department of Parks, Recreation and Marine Strategic Plan. As listed previously in Section 4.11.2, there are several Strategies in the Plan that are applicable to the proposed project**.** The proposed project is consistent with the Plan's Strategies because the project would continue and improve the existing recreation uses within the project site. The proposed project includes renovations to existing facilities within the Marina and does not preclude any existing recreational facility or recreational activities currently available in the Marina. The project would improve and modernize the condition of the Marina and its supporting infrastructure; would dredge the Marina's basins to the original design depths and/or original basin depths to provide safe navigation throughout the Marina; provide upgraded ADA compliant facilities to improve the level of safety and access at the facility;

and would extend the useful life of the facilities, including active, passive, and educational experiences. Therefore, the proposed project is consistent with the City's Department of Parks, Recreation, and Marine Strategic Plan Strategies listed above, and impacts are considered less than significant. No mitigation measures are required.

4.11.5.2 Potentially Significant Impacts

No potentially significant impacts were identified, and no mitigation is required.

4.11.6 CUMULATIVE IMPACTS

The cumulative study area for recreation impacts is the City of Long Beach. Implementation of the proposed project will result in an increase in the quality and safety of the recreation resources on site by replacing deteriorating facilities. All of the existing recreational uses on site will be retained. The project will maintain existing coastal access for the public, which will serve local and regional visitors, further enhancing the existing public recreational opportunities.

Implementation of the proposed project would result in the loss of 321 slips, primarily in the smaller slip size categories. Although this could contribute to a cumulative loss of smaller slips for boat owners, all Marina customers will continue to have a slip once the project is implemented. In addition, vacancies in the 20 ft and under category historically run between 100 and 200 slips, while there is a wait list for slips 50 ft and larger. Alamitos Bay Marina would continue to provide the Marina facilities in demand by recreational boaters and would not cumulatively contribute to the loss of such facilities. Therefore, the proposed project will positively contribute to recreation amenities in Alamitos Bay and would have no potential cumulatively considerable impacts on such resources.

In addition, the proposed project does not include any residential housing or increased employment opportunities that would increase the population in the City. Therefore, the proposed project would not, with any other planned or proposed projects, cumulatively contribute to the increased use of or need for additional or expanded recreational facilities in the City. Based on these factors, the proposed project would not contribute to adverse cumulative impacts related to recreation when combined with other foreseeable projects that are planned or expected to occur in Long Beach or the region. Implementation of the Alamitos Bay Marina Rehabilitation Project is therefore considered to have less than significant cumulative impacts related to recreational resources.

4.11.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

No potentially significant impacts to recreational resources have been identified and no mitigation is required. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to recreational resources.

4.12 TRANSPORTATION AND CIRCULATION

INTRODUCTION

The proposed Alamitos Bay Marina (Marina) Rehabilitation Project includes reconstruction and upgrading of the Alamitos Bay Marina docks, slips, parking areas, and restrooms. The project would result in a reduction of approximately 321 boat slips. As such, improvements to the Marina would result in lower number of boats at maximum occupancy. Since the average boat length in the Marina would be longer, it is possible that more people could be accommodated on the larger boats, creating additional traffic trips per boat. It is not known to what extent larger boats will attract larger numbers of persons per boat, thus creating more trips per boat; however, any increase in trips associated with larger boats is not anticipated to be greater than the reduction of trips caused by the reduction of 321 slips.[1] Therefore, the long-term traffic levels resulting from operation of the proposed project are not anticipated to significantly change.

Although the proposed project itself would not generate new vehicle trips, implementation of the project would generate a temporary increase in traffic volumes during construction activities. Construction-related vehicle trips are expected to occur with the following events: demolition of docks, parking areas, and facilities to be reconstructed; repaving parking areas; construction of new restroom facilities; construction of replacement docks; dredging operations; and hauling of dredge materials. Therefore, this section focuses on the evaluation of potential impacts related to construction traffic and parking capacity.

The traffic analysis presented in this section is based on the Construction Traffic Analysis and the Parking Demand Analysis (Appendix J), which are summarized in this section.

4.12.1 EXISTING ENVIRONMENTAL SETTING

4.12.1.1 Existing Circulation System

The Alamitos Bay Marina is located in the southeastern portion of the City of Long Beach (City). The Marina comprises eight basins; however, the proposed project only includes renovations to Basins 1–7. Basin 8 is not part of the project and it is not included in this

[1] Both the City of Long Beach and the Department of Boating and Waterways (DBAW) require that no less than 0.75 parking spaces per boat slip be provided for noncommercial boat slips. The proposed loss of slips would mean that 241 fewer parking spaces would be required; however, the project is not reducing the number of parking spaces.

analysis. Basins 1–3 are located adjacent to Marina Drive south of 2nd Street; Basin 4 is located along Appian Way adjacent to the Long Beach Yacht Club on the southeast corner of Naples Island; Basin 5 is located adjacent to the Alamitos Bay Yacht Club on Ocean Boulevard; Basin 7 is located northwest of Basin 5 on Ocean Boulevard. Basin 6 comprises two separate areas known as Basin 6-North (Basin 6-N) and Basin 6-South (Basin 6-S). Basin 6-N is located adjacent to the Marina Pacifica Mall on Pacific Coast Highway (PCH). Basin 6-S is located southwest of Basin 6-N at the northernmost end of Marina Pacifica Drive.

Based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. The City has identified a site adjacent to the northeast shore of Marine Stadium to convert to an open space/habitat mitigation site. This mitigation habitat area will therefore be analyzed as part of the project. The locations of all the Basins and the open space/habitat mitigation site are illustrated on Figure 3.2 (Chapter 3.0, Project Description).

4.12.2 METHODOLOGY

The relative impacts of the added construction-related vehicle trips generated by the proposed construction have been evaluated in the context of existing traffic conditions. Parking capacity analysis is based on existing regulations within the City's Municipal Code and the observed parking demand.

4.12.3 THRESHOLDS OF SIGNIFICANCE

Criteria for determining the significance of impacts to transportation and circulation are based on the California Environmental Quality Act (CEQA) Guidelines. Project-related traffic impacts may be considered potentially significant and adverse if the proposed project would:

- 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 v/c ratio on roads, or congestion at intersections)
- Exceed, either individually or cumulatively, a LOS standard established by the county congestion management agency for designated roads or highways
- Result in inadequate parking capacity
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

- 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?
- Result in inadequate emergency access?
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

The Initial Study/Mitigated Negative Declaration (IS/MND) previously prepared by the City determined that the proposed project would not result in any significant impacts related to air traffic patterns, emergency access, or alternative transportation. Therefore, these topics are not addressed further in this Environmental Impact Report (EIR).

4.12.4 IMPACTS AND MITIGATION MEASURES

4.12.4.1 Less Than Significant Impacts

Parking Capacity. There are currently 1,430 customers (occupied slips) in the Marina and 1,967 boat slips in Basins 1 through 7. The proposed project would result in the loss of approximately 321 slips. The City of Long Beach Zoning Ordinance requires that not less than 0.75 parking spaces per boat slip be maintained for noncommercial boat slips. Therefore, applying this ratio to the 1,967 existing slips in the Marina would require a minimum of 1,476 parking spaces. Currently there are 2,515 spaces in the Marina basin parking lots, which exceed the City's parking requirement by 1,039 spaces.

Because the project will reduce the total number of slips in the Marina by 321, it would also require 241 fewer parking spaces using this same parking ratio. After project completion, there would be a requirement of 1,235 spaces, as indicated in Table 4.12.A. The proposed project, however, would result in the addition of 9 parking spaces, for a total supply of 2,524 spaces. Based on the proposed number of slips, 23 Americans with Disabilities Act (ADA) accessible parking spaces are required and will be provided. The overall number of spaces provided at project completion exceeds the City's requirements by 1,289 spaces, and no impacts related to parking would occur with implementation of the proposed project.

Table 4.12.A: Alamitos Bay Marina Parking

	Number of Slips	Parking Required per City Code	Parking Provided	Net Difference Over Requirement
Existing Condition	1,967	1,476	2,515	+1,039
Proposed Project	1,646	1,235	2,524	+1,289

Construction Impacts. The construction operation for the Marina rehabilitation project is anticipated to last for a period of 72 months over 12 phases (approximately 6 months per phase). Each phase involves the removal/installation of gangways and docks, pile removal, seawall and riprap repair, dredging, restroom construction (either rehabilitation or new construction), rerouting of utilities, and parking lot repaving. Phase 1A includes excavation and construction of the open space/habitat mitigation site and will occur concurrently with Phase 1. The detailed construction sequence and equipment usage data for each of the 12 phases is included in the Traffic Study (Appendix J).

The proposed project includes two construction staging areas: one located in the parking lot on Marina Drive near Basin 2; and one located in the parking lot on Marina Drive adjacent to the Marina Shipyard near Basin 3 (see Figure 3.16, Chapter 3.0, Project Description).

Commercial and industrial waste resulting from construction, remodeling, repair, and demolition operations would be required to be transported by truck to be disposed of at Class III landfills such as the Puente Hills Landfill, which is the closest Class III landfill. Dredge materials from all Marina basins, except a portion of Basin 1, will be barged to an ocean disposal site (known as LA-2) and would not generate any truck trips. However, due to high levels of mercury discovered during preliminary sampling, approximately 25,504 cubic yards in Basin 1 will need to be trucked off site and disposed of at an approved landfill, confined aquatic disposal site, or upland confined disposal facility. The analysis prepared for the EIR has assumed a worst-case scenario wherein the materials will be trucked to Kettleman Hills Hazardous Waste Facility, a commercial chemical/hazardous waste site located in Kings County, California.

Construction materials would be delivered to one of the two construction staging areas. From there, the construction materials required for renovation of each basin would be loaded onto construction vessels and delivered via the waterway. Similarly, the dock systems would be craned into the water and floated to the appropriate basin during each phase. Therefore, delivery of construction materials would result in truck trips only to the staging areas and not to each individual basin.

Table 4.12.B indicates the total number of construction truck trips during a typical phase, as well as truck trips for the open space/mitigation site and Phases 2 and 3, which require off-site trucking of Basin 1 dredge materials.

Table 4.12.B: Construction Truck Trips by Phase

Project Phase	Delivery Trucks	Removal Trucks
Typical 6-month Phase (Phase 1, 4–12)		
Remove existing gangways, docks, and piles		9
Install new gangways, docks (inclusive of temporary dock), and piles	48	
Dredge basin (no truck trips associated with dredging for these phases)		
Seawall repair, restroom and utility rehabilitations, and parking lot repaving	52	9
Total	**100**	**18**
Phase 1A (Open Space/Eelgrass Mitigation Site)		
Demolish and remove excavated materials		585
Total	**0**	**585**
Total, Phases 1 and 1A	**100**	**603**
Phase 2		
Remove existing gangways, docks, and piles		9
Install new gangways, docks (inclusive of temporary dock), and piles	48	
Dredge Basin 1, remove contaminated materials		718
Seawall repair, restroom and utility rehabilitations, and parking lot repaving	52	9
Total	**100**	**736**
Phase 3		
Remove existing gangways, docks, and piles		9
Install new gangways, docks (inclusive of temporary dock), and piles	48	
Dredge Basin 1, remove contaminated materials		718
Seawall repair, restroom and utility rehabilitations, and parking lot repaving	52	9
Total	**100**	**736**

Based on preliminary construction plans, approximately 32 construction workers will be on site per day during each phase of the project. These workers will add 64 daily passenger car trips (32 inbound in the morning and 32 outbound in the evening). Worker commute trips will not add a.m. or p.m. peak-hour trips to construction traffic because the workers will arrive on site by 7:00 a.m., before the 7:00 a.m.–9:00 a.m. peak period, and will depart by 4:00, prior to the 4:00 p.m.–6:00 p.m. peak period. Because Phase 1A will occur concurrently with Phase 1, the workers and vehicle trips are included in the estimated trips for Phase 1.

Because of their larger size and limited maneuverability, the roadway impact of a single truck with five axles is approximately equivalent to two passenger cars. Therefore, when

calculating vehicle trips, each truck trip was assumed to have a passenger car equivalent (PCE) of two trips. Construction truck trips will be similar for most phases of the project, with the exception of the open space/habitat mitigation site and Phases 2 and 3. Based on the truck trips assumptions described above and included in Table A, a total of 118 trucks are expected during the typical 6-month (26-week) construction phase, resulting in an average of 4–5 trucks per week. Therefore, an average of one truck (2 truck trips/4 PCE) per day, with a maximum of one truck trip (2 PCE) during the a.m. peak hour, is estimated to occur during a typical construction phase.

Construction truck trips associated with Phase 1A (the open space/habitat mitigation site) for excavation of soils and earth materials are estimated to total 585 truckloads over a duration of 1.5 months (33 days, applying the City of Long Beach County Standard of 22 work days per month), or an average of approximately 18 trucks (36 truck trips [72 PCE]) per day, with a maximum of 9 trucks (18 truck trips [36 PCE]) in the a.m. peak hour. None of these haul trips would occur during the p.m. peak-hour period of 4:00–6:00 p.m. since excavated materials would most likely be disposed of on the same day and would need to arrive at their destinations by early- to mid-afternoon. Similar to the other basins, no delivery truck trips would occur at this site; delivery of construction materials to this location would be via the waterway from one of the construction staging areas.

During Phases 2 and 3, the 1,435 truck trips required to remove contaminated dredge materials from Basin 1 would occur over 12 months (264 work days), resulting in an average of approximately 6 truck trips (12 PCE) per day occurring in the a.m. peak-hour period. Similar to a typical construction phase, additional general deliveries for Phases 2 and 3 are estimated to be one truck (2 truck trips [4 PCE]) per day, with a maximum of one truck trip (2 PCE) during the a.m. peak hour. The estimated daily trip generation for the project is presented in Table 4.12.C.

Construction Haul Routes. The docking systems will be transported to the project site via delivery trucks from Dixon, California to Alamitos Bay and would travel south on Interstate 405 (I-405), west on State Route 22 (SR-22), south on Studebaker Road, west on 2nd Street, and then south on Marina Drive into the project site. The docking systems would be unloaded at one of the two staging areas off Marina Drive. The docking systems, as well as all other construction materials, will be delivered to the staging area and subsequently craned into the water and floated to the appropriate basin locations, as required by phase. It is assumed that trucks delivering general construction materials would enter the project area via a similar route, primarily utilizing Studebaker Road, 2nd Street, and Marina Drive. The locations of the basins and the corresponding construction routes are illustrated in Figure 4.12-1.

Table 4.12.C: Project Trip Generation

Generator	Vehicle Trips			PCE Trips		
	ADT	AM Peak Hour	PM Peak Hour	ADT	AM Peak Hour	PM Peak Hour
Typical Phase (Phase 1, 4–12)						
Construction Workers[1]	64	N/A	N/A	64	N/A	N/A
Trucks	2	1	N/A	4	2	N/A
Total	**66**	**1**	**0**	**68**	**2**	**0**
Phase 1A – Habitat Mitigation Site						
Construction Workers	N/A	N/A	N/A	N/A	N/A	N/A
Trucks	**36**	**18**	N/A	**72**	**36**	N/A
Total	**36**	**18**	**0**	**72**	**36**	**0**
Phases 1/1A Combined	**102**	**19**	**0**	**140**	**38**	**0**
Phase 2						
Construction Workers	64	N/A	N/A	64	N/A	N/A
Trucks	14	7	N/A	28	14	N/A
Total	**78**	**7**	**0**	**92**	**14**	**0**
Phase 3						
Construction Workers	64	N/A	N/A	64	N/A	N/A
Trucks	14	7	N/A	28	14	N/A
Total	**78**	**7**	**0**	**92**	**14**	**0**

[1] Workers arrive by 7:00 a.m. and depart by 4:00 p.m. Trips are based on one person per vehicle.

ADT = average daily traffic PCE = passenger car equivalent

Demolition material and debris from gangways, docks, restrooms, and road debris will be transported by truck to be disposed of at Class III landfills such as the Puente Hills Landfill, which is the closest Class III landfill. Removal trucks destined for the Puente Hills Class III Landfill will initially leave the project site from one of the two staging areas located in the Marina parking lots on Marina Drive. Similar to the delivery of construction materials, construction debris from each phase will be taken via the waterway from the Basins to the construction staging area, where it will be loaded onto trucks for removal. The exceptions to this removal process are Basin 4 and the open space/habitat mitigation site. Due to the number of docks being removed from Basin 4, and because there is plenty of parking lot area available, construction debris from Basin 4 will be removed directly from the land side. Due to the amount of excavated earth material to be removed from the open space/habitat mitigation site, trucks will leave via the local street system. Construction trucks leaving the project site will be routed through the local street network as follows:

- Trucks from Basins 1–3 and Basins 5–7 will depart from the staging areas and be routed north on Marina Drive, east on 2nd Street, and north on Studebaker Road
- Trucks from Basin 4 will be routed north on Appian Way, east on 2nd Street, and north on Studebaker Road
- Trucks from the open space/habitat mitigation site will be routed west on Eliot Street, west on Colorado Street, north on Park Avenue, and east on Seventh Street

All removal trucks will continue out of the project area via SR-22 and then north on Interstate 605 (I-605). Removal trucks for the contaminated dredge materials from Basin 1 will use the same route as removal trucks from Basins 1–3, but will continue from I-605 to north on Interstate 5 (I-5) toward Kettleman City, California.

Based on the estimated trip generation presented in Table 4.12.B, the construction activity during Phases 1/1A will add approximately 140 daily PCE trips. Based on these estimates, this is the most intense trucking phase of the project. As stated above, the truck trips associated with Phases 1/1A would travel two separate routes leaving the project area. Trucks associated with Phase 1 (Basin 4) would utilize Appian Way, 2nd Street, and Studebaker Road to SR-22. Trucks associated with Phase 1A would utilize Eliot Street, Colorado Street, Park Avenue, and Seventh Street to SR-22. Delivery trucks coming to the project site would travel via Studebaker Road, 2nd Street, and Marina Drive. 7th Street and 2nd Street are designated as Major Arterials in the City's General Plan. Studebaker Road is designated as a Minor Arterial, while Appian Way, Eliot Street, Colorado Street, Park Avenue, and Marina Drive are Local and Collector Streets.

The addition of 68 daily PCE associated with Phase 1 is expected to be insignificant to traffic flows along Appian Way, 2nd Street, and Studebaker Road. The 72 daily PCE of Phase 1A is also expected to be insignificant to traffic flows along Eliot Street, Colorado Street, Park Avenue, and 7th Street.

The total daily construction-related trips of 140 is expected to be insignificant to traffic flows along the roadways as described above. In addition, most truck trips would occur during the off-peak hours of the day, when ambient traffic is less. Therefore, construction of the proposed project would not cause an increase in traffic that is substantial in relation to the existing traffic load of the street system. In addition, construction traffic effects are temporary during the period of construction, and the number of construction workers and truck trips would vary depending on the specific construction activities. Although no adverse traffic impacts are anticipated, and no mitigation is required, several construction traffic recommendations are included as mitigation in order to minimize the effects of construction traffic on the local roadway system. Implementation of Mitigation Measure 4.12-1, requiring a Construction Traffic Management Plan, would minimize potential delays and conflicts

related to construction traffic within the Marina. In addition, Mitigation Measure 4.12-2 will ensure that potential construction traffic impacts remain at a less than significant level.

Hazardous Design Features/Incompatible Uses. Several comments received at the scoping meeting and during the NOP review period raised concerns regarding safety as it specifically relates to the proposed design of Basins 3 and 4, which would result in a narrowing of the Marina Channel between these two Basins. The concerns center on the perceived existing and potential conflict between the multiple recreational activities in Alamitos Bay and include, but are not limited to, rowing, kayaking, small boat and novice sailing, paddle boarding, larger vessel sailing, and motorized boating.

The existing Marina Channel has a design width of approximately 330 ft from dock to dock, but an effective navigable width of approximately 291 ft due to the side-tie boats at the ends of the docks. The proposed project includes an extension of docks from Basins 3 and 4 into Marina Channel that would result in a loss of 35 ft of the overall Channel width. Therefore, the encroachment from the project improvements would result in a final Marina Channel width of 295 ft.

Based on the Department of Boating and Waterways (DBAW) Guidelines of Marina Berthing Facilities (July 2005), the minimum recommended width for an interior channel (such as the Marina Channel) is 75 ft at the bottom of the channel. In addition, the width of a fairway is required to be 1.75 multiplied by the length of the longest boat that will be berthed perpendicular to the fairway. As an example, the longest boat accommodated in Basins 3 or 4 is planned to be 70 ft, which means the fairway accommodating the 70 ft boat must be 122.5 ft wide (70 x 1.75). Applying this recommendation of fairway width to the Marina Channel, the appropriate design width should be at least 122.5 ft. Because the Marina Channel would be 295 ft wide under the proposed project design, the width of the Channel is considered consistent with DBAW design guidelines and suitable for effective navigation.

Because the proposed project would result in fewer slips and capacity is not being increased, implementation of the project would not significantly increase congestion in the Marina or Marina Channel. Although the increased number of larger boats could affect maneuverability, the risk of accidents between the multiple users within the Bay is impacted by several factors, including vessel size and maneuverability; vessel speed; the effects of wind, waves, and currents; and the amount of traffic congestion. Assuming that the design width of the Marina Channel exceeds all design standards, the safety of competing users is contingent upon common sense and rules of the road. All recreational users in the Bay waters are responsible to be aware of the basic navigational rules (e.g., maintain a safe speed at all times so that action can be taken to avoid collisions; vessels under power should alter their course to starboard so that each will pass to the port side of each other; the sailing vessel that has the wind on the port side shall keep out of the way of the other; boats shall keep to the

starboard side of narrow channels whenever safe and practicable; motorboats shall keep out of the way of sailing vessels or human-powered craft where courses involve the risk of collision).

Because the final design width is consistent with Marina standards, safe and efficient navigation of the Marina Channel should be achievable with the 35 ft reduction in width. Safety impacts resulting from the encroachment of the docks in Basins 3 and 4 are therefore considered to be less than significant, and no mitigation is required.

4.12.4.2 Potentially Significant Impacts

No potentially significant impacts were identified. Although no mitigation is required, Mitigation Measure 4.12-1 is included to ensure that construction traffic impacts associated with implementation of the project would be less than significant throughout each phase of the project.

4.12.5 MITIGATION MEASURES

The following mitigation measures are incorporated to ensure that construction traffic impacts remain less than significant.

4.12-1 Prior to the issuance of demolition or building permits, the Marine Manager shall develop a Construction Traffic Management Plan for review and approval by the City of Long Beach Traffic Engineer. The plan shall be designed by a registered Traffic Engineer and shall address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes. The plan shall identify the routes that construction vehicles will use to access the site, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas. The plan shall also restrict construction trucks to no more than 19 during the a.m. peak hour for any one phase of the project, prohibit truck trips after 3:30 p.m., and require that a minimum of one travel lane in each direction on Marina Drive and 2nd Street be kept open during construction activities. The plan shall also require the City to keep all haul routes clean and free of debris including, but not limited to, gravel and dirt.

4.12-2 Prior to the issuance of demolition or building permits, the Marine Bureau Manager shall, under the direction of the City of Long Beach Traffic Engineer, address the truck route and circulation effects of the Home Depot and/or the Second+PCH Project construction, should either of these projects be under construction in the vicinity of the project site during construction of the Alamitos Bay Marina Rehabilitation project. The coordination shall identify the

construction routes, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas, and address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes.

4.12.6 CUMULATIVE IMPACTS

According to the project schedule, Phase 1 will commence in 2011. Cumulative projects include any committed and/or approved developments in the project study area that will generate future vehicle trips. The following projects are included in the cumulative impacts analysis for the proposed project:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project
- Proposed Home Depot Project at Loynes Drive and Studebaker Road
- Termino Drain Project, various segments terminating at the northern end of Marine Stadium

Of the related projects, the Second+PCH Project and the Home Depot Project are the only ones located where there is a potential to affect some of the same streets as construction of the proposed project would. Because the proposed project is scheduled to begin in 2011 and be implemented over 6 years, it is possible that the construction activity for the proposed project and construction for one of the cumulative projects identified above may occur at the same time.

The Second+PCH Project is proposing to redevelop the approximately 10-acre site located at 2nd Street and Pacific Coast Highway (PCH), currently developed with the Seaport Marina Hotel. The current plan proposes 192,000 sf of retail, 20,000 sf of restaurant uses, a 100-room hotel, 325 condominium units, a Coastal Science Center, and a Community Theater.[1] Construction of the proposed Second+PCH Project would occur in close proximity to the primary construction activity for the proposed project, and adjacent to the trucks being routed to and from Marina Drive and 2nd Street.

Similarly, the proposed Home Depot site is located on Studebaker Road, which will be utilized by construction traffic coming to and leaving from the Marina project site.

Construction workers, equipment, and haul vehicles associated with these two projects may utilize the same haul routes as the proposed Marina project. Therefore, when combined, these

[1] http://www.secondandpch.com/.

projects have the potential to contribute to short-term construction traffic impacts. However, with implementation of the construction traffic recommendations discussed below, including the Construction Traffic Management Plan (which restricts trucks to no more than 19 during the a.m. peak hour for any one phase of the project, prohibits truck trips after 3:30 p.m., and requires that a minimum of one travel lane in each direction on Marina Drive and 2nd Street be open during construction activities), cumulative impacts would be reduced.

Nevertheless, should either the Second+PCH Project or the Home Depot Project be under construction at the same time as the proposed Marina Rehabilitation Project, implementation of the construction traffic control measure requiring the City of Long Beach Traffic Engineer to address the truck route and circulation effects of the Home Depot Project and/or the Second+PCH Project construction traffic is warranted to ensure that potential cumulative construction traffic is addressed. This control measure is outlined as Mitigation Measure 4.12-2. Implementation of Mitigation Measure 4.12-2 will ensure that potential cumulative construction traffic is reduced to a less than significant level.

The proposed project would retain the existing marina recreation uses of the project site, and no intensification of uses would occur. Implementation of the Marina Rehabilitation Project would result in approximately 321 fewer slips, and no long-term operational traffic impacts are expected. Therefore, the traffic levels resulting from operation of the proposed project are not anticipated to change as a result of the proposed project, and no cumulative operational traffic impacts would occur.

4.12.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Operational project impacts related to traffic are less than significant and implementation of Mitigation Measure 4.12-1 would ensure that construction-related project traffic impacts remain less than significant throughout each phase of the project. In the event that either the Second+PCH or the Home Depot Project are under construction at the same time as the proposed Marina Rehabilitation Project, there is the potential for the project to contribute to cumulative construction traffic impacts. Implementation of Mitigation Measure 4.12-2 would ensure that any cumulative construction traffic impacts are reduced to a less than cumulatively significant level.

LSA

LEGEND

- Project Area
- Open Space/Habitat Mitigation Site
- To Landfill Facilities
- From Concrete Float Facility
- Removal Truck Route

0 900 1,800
FEET

SOURCE: Microsoft, Bing Maps, 2009

I:\TSY0701B\G\Const Haul_v2.cdr (9/21/09)

FIGURE 4.12.1

Alamitos Bay Marina Rehabilitation Project EIR

Construction Haul Routes

5.0 ALTERNATIVES

INTRODUCTION

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) describe a reasonable range of alternatives to the proposed project or to its location that could feasibly attain most of the basic project objectives but avoid or substantially lessen any of the significant effects and that it evaluate the comparative merits of each of the alternatives. This section sets forth the potential alternatives to the proposed project and evaluates them as required by CEQA and the CEQA Guidelines.

Key provisions in the CEQA Guidelines regarding alternatives (Section 15126.6) are summarized below to explain the foundation of the alternatives analysis herein.

- The EIR will describe and analyze a range of reasonable alternatives to the project or the project's location that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant impacts of the project. The EIR will also evaluate the comparative merits of the alternatives.
- The No Project/No Development Alternative shall be evaluated along with its impact. The No Project/No Development Alternative analysis shall discuss the existing conditions as well as what could be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- The range of alternatives required in an EIR is governed by the "rule of reason," which requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.
- Factors that may be taken into account when addressing the feasibility of alternatives are site suitability; economic viability; availability of infrastructure; General Plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site(s).
- Only alternative locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR.
- An EIR need not consider an alternative under which the effect cannot be reasonably ascertained and implementation is remote and speculative.

In identifying alternatives for this EIR, alternatives were selected by the City of Long Beach (City) that comply with CEQA requirements, would be reasonable and feasible for the project site, are in consideration of the existing uses of the project area, and are based upon public comments received on the Notice of Preparation (NOP).

In addition to the alternatives selected for evaluation, several possible alternatives were considered but rejected because they failed to meet the project objectives and/or were not deemed feasible. These considered but rejected alternatives are described in Section 5.3.

5.1 SELECTION OF ALTERNATIVES

Section 21100 of the Public Resources Code (PRC) and Section 15126 of the CEQA Guidelines require an EIR to identify and discuss a No Project/No Development Alternative as well as a reasonable range of alternatives to the proposed project that would feasibly attain most of the basic objectives of the project and would avoid or substantially lessen any of the significant environmental impacts. Alternatives to the proposed Alamitos Bay Marina Rehabilitation Project considered for analysis in this EIR are described below.

- **Alternative 1: No Project/No Development.** Consistent with Section 15126.6(e) of the CEQA Guidelines, the No Project/No Development Alternative is analyzed in terms of the existing condition of the project site at the time the NOP was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved. This alternative evaluates circumstances under which the project does not proceed. Alternative 1 does not include any improvements or changes to the dock and slip facilities, seawall repairs, upgrading of the existing restroom structures, or repaving of the parking areas within the Marina. In addition, Alternative 1 would not include the habitat mitigation site or the temporary/long dock. However, this alternative does include maintenance dredging in the Basin fairways, but the sediment removed would most likely be reduced since the docks and pilings would not be removed for replacement. The dredging is considered to be a necessary and reasonably foreseeable maintenance activity for the existing Marina in order to allow continued navigation of the channels and fairways.
- **Alternative 2: Reduced Project Alternative.** This alternative is a reduced intensity alternative that would eliminate the restroom rehabilitations and the parking lot repaving components of the project, including the associated land side Americans with Disabilities Act (ADA) improvements. In addition, due to input received during the public scoping process regarding the narrowing of the Marina Channel between Basins 3 and 4, fewer docks and slips would be constructed in Basin 4 under the Reduced Project Alternative. Alternative 2 is intended to update the Marina's water side facilities in compliance with ADA and California Department of Boating and Waterways (DBAW) standards. This alternative includes dock renovations, seawall repairs, and maintenance dredging as

planned in all 7 Basins, with the exception that the layout of Basin 4 would include fewer slips and would not extend as far into the channel (resulting in a greater loss of slips overall). Alternative 2 would include the habitat mitigation site and the temporary dock (relocated to the northwest to allow use of an existing gangway), but would not include the long dock. Similar to the proposed project, this alternative would result in an overall loss of slips.

- **Alternative 3: On-Site Dry Stack Storage Alternative.** This alternative is intended to implement the necessary components of the proposed project and create an on-site dry stack storage system to minimize the loss of smaller slips. This alternative includes complete dock renovations, seawall repairs, basin dredging, restroom building and parking lot rehabilitations, and ADA improvements. Alternative 3 would include the habitat mitigation site and the temporary/long dock. Similar to Alternative 2, this alternative would reduce the distance that the docks extend from Basin 4 into the Marina Channel, thereby resulting in fewer slips in Basin 4, and a greater loss of slips overall. However, an on-site storage area would be created in the Basin 3 parking lot adjacent to the Marina Shipyard. The dry stack storage would accommodate up to 150 small boats.

A complete discussion of each alternative is provided below. For each alternative, the analysis provides the following:

- A description of the alternative
- An overview of the potential impacts of the alternative and the significance of those impacts (per CEQA Guidelines, the significant effects of an alternative shall be discussed but in less detail than those of the proposed project)
- A summary comparison of the alternative relative to the proposed project, specifically addressing whether the alternative would meet the project objectives and reduce impacts in comparison with the proposed project

5.2 ALTERNATIVES CONSIDERED BUT REJECTED

Section 15126.6(c) of the CEQA Guidelines requires EIRs to identify any alternatives that were considered by the Lead Agency but were rejected during the scoping process and briefly explain the reasons underlying the Lead Agency's determination. In evaluating an appropriate range of alternatives to the proposed project, a number of alternatives were considered and rejected for differing reasons by the City.

The alternatives considered and rejected for the proposed project are listed below.

5.2.1 Alternative Project Locations

CEQA Guidelines Section 15126.6(f)(2)(A) states, "The key question [with regard to alternative locations] and first step in analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR." The proposed project is location-specific, as the project is to upgrade and replace the Alamitos Bay Marina docks and slip facilities that are approximately 50 years old. Because the project is specific to the Marina, there are no alternative locations; therefore, the EIR does not include analysis regarding alternative locations.

5.2.2 Alternative Habitat Mitigation Site Locations

The City considered several alternatives for the location of the habitat mitigation site. The habitat mitigation site for eelgrass is required due to the removal of eelgrass that would occur with dredging activities and is based on the *Southern California Eelgrass Mitigation Policy* (National Marine Fisheries Service, 1991 as amended). Agencies require that mitigation habitat be successfully created "in kind" (i.e., mitigation of eelgrass), and "on site" (i.e., within the same system–Alamitos Bay). Several factors need to be met in order to create an acceptable and successful eelgrass mitigation site. These factors include water quality (temperature, salinity, percentage of hydrogen [pH], and underwater light levels), water depth, and tidal flushing requirements.

The following sites were evaluated between November 2008 and March 2008 as potential eelgrass mitigation sites. These alternative mitigation sites and the reasons for their rejection are briefly described below.

Alamitos Bay Peninsula between Balboa and 56th Place. Eelgrass grows in small patches along this section of bay shoreline, and there are open areas of bare sediments that potentially could serve as a mitigation site. Although water quality factors at this site are not limiting to eelgrass growth, beach and subtidal profiles indicate a steep slope and a narrow intertidal to shallow subtidal bench to depths of -5 feet (ft) mean lower low water (MLLW). The degree of the slope in this area would likely limit eelgrass distribution. In addition, public use (swimming, shoreline sports fishing activity, and kayak/inner tube fishing) may also be limiting to eelgrass growth at this site. During a preconsultation meeting held with the California Department of Fish and Game (CDFG), it indicated that it did not approve of this eelgrass mitigation site because of the high public use. Therefore, this site was rejected from further consideration.

Cerritos Channel and Wetlands. Eelgrass is currently abundant along the south bank of the channel east of the Pacific Coast Highway Bridge leading to the Cerritos Wetlands. Therefore, there is no opportunity for a mitigation site along this bank. Although there is a potential opportunity to include eelgrass mitigation with the future restoration of the Cerritos Wetlands, the restoration plans are not finalized or proceeding at this time. As mandated under CEQA (Guidelines Section 15126.4), mitigation measures shall not be deferred until some future time. Resource and regulatory agencies would therefore be unlikely to approve the Cerritos Channel and Wetlands as an acceptable mitigation site. Therefore, this site was rejected from further consideration.

Basin 6-North–Cerritos Channel. A portion of Basin 6-North (Basin 6-N) was evaluated as a potential eelgrass mitigation site evaluation and was determined to be feasible from a biological standpoint. Preliminary design of a mitigation site was subsequently prepared by Coastal Resources Management, Inc. (CRM). However, the site was rejected by the Long Beach Marine Bureau due to the substantial loss of boat slips in this Basin that would result with implementation of the mitigation area. The loss of slips is also a concern recently expressed by the California Coastal Commission for similar projects. Therefore, this site was rejected from further consideration.

Long Beach Shoreline between Junipero Ave to 1st Street (Downtown Marina). This site was investigated because eelgrass is known to occur immediately offshore of the surf zone along this stretch of protected beach. The specific site investigated was the shallow water shoal that has been formed at the junction of the Downtown Marina and the shoreline. Although water quality and depths were not considered limiting factors, eelgrass actively competes with the red algae *Gracilariopsis* for light and space throughout this stretch of nearshore shallow water habitat. In addition, Coastal Resources Management, Inc. (CRM) diver surveys of the site in May 2008 confirmed that eelgrass had colonized this shoal and grows extensively throughout the area. Therefore, due to the abundance of existing eelgrass beds that would preclude this as a mitigation site, this location was rejected from further consideration.

Rainbow Marina (Along the South Jetty/Breakwall). Dive surveys at the Rainbow Marina site were conducted by CRM in May 2008 at depths between 0.0 and -15 ft MLLW. The area investigated includes a narrow sandy beach/quarry rock shoreline. The quarry rock shoreline extends subtidally to a depth of -15 ft MLLW in front of the Long Beach Aquarium dock facilities and other commercial vessels. In order for this area to be used as an eelgrass mitigation site, the waterway would have to be narrowed and filled in with appropriate sandy sediments, which would result in the loss of the existing subtidal riprap in this area. Biologically, the subtidal riprap is highly productive, and it would be unlikely that the loss of

the subtidal "artificial structure" and associated marine life would be approved by the resource and regulatory agencies. Therefore, this site was rejected from further consideration.

Huntington Beach Wetlands Restoration Project. The Huntington Beach Wetlands Conservancy, with local and state funding, has renovated wetland habitat along Pacific Coast Highway for fishery habitat and is planning to do additional work to create habitat areas for specific wetland mitigation projects. This location would be an off-site mitigation option. The Conservancy has indicated willingness to accommodate the City's need for eelgrass habitat mitigation through the direct compensation of the costs required to create the subtidal channel habitat. However, because the mitigation would be located outside the City's sphere of influence within another jurisdiction, and because this alternative would not address the City's need for a long-term solution for habitat mitigation, this site was rejected from further consideration.

5.2.3 Existing Layout Alternative

The Marina dock facilities are approximately 50 years old, have reached the end of their useful life, and now require ongoing repairs. Several comments in response to the NOP and scoping meeting suggested that the Marina be rebuilt in the exact layout as currently exists. However, any rehabilitation of the Marina would require compliance with updated building codes and ADA access requirements. For example, ADA compliant gangways need to provide a 1:12 maximum slope, or a gangway at least 80 ft long.

These regulations and requirements did not exist at the time the Marina was originally constructed, but must be adhered to with newly constructed or altered recreational facilities. Therefore, it is not possible to rebuild the docks and refurbish the restroom structures in their existing layout or design. Slip spaces would be lost due to required design components and standards; some reconfiguration would be required to accommodate the existing slip mix and layout. In addition, the financial costs to rebuild the Marina would remain approximately the same as under the proposed project, but neither the vacancy trend in the 20 ft and under slip category nor the demand for larger slips would be addressed.[1] Therefore, this alternative was rejected from further consideration.

[1] According to the Marine Bureau, vacancies in the 20 ft and under category historically run between 100 and 200 slips; currently there is a 4-year waiting list for 50 ft slips, a 6-year waiting list for 60 ft slips, an 8-year waiting list for 70 ft slips, and a 7-year waiting list for 80 ft slips.

5.3 PROPOSED PROJECT

As previously noted, alternatives must be evaluated as to their ability to reduce or eliminate significant unavoidable adverse environmental impacts associated with the proposed project, including an alternate location, and to attain the basic objectives of the project. The comparative merits of the different alternatives are evaluated in accordance with CEQA.

The project addressed in this EIR includes complete rehabilitation of dock and slip facilities and maintenance dredging in Basins 1–7, seawall repairs, upgrading of restroom facilities, repaving of parking areas, construction of an open space/habitat mitigation site, and construction of a new long dock adjacent to Basin 4 and the Long Beach Yacht Club (LBYC). In addition, a temporary dock would be constructed at the terminus of the long dock to accommodate displaced boats during project implementation.

5.3.1 Significant Unavoidable Environmental Impacts of the Proposed Project

The potential impacts of the proposed project are described in Section 4.0 along with feasible mitigation measures to reduce significant impacts. Many of the project impacts are below established thresholds of significance or can be reduced to below thresholds of significance with implementation of mitigation measures. Some impacts cannot be reduced to below a level of significance, even with mitigation, and are considered unavoidable adverse impacts. The unavoidable adverse impacts for the proposed project are discussed below.

Air Quality Construction Impacts. Implementation of the Alamitos Bay Marina Rehabilitation Project would result in significant adverse impacts related to emissions of nitrogen oxide (NO_X) during construction. While the adherence to South Coast Air Quality Management District (SCAQMD) rules and regulations and compliance with standard construction conditions would reduce impacts from construction activity, construction vehicle emissions related to vehicle trips to a land side facility would still exceed the SCAQMD-established daily emissions thresholds for NO_X emissions. Therefore, impacts would remain significant and adverse. No feasible mitigation measures beyond compliance with SCAQMD rules and regulations and standard construction conditions are available to offset this significant impact. However, emissions from the proposed project's construction activities would not exceed SCAQMD localized significance thresholds (LSTs), and significant adverse air quality impacts related to LSTs would not occur.

Construction activities for the proposed project, in conjunction with other planned projects, would contribute cumulatively to the local and regional air pollutants. They would also contribute to construction-related adverse cumulative air quality impacts, resulting in significant construction-related air quality impacts. Therefore, the cumulative construction impacts of the proposed project would remain adverse and significant.

The project would not result in increases in long-term operational emissions because capacity of the Marina would not be increased with the proposed project, and no additional boats would be added to the Marina. Therefore, the project would not contribute cumulatively to long-term local and regional air quality degradation.

Noise Construction Impacts. Implementation of the Alamitos Bay Marina Rehabilitation Project would result in significant adverse impacts related to on-site construction noise. Pile driving will be the noisiest activity on site, generating up to 93 dBA L_{max} at a distance of 50 ft. Other construction equipment used on site, such as loaders and backhoes, would generate up to 86 dBA L_{max} at a distance of 50 ft. Construction noise would be intermittent and temporary and would cease once construction is complete. Adherence to the City's noise regulations and implementation of Mitigation Measures 4.9-1 through 4.9-5 would reduce construction noise impacts to sensitive receptors; however, construction noise impacts would remain significant and unavoidable due to intermittent high levels of noise and the disturbance that noise will have on nearby residents and the public using outdoor recreation open space.

Construction noise from the proposed project and other future projects would be localized to each project site. In addition, pile driving, which will be the noisiest activity on site, does not occur with any of the other cumulative projects. The project would therefore not result in significant and adverse cumulative noise impacts. Similarly, implementation of the proposed project would not result in significant adverse operational noise impacts because the on-site uses would not be changed or intensified.

5.4 PROJECT GOALS AND OBJECTIVES

The primary goals of the Alamitos Bay Marina Rehabilitation Project are to rehabilitate the Marina facilities for boaters, local residents, and tourists while maintaining the unique character of the Marina. Project objectives include:

- Renovate and replace the deteriorating Marina facilities to expand recreational boating opportunities in keeping with the current and future demands of the boating public for larger slips
- Restore the Marina's original and/or design depths by dredging the basins to ensure safe navigation and adequate access for the boating public
- Provide overdue and necessary Marina repairs and maintenance through surface repaving of parking areas, repairs to basin seawalls where required, and complete renovations to the 13 restroom buildings

- Maintain the Marina's existing character
- Satisfy ADA requirements for access to the Marina facilities and docks
- Enhance the level of safety for boaters
- Extend the useful life of the Marina
- Upgrade utility facilities
- Provide slips/layout designs in accordance with Department of Boating and Waterways (DBAW) standards
- Rebuild the Marina consistent with the goals of the Alamitos Bay Master Plan and the Department of Parks, Recreation, and Marine Departmental Strategic Plan

5.5 ALTERNATIVE 1: NO PROJECT/NO DEVELOPMENT

5.5.1 Description

Consistent with Section 15126.6(e) of the CEQA Guidelines, the No Project/No Development Alternative is the existing condition of the project site at the time the NOP was published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved. The setting of the site at the time of the NOP is described throughout Section 4.0 of this EIR with respect to individual environmental issues and the baseline of the impact assessment of the proposed project. This alternative will evaluate circumstances under which the project does not proceed. This alternative includes maintenance dredging in the Basin fairways, although less dredge sediments would be removed since the docks and pilings would not be removed for replacement. The dredging is considered to be a necessary and reasonably foreseeable maintenance activity for the existing Marina in order to allow continued navigation of the channels and fairways.

5.5.2 Environmental Analysis

The No Project/No Development Alternative assumes that the existing on-site conditions would remain unchanged except for reasonably foreseeable maintenance activities such as dredging in order to allow continued navigation of the Marina channels and fairways. As this alternative would eliminate the large majority of construction activities, implementation of this alternative would result in reduced environmental impacts when compared to the proposed project.

In leaving the project area in its current condition, none of the physical impacts associated with removal and replacement of the dock and slips, pilings, seawall repairs, restroom upgrades and parking lot paving would occur (with the exception of the maintenance dredging activities). No construction air emissions or noise associated with the dock, parking

lots, and restroom construction activities would be generated; however, because maintenance dredging would be required at some point in order to allow continued navigation of the Marina channels and fairways, some contaminated sediments from Basin 1 would still be removed. Therefore, the potential for significant and unavoidable air quality impacts associated with trucking these materials to a land side facility would still occur, but the number of truck trips would be incrementally reduced as compared to the proposed project. In addition, the No Project/No Development Alternative would not avoid impacts to eelgrass resources due to necessary maintenance dredging. Therefore, physical impacts associated with removal of eelgrass and construction of a habitat mitigation site would occur even under this alternative.

Under the No Project/No Development Alternative, the number of slips in the Marina would not decrease, but the recreational benefits and enhancements to the project area would not be achieved. The Marina docks, slips, restrooms, and seawalls would continue to degrade, increasing the safety risk associated with operation of the facilities. The foreseeable maintenance dredging of the No Project/No Development Alternative could result in a slight improvement in water quality compared with existing conditions. However, the parking lot storm drain facilities would not be improved with filters, and surface runoff would continue to discharge directly into the Marina waters.

5.5.3 Attainment of Project Objectives

The No Project/No Development Alternative would not achieve the project objectives. The aging and deteriorating docks and slip facilities would not be replaced, and recreational boating would not be enhanced. Maintenance costs and safety concerns would continue to increase. The goals of the Alamitos Bay Master Plan would not be implemented, and the overall environmental and recreational improvements associated with the project would not be realized. Moreover, the objectives contained in the City's Open Space and Recreation Element in the Department of Parks, Recreation, and Marine Departmental Strategic Plan would not be furthered. For example, without ADA improvements, the required access to the Marina's recreation resources for handicapped and disadvantaged residents would not be implemented, and the Marina condition, infrastructure, amenities, and safety would not be improved. Finally, the slip vacancies for smaller slips and waiting lists for larger slips would not be addressed or rectified.

5.5.4 Conclusion

The No Project/No Development Alternative would require maintenance dredging at some point in order to allow continued navigation of the Marina channels and fairways. Therefore, some contaminated sediments from Basin 1 would still require removal by truck to a land side facility. This alternative does not eliminate the significant and unavoidable air quality

impacts associated with the proposed project. In addition, the project objectives would not be achieved with the No Project/No Development Alternative, and none of the project benefits would be realized.

5.6 ALTERNATIVE 2: REDUCED PROJECT ALTERNATIVE

5.6.1 Description

Alternative 2 is the Reduced Project Alternative, which would eliminate the restroom rehabilitations and the parking lot repaving components of the project, including the associated land side ADA improvements. In addition, due to input received during the public scoping process regarding the narrowing of the Marina Channel between Basins 3 and 4, fewer docks and slips would be constructed in Basin 4 under the Reduced Project Alternative, thereby resulting in fewer slips overall. Alternative 2 is intended to update the Marina's water side facilities in compliance with ADA and DBAW standards. This alternative includes dock renovations, seawall repairs, and maintenance dredging as planned in all seven basins, with the exception that the layout of Basin 4 would include fewer slips and would not extend as far into the channel. Alternative 2 would include the habitat mitigation site and the temporary dock (relocated to the northwest to allow use of an existing gangway), but would not include the long dock. This alternative would result in an overall greater loss of slips as compared to the proposed project layout.

5.6.2 Environmental Analysis

Aesthetics. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, a number of slips in Basin 4 and the long dock. The temporary dock would still be implemented in order to accommodate displaced boats during construction. As a result, on- and off-site views of the overall Marina with this Alternative would be similar to the proposed project, but views associated with the new long dock would be eliminated. Under this alternative, potential aesthetic impacts related to construction would be reduced compared to impacts under the proposed project because no land side construction would occur, and construction activities in Basin 4 would be incrementally reduced. Similar to the proposed project, visual impacts associated with the Reduced Project Alternative would be considered less than significant. However, the Reduced Project Alternative would result in fewer aesthetics-related construction impacts compared to the proposed project.

Air Quality. The Reduced Project Alternative would reduce the duration of the project construction emissions since there would be no rehabilitation of the restroom facilities, parking lot repaving, or construction of the long dock. In addition, the reduction of the dock area in Basin 4 would incrementally reduce the emissions associated with dock and piling

replacement. The overall amount and duration of localized emissions being generated by construction would be reduced as compared to the proposed project. However, because dredging activities would still occur under this alternative, the potential for significant and unavoidable air quality impacts associated with trucking these materials from Basin 1 to a land side facility would still occur. Therefore, implementation of this alternative is not expected to reduce the significant and adverse construction emission impacts associated with the proposed project.

As with the proposed project, this alternative would not result in any significant long-term operational impacts. However, Alternative 2 would not increase energy efficiency that would occur with the renovation of restrooms under the proposed project. Therefore, this alternative would not contribute to a reduction in GHG emissions and would have incrementally greater impacts when compared to the proposed project.

Biological Resources. The Reduced Project Alternative would result in essentially the same level of impacts to marine biological resources as the proposed project since water side construction would be reduced only in Basin 4. Immediate or near-term impacts to eelgrass, fish, benthic communities, and other marine organisms would be the same with implementation of either the Reduced Project Alternative or the proposed project, which is less than significant with incorporated mitigation measures. Because the eelgrass resources exist in the interior portion of Basin 4 where docks would be replaced, and because there are no eelgrass beds where the long dock would be constructed, impacts to this marine resource would remain the same as the proposed project.

Construction impacts associated with piling activities and dredging would be slightly reduced in Basin 4 as compared to the proposed project but are not an indicator of an environmentally superior alternative for biological resources. Because of the improvement in tidal flushing due to dredging, both Alternative 2 and the proposed project would provide an enhanced marine habitat for fish and other organisms. The Reduced Project Alternative would not require removal of any trees. However, potential noise and disturbance impacts to nesting birds could occur with water side construction activities.

Similar to the proposed project, the Reduced Project Alternative would have no significant impacts related to long-term operations. Implementation of mitigation measures to address impacts to biological resources within the Marina and at the open space habitat site would reduce impacts to a less than significant level for both the proposed project and this alternative.

Cultural and Historic Resources. The Reduced Project Alternative would reduce the amount of dock surface area and the long dock within Basin 4. In addition, this alternative

would eliminate the restroom renovations and parking area repaving and would therefore reduce the potential for encountering cultural resources; however, the proposed project is considered unlikely to impact such resources due to the site being highly disturbed and the minimal grading required to resurface the parking lots and renovate restrooms. Potential cultural resource impacts with Alternative 2 would therefore be similar to those under the proposed project, which are considered less than significant.

Potential impacts on Marine Stadium, a historic resource, would be similar to the proposed project with Alternative 2 because the open space/habitat mitigation site would still be implemented. Although improvements within Basin 4 would be reduced with this alternative, Basin 4 is outside of Marine Stadium's boundaries, which terminate at the northern edge of the Second Street Bridge. Therefore, potential impacts to this historic resource under the Reduced Project Alternative are considered less than significant, similar to the proposed project.

Geology and Soils. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, a number of slips in Basin 4, and the long dock. Because this alternative eliminates structural components of land side construction, potential impacts related to soil stability and seismic ground-shaking impacts for this alternative would be less than those under the proposed project. However, the reduced Project Alternative would not renovate the existing restroom structures in accordance with the most current seismic design parameters, and unlike the proposed project, would not provide additional seismic protection in comparison to existing conditions. Overall, the Reduced Project Alternative would result in less than significant impacts related to geology and soils, similar to the proposed project.

Hazards and Hazardous Materials. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, construction of the long dock, and would reduce the dock area in Basin 4. The proposed dredging activities would still occur under this alternative, and the removal of contaminated dredge materials from Basin 1 would be included. Similar to the proposed project, it is unlikely that any dredging activities associated with Alternative 2 would pose a significant concern through the routine transport, use, or disposal of sediment material.

Under Alternative 2 there would be no demolition of the existing restroom structures, and no potential exposure to lead-based paints (LBPs) and polychlorinated biphenyls (PCBs) found in existing building materials. Therefore, potential hazards and hazardous waste construction impacts under the Reduced Project Alternative would be less than those under the proposed project. Overall, the Reduced Project Alternative would result in less than significant impacts

related to hazards and hazardous wastes, as does the proposed project with mitigation incorporated.

The operational handling, use, storage, transport, and disposal of small amounts of substances used for boat cleaning and maintenance such as cleaners, solvents, and paints would be similar under both the proposed project and the Reduced Project Alternative. Impacts related to the use of hazardous materials under operational conditions at the Marina are not significantly reduced under Alternative 2 and are considered less than significant for this alternative, similar to the proposed project.

Hydrology and Water Quality. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, construction of the long dock, and would reduce the dock area in Basin 4. Potential hydrology and water impacts due to dock and piling replacements would be incrementally less with the reduced Project Alternative than under the proposed project because fewer construction activities would occur within Basin 4. However, water quality impacts resulting from dredging activities would be similar for both Alternative 2 and the proposed project.

The Reduced Project Alternative would include the open space/habitat mitigation site and would require excavation similar to the proposed project, which could lead to sediment and erosion control impacts to marine waters, similar to the proposed project. However, the restroom structures and the repaving of parking areas would not occur with this alternative; therefore, potential erosion and water quality impacts resulting from soil disturbance would be less for this alternative than under the proposed project. With implementation of mitigation measures, construction activities related to the Reduced Project Alternative would result in less than significant impacts related to hydrology and water quality, similar to the proposed project.

The Reduced Project Alternative would eliminate several components of the proposed project but would not significantly alter the operational characteristics within the Marina or the potential for water quality impacts. Boaters would continue to be regulated by the City's Environmental Policies and the Marina Guidelines regarding the proper disposal and containment of hazardous materials and/or practices that may impair water quality. However, under the Reduced Project Alternative the storm drain facilities in the parking lots would not be improved with filters, and surface runoff would continue to discharge directly into the Marina waters. Therefore, although overall operational water quality impacts would be similar for both the Reduced Project Alternative and the proposed project, water quality impacts related to storm drain runoff would be greater under the Reduced Project Alternative.

Land Use. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, construction of the long dock, and would reduce the dock area in Basin 4. Alternative 2, like the proposed project, would continue to provide Marina-related recreation uses on site and would therefore be consistent with the existing marine and water-related recreational uses at the site. Similar to the proposed project, impacts for this alternative related to consistency with existing land use regulations and planning documents are considered less than significant. Therefore, land use impacts compared to the proposed project are neutral, having no greater or lesser impacts than the proposed project.

Noise. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, construction of the long dock, and would reduce the dock area in Basin 4. Under both the proposed project and Alternative 2, significant and adverse noise impacts would occur during project construction, including pile driving and general construction activities. However, Alternative 2 would reduce the duration of the construction operations and would eliminate some pile driving required under the proposed project for the long dock and the extended docks within Basin 4. Therefore, although construction noise impacts are incrementally reduced due to the reduction of construction activity, construction noise would remain significant and adverse under Alternative 2. As with the proposed project, this alternative would not result in any significant long-term operational noise impacts.

Public Services and Utilities. The Reduced Project Alternative eliminates several components as compared to the proposed project, including renovated restrooms and repaving of parking areas, but does not alter the operational characteristics of the Marina. Under the Reduced Project Alternative, emergency calls for police and fire services and demands for school and library services are not anticipated to increase, which is the same as the proposed project.

Under the Reduced Project Alternative, the restroom facilities would not be renovated, but the reduction in the overall number of slips and users would ensure that impacts to water and wastewater services and facilities would be less than significant, which is the same as the proposed project. However, because the existing restrooms would not be remodeled to utilize low-flow facilities, corresponding benefits in the reduction of potable water demand would not occur. Additionally, Alternative 2 would not increase energy efficiency, which would occur with the renovation of restrooms under the proposed project. Although storm drain facilities would not be upgraded with this alternative, the effects to solid waste and storm drain facilities under the Reduced Project Alternative would be similar to the proposed project due to the reduction in the number of slips. Therefore, impacts related to public services and utilities under the Reduced Project Alternative would be the same as under the proposed project.

Recreation. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, construction of the long dock, and would reduce the dock area in Basin 4. Therefore, short-term construction-related impacts on recreational facilities would be lessened with this alternative as compared to the proposed project.

Neither this alternative nor the proposed project changes the Harbor's use as a recreational facility; however, both would result in a loss of slips. Because Alternative 2 reduces slips in Basin 4, long-term recreational impacts are considered greater for this alternative when compared to the proposed project. However, no potentially significant impacts are identified for either scenario.

Alternative 2, similar to the proposed project, would not result in an increased demand for recreational facilities (including other Marinas, boat storage facilities, or boat launch facilities) or require development or expansion of additional recreational facilities. Similar to the proposed project, Alternative 2 would include the addition of approximately 23 dry storage spaces for 30 ft and under boats in the Basin 4 parking lots. Overall, compared to the proposed project, recreational impacts are slightly greater for the Reduced Project Alternative due to the lack of ADA access at the restroom and parking facilities and the reduced number of slips in Basin 4. Therefore, operational impacts to recreational resources for the Reduced Project Alternative are considered greater than the proposed project.

Traffic and Circulation. The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, construction of the long dock, and would reduce the dock area in Basin 4. Under this alternative, potential short-term circulation impacts would be similar to those under the proposed project because construction activities would occur at the same locations and in similar phases. However, because the restroom buildings and parking lot paving would not be renovated, short-term parking and access impacts within the Marina would be fewer for Alternative 2 than under the proposed project. In addition, the duration of project construction would be reduced under this alternative. However, the overall potential impacts to area circulation would be less than significant, similar to the proposed project.

Vehicle traffic associated with the usage patterns of larger boats is too speculative to determine potential impacts. However, due to the reduction in the number of slips, long-term operation of either the proposed project or the Reduced Project Alternative would have less than significant impacts related to traffic conditions in the project vicinity. Therefore, operational traffic impacts for Alternative 2 are similar to the proposed project.

5.6.3 Attainment of Project Objectives

The Reduced Project Alternative would achieve some, but not all, of the project objectives. The aging and deteriorating docks and slip facilities would be replaced, and recreational boating would be enhanced. However, because this alternative would result in a greater loss of smaller slips than the proposed project, it would potentially reduce the overall recreational opportunities for small boat owners and users when compared to the proposed project.

The goals of the Alamitos Bay Master Plan to remodel the restrooms and bring them up to current standards, and the objectives contained in the City's Open Space and Recreation Element related to modernizing the Marina condition, infrastructure, and amenities would not be fully implemented with the Reduced Project Alternative. In addition, ADA access to the restroom facilities for handicapped and disadvantaged residents would not be implemented..

5.6.4 Conclusion

The Reduced Project Alternative would eliminate rehabilitation of the restroom facilities, parking lot repaving, land side ADA access improvements, construction of the long dock, and would reduce the dock area and number of slips in Basin 4. Although several components are eliminated with the Reduced Project Alternative, impacts related to aesthetics, biological resources, cultural/historic resources, geology and soils, hazardous materials, land use, and public services and utilities would be similar to the proposed project for this alternative.

Compared to the proposed project, recreational impacts are slightly greater for Alternative 2, the Reduced Project Alternative, due to the lack of ADA access at the restroom and parking facilities and the overall greater loss of slips as compared to the proposed project.

Construction-related hydrology and water quality impacts would be fewer than those under the proposed project because construction activities would be reduced. Conversely, operational water quality impacts would be greater than the proposed project because storm drain filters would not be included. Operational traffic and circulation impacts would be similar to the proposed project, while construction-related traffic impacts would be reduced when compared to the proposed project. However, with mitigation these impacts were less than significant for the proposed project.

Similar to the proposed project, this alternative would require removal of contaminated dredge materials to a land side facility. Therefore, the Reduced Project Alternative would not eliminate the significant and unavoidable adverse air quality impacts associated with the proposed project.

Although Alternative 2 would reduce the duration of the construction operations and would eliminate some pile driving, construction noise would remain significant and adverse under Alternative 2, similar to the proposed project.

5.7 ALTERNATIVE 3: ON-SITE DRY STACK STORAGE ALTERNATIVE

5.7.1 Description

Alternative 3, the On-Site Dry Stack Storage Alternative, is intended to implement all of the necessary components of the proposed project and create an on-site dry stack storage system to minimize the loss of smaller slips. This alternative includes complete dock renovations, seawall repairs, basin dredging, restroom building and parking lot rehabilitations, and ADA improvements associated with the proposed project. Alternative 3 would also include the habitat mitigation site and the temporary/long dock. Similar to Alternative 2, this alternative would reduce the distance that the docks extend from Basin 4 into the Marina Channel, thereby resulting in fewer slips in Basin 4 and a greater loss of slips overall. However, an on-site storage area would be created in the Basin 3 parking lot adjacent to the Marina Shipyard.

Although no formal plans have been developed at the time this EIR was prepared, the conceptual idea for the dry stack storage facility includes a three-boat-high rack storage unit able to accommodate up to 150 small boats. The overall height could be up to 30 ft, depending on the size of boats to be accommodated. For similar dry stack units, the boats are moved on and off the rack system by a specialized marine forklift. Boats would then be lowered into the water at the southwest end of the shipyard, adjacent to Basin 3.

5.7.2 Environmental Analysis

Aesthetics. The On-Site Dry Stack Storage Alternative would be similar to the proposed project with the exception that some slips in Basin 4 would be eliminated, and a dry stack storage area to accommodate up to 150 small boats would be included. As a result, on- and off-site views of the overall Marina with this alternative would be similar to the proposed project, but the new dry stack storage area would create a new visual component. The storage site would be located in the Basin 3 parking lot area, adjacent to the Marina Shipyard. The shipyard is a full-service boatyard, capable of lifting large sail and power boats out of the water. The height of the dry stack system would likely be similar to the height of structures and boats being serviced by the Marina Shipyard (up to approximately 30 ft high). No new lighting would be required for the proposed facility. This proposed use is consistent with Marina and shipyard operations and the character of the surrounding visual environment, and therefore would not create an adverse visual impact.

No significant viewsheds would be altered by the addition of this project element, and operational impacts to visual resources are considered to be similar to the proposed project.

Although construction activities in Basin 4 would be incrementally reduced under this alternative, potential aesthetic impacts related to construction would be the same as with the proposed project.

Air Quality. The reduction of the dock area in Basin 4 would incrementally reduce the emissions associated with dock and piling replacement. However, construction required for the dry storage area would likely offset any minor reductions associated with Basin 4. Therefore, the overall amount and duration of localized emissions being generated by construction would be similar to the proposed project.

Dredging activities would still occur under the On-Site Dry Stack Storage Alternative, and therefore, the significant and unavoidable air quality impacts associated with trucking these materials from Basin 1 to a land side facility would still occur. Therefore, implementation of this alternative is not expected to reduce the significant and adverse construction emission impacts associated with the proposed project.

As with the proposed project, this alternative would not result in any significant long-term operational impacts.

Biological Resources. The On-Site Dry Stack Storage Alternative would result in essentially the same level of impacts to biological resources as the proposed project. The addition of a land side storage area would not have an effect on marine habitats. The proposed location for the dry stack storage is within an existing parking lot adjacent to Marina-related uses, and no terrestrial habitats or biological resources would be impacted.

Immediate or near-term impacts to eelgrass, fish, benthic communities, and other marine organisms would be the same with implementation of either the On-Site Dry Stack Storage Alternative or the proposed project, which is less than significant with incorporated mitigation measures. Alternative 3 would impact the same amount of eelgrass as the proposed project because although the docks in Basin 4 are reduced under this alternative, eelgrass is located in the interior portion of Basin 4, where docks would be replaced and dredging would occur. Therefore, impacts to this marine resource would remain the same as the proposed project.

Construction impacts associated with piling activities and dredging would be slightly reduced in Basin 4 compared to the proposed project but are not an indicator of an environmentally superior alternative for biological resources. Because of the improvement in tidal flushing due to dredging, both Alternative 3 and the proposed project would provide an enhanced marine habitat for fish and other organisms. Potential noise and disturbance impacts to

nesting birds would occur with water side construction activities, similar to the proposed project.

Similar to the proposed project, the On-Site Dry Stack Storage Alternative would have no significant impacts related to long-term operations. Implementation of mitigation measures to address impacts to biological resources within the Marina and at the open space habitat site would reduce impacts to a less than significant level for both the proposed project and this alternative.

Cultural and Historic Resources. The On-Site Dry Stack Storage Alternative reduces the amount of dock surface area within Basin 4 and adds a land side storage facility. Implementation of the storage area would require little to no grading, as the location is already paved and would, at the most, require resurfacing. Similar to the proposed project, the potential for encountering cultural resources is considered unlikely due to the site being highly disturbed and the minimal grading required for resurfacing the parking lots and renovating restrooms. Potential cultural resource impacts with this alternative would therefore be similar to those under the proposed project, which are considered less than significant.

Potential impacts on Marine Stadium, a historic resource, would be similar to the proposed project with the On-Site Dry Stack Storage Alternative because the open space/habitat mitigation site would still be implemented. Although improvements within Basin 4 would be reduced with this alternative, Basin 4 is outside of Marine Stadium's boundaries, which terminate at the northern edge of the Second Street Bridge. Therefore, potential impacts to this historic resource under the On-Site Dry Stack Storage Alternative are considered less than significant and are similar to the proposed project.

Geology and Soils. The On-Site Dry Stack Storage Alternative reduces the amount of dock surface area within Basin 4 and adds a land side storage facility. Implementation of the storage area would require little to no soil disturbance, as the location is already paved and would not require any significant excavation or grading. Disturbance to and preparation of the ground surface would be similar to land side improvements required for renovations to parking areas and restroom facilities. Therefore, potential impacts related to soil stability and seismic ground-shaking impacts for this alternative would be the same as those under the proposed project. Overall, the On-Site Dry Stack Storage Alternative would result in less than significant impacts related to geology and soils, similar to the proposed project.

Hazards and Hazardous Materials. The proposed dredging activities would still occur under the On-Site Dry Stack Storage Alternative, and the removal of contaminated dredge

materials from Basin 1 would be included. Similar to the proposed project, it is unlikely that any dredging activities associated with this alternative would pose a significant concern through the routine transport, use, or disposal of sediment material.

The On-Site Dry Stack Storage Alternative would include demolition of the existing restroom structures, and similar to the proposed project, would create a potential for exposure to LBPs and PCBs found in existing building materials. Therefore, potential hazards and hazardous waste construction impacts under the On-Site Dry Stack Storage Alternative would be the same as those under the proposed project. No additional structures would require removal for implementation of this alternative. Overall, the On-Site Dry Stack Storage Alternative would result in less than significant impacts related to hazards and hazardous wastes, as does the proposed project with mitigation incorporated.

The operational handling, use, storage, transport, and disposal of small amounts of substances used for boat cleaning and maintenance such as cleaners, solvents, and paints would be similar under both the proposed project and the On-Site Dry Stack Storage Alternative. Impacts related to the use of hazardous materials under operational conditions at the Marina are not significantly reduced under Alternative 3 and, with implementation of mitigation measures, are considered less than significant for this alternative, similar to the proposed project.

Hydrology and Water Quality. Potential hydrology and water impacts due to dock and piling replacements would be incrementally less with the On-Site Dry Stack Storage Alternative than under the proposed project because fewer construction activities would occur within Basin 4. However, overall water quality impacts resulting from dredging activities would be similar for both this alternative and the proposed project.

The On-Site Dry Stack Storage Alternative would include the open space/habitat mitigation site and would require excavation similar to the proposed project, which could lead to sediment and erosion control impacts to marine waters, similar to the proposed project. Implementation of the storage area would require little to no grading, as the location is already paved and would not require any significant excavation or grading. Therefore, erosion and water quality impacts resulting from soil disturbance would be the same for this alternative as with the proposed project. With implementation of mitigation measures, construction activities related to the On-Site Dry Stack Storage Alternative would result in less than significant impacts related to hydrology and water quality, similar to the proposed project.

The On-Site Dry Stack Storage Alternative would create a new land side storage facility but would not significantly alter the operational characteristics within the Marina or the potential for water quality impacts. Boaters would continue to be regulated by the City's

Environmental Policies and Marina Guidelines regarding the proper disposal and containment of hazardous materials and/or practices that may impair water quality. Additionally, the storm drain facilities in the parking lots would be improved with filters and the quality of surface runoff would be improved, similar to the proposed project. Therefore, overall operational water quality impacts would be similar for both the On-Site Dry Stack Storage Alternative and the proposed project.

Land Use. The On-Site Dry Stack Storage Alternative, similar to the proposed project, would continue to provide Marina-related recreation uses on site and would therefore be consistent with the existing marine- and water-related recreational uses on site. In addition, this alternative provides dry storage for boats on site and would help offset the loss of smaller slips. The provision of new recreational boating opportunities is consistent with the Coastal Act policies requiring that facilities serving recreational boating industries be protected and, where feasible, upgraded (Coastal Act Section 30234). In addition, the provision of a dry storage boating facility is likely to be more affordable than in-water slips and would further the goals of the Coastal Act policy regarding provision of lower-cost visitor and recreational facilities (Coastal Act Section 30213).

Similar to the proposed project, impacts for this alternative related to consistency with existing land use regulations and planning documents are considered less than significant. Therefore, land use impacts compared to the proposed project are neutral, having no greater or lesser impacts than the proposed project.

Noise. Both the proposed project and the On-Site Dry Stack Storage Alternative would result in significant and adverse noise impacts during project construction, including pile driving and general construction activities. However, this alternative would incrementally reduce the duration of the construction operations required in Basin 4 and would eliminate some pile driving required under the proposed project. Additional construction activity and noise related to the dry stack storage facility would partially offset the reduced construction noise in Basin 4. Therefore, although construction noise impacts associated with pile driving are incrementally reduced due to the reduction of construction activity, construction noise would remain significant and adverse under the On-Site Dry Stack Storage Alternative. As with the proposed project, this alternative would not result in any significant long-term operational noise impacts.

Public Services and Utilities. The On-Site Dry Stack Storage Alternative adds a land side storage facility but would not significantly alter the operational characteristics of the Marina. Under the On-Site Dry Stack Storage Alternative, emergency calls for police and fire

services and demands for school and library services are not anticipated to increase over existing levels, which are the same as the proposed project.

Under the On-Site Dry Stack Storage Alternative, there is a greater reduction in the overall number of slips, but an increased number of dry storage opportunities for users. Therefore, the demand for water, wastewater, and solid waste services and facilities could be greater under this alternative than for the proposed project. However, this alternative would still benefit from a reduction of potable water and utility demands due to upgraded restrooms containing low-flow facilities and energy-efficient utilities. The effects to storm drain facilities under the On-Site Dry Stack Storage Alternative would be similar to the proposed project, as similar improvements would be made. Overall, impacts related to public services and utilities under the On-Site Dry Stack Storage Alternative would be incrementally greater than under the proposed project due to a potential for additional visitors to the facilities.

Recreation. The On-Site Dry Stack Storage Alternative would reduce the dock area in Basin 4 but increase land side storage opportunities. Short-term construction-related impacts on recreational facilities are anticipated to be similar to the proposed project for this alternative.

Neither this alternative nor the proposed project changes the Harbor's use as a recreational facility. The On-Site Dry Stack Storage Alternative would not result in an increased demand for recreational facilities (including other Marinas, boat storage facilities, or boat launch facilities) or require development or expansion of additional recreational facilities. The On-Site Dry Stack Storage Alternative results in a greater loss of slips in Basin 4 than the proposed project, but provides up to 150 land side storage spaces for small boats. Therefore, the loss of smaller slips is partially offset and the long-term recreational impacts are reduced for this alternative when compared to the proposed project. However, no potentially significant impacts are identified for either scenario.

Traffic and Circulation. Potential short-term circulation impacts would be similar to those under the proposed project for the On-Site Dry Stack Storage Alternative because construction activities would occur at the same locations and in similar phases. Construction of the dry stack storage facility is not expected to impact traffic, as it will be implemented within the proposed project's construction area. The overall potential impacts to area circulation would be less than significant, similar to the proposed project.

Vehicle traffic associated with the usage patterns of larger boats is too speculative to determine potential impacts. However, due to the reduction in the number of slips, long-term operation of either the proposed project or the On-Site Dry Stack Storage Alternative would have less than significant impacts related to traffic conditions in the project vicinity. In

addition, the dry stack facility is proposed to help offset the loss of smaller slips. Therefore, vehicle trips to the Marina and parking demand would not be expected to significantly change from existing conditions. Similar to the proposed project, Alternative 3 would result in a surplus of parking.[1] Therefore, although spaces in the Basin 3 parking lot could be lost due to construction of the dry storage system, there would remain an adequate surplus of parking spaces. Therefore, operational traffic and parking impacts for this alternative are similar to the proposed project.

5.7.3 Attainment of Project Objectives

The On-Site Dry Stack Storage Alternative would achieve all of the project objectives. The aging and deteriorating docks and slip facilities would be replaced, and recreational boating would be enhanced. Although this alternative would result in a greater loss of smaller slips than the proposed project, it includes a dry stack storage facility for up to 150 small boats and would therefore partially offset the loss of slips. The On-Site Dry Stack Storage Alternative therefore increases overall recreational opportunities for small boat owners and users and results in fewer recreational impacts when compared to the proposed project.

5.7.4 Conclusion

The On-Site Dry Stack Storage Alternative would eliminate some slips in Basin 4 but would include a dry stack storage facility for up to 150 small boats. Impacts related to aesthetics, biological resources, cultural/historic resources, geology and soils, hazardous materials, hydrology and water quality, land use, public services and utilities, and traffic would be similar to the proposed project for this alternative.

Although there is an overall greater loss of slips with this alternative as compared to the proposed project, recreational impacts are reduced under the On-Site Dry Stack Storage Alternative due to the provision of on-site small boat storage for up to 150 boats.

Similar to the proposed project, this alternative would require removal of contaminated dredge materials to a land side facility. Therefore, construction air quality impacts would still occur, and the On-Site Dry Stack Storage Alternative would not eliminate the significant and unavoidable adverse air quality impacts associated with the proposed project.

Although Alternative 3 would reduce the duration of the construction operations and would eliminate some pile driving in Basin 3, construction noise would remain significant and adverse under Alternative 3, similar to the proposed project.

[1] The proposed project provides 2,524 parking spaces and results in a surplus over the required number of approximately 1,289 spaces.

5.8 IDENTIFICATION OF ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project/No Development Alternative would be environmentally superior to the proposed project on the basis of the lack of physical impacts that would occur with the No Project/No Development Alternative. If there were no changes to the existing conditions on the site, there would be no potential impacts associated with construction-related traffic, noise, or air emissions. However, because maintenance dredging would be a reasonably foreseeable activity required to maintain navigable channels and fairways, the No Project/No Development Alternative would include construction vehicle trips to dispose of contaminated dredge materials at a land side facility. Therefore, the No Project/No Development Alternative would not eliminate the proposed project's significant and unavoidable air quality impacts. Overall, however, the No Project/No Development Alternative is considered environmentally superior because the physical impacts associated with this Alternative are significantly less than the proposed project and other alternatives.

The CEQA Guidelines require that if the environmentally superior alternative is the No Project Alternative, "the EIR also identify an environmentally superior alternative among the other alternatives" (CEQA Guidelines Section 15126.6(e)(2)). The Environmentally Superior Alternative, in terms of direct physical effects on the environment, is Alternative 2, the Reduced Project Alternative.

Alternative 2 would eliminate construction activities associated with the proposed project's land side improvements (rehabilitation of the restroom facilities, parking lot repaving, and ADA access improvements), as well as eliminating construction of the long dock and reducing the dock area and number of slips in Basin 4. Therefore, direct physical effects on the environment as a result of construction would be reduced as compared to the proposed project.

Overall, the Reduced Project Alternative reduces the amount and duration of the construction activities and potential impacts of the proposed project. The Reduced Project Alternative would result in reduced overall construction impacts for cultural resources, geology and soils, hazardous materials, hydrology/water quality, and traffic compared to the proposed project because the improvements to land side facilities would not occur with this alternative. Impacts related to these environmental topics would still result in less than significant impacts, as would the proposed project.

Alternative 2 includes some maintenance dredging, which would be required in order to maintain safe navigation throughout the Marina, and to continue the Marina's use as a recreational facility. Therefore, the removal of some contaminated material from Basin 1

would still occur and would require construction vehicle trips to dispose of contaminated dredge materials at a land side facility. Therefore, the Reduced Project Alternative would, like the proposed project, result in significant and unavoidable air quality impacts. Additionally, although Alternative 2 would reduce the duration of construction operations and would eliminate some pile driving, construction noise would remain significant and adverse under Alternative 2, similar to the proposed project.

Alternative 2 would not increase the energy efficiency that would occur with the renovation of restrooms under the proposed project. Therefore, this alternative would not contribute to a reduction in greenhouse gas (GHG) emissions and would have incrementally greater impacts when compared to the proposed project. In addition, ADA access to the restroom facilities for handicapped and disadvantaged residents would not be implemented.

The Reduced Project Alternative would achieve some, but not all, of the project objectives. The aging and deteriorating docks and slip facilities would be replaced, and recreational boating would be enhanced. However, because this alternative would result in a greater loss of smaller slips than the proposed project, it would potentially reduce the overall recreational opportunities for small boat owners and users when compared to the proposed project. Further, the goals of the Alamitos Bay Master Plan to remodel the restrooms and bring them up to current standards, and the objectives contained in the City's Open Space and Recreation Element related to modernizing the Marina condition, infrastructure, and amenities, would not be fully implemented with the Reduced Project Alternative. The restroom facilities and parking areas would continue to deteriorate, and the costs associated with continued maintenance would continue to rise.

Table 5.A provides a comparison of the significant adverse impacts of the proposed project and the proposed alternatives.

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
Characteristics	• Complete rehabilitation of docks and slips (resulting in approximately 1,646 new slips), including pilings and gangways • Upgrade Marina with ADA required facilities, including gangways, access to restroom buildings, and ADA parking • Construction of temporary and new long dock • Construction and/or renovation of 13 restroom buildings • Repaving of parking areas • Dredging of basins • Seawall repairs where necessary	• Existing condition/No improvements • Maintenance dredging of fairways as required, where accessible	• Rehabilitation of docks and slips, including pilings and gangways, except with fewer slips in Basin 4 • Upgrade Marina's water side facilities with ADA required facilities • Construction of temporary dock • Dredging of basin seafloors • Seawall repairs where necessary • Construction of open space/habitat mitigation site • **Does not include**: renovation of restroom buildings, repaving, long dock, or ADA access at land side facilities	• Complete rehabilitation of docks and slips, including pilings and gangways • Reduction of dock area and slips in Basin 4 • Construction of on-site dry stack storage for approximately 150 small boats • Upgrade Marina with ADA required facilities, including gangways, access to restroom buildings and ADA parking • Construction of temporary and new long dock • Construction and/or renovation of 13 restroom buildings • Repaving of parking areas • Dredging of basins • Seawall repairs where

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
	• Construction of open space/habitat mitigation site			necessary • Construction of open space/habitat mitigation site
Meets Project Objectives?	• Meets all project objectives	• Would not meet any project objectives	• Meets some, but not all, of the project objectives	• Meets all project objectives
Aesthetics	• Similar visual character compared to existing conditions • Less than significant aesthetic impacts, no mitigation required	• No change in aesthetic condition of site or views of the Marina from on- or off-site vantage points • No aesthetic impacts	• Marina visual character similar to the proposed project • Visual character of the restroom structures and parking areas would remain the same as existing conditions	• Marina visual character similar to the proposed project • Views of and within the Marina would include the addition of the dry stack storage facility
Air Quality	• Significant and adverse impacts related to construction vehicle emissions during construction • Significant and adverse cumulative construction emissions impacts	• Fewer air quality emissions generated compared to proposed project • Similar significant and adverse impacts related to construction vehicle emissions during construction	• Same as proposed project	• Same as proposed project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
	• No significant operational air quality impacts	• Significant and adverse cumulative construction emissions impacts		
Biological Resources	• Potentially significant construction-related impacts to the California brown pelican and Great Blue Heron, if present during such activities, and to nesting native birds • Potentially significant impacts to eelgrass, fish, benthic communities, and other marine organisms • Potentially significant impacts to green sea turtles and other sensitive marine species, if present	• No change from existing conditions	• No trees would be removed or relocated, and potential impacts to nesting birds would be reduced	• Same as proposed project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
	• Less than significant impacts to biological resources with mitigation			
Cultural Resources	• No impact to any known archaeological or paleontological resources on the project site • Less than significant impact to Marine Stadium, a historic resource, adjacent to the project site • Possibility of discovering unknown archaeological or paleontological resources • Less than significant impacts to cultural/historic resources with	• No change from existing conditions	• Less potential of discovering unknown archaeological or paleontological resources than the project	• Same as project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
	mitigation			
Geology and Soils	• Potential geologic hazards include impacts related to soil erosion, seismic ground shaking, liquefaction, lateral spreading, subsidence, and expansive soil • Less than significant impacts related to geology and soils with mitigation	• No change from existing conditions	• Fewer potential impacts related to soil stability and seismic ground-shaking impacts as compared to the proposed project • Would not upgrade restroom structures in accordance with the most current seismic design parameters or provide additional seismic protection	• Same as project
Hazards and Hazardous Materials	• Potential hazards related to exposure to lead-based paints (LBPs), asbestos-containing materials (ACMs) and polychlorinated biphenyls (PCBs) during demolition of	• No change from existing conditions • Similar potential impacts related to exposure to contaminated dredge materials	• Fewer potential hazards related to exposure to LBPs, ACMs, PCBs or contaminated soils from building structures and/or soils as compared to the proposed project • Similar potential impacts related to exposure to	• Same as project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
	structures • Potential hazards related to exposure to contaminated soils/dredge materials during excavation, grading and dredging activities • Less than significant impacts related to hazards and hazardous materials with mitigation		contaminated dredge materials	
Hydrology and Water Quality	• Potential impacts to water quality during construction and operation activities • Less than significant impacts related to water quality with mitigation	• No change from existing conditions • No benefit from water quality improvements	• Incrementally fewer potential water quality impacts during construction as compared to the proposed project • No benefit from water quality improvements	• Incrementally fewer potential water quality impacts during construction compared to the proposed project • Less than significant impacts related to water quality with mitigation
Land Use	• No impacts related to land use	• No change from existing conditions	• Same as proposed project	• Same as proposed project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
Noise	• Significant and adverse noise impacts during construction • No significant operational noise impacts	• No change from existing conditions • Incrementally less noise during dredging activities	• Reduced duration of noise impacts during construction activities; however, construction noise impacts remain significant and adverse • No significant operational noise impacts	• Same as project
Public Services and Utilities	• No significant impacts related to public services and utilities • Benefit from reduction in potable water demand and energy efficient upgrades	• No changes in public services or utilities • No benefits from reduction in potable water demand or energy efficient upgrades	• No benefits from reduction in potable water demand or energy efficient upgrades • No significant impacts related to public services and utilities	• Same as project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
Recreation	• Improvements to existing recreation facilities and continuation of the useful life of the Marina by providing upgraded docks and slips, ADA-compliant facilities, renovated restrooms, and dredged basins to ensure safe navigation • Loss of approximately 321 slips	• No change from existing conditions • Would continue the physical deterioration of, and costs related to, on-site recreational facilities	• Would not include renovations to restroom facilities • Would not include repaving of parking areas • Would not provide ADA access to restroom or parking facilities • Loss of greater number of slips than project	• Improvements to existing recreation facilities and continuation of the useful life of the Marina by providing upgraded docks and slips, ADA-compliant facilities, renovated restrooms, and dredged basins to ensure safe navigation • Loss of greater number of slips than project • Provision of approximately 150 dry stack storage spaces to offset loss of slips
Transportation and Circulation	• No significant impacts related to transportation and circulation • No parking impacts • No operational traffic impacts • Mitigation measures	• No change from existing conditions	• Fewer construction traffic impacts • No parking impacts • No operational traffic impacts • Mitigation measures are proposed to ensure	• Same as project

Table 5.A: Alternatives Comparison Matrix

Issue Topic	Proposed Project	Alternative 1: No Project/ No Development	Alternative 2: Reduced Project Alternative	Alternative 3: On-Site Dry Stack Storage Alternative
	are proposed to ensure implementation of a Construction Traffic Management Plan and coordination should construction of the proposed project and future projects occur simultaneously		implementation of a Construction Traffic Management Plan and coordination should construction of the proposed project and future projects occur simultaneously	

6.0 LONG-TERM IMPLICATIONS OF THE PROJECT

6.1 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

The Guidelines for the California Environmental Quality Act (CEQA), Section 15126.2 (c), require that an Environmental Impact Report (EIR) consider and discuss significant irreversible changes that would be caused by implementation of the proposed project to ensure that such changes are justified. The CEQA Guidelines specify that the use of nonrenewable resources during the initial and continued phases of the project should be discussed because a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary and secondary impacts (such as a highway improvement that provides access to a previously inaccessible area) should also be discussed because such changes generally commit future generations to similar uses. Irreversible damage can also result from environmental accidents associated with the project and should be discussed.

The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the Marina. The project encourages boating use by providing upgraded ADA-compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation.

The Alamitos Bay Marina Rehabilitation Project would accommodate changes in the boating needs of the public by providing longer average slip lengths. The dock and slip facilities were developed 50+ years ago, when the average length and width of recreational boating slips was shorter and narrower than current boater demand. However, providing longer slips will reduce the total number of slips within the Marinas. There are currently 1,967 existing slips in Basins 1 through 7. The proposed project includes installation of 1,646 slips in these Basins, resulting in the loss of approximately 321 slips.

Construction of the project will result in a commitment of limited, slowly renewable, and nonrenewable resources for restoration purposes. Such resources may include certain types of lumber and other forest products; raw materials such as steel; aggregate materials used in concrete and asphalt such as sand and stone; water; petrochemical construction materials such as plastic; and petroleum-based construction materials. In addition, fossil fuels used by construction equipment will also be consumed. Although project construction will result in a commitment of public maintenance services such as wastewater services and solid waste disposal, these resources associated with maintenance are already committed to the existing public recreational facilitates at the project site.

Similarly, operation of the proposed project will result in the commitment of limited, nonrenewable resources and slowly renewable resources such as electricity, petroleum-based fuels, fossil fuels, and water. Electricity will be used for lighting associated with restroom buildings, dock lighting, and security. However, these facilities are not being expanded; rather, they are being replaced with updated facilities that do not increase capacity. In addition, because any change in Marina attendance and patterns of use is expected to be negligible as a result of project implementation, no increase in demand for resources is anticipated when compared to existing conditions. The project will not result in a significant impact related to the provision of electricity. In addition, Title 24 of the California Code of Regulations requires conservation practices that will limit the amount of energy consumed by the proposed project. Compliance with Title 24 is mandated by the State. Although electrical use will not increase, the use of the resource will continue to represent the existing long-term commitment of this essentially nonrenewable resource.

Operation of the proposed project also requires potable water for the restroom facilities and for boating needs. However, due to the use of low-flow facilities and reduction of 321 boat slips, the project would result in a small reduction of potable water use compared to existing conditions. The potable water use will not increase, but will continue to represent the existing long-term commitment of this essentially nonrenewable resource.

The on-site drainage pattern in the developed condition would not change from existing conditions. Mitigation measures are required to ensure that pollutants of concern will be controlled through implementation of structural and nonstructural best management practices (BMPs), that temporary water quality impacts associated with construction activities are addressed, and that the dispersion of sediments during construction activities is controlled.

The visual change from the existing condition to the project condition will be negligible, as the project area would continue to consist of boats, docks, slips, restrooms, and other associated Marina facilities. In addition, implementation of the project is anticipated to result in a visual improvement because the existing amenities are old and in need of replacement.

As discussed in Section 4.2, Air Quality, the proposed project would not result in any long-term on-site stationary sources and would cause little to no change in off-site vehicle trips. Therefore, the proposed project would not generate any additional long-term greenhouse gas (GHG) emissions. However, short-term construction vehicle emissions would exceed the nitrogen oxide (NO_X) threshold, primarily due to the transport of contaminated dredge materials to an off-site landfill. Implementation of Mitigation Measure 4.2-1 would reduce the vehicle exhaust emissions during construction. However, the impact would remain significant and unavoidable.

The commitment of limited, slowly renewable, and nonrenewable resources required for construction of the proposed project will limit the availability of these resources for future generations or for other uses during the life of the project. However, the uses associated with operation of the project represent a continued, not increased, use of these resources. No other significant irreversible changes are expected to occur as a result of project implementation.

6.2 GROWTH-INDUCING IMPACTS

Section 15126 (d) of the State CEQA Guidelines requires that an EIR analyze growth-inducing impacts. Further, the CEQA Guidelines state that an EIR should discuss the ways in which the project could foster economic or population growth or construction of additional housing, either directly or indirectly, in the surrounding environment. Impacts associated with the removal of obstacles to growth, as well as the development of facilities that encourage and facilitate growth, are considered to be growth inducing. However, the CEQA Guidelines also state that it should not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

The existing uses on the project site are a combination of marine and recreation uses; the proposed project would implement improvements to these existing uses on the project site. The proposed project site is currently served by all utilities and public services required for the existing and proposed uses, and no expansion or increase in these services is required for operation of the project. The project will not remove obstacles to growth in a previously undeveloped area because the recreational land uses will not change.

The potential for the project to generate additional growth in the City is unlikely because the proposed project is the rehabilitation of an existing Marina facility that will result in a reduction of boat slips and is intended to continue to serve existing residents of and visitors to the City. The project does not result in the creation of new jobs and would therefore not create a need for any additional housing. Based on these considerations, the proposed project would not induce population growth in the community or result in economic growth.

7.0 MITIGATION MONITORING AND REPORTING PROGRAM

7.1 MITIGATION MONITORING REQUIREMENTS

Public Resources Code Section 21081.6 (enacted by the passage of Assembly Bill 3180) mandates that the following requirements shall apply to all reporting or mitigation monitoring programs:

I. The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.

II. The lead agency shall specify the location and custodian of the documents or other material which constitute the record of proceedings upon which its decision is based.

III. A public agency shall provide the measures to mitigate or avoid significant effects on the environment that are fully enforceable through permit conditions, agreements, or other measures. Conditions of project approval may be set forth in referenced documents which address required mitigation measures or in the case of the adoption of a plan, policy, regulation, or other project, by incorporating the mitigation measures into the plan, policy, regulation, or project design.

IV. Prior to the close of the public review period for a draft environmental impact report or mitigated negative declaration, a responsible agency, or a public agency having jurisdiction over natural resources affected by the project, shall either submit to the lead agency complete and detailed performance objectives for mitigation measures which would address the significant effects on the environment identified by the responsible agency or agency having jurisdiction over natural resources affected by the project, or refer the lead agency to appropriate, readily available guidelines or reference documents. Any mitigation measures submitted to a lead agency by a responsible agency or an agency having jurisdiction over natural resources affected by the project shall be limited to measures which mitigate impacts to resources which are subject to the statutory authority of, and definitions applicable to, that agency. Compliance or noncompliance by a responsible agency or agency having jurisdiction over natural resources affected by a project with that requirement shall not limit that authority of the responsible agency or agency having jurisdiction over natural resources affected by a

project, or the authority of the lead agency, to approve, condition, or deny projects as provided by this division or any other provision of law.

7.2 MITIGATION MONITORING PROCEDURES

The mitigation monitoring and reporting program has been prepared in compliance with Public Resources Code Section 21081.6. It describes the requirements and procedures to be followed by the City of Long Beach to ensure that all mitigation measures adopted as part of the proposed Alamitos Bay Marina Rehabilitation Project will be carried out as described in this EIR.

Table 7.A lists each of the mitigation measures specified in this EIR and identifies the party or parties responsible for implementation and monitoring of each measure.

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.1 AESTHETICS		
No potentially significant impacts were identified, and no mitigation is required.		
4.2 AIR QUALITY		
4.2-1 Prior to commencement of construction, the Marine Bureau Manager shall ensure that the final project plans and the construction contract include, but are not limited to, the following energy conservation and emission reduction measures: **Fugitive Dust Controls.** The project construction contractor shall develop and implement dust-control methods that shall achieve this control level in a South Coast Air Quality Management District (SCAQMD) Rule 403 dust control plan, designate personnel to monitor the dust control program, and order increased watering, as necessary, to ensure a 90 percent control level. Their duties shall include holiday and weekend periods when work may not be in progress. Additional control measures to reduce fugitive dust shall include, but are not limited to, the following: • Provide temporary wind fencing around sites being graded or cleared • Cover truck loads that haul dirt, sand, or gravel or maintain at least 2 feet (ft) of freeboard in accordance with Section 23114 of the California Vehicle Code (CVC) • Install wheel washers where vehicles enter and exit unpaved roads	City of Long Beach Marine Bureau Manager	Prior to commencement of construction

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
onto paved roads, or wash off tires of vehicles and any equipment leaving the construction site • Suspend all soil disturbance activities when winds exceed 25 miles per hour (mph) as instantaneous gusts or when visible dust plumes emanate from the site and stabilize all disturbed areas • Appoint a construction relations office to act as a community liaison concerning on-site construction activity, including resolution of issues related to particulate matter less than 10 microns in diameter (PM_{10}) generation • Sweep all streets at least once a day using SCAQMD Rule 1186, 1186.1 certified street sweepers or roadway washing trucks if visible soil materials are carried to adjacent streets (recommend water sweepers with reclaimed water) • Apply water three times daily, or nontoxic soil stabilizers according to manufacturers' specifications, to all unpaved parking or staging areas or unpaved road surfaces or as needed to areas where soil is disturbed **Emission Controls for Nonroad Construction Equipment.** Construction equipment shall meet the United States Environmental Protection Agency (EPA) Tier 4 nonroad engine standards, where feasible. The Tier 4 standards become available starting in 2012.		

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
Best Management Practices (BMPs) for Construction Equipment. The construction contractor shall implement the following BMPs on construction equipment, where feasible, to further reduce emissions from these sources. • Use of diesel oxidation catalysts and/or catalyzed diesel particulate traps, as feasible • Maintain equipment according to manufacturer specifications • Restrict idling of equipment and trucks to a maximum of 5 minutes (per California Air Resources Board [ARB] regulation) • Use of high-pressure fuel injectors on diesel-powered equipment • Use of electricity from power poles rather than temporary diesel- or gasoline-powered generators **Construction Traffic Emission Reductions.** The construction contractor shall implement the following measures to further reduce emissions from construction. • Trucks used for construction (a) prior to 2015 shall use engines certified to no less than 2007 nitrogen oxide (NO_x) emissions standards and (b) in 2015 and beyond shall meet EPA 2010		

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
emission standards. Provide temporary traffic control such as a flag person during all phases of construction to maintain smooth traffic flow • Schedule construction activities that affect traffic flow on arterial systems to off-peak hours where possible • Reroute construction trucks away from congested streets or sensitive receptor areas • Provide dedicated turn lanes for movement of construction trucks and equipment on and off site • Configure construction parking to minimize traffic interference • Improve traffic flow by signal synchronization • All vehicles and equipment will be properly tuned and maintained according to manufacturer specifications. • Reduce traffic speeds on all unpaved roads to 15 mph or less **Emission Controls for Construction Tugboats.** All tugboats used in construction shall meet the EPA Tier 2 marina engine standards, and if feasible, use construction tugs that meet the EPA Tier 3 marine engine standards. The Tier 3 standards become available starting in 2009.		

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	Construction Tugboat Home Fleeting. The construction contractor shall require all construction tugboats that home fleet in the **XXX** (SPBP) to (a) shut down their main engines, and (b) refrain from using auxiliary engines at dock or to use electrical shore power, if need be.		
4.2-2	Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings include the following building design energy conservation measures: **Green Building Design for Restroom Buildings:** Incorporate measures from the Leadership in Energy and Environmental Design (LEED) certification program and other green building guidelines that reduce greenhouse gas (GHG) emissions through either development density/ design and/or energy conservation. The LEED for Retail–New Construction and LEED for Commercial Interiors programs developed by the United States Green Building Council are good sources for identifying measures and examples of energy conservation measures, including the following: • Meet or exceed Title 24 requirements • Incorporate ENERGY STAR-rated windows • Incorporate ENERGY STAR-rated space heating and cooling equipment	City of Long Beach Marine Bureau Manager	Prior to issuance of building permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	• Incorporate hot water systems that are energy efficient • Incorporate ENERGY STAR-rated light fixtures • Incorporate ENERGY STAR-rated appliances • Install/operate renewable electric generation systems, as appropriate and economically feasible		
4.2-3	Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings of the building operations and maintenance plan include, but are not limited to, the following energy conservation measures: • **Compact Fluorescent Light Bulbs:** All interior building lighting shall use compact fluorescent light bulbs. Fluorescent light bulbs produce less waste heat and use substantially less electricity than incandescent light bulbs. • **Energy Audits:** Conduct a third-party energy audit every 5 years and install innovative power-saving technology where feasible, such as power factor correction systems and lighting power regulators. Such systems help to maximize usable electric current and eliminate wasted electricity, thereby lowering overall electricity use.	City of Long Beach Marine Bureau Manager	Prior to issuance of building permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.2-4	Prior to issuance of building permits, the Marine Bureau Manager shall ensure that the final construction drawings and the construction contract indicate that no more than 1 acre (43,560 square feet) of parking lot pavement area shall be under construction for replacement at any one time during each phase of the project.	City of Long Beach Marine Bureau Manager	Prior to issuance of building permits
4.2-5	During all phases of demolition, dredging, and construction, the Marine Bureau Manager shall ensure that the contract to construct complies with the following rules for construction and operation to minimize the air quality impacts from the proposed project. The following measures are required and will reduce or minimize air pollutants generated by construction vehicles and equipment and fugitive dust emissions associated with earthmoving or excavation operations, or other soil disturbances, as identified in South Coast Air Quality Management District (SCAQMD) Rules 402 and 403. The following measures shall be printed on all final plans and drawings associated with the project: During earthmoving or excavation operations, fugitive dust emissions shall be controlled by regular watering or other dust-preventive measures using the following procedures: • All material excavated shall be sufficiently watered to prevent excessive amounts of dust. Watering, with complete coverage, shall occur at least twice daily, preferably in the late morning and after	City of Long Beach Marine Bureau Manager	Ongoing during all phases of demolition, dredging, and construction

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
work is done for the day. • All earthmoving or excavation activities shall cease during periods of high winds (i.e., winds greater than 20 miles per hour [mph] averaged over 1 hour). • All material transported off site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust. • The area disturbed by earthmoving or excavation operations shall be minimized at all times. After earthmoving or excavation operations, fugitive dust emissions shall be controlled using the following measures: • Portions of the construction area to remain inactive longer than a period of 3 months shall be revegetated and watered until cover is grown. • All active portions of the construction site shall be watered to prevent excessive amounts of dust. At all times, fugitive dust emissions shall be controlled using the following procedures:		

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	• On-site vehicle speed shall be limited to 15 mph. • Road improvements shall be paved as soon as feasible, watered periodically, or chemically stabilized. At all times during the construction phase, ozone precursor emissions from mobile equipment shall be controlled using the following procedures: • Equipment engines shall be maintained in good condition and in proper tune according to manufacturer's specifications. • On-site mobile equipment shall not be left idling for a period longer than 60 seconds. Outdoor storage piles of construction materials shall be kept covered, watered, or otherwise chemically stabilized with a chemical wetting agent to minimize fugitive dust emissions and wind erosion.		
4.3 BIOLOGICAL RESOURCES			
4.3-1	Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that a qualified biologist has been retained and shall be on site to assess the roosting (and foraging) behavior of waterbirds at the Marina immediately prior to any major construction disturbance. In the event of an imminent threat to a special-status species, the monitor shall immediately contact the Construction	City of Long Beach Marine Bureau Manager	Prior to the start of any construction or dredging activities

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	Manager. In the event the Construction Manager is not available, the monitor shall have the authority to redirect or halt construction activities if determined to be necessary.		
4.3-2	Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract in order to further reduce any potential impacts to green sea turtles: • A qualified marine biologist shall be on site during the construction period to monitor the presence of endangered species. The on-site biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed. • Construction crews and work vessel crews shall be briefed on the potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions. • In the event that a sea turtle is sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle is safely outside the outer perimeter of construction. The on-site biological monitor shall have the authority to halt construction operation and shall determine when	City of Long Beach Marine Bureau Manager	Prior to the start of any construction or dredging activities

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	construction operations can proceed. The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his/crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS).		
4.3-3	Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall ensure that an Eelgrass Mitigation Plan has been included in the contract for construction. The Plan shall require that any direct losses to eelgrass will be mitigated at a ratio of 1.2:1 according to the Southern California Eelgrass Mitigation Policy (SCEMP) requirement. According to current surveys, eelgrass to be impacted by the project is 1,373 square feet (sf), which would result in 1,648 sf to be mitigated at the 1.2:1 mitigation ratio. As detailed in the SCEMP, the actual amount of eelgrass to be mitigated shall depend on preconstruction surveys, postconstruction surveys, and surveys at a control site at the appropriate time prior to the beginning of project activities. The preferred mitigation area is located adjacent to the northeast end of Marine Stadium on a City of Long Beach-owned storage site. A qualified biologist shall monitor the successful establishment of the eelgrass mitigation site for a period of 5 years, in accordance with the Southern California Eelgrass Mitigation Policy.	City of Long Beach Marine Bureau Manager	Prior to the start of any construction or dredging activities

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.3-4 Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall provide verification that the following provision has been included in the contract for project construction: that a qualified biologist has been retained to implement the following measures, which shall be incorporated during all phases of construction in order to minimize impacts on eelgrass and other biological resources: • Impacts to eelgrass beds shall be avoided where practical and feasible. A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone. To assist the construction crew in avoiding unnecessary damage to eelgrass, the project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques. • Barges and work vessels shall avoid impacts to eelgrass beds in Basins 2 and 4. Barges and work vessels shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels. • A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality best management	City of Long Beach Marine Bureau Manager	Prior to issuance of any demolition or construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	practices (BMPs) are implemented and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within 30 days after the project is completed, a post-construction marine biological survey shall be conducted to determine the extent of any construction impacts on eelgrass habitat. The survey report will be completed within 30 days and shall be submitted to the California Coastal Commission and the United States Army Corps of Engineers.		
4.3-5	Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract. The construction contractor shall be responsible for ensuring that the following measures are implemented during all phases of construction in order to minimize impacts on biological resources: • No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil. Any construction debris within the temporary cofferdam area shall be removed from the site at the end of each construction day. • Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or	City of Long Beach Marine Bureau Manager	Prior to issuance of any demolition or construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
construction equipment or power tools into Alamitos Bay. Such measures include deployed oil booms and a silt curtain around the proposed construction zone at all times to minimize the spread of any ac accidental fuel spills, turbid construction-related water discharge, and debris. Other measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits. • All trash shall be disposed of in the proper trash receptacles at the end of each construction day. Any construction debris shall be removed from the site. • During construction, floating booms shall be used to assist in containing debris discharged. Any debris discharged shall be removed as soon as possible but no later than the end of each day. • If turbid conditions are generated during construction, including dredging or pile driving, a silt curtain shall be utilized to control turbidity. The City of Long Beach shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column. • The City shall implement all the requirements of the Department of the Army Permit and the RWQCB WQC, This includes the anticipated dredging water quality monitoring plan set forth by the		

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	RWQCB. • Construction methods shall be used that are the least damaging to benthic sediments and organisms. Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. The City of Long Beach shall have adequate equipment available to contain such spills immediately.		
4.3-6	Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall ensure that the following provisions are incorporated into the final project plans and construction contract for the purpose of protecting nesting birds within the study area during construction: • Tree and vegetation removal shall be restricted to outside the likely active nesting season (January 1–September 1) for those bird species present or potentially occurring within the project area. That time period is inclusive of most other birds' nesting periods, thus maximizing avoidance of impacts to any nesting birds. If construction must be completed during the breeding season listed above, surveys for nesting birds shall be conducted at least 15 days prior to construction. Should an occupied nest be detected, the City will consult with the California Department of Fish and Game	City of Long Beach Marine Bureau Manager	Prior to issuance of any demolition or construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	(CDFG) to determine an appropriate means for reducing impacts to nesting birds prior to tree removal. If nesting birds are observed within the vicinity, a buffer from the nest shall be established. The size of the buffer is dependent on the species and shall be determined by a qualified biologist. The buffer shall be delineated by roping the boundaries of construction and shall remain in place until the nest is abandoned or the young have fledged.		
4.3-7	The Marine Bureau Manager shall ensure that a field survey to investigate the presence of the invasive algae *Caulerpa taxifolia* is conducted 30 to 60 days prior to commencement of construction by qualified divers certified by the California Department of Fish and Game (CDFG) and National Marine Fisheries Service (NMFS) to conduct such surveys. The preconstruction *Caulerpa* surveys will be conducted according to the accepted criteria of the Southern California *Caulerpa* Action Team (SCCAT) for conducting surveys for the invasive algae and in accordance with the NMFS and CDFG *Caulerpa* survey protocols. In accordance with the recommendations of the SCCAT, and according to the NMFS *Caulerpa* Control Protocol (Version 3, adopted March 12, 2007 [NMFS 2007]), a survey must be conducted in harbor areas that may be disturbed. In areas that are expected to be free of *Caulerpa*, a 20 percent visual Surveillance Level survey is required prior to any dredging. The survey will also identify any other marine vegetation in the proposed construction area,	City of Long Beach Marine Bureau Manager	30 to 60 days prior to commencement of any construction

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
including eelgrass. The Marine Bureau Manager, or his/her designee, will transmit the survey results via *Caulerpa* Survey Reporting Form to NMFS and the CDFG within 48 hours of completion of the survey. If *Caulerpa* is identified in the project area, the City, NMFS, and CDFG will be notified within 24 hours of completion of the survey. In the event that *Caulerpa* is detected, disturbance shall not be conducted until such time as the infestation has been isolated, treated, or the risk of spread from the proposed disturbing activity is eliminated in accordance with Section F of the *Caulerpa* Control Protocol.		
4.4 CULTURAL AND HISTORIC RESOURCES		
No potentially significant impacts were identified and no mitigation is required.		
4.5 GEOLOGY AND SOILS		
4.5-1 Prior to issuance of building permits, the Marine Bureau Manager shall verify that recommendations contained in the Geotechnical Evaluation prepared for the proposed project (Ninyo and Moore, February 2007) have been incorporated into final construction drawings. Design and grading construction shall be performed in accordance with the most current California Building Code in use by the City of Long Beach, the most current local grading regulations, and recommendations of the project geotechnical consultant.	City of Long Beach Marine Bureau Manager	Prior to issuance of building permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.6 HAZARDS AND HAZARDOUS MATERIALS			
4.6-1	Prior to issuance of any permits allowing dredging in Basin 1, the City of Long Beach (City) shall conduct additional laboratory testing of the sediment materials from Basin 1. Additional testing shall be conducted prior to disposal of the contaminated soils to determine if concentrations of mercury exceed the Soluble Threshold Limit Concentration (STLC) for mercury at 0.2 milligrams per liter (mg/L) and are considered hazardous by State standards (California Code of Regulations [CCR], Title 22, Section 66261.1–66261.126), and/or are considered hazardous by federal standards (Resource Conservation Recovery Act [RCRA]), where mercury concentrations exceed the federal threshold of 0.2 mg/L, as determined from toxicity characteristic leaching procedure (TCLP) extract testing (TCLP method shall be determined by leaching potential).	City of Long Beach/City of Long Beach Marine Bureau Manager	Prior to issuance of any permits allowing dredging in Basin 1
4.6-2	Prior to issuance of any permits allowing dredging in Basin 1, the City of Long Beach shall conduct a Human Health Risk evaluation to determine the level of exposure to potentially hazardous levels of mercury during construction activities.	City of Long Beach/ City of Long Beach Marine Bureau Manager	Prior to issuance of any permits allowing dredging in Basin 1
4.6-3	**Soil Management Plan:** The Office of Environmental Health Hazard Assessment (OEHHA) shall review the dredge materials removal workplan and shall list any additional requirements. Implementation of the workplan shall be overseen by the OEHHA	City of Long Beach/ The Office of Environmental Health Hazard	Prior to issuance of any permits allowing dredging in Basin 1/ prior to

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	for compliance with local, State, and federal regulations. Any additional sampling or contaminant material removal shall be subject to these same regulations. As part of the soil management plan, all disposal material will be characterized prior to disposal at a State landfill site. All hazardous waste will be disposed of in a Class I landfill. All other soils or solid waste will be disposed of at an unclassified landfill. In addition, during construction activities of the potentially impacted soils on site, monitoring will be required by the South Coast Air Quality Management District (SCAQMD). After removal of the contaminated materials from Basin 1 and during the drying process of these sediments/soils, a mixture of Simple Green and water (10:1) shall be lightly applied to the excavated sediments/soils. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions.	Assessment (OEHHA)	disposal of Basin 1 sediments at a State landfill site
4.6-4	During all excavation activities, the Marine Bureau Manager shall ensure that all construction subcontractors comply with the appropriate health and safety measures required by the Occupational Safety and Health Administration (OSHA). In the event that groundwater is encountered during grading or excavation activities, all construction activities shall be terminated	City of Long Beach Marine Bureau Manager	Ongoing during all excavation and grading activities

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	in the immediate area until the groundwater is investigated for potentially hazardous content. In the event that suspicious odors are observed in soil, construction shall also be terminated until the soil is properly characterized for hazardous waste content. Appropriate measures shall be taken in compliance with all applicable regulations for the characterization and disposal of hazardous materials.		
4.6-5	Prior to the issuance of any demolition permits and at least 10 days prior to any demolition work for proposed improvements, the Marine Bureau Manager shall notify and submit fees to the South Coast Air Quality Management District (SCAQMD) in compliance with SCAQMD Rule 1403, Asbestos Emissions from Demolition/Renovation Activities. Contractors shall adhere to the requirements of SCAQMD Rule 1403 during all construction and demolition activities.	City of Long Beach Marine Bureau Manager	Prior to the issuance of any demolition permits and at least 10 days prior to any demolition work for proposed improvements
4.6-6	Prior to the issuance of any demolition permits, the Marine Bureau Manager shall provide evidence that a certified asbestos consultant has conducted an asbestos survey of the existing concrete materials. If asbestos-containing material (ACM) is found, it shall be removed and disposed of by a licensed and certified asbestos abatement contractor in accordance with requirements outlined by the local county health department.	City of Long Beach Marine Bureau Manager	Prior to the issuance of any demolition permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.6-7	Prior to the issuance of any demolition permits, the Marine Bureau Manager shall provide evidence that a certified lead-based paint (LBP) consultant has conducted LBP surveys in the areas where paint materials may be removed or disturbed on existing structures. If LBPs are found, they shall be removed and disposed of by a licensed and certified LBP contractor in accordance with requirements outlined by the local county health department.	City of Long Beach Marine Bureau Manager	Prior to the issuance of any demolition permits
4.6-8	Prior to the issuance of any demolition permits, the City of Long Beach shall conduct the inspection of utility pole-mounted transformers within the project area for leaks. Leaking transformers shall be considered a potential for polychlorinated biphenyl (PCB) hazard unless tested and shall be handled accordingly. If the removal of utility poles is anticipated, all treated wooden poles may have a potential for creosote. Areas immediately surrounding the utility pole shall be tested and handled accordingly.	City of Long Beach/City of Long Beach Marine Bureau Manager	Prior to the issuance of any demolition permits
4.7 HYDROLOGY AND WATER QUALITY			
4.7-1	Prior to issuance of a grading permit, the Marine Bureau Manager shall verify that construction plans for the project include features meeting the applicable construction activity Best Management Practices (BMPs) and erosion and sediment control BMPs published in the *California Storm Water BMP Handbook—Construction Activity* or equivalent. The construction contractor	City of Long Beach Marine Bureau Manager/City Building Official	Prior to the issuance of any grading permit

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
shall be required to submit a Storm Water Pollution Prevention Plan (SWPPP) to the City that includes the BMP types listed in the handbook or equivalent. The SWPPP shall be prepared by a civil or environmental engineer and will be reviewed and approved by the City Building Official prior to the issuance of any grading or building permits. The SWPPP shall reduce the discharge of pollutants to the maximum extent practicable using BMPs, control techniques and systems, design and engineering methods, and such other provisions as appropriate. A copy of the SWPPP shall be kept at the project site. The SWPPP shall meet the requirements of the General Construction Permit and shall identify potential pollutant sources associated with construction activities; identify non-storm water discharges; develop a water quality monitoring and sampling plan; and identify, implement, and maintain BMPs to reduce or eliminate pollutants associated with the construction site. The BMPs identified in the SWPPP shall be implemented during project construction. The SWPPP Notice of Termination (NOT) shall be submitted to the State Water Resources Control Board (SWRCB) upon completion of construction and stabilization of the site.		

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.7-2	Prior to issuance of demolition and grading permits, the Marine Bureau Manager shall demonstrate to the Director of Long Beach Development Services, or their designee, that compliance with the provisions of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Construction and Land Disturbance Activities*, and any subsequent permit as they relate to construction activities for the project has been obtained. This will include submission of the Permit Registration Documents, including a Notice of Intent (NOI), a risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), annual fee, and signed certification statement to the State Water Resources Control Board (SWRCB) at least 14 days prior to the start of construction.	City of Long Beach Marine Bureau Manager	Prior to issuance of demolition and grading permits
4.7-3	Prior to issuance of demolition and grading permits, the Marine Bureau Manager shall provide evidence that a Standard Urban Storm Water Mitigation Plan (SUSMP) for the project has been prepared in accordance with the Los Angeles County SUSMP and the Municipal National Pollutant Discharge Elimination System (NPDES) Permit. The project SUSMP shall identify all of the Nonstructural and Structural Best Management Practices (BMPs) that will be implemented as part of the project in order to reduce impacts to water quality to the maximum extent practicable by addressing typical land use pollutants and pollutants that have	City of Long Beach Marine Bureau Manager	Prior to issuance of demolition and grading permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	impaired the Alamitos Bay. The SUSMP shall be reviewed and approved by the City of Long Beach Building Official prior to issuance of a grading permit.		
4.7-4	Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification in the record that approval to initiate the City's contract with AES (to increase pumping rates) has been incorporated into project plans and will be implemented in the event that water quality standards are exceeded during construction activities associated with Basins 6-North and 6-South (Basins 6-N and 6-S). The construction contractor shall be responsible for notifying the Marine Bureau Manager in the event that increased flushing in the Bay is needed, should water quality remain impaired **(**i.e.**,** water quality standards are exceeded) beyond 2 days after dredging in Basins 6-N or 6-S.	City of Long Beach Marine Bureau Manager/ Construction Contractor	Prior to the issuance of any construction permits
4.7-5	Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification that authorization has been obtained from: (1) the United States Army Corps of Engineers (Corps) under the Section 404 Permit program for the discharge of fill material into jurisdictional waters; (2) the Corps, under Section 10 of the Rivers and Harbors Act for the disposal of dredged material and placement of piles and riprap; and (3) the Corps, under Section 103 of the Marine Protection Research and	City of Long Beach Marine Bureau Manager	Prior to the issuance of any construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	Sanctuaries Act for the transportation of dredged material for ocean disposal. In addition, standard conditions of the Corps permits require Section 401 water quality certification by the Regional Water Quality Control Board (RWQCB). In order to obtain these authorizations, the City shall develop a mitigation plan subject to review and approval by the appropriate resource agencies (Corps, United States Fish and Wildlife Service [USFWS], National Marine Fisheries Service [NMFS], California Department of Fish and Game [CDFG], and RWQCB).		
4.7-6	Prior to the issuance of any construction permits, the Marine Bureau Manager shall demonstrate in the record that Best Management Practices (BMPs) for all dredging activities, as listed in Appendix F of this document, have been incorporated into project plans in order to reduce impacts to water quality to the maximum extent practicable. The construction contractor shall be responsible for performing and documenting the application of BMPs identified in this document.	City of Long Beach Marine Bureau Manager/ Construction Contractor	Prior to the issuance of any construction permits
4.7-7	Prior to the issuance of any construction permits, the Marine Bureau Manager shall provide verification in the record that a trash and debris containment boom has been incorporated into project plans and will be implemented during all dock removal and replacement activities in order to reduce impacts to water quality to the maximum extent practicable. The construction	City of Long Beach Marine Bureau Manager/ Construction Contractor	Prior to the issuance of any construction permits

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	contractor shall be responsible for performing and documenting the application of the trash and debris containment boom.		
4.8 LAND USE			
No potentially significant impacts were identified, and no mitigation is required.			
4.9 NOISE			
4.9-1	Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirements are printed on all final project plans: Consistent with the City of Long Beach (City) Noise Ordinance, construction activity that produces loud or unusual noise that could impact a reasonable person of normal sensitivity shall be limited to between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and federal holidays, and between 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall occur on Sundays.	City of Long Beach Marine Bureau Manager	Prior to the issuance of any permit/Ongoing during construction activities
4.9-2	Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: during construction and demolition, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.	City of Long Beach Marine Bureau Manager/ Construction Contractor	Prior to the issuance of any permit/Ongoing during construction activities
4.9-3	Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: the project contractor shall place all stationary	City of Long Beach Marine Bureau Manager	Prior to the issuance of any permit

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
	construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.		
4.9-4	Prior to the issuance of any permit, the Marine Bureau Manager shall demonstrate that the following requirement is printed on all final project plans: the construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.	City of Long Beach Marine Bureau Manager/ Construction Contractor	Prior to the issuance of any permit
4.9-5	Prior to issuance of a grading permit, the Director of Parks, Recreation, and Marine shall hold a community preconstruction meeting in concert with the Construction Contractor to provide information regarding the construction schedule. The construction schedule information shall include the duration of each construction activity and the specific location, days, frequency, and duration of the pile driving that will occur during each phase of the project construction. Public notification of this meeting shall be undertaken in the same manner as the Notice of Availability mailings for this Draft Environmental Impact Report (EIR).	Director of Parks, Recreation, and Marine/ Construction Contractor	Prior to issuance of any grading permit

Table 7.A: Mitigation and Monitoring Reporting Program

	Mitigation Measures	Responsible Party	Timing for Mitigation Measure
4.10 PUBLIC SERVICES AND UTILITIES			
4.10-1	Prior to the issuance of building permits, the Marine Bureau Manager shall demonstrate on the final construction plans that applicable interior and exterior water conservation measures have been incorporated into all aspects of this project. At a minimum, measures shall include low-flush toilets, low-flow faucets and shower heads, and the installation of efficient irrigation systems to minimize runoff and evaporation.	City of Long Beach Marine Bureau Manager	Prior to the issuance of building permits
4.10-2	Prior to the issuance of any demolition permit, a solid waste management plan for the proposed project shall be developed by the Marine Bureau, and submitted to the Environmental Services Bureau for review and approval. The plan shall identify methods to promote recycling and reuse of construction materials as well as safe disposal consistent with the policies and programs outlined by the City of Long Beach. The plan shall identify methods of incorporating source reduction and recycling techniques into project construction and operation in compliance with State and local requirements such as those described in Chapter 14 of the California Code of Regulations and Assembly Bill (AB) 939.	City of Long Beach Department of Parks, Recreation, and Marine/City of Long Beach Environmental Services Bureau	Prior to the issuance of any demolition permit
4.11 RECREATION			
No potentially significant impacts were identified, and no mitigation is required.			

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures		Responsible Party	Timing for Mitigation Measure
4.12 TRAFFIC AND CIRCULATION			
4.12-1	Prior to the issuance of demolition or building permits, the Marine Manager shall develop a Construction Traffic Management Plan for review and approval by the City of Long Beach Traffic Engineer. The plan shall be designed by a registered Traffic Engineer and shall address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes. The plan shall identify the routes that construction vehicles will use to access the site, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas. The plan shall also restrict construction trucks to no more than 19 during the a.m. peak hour for any one phase of the project, prohibit truck trips after 3:30 p.m., and require that a minimum of one travel lane in each direction on Marina Drive and 2nd Street be kept open during construction activities. The plan shall also require the City to keep all haul routes clean and free of debris including, but not limited to, gravel and dirt.	City of Long Beach Marine Bureau Manager/City of Long Beach Traffic Engineer	Prior to the issuance of demolition or building permits
4.12-2	Prior to the issuance of demolition or building permits, the Marine Bureau Manager shall, under the direction of the City of Long Beach Traffic Engineer, address the truck route and circulation effects of the Home Depot and/or the Second+PCH Project construction, should either of these projects be under construction in the vicinity of the project site during construction of the	City of Long Beach Marine Bureau Manager/City of Long Beach Traffic Engineer	Prior to the issuance of demolition or building permits

Table 7.A: Mitigation and Monitoring Reporting Program

Mitigation Measures	Responsible Party	Timing for Mitigation Measure
Alamitos Bay Marina Rehabilitation project. The coordination shall identify the construction routes, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas, and address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes.		

8.0 LIST OF PREPARERS

8.1 LSA ASSOCIATES, INC. STAFF

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Ashley Davis, Senior Environmental Planner
Laura Rocha, Senior Environmental Specialist
Angie Kung, Environmental Planner
Ken Wilhelm, Principal, Transportation Planner
Dean Arizabal, Transportation Planner
Keith Lay, Associate, Air and Noise Analysis
Erin Razban, Environmental Planner
Debra Cooper, Graphics
Justin Roos, GIS

8.2 CITY STAFF

Jill Griffiths, Advance Planning Officer, Department of Development Services
Mark Sandoval, Marine Bureau Manager, Department of Parks, Recreation & Marine
Dave Kinley, Harbormaster, Department of Parks, Recreation & Marine
Dave Roseman, Traffic Engineer, Department of Public Works

8.3 TECHNICAL CONSULTANTS

Rick Ware, Project Marine Biologist, Coastal Resources Management, Inc.
Glenn Estrella, Alamitos Bay Marina Project Manager, TranSystems
Kurt Grant, Manager Project Manager, Bellingham Marine Industries, Inc.
Josh Burnham, Anchor Environmental
Jennifer Pettis-Schallert, Anchor Environmental

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FINAL
ENVIRONMENTAL IMPACT REPORT

ALAMITOS BAY MARINA REHABILITATION PROJECT
SCH NO. 2008041028

VOLUME II:
TECHNICAL APPENDICES

Submitted to:

City of Long Beach
Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

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LSA

December 2009

APPENDIX A

NOTICE OF PREPARATION (NOP), NOP COMMENTS, AND SCOPING MEETING COMMENTS

ALAMITOS BAY MARINA NOP

CITY OF LONG BEACH

DEPARTMENT OF DEVELOPMENT SERVICES

333 W. Ocean Boulevard, 5th Floor Long Beach, CA 90802 (562) 570-6194 FAX (562) 570-6068

Notice of Preparation

TO: Agencies, Organizations, and Interested Parties

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report in Compliance with Title 14, Section 15082(a) of the California Code of Regulations

Pursuant to Public Resources Code Section 21165 and the Guidelines for the California Environmental Quality Act (CEQA) Section 15050, the City of Long Beach (City) is the Lead Agency responsible for preparation of an Environmental Impact Report (EIR) addressing potential impacts associated with the project identified below.

AGENCIES: The purpose of this notice and the attached documentation is (1) to serve as a Notice of Preparation (NOP) of an EIR pursuant to the State CEQA Guidelines Section 15082, and (2) to advise and solicit comments and suggestions regarding the scope and content of the EIR to be prepared for the proposed project. Specifically, the City requests input on the environmental information that is germane to your agency's statutory responsibility in connection with the proposed project. Your agency may rely on the Draft EIR prepared by the City when considering permits or other approvals for the project.

ORGANIZATIONS AND INTERESTED PARTIES: The City requests your comments and concerns regarding the proposed scope and content of the environmental information to be included in the EIR.

PROJECT TITLE: Alamitos Bay Marina Rehabilitation Project

PROJECT LOCATION: Alamitos Bay Marina (Marina) is located in the southeastern portion of Los Angeles County within the City of Long Beach. The Marina lies adjacent to and northwest (upshore) of the mouth of the San Gabriel River and is accessible primarily from Pacific Coast Highway (PCH) and Second Street, the nearest major intersection. The proposed project encompasses seven of the eight Marina basins located throughout Alamitos Bay.

PROJECT DESCRIPTION: The City is the Lead Agency for the project and will prepare the EIR in accordance with the requirements of CEQA and the State CEQA Guidelines. In early 2008, the City prepared an Initial Study/Mitigated Negative Declaration (IS/MND) for the Alamitos Bay Marina Rehabilitation Project. Mitigation measures to reduce potentially significant effects to less than significant levels were incorporated into the project, and the IS/MND was circulated for public review from April 4, 2008, to May 5, 2008. Comments were received from reviewing agencies and issues were raised in the comments received that have yet to be resolved. Therefore, due to an abundance of caution, the City has elected to elevate the level of CEQA review to an EIR.

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The Marina comprises eight basins located throughout Alamitos Bay. As previously stated, the proposed project to be analyzed in the EIR includes renovations to Basins 1 through 7; Basin 8 is not a part of the rehabilitation. The proposed project would renovate the existing Marina facilities by providing new docks and pilings, upgraded Americans with Disabilities Act (ADA) compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation.

Based on preliminary analysis contained in the IS/MND, mitigation for potential impacts to eelgrass would be required. Therefore, two possible mitigation sites have been identified by the City. The first alternative is a City-owned parcel of land adjacent to the northeast end of Marine Stadium, where a mitigation habitat area would be created. The second alternative is a portion of the existing dock area at the northernmost end of Basin 6 North. The site adjacent to Marine Stadium is the preferred alternative because it minimizes the loss of slips. This preferred mitigation site will therefore be analyzed as a part of the EIR project.

The project description, location, and potential environmental effects, based on the information known to date, are contained in the attached materials. Through the receipt of comments on this NOP and the process of preparing the Draft EIR, additions, deletions, and/or modifications of these potential environmental impacts may occur.

PUBLIC REVIEW PERIOD: The NOP is available for public review and comment pursuant to California Code of Regulations, Title 14, Section 15082(b). Because of time limits mandated by State law, your comments must be sent at the earliest possible date but *not later than 30 days* after receipt of this notice. The 30-day period during which the City will receive comments on the NOP for the proposed project is:

Beginning: Monday, May 11, 2009 **Ending:** Wednesday, June 10, 2009 at 4:30p.m.

RESPONSES AND COMMENTS: Please list a contact person for your agency or organization, include U.S. mail and email addresses, and send your responses and comments to:

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Or via email to: Jill_Griffiths@longbeach.gov

PUBLIC OPEN HOUSE/SCOPING MEETING: The City will conduct a public open house and scoping meeting in conjunction with this NOP in order to present the project and the EIR process and to receive public comments.

DATE:	Thursday, May 28, 2009
TIME:	6:30p.m. to 8:30p.m.
LOCATION:	Khoury's Restaurant – Banquet Room 110 North Marina Drive Long Beach, CA 90803

DOCUMENT AVAILABILITY: The NOP is available for public review on the following website and at the locations listed below during regular business hours:

- http://www.lbds.info/planning/environmental_planning/environmental_reports.asp
- Long Beach Main Library, 101 Pacific Avenue, Long Beach, CA 90802
- Bay Shore Neighborhood Library, 195 Bay Shore Avenue, Long Beach, CA 90803
- Los Altos Neighborhood Library, 5614 Britton Drive, Long Beach, CA 90815

If you require additional information, please contact Jill Griffiths at (562) 570-6191.

Signature: Jill Griffiths Date: May 7, 2009

Title: Advance Planning Officer Telephone: (562) 570-6191

SUPPLEMENTAL PROJECT INFORMATION

INTRODUCTION

The City of Long Beach (City) is considering a project that would renovate the existing Alamitos Bay Marina (Marina) facilities and enhance the existing recreational boating facilities within the harbor. The project encourages boating use by providing upgraded Americans with Disabilities Act (ADA)-compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation. The Marina facilities are operated by the City of Long Beach Marine Bureau and are primarily accessible from PCH and Second Street (see Figure 1). The Marina was opened in the late 1950s and early 1960s. There are currently 1,997 slips located throughout the Marina.

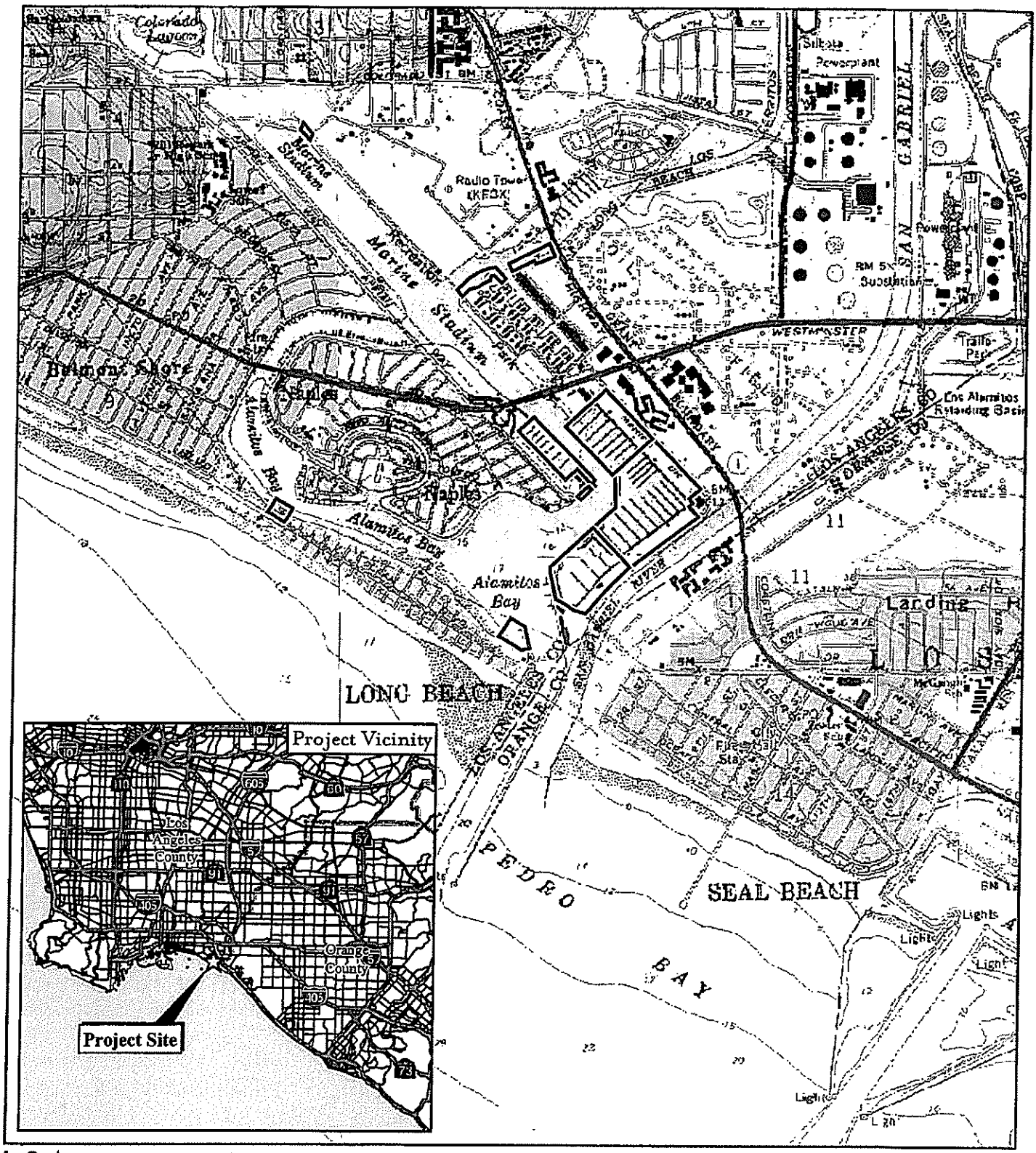
The Marina comprises eight basins; however, the proposed project includes renovations only to Basins 1 through 7. Basin 8 is not included in the project to be addressed in the EIR. Basins 1 through 3 are located adjacent to Marina Drive south of Second Street; Basin 4 is located along East Appian Way on the southeast corner of Naples Island, adjacent to the Long Beach Yacht Club; Basin 5 is located adjacent to the Alamitos Bay Yacht Club on Ocean Boulevard; Basin 7 is located on Ocean Boulevard to the northwest of Basin 5. Basin 6 comprises two separate areas known as Basin 6-South and Basin 6-North. Basin 6-South is located at the northernmost end of Marina Pacifica Drive, and Basin 6-North is located northeast of Basin 6-South, adjacent to the Marina Pacifica Mall on PCH.

PROPOSED PROJECT DESCRIPTION

The proposed Alamitos Bay Marina Rehabilitation project would renovate the existing Marina facilities in Basins 1 through 7 by providing upgraded ADA-compliant facilities and the following: (1) maintenance dredging of the Marina basins to original design depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary; (4) complete dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project also includes the construction of an approximately 600-foot long dock located adjacent to Basin 4 at the southeast corner of the Long Beach Yacht Club. The long dock includes a 200-foot temporary section that would accommodate boaters during the renovations and would be removed upon project completion.

Based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an open space/habitat mitigation site (see Figure 2). This mitigation habitat area will therefore be analyzed in the EIR as a part of the project.

There are currently 1,967 existing slips in Marina Basins 1 through 7; the proposed project includes installation of approximately 1,659 slips, resulting in the loss of approximately 308 slips. As of the date of this notice, there are 1,430 customers in the Marina, so there would be a slip for every existing customer once the renovations are complete.



LSA

LEGEND

Project Locations

FIGURE 1.0

N

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FEET

Alamitos Bay Marina Rehabilitation Project EIR

Project Location Map

SOURCE: USGS 7.5' QUAD - LONG BEACH ('81), LOS ALAMITOS ('81), SEAL BEACH ('81); CALIF.

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09 0034230

The project is anticipated to be completed in 12 phases over approximately 5 years and includes two construction staging areas: one located in the parking lot on Marina Drive near Basin 2; and one located in the parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard.

POTENTIAL ENVIRONMENTAL EFFECTS

Topics to Be Addressed In the EIR

Preliminary analysis and the previously prepared IS/MND for the proposed project indicate that there may be significant adverse environmental impacts related to several environmental topics. These topics will be further addressed in the EIR and mitigation proposed as necessary. In addition, the EIR will also describe and evaluate project alternatives that may reduce or avoid any identified significant adverse impacts of the project. Responses received to this NOP may modify or add to the preliminary assessment of potential issues addressed in the EIR. Topics to be further addressed in the EIR are briefly described below.

Aesthetics. The EIR will address the project's potential effects on any scenic vistas or resources, as well as on the visual character of the project site and immediate area. The EIR will also discuss any light or glare effects that may be created by the proposed project.

Air Quality. The EIR will address the project's potential effects related to applicable air quality plans, criteria pollutant emission thresholds, and whether or not the project would violate any air quality standards. The air quality analysis will address the proposed project's potential to expose sensitive receptors to substantial pollutant concentrations. Potential objectionable odors will also be addressed in the EIR.

Biological Resources. The EIR will address the project's potential effects on any species identified as a candidate, sensitive, or special-status species. The EIR will also address the project's potential effect on any riparian habitat or other sensitive natural community, federally protected wetlands, and the movement of any native resident or migratory fish or wildlife species. The project will also be analyzed to determine potential conflicts with any local policies, ordinances, or adopted habitat conservation plans protecting biological resources.

Cultural and Historical Resources. The EIR will address the project's potential effects on historical, archaeological, and paleontological resources, including the potential to disturb human remains.

Geology and Soils. The EIR will address the project's potential effects related to hazards resulting from rupture of known earthquake faults, seismic activity, liquefaction, landslides, and other unstable soil conditions.

Hazards and Hazardous Materials. The EIR will address the project's potential effects related to hazards resulting from the routine transport, use, or disposal of hazardous materials. Hazards related to foreseeable accidents involving the release of hazardous materials will also be addressed. The project site is not located on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. The EIR will address the project's potential hazards to watercraft safety resulting from the proposed design features and Marina layout.

Because the project is not located within 2 miles of a public airport, within the vicinity of a private airstrip, or adjacent to any wildlands that could create wildland fire hazards, these topics will not be analyzed further in the EIR. Similarly, because the proposed project does not result in any changes to the Marina's circulation system, the project is not anticipated to impact any emergency response or evacuation plans. These topics will not be addressed further in the EIR unless new information identifying them as potential impacts is presented during the scoping process.

Hydrology and Water Quality. The EIR will address the project's potential effects related to water quality standards, waste discharge requirements, groundwater conditions, drainage patterns, runoff quantities, and hazards related to inundation by seiche, tsunami, or mudflow. The EIR will also address the project's potential effects related to the loss of pervious surfaces, discharge of pollutants into storm drains and waterways, and whether or not the project would violate any best management practices of a National Pollution Discharge Elimination System (NPDES) permit.

Although the project site is within the 100-year floodplain,[1] the proposed project does not include housing and would not expose people to risks associated with flooding of residences. In addition, no structures would be placed where downstream properties would be impacted. Therefore, these topics will not be addressed further in the EIR unless new information identifying them as potential impacts is presented during the scoping process.

Land Use and Planning. The EIR will address the project's potential conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the project.

The proposed project would not divide an established community and is not located within any applicable Habitat Conservation Plan or Natural Communities Conservation Plan. Therefore, these topics will not be addressed further in the EIR unless new information identifying them as potential impacts is presented during the scoping process.

Noise. The EIR will address the project's potential effects related to established noise standards, groundborne vibration and noise, and increased ambient noise levels due to the proposed project.

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[1] Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM 060136 0025 C, July 6, 1998).

Because the proposed project is not located within an adopted airport land use plan or within 2 miles of a public airport or private airstrip, the project would not expose people on site to excessive noise levels from airport uses. Therefore, this topic will not be addressed further in the EIR unless new information identifying it as a potential impact is presented during the scoping process.

Recreation. The EIR will address the project's potential to create increased use of existing parks or other recreational facilities, or require the construction or expansion of any recreational facilities in the project vicinity.

Traffic and Circulation. The EIR will address the project's potential to cause an increase in traffic that could be substantial in relation to the existing capacity of the street system, exceed any established level of service standard, increase hazards due to a design feature or incompatible uses, or result in inadequate emergency access or parking capacity.

The project is not anticipated to conflict with any policies, plans, or programs supporting alternative transportation. Additionally, the proposed project would not affect air traffic patterns or create airport-related safety risks. Therefore, these topics will not be addressed further in the EIR unless new information identifying them as potential impacts is presented during the scoping process.

Topics Not Requiring Further Analysis in the EIR

As described below, the following topics will not be analyzed further in the EIR unless new information identifying them as a potential impact is presented during the scoping process.

Agricultural Resources. According to the United States Department of Agriculture National Agricultural Statistics Service, no farmland, agricultural zoning, or Williamson Act contracts exist within or adjacent to the project site. No impact to farmland or agriculture will occur with project implementation, and the proposed project will not result in the conversion of existing farmland uses to nonagricultural uses. Therefore, this topic will not be analyzed further in the EIR unless new information identifying it as a potential impact is presented during the scoping process.

Mineral Resources. The proposed project site is not a mineral resource recovery site designated on a local General Plan, Specific Plan, or other land use plan. The project site contains no known mineral resources that would be of value to the region or the residents of the State of California. Therefore, this topic will not be analyzed further in the EIR unless new information identifying it as a potential impact is presented during the scoping process.

Population and Housing. The proposed project will renovate the existing boating facilities in the Marina and will not propose the construction of any new homes or businesses. The proposed project will not impact or affect the location, distribution, density, or growth rate of populations within the vicinity of the project site. In addition, the proposed project will not create additional permanent employment that could increase the City's population.

There would be no displacement or loss of residential units as a result of the project, and no replacement housing would be necessary. The project site is designated as a Marina use on the City's General Plan and zoning maps and is not designated for residential uses. However, it is possible that people living on their boats ("live-aboards") may claim them as their primary home. Although the proposed project may result in temporary displacement or relocation of these individuals within the Marina, the City has assured its Alamitos Bay Marina customers that they will not be forced out of the Marina due to the project.

The rebuild will result in 1,659 slips in Basins 1 through 7. As of the date of this notice, there are 1,430 customers in the Marina, so there would be a slip for every customer once the renovations are complete. However, should the number of correctly sized slips not be available at project completion, those customers would be placed in alternate slips until the appropriately sized slips become available. Currently, 102 customers have live-aboard permits issued by the Marine Bureau. Because the number of customers who live aboard boats is relatively small, and because boats will be temporarily relocated only during construction, impacts are considered less than significant, and mitigation is not required. Therefore, this topic will not be analyzed further in the EIR unless new information identifying it as a potential impact is presented during the scoping process.

Public Services and Utilities. Implementation of the project would not alter emergency access to the project area, nor would it create additional demand for fire protection, emergency medical, or police services because the overall capacity of the Marina will not be increased. In addition, because the project does not include housing and does not increase population or jobs in the area, it would not contribute to the school-age population or increase the demand for additional parks or any other public facilities. Therefore, this topic will not be analyzed further in the EIR unless new information identifying it as a potential impact is presented during the scoping process

ALAMITOS BAY MARINA NOP

AGENCY COMMENTS

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

May 19, 2009

Ms. Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Dear Ms. Griffiths:

Notice of Preparation of a Draft Environmental Impact Report (Draft EIR) for the Alamitos Bay Marina Rehabilitation 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
LAC090512-12AK
Control Number

Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012-2952
213.922.2000 Tel
metro.net

Metro

May 21, 2009

Ms. Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Dear Ms. Griffiths:

Thank you for the opportunity to comment on the Notice of Preparation (NOP) for the Alamitos Bay Marina Rehabilitation project. This letter conveys recommendations from the Los Angeles County Metropolitan Transportation Authority (Metro) concerning issues that are germane to our agency's statutory responsibilities in relation to the proposed project.

A Traffic Impact Analysis (TIA), with highway, freeway, and transit components, is required under the State of California Congestion Management Program (CMP) statute. The CMP TIA Guidelines are published in the "2004 Congestion Management Program for Los Angeles County", Appendix D. The geographic area examined in the TIA must include the following, at a minimum:

1. All CMP arterial monitoring intersections, including monitored freeway on/off-ramp intersections, where the proposed project will add 50 or more trips during either the a.m. or p.m. weekday peak hour (of adjacent street traffic); and
2. Mainline freeway-monitoring locations where the project will add 150 or more trips, in either direction, during either the a.m. or p.m. weekday peak hour.

Among the required steps for the analysis of development-related impacts to transit are:

3. Evidence that in addition to Metro, all affected Municipal transit operators received the NOP for the Draft EIR;
4. A summary of the existing transit services in the area;
5. Estimated project trip generation and mode assignment for both morning and evening peak periods;
6. Documentation on the assumptions/analyses used to determine the number and percentage of trips assigned to transit;
7. Information on facilities and/or programs that will be incorporated into the development plan that will encourage public transit usage and transportation demand management (TDM) policies and programs; and
8. An analysis of the expected project impacts on current and future transit services along with proposed project mitigation.

Metro looks forward to reviewing the Draft EIR. If you have any questions regarding this response, please call me at 213-922-6908 or by email at chapmans@metro.net. Please send the Draft EIR to the following address:

Metro CEQA Review Coordination
One Gateway Plaza MS 99-23-2
Los Angeles, CA 90012-2952
Attn: Susan Chapman

Sincerely,

Susan Chapman
Program Manager, Long Range Planning

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maziar Movassaghi
Acting Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

May 27, 2009

Ms. Jill Griffiths, Advance Planning Officer
Planning Bureau, Development Services
City of Long Beach
333 W. Ocean Boulevard, 5th Floor
Long Beach, California 90802
Jill_Griffiths@longbeach.gov

NOTICE OF PREPARATION FOR A DRAFT ENVIRONMENTAL IMPACT REPORT FOR ALAMITOS BAY MARINA REHABILITATION PROJECT (SCH# 2008041028), CITY OF LONG BEACH, LOS ANGELES COUNTY

Dear Ms. Griffiths:

The Department of Toxic Substances Control (DTSC) has received your submitted Initial Study and Notice of Preparation (NOP) for a subsequent draft Environmental Impact Report (EIR) No. 507 for the above-mentioned Project. The following project description is stated in your document: "Alamitos Bay Marina (Marina) is located in the southeastern portion of Los Angeles County within the City of Long Beach. The Marina lies adjacent to and northwest (upshore) of the mouth of the San Gabriel River and is accessible primarily from Pacific Coast Highway (PCH) and Second Street, the nearest major intersection. The proposed project encompasses seven of the eight Marina Basins located throughout Alamitos Bay. The proposed project would renovate the existing Marina facilities by providing new docks and pilings, upgraded Americans with Disabilities Act (ADA) compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation. The project also includes the construction of an approximately 600-foot long dock located adjacent to Basin 4 at the southeast corner of the Long Beach Yacht Club. The project site is designated as a Marina use on the City's General Plan and zoning maps." DTSC has the following comments:

1) The EIR should identify the current or historic uses at the project site that may have resulted in a release of hazardous wastes/substances, and any known or potentially contaminated sites within the proposed Project area. For all identified sites, the EIR should evaluate whether conditions at the site may pose a threat to human health or the environment. Following are the databases of some of the pertinent regulatory agencies:

- National Priorities List (NPL): A list maintained by the United States Environmental Protection Agency (U.S.EPA).
- Envirostor: A Database primarily used by the California Department of Toxic Substances Control, accessible through DTSC's website (see below).
- Resource Conservation and Recovery Information System (RCRIS): A database of RCRA facilities that is maintained by U.S. EPA.
- Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS): A database of CERCLA sites that is maintained by U.S.EPA.

- Solid Waste Information System (SWIS): A database provided by the California Integrated Waste Management Board which consists of both open as well as closed and inactive solid waste disposal facilities and transfer stations.
- GeoTracker: A list that is maintained by Regional Water Quality Control Boards.
- Local Counties and Cities maintain lists for hazardous substances cleanup sites and leaking underground storage tanks.

- The United States Army Corps of Engineers, 911 Wilshire Boulevard, Los Angeles, California, 90017, (213) 452-3908, maintains a list of Formerly Used Defense Sites (FUDS).

2) The EIR should identify the mechanism to initiate any required investigation and/or remediation for any site that may be contaminated, and the government agency to provide appropriate regulatory oversight. If necessary, DTSC would require an oversight agreement in order to review such documents. Please see comment No. 11 below for more information.

3) All environmental investigations, sampling and/or remediation for the site should be conducted under a Workplan approved and overseen by a regulatory agency that has jurisdiction to oversee hazardous substance cleanup. The findings of any investigations, including any Phase I or II Environmental Site Assessment Investigations should be summarized in the document. All sampling results in which hazardous substances were found should be clearly summarized in a table.

4) Proper investigation, sampling and remedial actions overseen by the respective regulatory agencies, if necessary, should be conducted at the site prior to the new development or any construction. All closure, certification or remediation approval reports by these agencies should be included in the EIR.

5) If buildings or other structures, asphalt or concrete-paved surface areas are being planned to be demolished, an investigation should be conducted for the presence of other related hazardous chemicals, lead-based paints or products, mercury, and asbestos containing materials (ACMs). If other hazardous chemicals, lead-based paints or products, mercury or ACMs are identified, proper precautions should be taken during demolition activities. Additionally, the contaminants should be remediated in compliance with California environmental regulations and policies.

6) Project construction may require soil excavation or filling in certain areas. Sampling may be required. If soil is contaminated, it must be properly disposed and not simply placed in another location onsite. Land Disposal Restrictions (LDRs) may be applicable to such soils. Also, if the project proposes to import soil to backfill the areas excavated, sampling should be conducted to ensure that the imported soil is free of contamination.

7) Human health and the environment of sensitive receptors should be protected during the construction or demolition activities. If it is found necessary, a study of the site and a health risk assessment overseen and approved by the appropriate government agency and a qualified health risk assessor should be conducted to determine if there are, have been, or will be, any releases of hazardous materials that may pose a risk to human health or the environment.

8) If it is determined that hazardous wastes are, or will be, generated by the proposed operations, the wastes must be managed in accordance with the California Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (California Code of Regulations, Title 22, Division 4.5). If it is determined that hazardous wastes will be generated, the facility should also obtain a United States Environmental Protection Agency Identification Number by contacting (800) 618-6942. Certain hazardous waste treatment processes or hazardous materials, handling, storage or uses may require authorization from the local Certified Unified Program Agency (CUPA). Information about the requirement for authorization can be obtained by contacting your local CUPA.

9) If during construction/demolition of the project, the soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented.

10) If the site was used for agricultural, livestock or related activities, onsite soils and groundwater might contain pesticides, agricultural chemical, organic waste or other related residue. Proper investigation, and remedial actions, if necessary, should be conducted under the oversight of and approved by a government agency at the site prior to construction of the project.

11) DTSC can provide guidance for cleanup oversight through an Environmental Oversight Agreement (EOA) for government agencies, or a Voluntary Cleanup Agreement (VCA) for private parties. For additional information on the EOA or VCA, please see www.dtsc.ca.gov/ SiteCleanup/Brownfields, or contact Ms. Maryam Tasnif-Abbasi, DTSC's Voluntary Cleanup Coordinator, at (714) 484-5489.

If you have any questions regarding this letter, please contact Mr. Rafiq Ahmed, Project Manager, at rahmed@dtsc.ca.gov or by phone at (714) 484-5491.

Sincerely,

Greg Holmes, Unit Chief
Brownfields and Environmental Restoration Program

cc: Governor's Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, California 95812-3044
state.clearinghouse@opr.ca.gov

CEQA Tracking Center
Department of Toxic Substances Control
Office of Environmental Planning and Analysis
1001 I Street, 22nd Floor, M.S. 22-2
Sacramento, California 95814
nritter@dtsc.ca.gov

CEQA #2601

PRELIMINARY NOP COMMENTS FROM THE CALIFORNIA DEPARTMENT OF FISH AND GAME MAY 2009

Preliminary Comments for (NOP) Alamitos Bay Marina Project

General Comments:

The DEIR should include detailed discussions addressing the following marine related issues:

1. A complete discussion of the purpose and need for, and description of, the proposed project, including all phases and areas and access routes to the construction and staging areas.

2. A complete recent list, description and biological assessment of the flora and fauna within and next to the project area, with particular emphasis upon identifying State or Federally listed rare, threatened, endangered, or proposed candidate species, California Species of Special Concern and/or State Protected or Fully Protected species, and any locally unique or rare species and habitats and any sensitive habitats. These species and habitats should be protected from project related impacts. The DEIR should include, at a minimum, the following data.

    - The Department's California Natural Diversity Data Base in Sacramento should be contacted at (916) 327-5960 to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code. Species to be addressed should include all those which meet the CEQA definition for endangered, rare, or threatened species (see CEQA Guidelines, Section 15380).

    - Discussions regarding habitat use of the Project area by sensitive species, including seasonal variations, emphasizing the area of impact on those species, using acceptable species-specific survey procedures as determined through consultation with the Department. Focused species-specific surveys, conducted in conformance with established protocols at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required.

    - Impacts to migratory wildlife affected by the Project should be fully evaluated.

Specific Comments:

1. A thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect natural resources. All facets of the Project should be included in this assessment. The DEIR should include, at a minimum, the following data.

- Specific acreage and descriptions of the types of marine substrate, intertidal, wetland, and other sensitive habitats that will or may be affected by the proposed project or project alternatives. Maps and tables should be used to summarize such information.

- Discussions regarding the regional setting, pursuant to the CEQA Guidelines, Section 15125(a), with special emphasis on resources that are rare, sensitive or unique to the region and habitats that are important to listed species that would be affected by the project. For example, Alamitos Bay soft bottom is considered potential eelgrass habitat and the California least tern, *Sternula antillarum brownii,* a fully protected endangered species, may potentially use many parts of Alamitos Bay for foraging. This discussion is critical to Alamitos Bay assessments of environmental impacts.

- Detailed discussions, including both qualitative and quantitative analyses, of the potentially affected listed and sensitive species of invertebrate, fish, birds, mammals, reptiles and plants and their habitats. Emphasis should be on the proposed project site area of impact, and alternative sites, including information pertaining to the species local status and distribution. The anticipated or real impacts of the project on these species and habitats should be fully addressed.

- Discussions regarding indirect project impacts on biological resources, including marine resources, nearby public lands, open space, adjacent natural habitats, or riparian ecosystems. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated and provided. Include discussions of potential adverse impacts from lighting, shading, noise, human activity, exotic species, erosion and drainage.

- A discussion of both short and long term noise and vibration impacts as it pertains to fish, macroinvertebrates, birds and marine mammals/reptiles.

- A discussion of potential adverse impacts changes on drainage patterns from the proposed project. Shoreline erosion conditions before, during, and after construction, and the fate of eroded materials should be studied and discussed. Include a discussion of how the proposed project could influence water currents, flushing, sedimentation, and normal sediment transport.

- A discussion of potential water quality impacts associated with the construction, operation, and decommissioning of the facility to include excessive turbidity or situations resulting from dredging or other project activities; thermal discharges; chemical discharges (including nutrients); sanitary discharges; litter; cleaning agents and wash down waters; heavy metals and other toxic materials; deck drainage; gray water; desalination

and fire control system; test water discharges; and bilge water discharges both for the vessels and the facilities. A discussion to include the types of materials that will be used at the facility and aboard the ships including a description of the spill response and contingencies that will be utilized in the event of a spill as it relates to marine resources which include fish, invertebrates, birds, habitat and mammals.

- An analysis of cumulative effects, as described under CEQA Guidelines, Section 15130. General and specific plans, and past, present, and anticipated future projects, should be analyzed concerning their impacts on similar plant communities and wildlife habitats.

2. The DEIR should include a discussion of the mitigation measures to be implemented for adverse project related impacts on sensitive habitats, plants, and animals. Mitigation measures should emphasize avoidance, and where avoidance is infeasible, reduction to minimize project impacts. For unavoidable impacts, mitigation should be addressed in detail along with proposed mitigation sites and collaboration with the resources agencies. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts on rare, threatened, or endangered species. For the marine aspects of the project we would expect, at a minimum, an eelgrass and eelgrass habitat avoidance plan, a marine bird protection plan, and an oil spill contingency plan.

3. The DEIR should include a discussion of compliance with the California Endangered Species Act (CESA) if the project has the potential to impact state listed species. A CESA Permit must be obtained, if the project has the potential to result in "take" of species of plants or animals listed under CESA, either during construction or over the life of the project. CESA Permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit.

4. Descriptions and analyses of a range of alternatives to ensure that alternatives to the proposed project are fully considered and evaluated. The analyses must include alternatives that avoid or otherwise reduce impacts to sensitive biological resources. Specific alternative locations should be evaluated in areas of lower resource sensitivity where appropriate.

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street

12th Floor

Los Angeles, California

90017-3435

t (213) 236-1800

f (213) 236-1825

www.scag.ca.gov

June 9, 2009

Ms. Jill Griffiths
Advance Planning Officer
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
Jill_Griffiths@longbeach.gov

RE: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Alamitos Bay Marina Rehabilitation Project [SCAG No. I20090242]

Dear Ms. Griffiths,

Thank you for submitting the **Notice of Preparation of a Draft Environmental Impact Report for the Alamitos Bay Marina Rehabilitation Project [SCAG No. I20090242]** to the Southern California Association of Governments (SCAG) for review and comment. SCAG is the authorized regional agency for Inter-Governmental Review of Programs proposed for federal financial assistance and direct development activities, pursuant to Presidential Executive Order 12372 (replacing A-95 Review). Additionally, pursuant to Public Resources Code Section 21083(d) SCAG reviews Environmental Impact Reports of projects of regional significance for consistency with regional plans per the California Environmental Quality Act Guidelines, Sections 15125(d) and 15206(a)(1). SCAG is also the designated Regional Transportation Planning Agency and as such is responsible for both preparation of the Regional Transportation Plan (RTP) and Regional Transportation Improvement Program (RTIP) under California Government Code Section 65080 and 65082.

SCAG staff has reviewed this project and determined that the proposed project is regionally significant per California Environmental Quality Act (CEQA) Guidelines, Sections 15125 and/or 15206. The proposed project would renovate the existing Alamitos Bay Marina facilities by providing new docks and pilings, upgraded Americans with Disabilities Act (ADA) compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation.

Policies of SCAG's Regional Transportation Plan (RTP) and Compass Growth Visioning (CGV) that may be applicable to your project are outlined in the attachment. The RTP, CGV, and table of policies can be found on the SCAG web site at: http://scag.ca.gov/igr. For ease of review, we would encourage you to use a side-by-side comparison of all SCAG policies with a discussion of the consistency, non-consistency or non-applicability of the policy and supportive analysis in a table format (example attached).

The attached policies are meant to provide guidance for considering the proposed project within the context of our regional goals and policies. We also encourage the use of the SCAG List of Mitigation Measures extracted from the RTP to aid with demonstrating consistency with regional plans and policies. **Please provide a minimum of 45 days for SCAG to review the Draft EIR and associated plans when these documents are available.** If you have any questions regarding the attached comments, please contact Bernard Lee at (213) 236-1800 or leeb@scag.ca.gov. Thank you.

Sincerely,

Jacob Lieb, Manager
Assessment, Housing & EIR

DOCS# 152100

COMMENTS ON THE NOTICE OF PREPARTION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE ALAMITOS BAY MARINA REHABILITATION PROJECT – SCAG NO. I20090242

PROJECT LOCATION

Alamitos Bay Marina is located in the southeastern portion of Los Angeles County within the City of Long Beach. The Marina lies adjacent to and northwest (upshore) of the mouth of the San Gabriel River and is accessible primarily from Pacific Coast Highway (PCH) and Second Street, the nearest major intersection. The proposed project encompasses seven of the eight Marina basins located throughout Alamitos Bay.

PROJECT DESCRIPTION

The City is the Lead Agency for the project and will prepare the EIR in accordance with the requirements of CEQA and the State CEQA Guidelines. In early 2008, the city prepared an Initial Study/Mitigated Negative Declaration (IS/MND) for the Alamitos Bay Marina Rehabilitation Project. Mitigation measures to reduce potentially significant effects to less than significant levels were incorporated into the project, and the IS/MND was circulated for public review from April 4, 2008 to May 5, 2008. Comments were received from reviewing agencies and issues were raised in the comments received that have yet to be resolved. Therefore, due to an abundance of caution, the City has elected to elevate the level of CEQA review to an EIR.

The Marina comprises eight basins located throughout Alamitos Bay. As previously stated, the proposed project to be analyzed in the EIR includes renovations to Basins 1 through 7; Basin 8 is not part of the rehabilitation. The proposed project would renovate the existing Marina facilities by providing new docks and pilings, upgraded Americans with Disabilities Act (ADA) compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation.

Based on preliminary analysis contained in the IS/MND, mitigation for potential impacts to eelgrass would be required. Therefore, two possible mitigation sites have been identified by the City. The first alternative is a City-owned parcel of land adjacent to the northeast end of Marine Stadium, where a mitigation habitat area would be created. The second alternative is a portion of the existing dock area at the northernmost end of Basin 6 North. The site adjacent to Marine Stadium is the preferred alternative because it minimizes the loss of slips. This preferred mitigation site will therefore be analyzed as part of the EIR project.

CONSISTENCY WITH REGIONAL TRANSPORTATION PLAN

Regional Growth Forecasts

The DEIR should reflect the most current SCAG forecasts, which are the 2008 RTP (May 2008) Population, Household and Employment forecasts. The forecasts for your region, subregion, and city are as follows:

Adopted SCAG Regionwide Forecasts[1]

	2010	2015	2020	2025	2030	2035
Population	19,418,344	20,465,830	21,468,948	22,395,121	23,255,377	24,057,286
Households	6,086,986	6,474,074	6,840,328	7,156,645	7,449,484	7,710,722
Employment	8,349,453	8,811,406	9,183,029	9,546,773	9,913,376	10,287,125

Adopted GCCOG Subregion Forecasts[1]

	2010	2015	2020	2025	2030	2035
Population	2,143,979	2,190,471	2,236,253	2,280,588	2,323,438	2,364,199
Households	591,028	607,440	623,862	636,482	648,759	658,696
Employment	762,987	776,857	785,715	796,129	807,251	817,891

Adopted City of Long Beach Forecasts[1]

	2010	2015	2020	2025	2030	2035
Population	503,251	517,226	531,854	545,980	559,598	572,614
Households	169,739	175,415	181,397	186,067	190,576	194,287
Employment	185,938	189,987	192,573	195,614	198,860	201,967

1. The 2008 RTP growth forecast at the regional, subregional, and city level was adopted by the Regional Council in May 2008. City totals are the sum of small area data and should be used for advisory purposes only.

The **2008 Regional Transportation Plan (RTP)** also has goals and policies that are pertinent to this proposed project. This RTP links the goal of sustaining mobility with the goals of fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to residents affected by socio-economic, geographic and commercial limitations. The RTP continues to support all applicable federal and state laws in implementing the proposed project. Among the relevant goals and policies of the RTP are the following:

Regional Transportation Plan Goals:

RTP G1 *Maximize mobility and accessibility for all people and goods in the region.*
RTP G2 *Ensure travel safety and reliability for all people and goods in the region.*
RTP G3 *Preserve and ensure a sustainable regional transportation system.*
RTP G4 *Maximize the productivity of our transportation system.*
RTP G5 *Protect the environment, improve air quality and promote energy efficiency.*
RTP G6 *Encourage land use and growth patterns that complement our transportation investments.*
RTP G7 *Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.*

GROWTH VISIONING

The fundamental goal of the **Compass Growth Visioning** effort is to make the SCAG region a better place to live, work and play for all residents regardless of race, ethnicity or income class. Thus, decisions regarding growth, transportation, land use, and economic development should be made to promote and sustain for future generations the region's mobility, livability and prosperity. The following "Regional Growth Principles" are proposed to provide a framework for local and regional decision making that improves the quality of life for all SCAG residents. Each principle is followed by a specific set of strategies intended to achieve this goal.

Principle 1: Improve mobility for all residents.

GV P1.1 *Encourage transportation investments and land use decisions that are mutually supportive.*
GV P1.2 *Locate new housing near existing jobs and new jobs near existing housing.*
GV P1.3 *Encourage transit-oriented development.*
GV P1.4 *Promote a variety of travel choices*

Principle 2: Foster livability in all communities.

GV P2.1 *Promote infill development and redevelopment to revitalize existing communities.*
GV P2.2 *Promote developments, which provide a mix of uses.*
GV P2.3 *Promote "people scaled," walkable communities.*
GV P2.4 *Support the preservation of stable, single-family neighborhoods.*

Principle 3: Enable prosperity for all people.

GV P3.1 *Provide, in each community, a variety of housing types to meet the housing needs of all income levels.*
GV P3.2 *Support educational opportunities that promote balanced growth.*
GV P3.3 *Ensure environmental justice regardless of race, ethnicity or income class.*
GV P3.4 *Support local and state fiscal policies that encourage balanced growth*
GV P3.5 *Encourage civic engagement.*

Principle 4: Promote sustainability for future generations.

GV P4.1 *Preserve rural, agricultural, recreational, and environmentally sensitive areas*
GV P4.2 *Focus development in urban centers and existing cities.*
GV P4.3 *Develop strategies to accommodate growth that uses resources efficiently, eliminate pollution and significantly reduce waste.*
GV P4.4 *Utilize "green" development techniques*

CONCLUSION

As the clearinghouse for regionally significant projects per Executive Order 12372, SCAG reviews the consistency of local plans, projects, and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

All feasible measures needed to mitigate any potentially negative regional impacts associated with the proposed project should be implemented and monitored, as required by CEQA. Refer to the SCAG List of Mitigation Measures for additional guidance.
The list can be found at: http://www.scag.ca.gov/igr/documents/SCAG_IGRMMRP_2008.pdf

SUGGESTED SIDE BY SIDE FORMAT - COMPARISON TABLE OF SCAG POLICIES

For ease of review, we would encourage the use of a side-by-side comparison of all SCAG policies with a discussion of the consistency, non-consistency or not applicable of the policy and supportive analysis in a table format. All policies and goals must be evaluated as to impacts. Suggested format is as follows:

The complete table can be found at: http://www.scag.ca.gov/igr/

- Click on ***"Demonstrating Your Project's Consistency With SCAG Policies"***
- Scroll down to ***"Table of SCAG Policies for IGR"***

SCAG Regional Transportation Plan Goals and Compass Growth Visioning Principles		
Regional Transportation Plan Goals		
Goal/ Principle Number	**Policy Text**	**Statement of Consistency, Non-Consistency, or Not Applicable**
RTP G1	Maximize mobility and accessibility for all people and goods in the region.	***Consistent:*** *Statement as to why* ***Not-Consistent:*** *Statement as to why* *or* ***Not Applicable:*** *Statement as to why*
RTP G2	Ensure travel safety and reliability for all people and goods in the region.	***Consistent:*** *Statement as to why* ***Not-Consistent:*** *Statement as to why* *or* ***Not Applicable:*** *Statement as to why*
RTP G3	Preserve and ensure a sustainable regional transportation system.	***Consistent:*** *Statement as to why* ***Not-Consistent:*** *Statement as to why* *or* ***Not Applicable:*** *Statement as to why*
Etc.	Etc.	Etc.

From: Jill Griffiths [Jill.Griffiths@longbeach.gov]
Sent: Friday, June 12, 2009 8:39 PM
To: Grace Kato
Cc: Mark Sandoval; Ashley Davis; Renee Escario
Subject: Re: Alamitos Bay Marina Rehabilitation Project

Ms. Kato:

Thank you for your email request. Please provide the State Lands Commission's comments as soon as possible.

Jill Griffiths
Advance Planning Officer

Building A Better Long Beach
LONG BEACH DEVELOPMENT SERVICES

333 West Ocean Blvd.
Long Beach, CA 90802
T: 562.570.6191
F: 562.570.6068
http://lbds.longbeach.gov/

"Grace Kato" <KATOG@slc.ca.gov>

06/10/2009 11:26 AM

To <Jill_griffiths@longbeach.gov>
cc
Subject Alamitos Bay Marina Rehabilitation Project

Ms. Griffiths:
Staff of the State Lands Commission would like to provide comments on the NOP for the DEIR for the Alamitos Bay Marina Rehabilitation Project but will be unable to do so until Friday, June 12. We request an extension of the comment deadline to June 12 so that our comments may be included. Any consideration on this request will be greatly appreciated. Thank you.
Grace

Grace M. Kato
Public Land Management Specialist
California State Lands Commission
(916) 574-1227
katog@slc.ca.gov

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
Relay Service From TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: **(916) 574-1227**
Contact FAX: **(916) 574-1324**

AUG 03 2009

File Ref: G5-03

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Dear Ms. Griffiths:

SUBJECT: Notice of Preparation of a Draft Environmental Impact Report for the Alamitos Bay Marina Rehabilitation Project

Staff of the California State Lands Commission (CSLC) reviewed the Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Alamitos Bay Marina Rehabilitation Project.

The facts pertaining to the proposed project, as we understand them, are these:

The proposed Alamitos Bay Marina Rehabilitation project would renovate the existing Marina facilities by providing updated Americans With Disabilities Act-compliant facilities and the following: (1) maintenance dredging of the Marina basins to original design depths; (2) replacing and/or upgrading 13 restrooms; (3) repairing the sea wall where necessary; (4) complete dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project also includes the construction of an approximately 600-foot long dock that would accommodate boaters during the renovations and would be removed upon project completion.

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable rivers, sloughs, lakes, etc. The CSLC has residual and review authority over Public Trust Resources on tide and submerged lands legislatively granted in trust to local jurisdictions (Public Resources Code §6301 and §6306).

The project area involves sovereign lands, which are legislatively granted to the city of Long Beach pursuant to Chapter 102, Statutes of 1925, and as amended, with oil

and gas rights reserved to the State. The City, as a Trustee of these sovereign lands, has been charged with the day-to-day administration of these sovereign granted lands and must ensure that the uses proposed are consistent with the provisions of the relevant granting statutes and the Public Trust. Because of this grant, the City need not apply to the CSLC for any entitlement to conduct its project, but should contact all other agencies having jurisdiction over the project for appropriate authorizations.

The NOP states the rebuild will result in 1,659 slips in Basins 1-7 with 102 berthholders currently holding live-aboard permits issued by the Marine Bureau and that there will be no displacement or loss of residential units as a result of the project, and no replacement housing would be necessary. It is the position of the CSLC that live-aboard use of granted tidelands and submerged lands is inconsistent with granting statutes and the Public Trust and therefore, except in very limited circumstances, inappropriate. As such, please advise how the city intends to remedy this situation.

CSLC staff appreciates the opportunity to comment. If you have any questions concerning the CSLC's jurisdiction, please do not hesitate to contact Grace Kato, Public Land Management Specialist at the number referenced above or via email at katog@slc.ca.gov.

Sincerely,

Colin Connor, Assistant Chief
for Barbara Dugal, Chief
Land Management Division

cc: Grace Kato

ALAMITOS BAY MARINA NOP

INTERESTED PARTIES COMMENTS

"Mark Turpin" <mturpin@kktia.com>

05/22/2009 11:24 AM

To <Jill_Griffiths@longbeach.gov>

cc

Subject Alamitos Bay Marina Rehabilitation Project

Dear Ms. Griffiths,

I have read a copy of the Notice of Preparation for the Project noted above and have a couple of questions:

1. The Project Information and map (Figure 1.0) notes a site at the northeast end of Marine Stadium that would be converted into a Space/Habitat Mitigation Site. What exactly does that mean and can you describe what that entails?
2. The attached map (Figure 1.0) also shows a Project Location at or near the current LB Sailing Center on the Peninsula. What work is planned for that location?

Unfortunately, I will be unable to attend the meeting scheduled for May 28th, but I am very interested in this project, for several reasons. My son is a member of LB Junior Crew. I do have some safety concerns relating to the proposed dock extension near the Long Beach Yacht Club, as that area is pretty congested, when the rowing center has any regattas. The proposed dock extension certainly won't help to alleviate that congestion, and could certainly make it worse. However, maybe there is some way to mitigate that issue? I believe that issue should be addressed, but by reasonable people. I understand that some people you hear from on this issue may not be...

Lastly, I have spoken with both Mayor Foster and Councilman DeLong on different occasions about trying to give local Long Beach businesses a better chance in competing for City projects. As you can see from my email signature, I am a Principal in a Long Beach architecture firm and have provided Councilman DeLong's office with some small amounts of Pro-Bono work in the past.

Our firm has extensive experience designing ADA/Title-24 projects, and we are definitely interested in providing the City with a proposal for any architectural work associated with this Project. In fact, I am currently a Commissioner on the LB Disabled Access Appeals Board.

I realize that you may not be involved with the selection of consultants, but hoped that you might be willing to "put a bug" in the ear of whomever is when the time comes. Even if our firm isn't awarded the architectural portions of this Project, there certainly are a number of very qualified firms in Long Beach. Our firm is registered on the City RFP website, so I should at least receive notification, when

the RFP is issued.

Best regards,
Mark

VIA EMAIL

Mark Turpin
Principal

KKT_sig_LB 60%

Long Beach + Simi Valley

O 562.216.5244
F 562.216.5249
C 562.221.0585

mturpin@kktia.com
www.kktia.com

Please note my new email address: mturpin@kktia.com

"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>

05/28/2009 03:10 PM

Please respond to commonsense-sayssavethefence@fastmail.fm

To jill.griffiths@longbeach.gov

cc

Subject JILL:QUICK FOLLOW UP ON LACK OF VARASITY OF MR SANDOVAL AS REVEALED BY PUBLIC RECIRD: LETTER TO CALIFORNIA ATTORNEY GENERAL RE:PERMISSIVE CULTURE AMONG LONG BEACH OFFICIALS OF CORRUPTION OF TRUTH AS EVIDENCED BY

Scroll down see LIE#'S 1-6
LBG

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: danmcgill@fastechus.com
Date: Mon, 20 Apr 2009 19:22:27 -0700
Subject: Fwd: Fwd: LETTER TO CALIFORNIA ATTORNEY GENERAL RE:PERMISSIVE CULTURE AMONG LONG BEACH OFFICIALS OF CORRUPTION OF TRUTH AS EVIDENCED BY

3 0f 3 RES IPSA LOQUITUR

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: cposner@coastal.ca.gov
Date: Wed, 15 Apr 2009 09:50:16 -0700
Subject: Fwd: LETTER TO CALIFORNIA ATTORNEY GENERAL RE:PERMISSIVE CULTURE AMONG LONG BEACH OFFICIALS OF CORRUPTION OF TRUTH AS EVIDENCED BY

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: cc0164@staplescopycenter.com
Date: Sun, 12 Apr 2009 22:32:35 -0700
Subject: LETTER TO CALIFORNIA ATTORNEY GENERAL RE:PERMISSIVE CULTURE AMONG LONG BEACH OFFICIALS OF CORRUPTION OF TRUTH AS EVIDENCED BY

INCONTROVERTIBLE PUBLIC RECORDS WHICH SHOW MR.MARK SANDOVAL HAS LIED NO LESS THAN 6 TIMES ON SEMINAL ISSUES REGARDING PUBLIC SAFETY.YET,HIS KEPT IN OFFICE BY:

City Manager Pat West-new office
Director of Parks Recreation and Marine:Phil Hester
Mayor Robert Foster;new to elected office,relatively new to Long Beach
Councilman Gary De Long:New to elected office;relatively new to Long Beach lacks DNA
to be effective.

SEE ATTACHED EVIDENCE OF SANDOVAL PATTERN OF LIES:

1.LIE:Long Beach Press Telegram:May 17,2007
Beach Week Section:Page 6"Column two(2) Paragraph 1.

2.LIE:Mark Sandoval's e-mail to California Coastal Commission's Mr. Chuck Posner 12/21/2007

3.LIE:February 4,2008 letter to: Patrick West City Manager:From Phil Hester
for Mayor and Members of Council.Page 1-Final Paragraph Re;Mr. Richard
Miller.You are invited to call Mr. Miller at (562) 498 2595 who will
1.Confirm HIS OPPOSITION TO REMOVAL OF FENCING
2.Confirm that he-so expressed his opposition,in a pointed conversation
with Mr.Sandoval upon learning of Mr.Sandoval's false statement.

4.LIE:July 17,2008 ZONING HEARING (08-02-01).Failed to tell Zoning Administrator
of the pointed conversation Mr. Miller had with Mr. Sandoval re Mr. Millers
opposition to fence removal.

5.LIE:Repeated #4-at the Planning Commission dealing with the fence issue.(both
#4 and # 5 are on tape.

(there are numerous others lies by Mr. Sandoval on the tapes of the above
meetings and with the February 4,2008 letter-but require circa 2 page
preface)

6.LIE: Mr.Sandoval lied to Doug Krikorian reporter 2/10/09 Long Beach Telegram telling
the Mr.Kriokian.."We contacted a firm and they told us that historic designation
does not extend beyond the Davies bridge""See attached letter from City Attorney
stating"..Mr.Sandoval does not have any responsive records.We included your request
to include and public records the City might have that relate to your request"
SEE PRESS TELEGRAM ARTICLE:A SIG ALERT ON LONG BEACH WATER FRONT 2-10-09.

Mr.Attorney General you will note the comment by Doug Krikorian that Mayor Foster
was not aware of the issue which gave rise to the explosive article which begins...
"HELL HAVE NO FURRY LIKE A WOMAN ROWER SCORNED"

Mr.Foster was the one that made the request to the City Manager that engendered
the above February 4,2008 letter(in the above#3)..after several appearance at
City Council by me.Page 3 of the letter deals with the issue of the water course
which had been discussed a number of times.Indeed,it was raised by we .yet again.
mid summer when Council approved a contract to scope and design.

Congenital,chromic,habitual,pathological LIAR??It matters not which.It is hoped that you will agree
that such conduct is injurious to and ill serves the public good as do those who embrace and
tolerate such incidious conduct.

You are invited to read the Press Telegram Sunday.April 12,2009 front page:WETLANDS DEAL...
to see where the developing culture of the conduct outlined above leads to.

It will also help you to better understand the two specific cases attached which so invite the
DIRECT INTERVENTION OF YOUR OFFICE IN THE INTEREST OF PUBLIC SAFETY-SO AT RISK,AS A RESULT OF
BUT NOT LIMITED TO, 1-6.

Respectfully,

Laurence B. Goodhue
United States Post Office Box 14464
Long Beach

California
90803

--

cacrewood8@fastmail.fm

--

cacrewood8@fastmail.fm

--

cacrewood8@fastmail.fm

--

cacrewood8@fastmail.fm

"commonsense-sayssavthefence@fastmail.fm"
<cacrewood8@fastmail.fm>

To jill.griffiths@longbeach.gov

cc

Subject FROM LAURENCE B. GOODHUE: EIR COMMENTS FOR ALAMITOS BAY MARINA REBUILD PLAN:

05/29/2009 01:26 AM

Please respond to commonsense-sayssavethefence@fastmail.fm

Jill:
Good to see you again.
Having had the opportunity to now read the NOTICE OF PREPARATION-there is considerable
more comfort as to where we are in the process.The initial consternation was engendered
over thinking that this was THE formal EIR period and would close in but 12days--which would
clearly not have been enough time to respond in details relative to:
1.Assuring the 1932 rowing course would not be impregnated,or reduced
2.Assuring the 1968 rowing course--which is the current course will not be impregnated or reduced.

NO 1.is protected both by Historical Land Mark Statues and Article 3 of the Coastal Act
No.2.is protected by the Article 3 of the Coast Act.

My suggestion would be for the consultant contact Long Beach Engineering Department.
Ask them to check Mr. Lon Maddox notes and records.Should the consultants wish to hire
their own surveyors-I will be glad to walk them over the area and can put then with 8-10
inches of the start and finish lines for the 1932 course.CLEARLY VISIBLE SURVEY MARKERS
FOR THE 1968 course are already in place.

The course width are well defined and memorialized in the 1932 Olympiad

agreement between
all parties.John Van Blom(562) 434 1521 would be your best source for data as to the need
dimensions sufficient to not dp injury to the integrity of the course.

The public safety issues relative to a enlarged new long dock will be set forth and transmitted
to you before June 11,2009

Note please the comments relative to the double slip concept you brought to my attention last
week at the planning commission meeting--which are set forth below.

Doubt not also the import of micro managing the mix of large and small boat facilities.History
demonstrates that the confidence and trust level of the administration of those is far from high=
indeed almost non existent!!!

Thanks gain for your help.

Larry
(323)474 4446

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: cacrewood8@fastmail.fm
Date: Mon, 25 May 2009 21:42:17 -0700
Subject: EIR COMMENTS FOR ALAMITOS BAY MARINA REBUILD PLAN:

Obviously having a Manager of a Marine Bureau who is not a boater;is seriously lacking in any meaningful understanding of matters marine or maritime safety issues,has taken an exponential toll on the marina infrastructure.

The public record as of this date indicates there is general agreement with the need to do the needed repairs and any updates which technology has yielded ---AS LONG AS IT IS WITHIN THE EXISTING FOOT PRINT.

It is striking to note that the only person advocating going outside the foot print which would be

1.In direct violation of City and State Land Mark statues.
2.In direct violation of Coastal Law-vis a via-the de facto elimination of
two of the protected rowing course lanes.
3.A constricting of the waterways in other areas-just south of the course
as one rounds the corner at Long Beach Yacht Club.

Is said Manager who is not a boater.

Yet it should be noted that Included in those that have offered their views relative to
negative impacts a larger foot print will have on the rowing dynamic are nationally and internationally recognized experts in designing and building
rowing courses and venues.(This individual does not include himself among those
experts who design and built the venues--my perspective comes from rowing many
venues=and COMMON SENSE)

It should also be noted that just because one has rowed-elsewhere--does not mean
they comprehend this venue and the safety issues inherent in an already constricted
waterway.This is brought into sharp focus by the fact that one of the consultants
for the City,who had briefly rowed elsewhere-was almost as clueless as to the safety
issues in the instant case---until he was walked through the issues.

The concept of reducing the number of facilities for small boats to make room
for larger boats=HAS BEEN TRIED AGAIN AND AGAIN BY THE ERRANT MANGER.It is
in direct violation of Coastal Law(see attached from Coastal Staff).

The ruse of building "double" slips which could hold two smaller or one large boat-is just that.IT IS A RUSE OF THE FIRST ORDER.ONE HAS TO BUT LOOK AT THE PAST HISTORY OF THE ERRANT MANAGER AND THE EQUALLY COMPLICIT MANAGEMENT ABOVE HIM.

It would only be a matter of time until the smaller boats would be displaced.
IT IS IMPORTANT TO KEEP IN MIND THE CURRENT MANAGER,PER WHAT IS REVEALED IN
THE PUBLIC RECORD IS EITHER A:
L.Chronic.
2.Habitual
3.Pathological
L I A R

and can not be trusted.
Equally disturbing the current City Management from the Director of Parks
Recreation and Marine to the Mayor is complicit in said patterns of lies and deceit(see attached public record).Not only to they embrace without reservation the pattern of deceit and lies of the Manager of the Marine Bureau-but the Mayor also is revealed to be no stranger to lying.(See

Press Telegram Article on Rowing Course and February 4,2009 memo)

The only possible way the double slip plan could be approved is if the City were to put up a $5,000,000.00(five million dollar bond--paid out of the general fund) which the City would forfeit if it violated the policy which precludes alternations in agreed ratio of smaller to larger vessels.Under the terms of the bond,the Managers responsible for the violation would be responsible for repaying the City.Liens on pensions of the current complicit City Management would become effective upon securing the Bond.

The larger boats yield a significant increase in square footage of toxic bottom paint negatively inherently intensifying destruction of marine habit already under siege by reduction of sunlight-vis a via the increased
square footage of the larger vessels.

Laurence B Goodhue
Long Beach
United States Post Office Box
14464
Long Beach
90803

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cacrewood8@fastmail.fm

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cacrewood8@fastmail.fm

"J. Van Blom" <j.vanblom@verizon.net>

06/08/2009 11:56 PM

To <Jill_Griffiths@longbeach.gov>

cc "AC duPont2" <acdupont4@gmail.com>, <John_Nunn@cox.net>, <johnson.dk@hotmail.com>, "Don Bogart" <jdbogart@self-serv.net>, "Larry Hambleton" <chief.ham@verizon.net>, "Jeff Jones" <windsurfcenter@juno.com>, "Jim Litzinger" <jim@intercat.com>

Subject Comments for Alamitos Bay Marina EIR

To: Jill Griffiths, Planning Bureau, Developmental Services, City of Long Beach

The following environmental issues need to be addressed in the Alamitos Bay Marina Project - Environmental Impact Report (EIR):

Historic. Regarding the proposed eelgrass mitigation site at the northeast end of the Marine Stadium: If this site is selected, measures should be taken to preserve the finish line pole for the 2,000 meter rowing course in the mitigation area, due to the historic significance of the pole (1968, 1976, and 1984 Olympic Trials, and used continuously for regular rowing events).

Aesthetics. The proposed new long dock addition on the southeast side of the Long Beach Yacht Club will have a significant negative impact on the scenic open water vista presently available from the land. This promontory is a destination point for those who want to enjoy the scenery of Alamitos Bay. It provides one of the few open vistas from the sidewalks of Naples Island. Walkers, joggers, and cyclists regularly stop along the railing above the seawall in this area to enjoy the open view of the bay, which is currently unobstructed by slips, docks, or boats. Additionally, the proposed mooring of the eleven Catalina 37 sailboats on the existing Long Beach Yacht Club long dock will also have a significant negative impact on the scenic open water vista available at the site, detracting from a clear view of the water.

Recreation. The proposed narrowing of the channel between Basins 3 and 4 will negatively impact the recreational use of Alamitos Bay. The narrowing of the channel will concentrate the considerable boat traffic of the channel and make conditions hazardous and intimidating for the increasing numbers of recreational small craft users of the bay, such as kayakers, paddle boarders, rowers, float fishermen, and dingy sailors, as well as for swimmers. This, in effect, will decrease the recreational opportunities of the bay.

Water Quality. Expanding the Alamitos Bay Marina will increase the surface area of the boat hulls under water. The increase in the surface area means an increased surface area of bottom paint, and an increase in the negative environmental effects that the additional anti-fouling paint would have.

Submitted by:
John Van Blom
240 Euclid Avenue
Long Beach, CA 90803
562 438 7963
j.vanblom@verizon.net

"Don Bogart" <jdbogart@self-serv.net>

06/10/2009 02:07 PM

To <Jill_Griffiths@longbeach.gov>

cc "'AC duPont2'" <acdupont4@gmail.com>, <John_Nunn@cox.net>, <johnson.dk@hotmail.com>, "'Larry Hambleton'" <chief.ham@verizon.net>, "'Jim Litzinger'" <jim@intercat.com>, "'J. Van Blom'" <j.vanblom@verizon.net>, "Todd Mehl" <tdmehl@gmail.com>, "'Katrin Gleie'" <katrin_gleie@hotmail.com>, <peter@charter.net>, "'Gabrielle Weeks'" <gabrielle@workwithweeks.com>, "'Mark Turpin'" <mturpin@kktia.com>, <jhendricks2@affinitygroup.com>, "'Keith Johnson'" <johnson.dk@hotmail.com>, <eventsbysabrina@yahoo.com>

Subject Comments for Alamitos Bay Marina EIR

To: Jill Griffiths, Planning Bureau, Developmental Services, City of Long Beach

The following issues need to be addressed in the Alamitos Bay Marina Project - Environmental Impact Report (EIR):

Misleading Drawings Are Being Used to Describe the Project

The spaces for *de facto* boats tied at the ends of the existing docks aren't shown on the project's drawings. This is misleading because it makes it appear that the lengthening of these docks will not adversely affect Marine Stadium and marina traffic flows. The drawings of the existing and proposed docks should show the dock ends as they are actually used today - with boats stern tied, and double and triple side tied to the dock ends such that the boats jut out into Marine Stadium and the waterway. Otherwise the impacts of the new docks and *de facto* boats on the waterway and Marine Stadium's six race lanes cannot be properly considered and judged.

Davies Bridge Waterway Approach Traffic Safety Analysis

A study of the boat traffic under Davies Bridge should be conducted to determine the chances of boats colliding beneath and while approaching and departing the navigable water underneath the bridge on warm summer weekends. The study should include the circular traffic of boats being launched and retrieved from the Davies Launch Ramp and should consider the water space currently unavailable because of boats end tied to existing docks. The analysis should take boat types, speeds, and maneuverability into account. The results of this first study should then be applied to the reduced

waterway area that would be available for navigation after the proposed docks are installed with the dock end spaces filled by boats as they are today. A new probability of collision should be calculated reflecting the decreased area available for navigation.

Alternatives to Using Marine Stadium for Dock Space

A determination should be made as to why the Marine Stadium waterway should be narrowed by the installation of larger docks in Basins 3 and 4 instead of placing these larger docks in volumes of water which appear to be available in Basins 1 and 2. It appears that there is additional space for larger docks at the ends of quays 4, 5, 12, 13, 14, 15, and 23, 24, and maybe 25. If more space is required for bigger boats, why shouldn't this already vacant space be used? Why should waterway space currently dedicated to youth athletics be squandered for stationary docks and yachts? A lot of youthful energy is productively burned off, teamwork learned, and college opportunities accessed in the waterways the Marine Bureau wants to turn into yacht parking spaces.

Safety Analysis at the Waterway Corner by the Long Beach Yacht Club

Since many sailing races appear to end at the northeast corner of the Long Beach Yacht Club, a compilation of from-the-water line-of-sight views at the intersection of the converging east-west and north-south waterways at this corner should be generated. It should show the views opposing traffic would have from various elevations above water level at this corner. A similar compilation should be generated with the proposed new north-south running dock at the end of Appian Way. The second compilation should include projections of various types of vessels tied to the proposed new dock. An analysis should then be conducted to show the effects of the proposed new dock and parked boats on safety at this busy corner. The analysis should include visibilities of opposing boat traffic, boat speeds, reaction times and maneuverabilities. The analysis should calculate the probabilities of collisions of various vessels at various speeds as they are now and what those probabilities would be with the new dock with yachts tied to it.

Diesel Pile Driver Noise Pollution

What will the effects be of pile driver noise in decibels on the community in the vicinity of the marina. A map showing the predicted noise intensities across the community should be generated. A time schedule for the noise producing operations should be furnished to the community. An analysis of the noise's effects on wildlife such as herons, and ocean mammals should be generated.

Diesel Pile Driver Smoke

An analysis of the fine particulate smoke emitted from diesel pile drivers and its effect on community residents should be included in the EIR.

Federal Agencies

The EIR should indicate if Federal agencies such as the Coast Guard and Corp of Engineers agree with the proposed narrowing of Alamitos Bay waterways.

100 Year Storm Impacts

A hydraulic analysis should be generated to show if the narrowing of Marine Stadium with new docks and boats would affect water flows from a 100 year storm. Would the new docks cause additional flooding in the communities around the Marina? The analysis should address the flow of rubbish from storm control channels into Alamitos Bay and how this rubbish with the new docks and boats would impact flooding during a 100 year storm.

Submitted by:

Don and Judy Bogart
5786 Campo Walk
Long Beach, CA 90803
562 439-3119
jdbogart@self-serv.net

"John Nunn" <john_nunn@cox.net>

06/10/2009 02:43 PM

To "'Don Bogart'" <jdbogart@self-serv.net>, <Jill_Griffiths@longbeach.gov>

cc "'AC duPont2'" <acdupont4@gmail.com>, <johnson.dk@hotmail.com>, "'Larry Hambleton'" <chief.ham@verizon.net>, "'Jim Litzinger'" <jim@intercat.com>, "'J. Van Blom'" <j.vanblom@verizon.net>, "'Todd Mehl'" <tdmehl@gmail.com>, "'Katrin Gleie'" <katrin_gleie@hotmail.com>, <peter@charter.net>, "'Gabrielle Weeks'" <gabrielle@workwithweeks.com>, "'Mark Turpin'" <mturpin@kktia.com>, <jhendricks2@affinitygroup.com>, "'Keith Johnson'" <johnson.dk@hotmail.com>, <eventsbysabrina@yahoo.com>

Subject RE: Comments for Alamitos Bay Marina EIR

Dear All,

Attached is my submission.

John Nunn

From: Don Bogart [mailto:jdbogart@self-serv.net]
Sent: Wednesday, June 10, 2009 2:08 PM
To: Jill_Griffiths@longbeach.gov
Cc: 'AC duPont2'; John_Nunn@cox.net; johnson.dk@hotmail.com; 'Larry Hambleton'; 'Jim Litzinger'; 'J. Van Blom'; Todd Mehl; 'Katrin Gleie'; peter@charter.net; 'Gabrielle Weeks'; 'Mark Turpin'; jhendricks2@affinitygroup.com; 'Keith Johnson'; eventsbysabrina@yahoo.com
Subject: Comments for Alamitos Bay Marina EIR

To: **Jill Griffiths, Planning Bureau, Developmental Services, City of Long Beach**

The following issues need to be addressed in the Alamitos Bay Marina Project - Environmental

Impact Report (EIR):

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Submitted by:
Don and Judy Bogart
5786 Campo Walk
Long Beach, CA 90803
562 439-3119
jdbogart@self-serv.net

6/10/09

To: Ms. Jill Griffiths, Planning Bureau, Developmental Services, City of Long Beach

Subject: Alamitos Bay Marina Project- Scoping for Environmental Impact Report

The EIR should include the following considerations:

History: The 2,000 m Olympic Venue was built specifically for the rowing events in the 1932 Olympics. The 2,000 m Marine Stadium is designated as a California Historic Landmark. It is unique as the only Olympic Rowing Venue in the United States specifically built for the Olympics. It is one of only two Olympic Rowing Venues in United States still in use today.

Consistency with the California Coastal Act: Restricting navigable waterways open to all types of boating recreation in order to park large expensive yachts, does not comply with the terms of the California Coastal Act. The Coastal Act protects the access and use of Waterways for all economic levels. This is a case of taking away waterway from all less expensive boating uses for the purpose of parking the most expensive yachts.

Restriction of Water Circulation: Maintaining good water circulation in the Alamitos Bay Marina is vital to the water quality in the Marina, as well as in the Colorado Lagoon. By restricting surface flow in the main channel by up to 90 ft., water circulation will be impaired. The Colorado Lagoon will be especially impacted because water circulation is already less inadequate in the Lagoon.

Safety: Reducing the main channel width 70-93 feet for 500 m, squeezes traffic into the center of the channel. In the summer and on holiday weekends, hundreds of Boaters of various sizes, types and speeds are forced together in a situation that will compromise safety. End and side tieing of boats on the ends of the new boat slips will further reduce channel width and further compromise safety.

Marine Life: Currently the marina is home to a diverse population of fish and water birds. In addition we are frequently visited by Dolphins and Sea Lions. Restriction of the channel will have a negative impact on all types of marine life.

Navigation: the U.S. Army Corps of Engineers may believe that this project is an undue restriction of the Navigatable Waterway. Since virtually all Marina traffic must use the main channel under Davies Bridge, adequate access to and egress from the marina is impared.

John Nunn
Member- Long Beach Sports Council
310-541-2689
john_nunn@cox.net

6/12/09

To: Ms. Jill Griffiths, Planning Bureau, Developmental Services, City of Long Beach

Subject: Alamitos Bay Marina Project- Scoping for Environmental Impact Report

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History: The 2,000 m Olympic Venue was built specifically for the rowing events in the 1932 Olympics. The 2,000 m Marine Stadium is designated as a California Historic Landmark. It is unique as the only Olympic Rowing Venue in the United States specifically built for the Olympics. It is one of only two Olympic Rowing Venues in United States still in use today.

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Navigation: the U.S. Army Corps of Engineers may believe that this project is an undue restriction of the Navigable Waterway. Since virtually all Marina traffic must use the main channel under Davies Bridge, adequate access to and egress from the marina is impaired.

I request that a full EIR report be done to ensure that all significant aspects are considered.

John Nunn
Member- Long Beach Sports Council
310-541-2689
john_nunn@cox.net

Keith Johnson <johnson.dk@hotmail.com>

06/10/2009 10:29 PM

To <jill_griffiths@longbeach.gov>
cc Mark Sandoval <mark_sandoval@longbeach.gov>, Phil Hester <phil_hester@longbeach.gov>
Subject Alamitos Bay Rebuild EIR

Hello Jill,

Thank you for allowing the various stakeholders of Alamitos Bay/Marine Stadium an opportunity to have our
concerns reviewed in the upcoming EIR. As stated in the "Public Scoping Meeting" held May 28, 2009, it was
expressed that one concern is as if 100 of the same concerns were put on review so I won't repeat what I assume has
already been sent in. The following are my concerns as a multi-water user of Alamitos Bay.

1. Launch ramp congestion, safety, blight and silt buildup caused by the location of the "Maintance Dock".

2. Mother's Beach sand/silt shoal that is getting bigger and bigger extending out into the channel and causing the swim
buoys to be placed in an unsafe area in the path of all water users.

3. Opinion by the City on its position on the boundaries of Marine stadium. If they differ from what is already on file when
declared an official Historical landmark in 1994, than please provide documentation.

Sincerely,
Keith Johnson
Life Time Resident of Long Beach

Comments on the Notice of Preparation for the Alamitos Bay Marina Rehabilitation Project

Need for Better Public Notice to Marina Tenants

Attendance at the NOP meeting was poor, with very few boat owners attending. Future EIR notices (availability of draft EIR for comment, draft EIR hearing, etc.) and notices of any other meetings concerning the marina rebuild should be provided in the monthly four-page newsletter that the Marine Bureau sends to each marina tenant enclosed with the monthly slip bill

The Need to Reconsider Project Goals

The current economic downturn coupled with the need to consider project emissions of Green House Gases (GHGs) in this EIR should trigger a reconsideration of the slip mix and overall goals in building a new marina for the next 50+ years. The current proposed project was apparently based upon projections of continued increases in boat sizes. This assumption probably is no longer appropriate. Discretionary spending on boats has decreased as the availability of credit has tightened and personal savings have increased. This is likely to be a permanent condition which will lead to purchases of fewer boats and smaller boats when a purchase is made. Increased future fuel costs for powerboats is likely to lead to downsizing of powerboats and increased use of sailboats, electric boats and human-powered small boats. Kayaks, canoes, rowing shells and other human-powered boats have been the fastest growing segment of water recreation in Alamitos Bay in recent years. Improved facilities for these small craft should be included in the marina project. Enhancement of opportunities for the use of sailboats, electric boats, kayaks, canoes, rowing shells and other human-powered boats will reduce the GHG emissions attributable to the marina project.

The EIR Needs to Fully Discuss Adverse Impacts on Recreational Uses

The NOP does not reference the public controversy concerning the proposed expansion of the marina footprint that will impact the historic meter rowing course used in the 1932 Olympics, used for training for other Olympics and currently used today for rowing practice and competitions. The enlarged marina footprint would result in a narrowing of the channel and loss of open water for all boaters, including canoeists, kayakers, powerboats and sailboats, as well as competitive rowers. The EIR must fully discuss these adverse impacts.

The NOP also does not acknowledge that the proposed project, by eliminating slips for smaller boats and increasing the number of slips for larger boats, will clearly reduce recreational opportunities for persons with small boats. Carrying out a project that only benefits owners of large boats will conflict with at least two statutory Coastal Act policies. The Coastal Act requires that:

- lower cost visitor and recreational facilities shall be protected and provided

  (Public Resources Code Section 30213)

- "Increased recreational boating use of coastal waters shall be encouraged . . . ***by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors*** . . . . "

  (Public Resources Code Section 30224, emphasis added.)

The proposed project, as currently configured, does not further either of these policies. The proposed project only proposes to enhance recreational opportunities for for larger sailboats and powerboats by creating additional larger slips. It would reduce the recreational opportunities for all other boaters by reducing the overall number of slips and greatly reducing the number of small slips, without providing any replacement dry storage. These conflicts between the proposed project and Coastal Act policies must be fully discussed in the EIR. It is unclear how findings (findings of overriding consideration) accepting the significant loss of small boats slips could properly be adopted where there is plenty of excess marina parking area that could be used for creation of a dry storage yard.

The Proposed Project Should be Revised or the EIR Should Discuss an Alternative Project Having Lesser Adverse Impacts on Water Recreation

The proposed project should be revised or the EIR should include an alternative project that better promotes Coastal Act recreational policies and reduces environmental impacts. Such a revised project or project alternative would include the following elements:

1) rebuild the marina ***within*** the existing marina footprint

2) provide dry storage facilities to, at a minimum, replace ***all*** of the small slips that are to be eliminated (below the original 1,997 slips), including:

   - a new mast-up dry storage facility for larger sailboats (with masts too tall to fit under the Second Street bridge) with a hoist, located in the marina parking lot next to Marina Shipyard

   - additional dry storage space for powerboats and smaller sailboats in Marine Stadium

3) enhance the recreational opportunities for other small boats by:

   - improving beach storage for Hawaiian canoes, Dragon boats and other human-powered boats on Mother's Beach and/or in Marine Stadium, including new restrooms, classroom and secure storage facilities

   - improve Marine Stadium bathrooms and other Marine Stadium facilities

   - provide prime-time access for use of Marine Stadium to rowers, kayakers, Dragon boats, Hawaiian canoes and other human-powered boats on at least an equal level with power boat use; adjust the power/non-power use schedules based upon the actual number of users over time

Adoption of this alternative instead of the proposed project would provide greater benefits and lesser impacts than the proposed project. The loss of eel grass would be minimized because the marina footprint would be unchanged. Keeping the same marina footprint would also moot crowding and safety issues with kayakers and rowers and preserve the historic 2000 meter rowing course. Adding new dry storage areas would mitigate the loss of slips for small boaters, increase City project revenues and promote Coastal Act policies. Building the new dry storage

portion first would reduce the need to provide replacement slips during construction, as some small boat owners opt for less expensive dry storage costs instead of slip fees. Enhancing recreational opportunities for small human-powered boats would further promote Coastal Act policies by providing recreational opportunities for a broad range of Long Beach area residents and mitigate the GHG emissions from the project.

The Gangways of the Already Demolished Slips Should be Rented as Side-ties Pending Completion of the CEQA Process and Project Approval

All of the slips, approximately 189 slips, on Gangways 23, 24 and 25 have already been demolished, apparently in anticipation of project approval under the 2008 Mitigated Negative Declaration previously prepared for the project. It is unclear why this demolition was accomplished without first obtaining a Coastal Development Permit. Although the slips are gone, the gangways themselves could be rented on an interim basis as side-ties for all sizes of boats. The mix of boats utilizing the side-ties could be an excellent reality check on the appropriate mix of new slip sizes need for the rebuilt marina. Allowing the gangways to sit empty for many more months or years, as the CEQA and approval process proceeds, is a missed opportunity to raise revenue for the City that could be used to help fund the rebuild.

Thank you for your consideration of these comments.

Very truly yours,

Dated: June 8, 2009

William L. Waterhouse

119 Bay Shore
Long Beach, CA 90803

SCOPING PUBLIC MEETING COMMENT CARDS

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: WILBUR W LORBEER

ADDRESS: 5320 E 2nd STREET SUITE 9 CITY: LONG BEACH ZIP: 90803

EMAIL ADDRESS: W.LORBEER@GMAIL.COM

REPRESENTING: _____

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

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

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
(562) 570-6191

Jill_Griffiths@longbeach.gov

In the EIR Report, there are many issues which should be addressed concerning the channel between the 2nd Street Bridge and the turning area in front of the LBYC.

As a boat owner in Basin 4, I have am always concerned with the traffic issues when leaving and returning to my slip.

It is congested and crowed thus a serious safety hazard considering the launch ramp, the Boatyard, the Sea Scout Base and the LBYC as well as boats from Basin 3, all accessing this area. Now you add all the other marine use traffic such as kayakers, electric boats, standing paddle boarders, jet skiers and fishermen in float tubes. Add to this the rowers paddling backwards, not able to see where they are going , the outriggers, traveling over the speed limit (not maneuverable), it is a accident waiting to happen.

I'm sure there have been many accidents because I have been familiar with many close calls.

When you are coming out of one of the fairways, it is impossible to see any watercraft that is low to the water and watercraft do not have the ability to stop abruptly.

It should be considered to have extended times for the rowers in Marine Stadium and possibly along Bayshore Drive which is inaccessible to large sail and power boats.

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: DON BOGART

ADDRESS: 5786 CAMPO WALK CITY: LONG BEACH ZIP: 90803

EMAIL ADDRESS: jdbogart@self-serv.net

REPRESENTING: SELF

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

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

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
(562) 570-6191

Jill_Griffiths@longbeach.gov

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

THE PROPOSED CHANGES IMPACT TRAINING AREAS FOR LONG BEACH STUDENT ATHLETES.

MARINE STADIUM SHOULD NOT BE CONVERTED INTO DOCK AREAS.

Please comment by June 10, 2009

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: LARRY GOODHUE

ADDRESS: USPO BOX 14464 CITY: LONG BEACH ZIP: 90803

EMAIL ADDRESS: CALGREENBLOOD AT EARTHLINK-NET

REPRESENTING: SOCIE

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

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

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WILL CLICK OVER EMAIL ON COMMENTS - TONIGHT AT THE CENTER ON MARINE SAFETY -

PROTECTING REMAINING COURSE

Please comment by June 10, 2009

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: Jeff LaBarre

ADDRESS: 10350 Almaya Ave, #11 CITY: Los Angeles ZIP: 90064

EMAIL ADDRESS: jlabarre@coxcastle.com

REPRESENTING: Hurricane Gulch Yacht Club

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

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

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Planning Bureau, Development Services
City of Long Beach
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(562) 570-6191

Jill_Griffiths@longbeach.gov

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

As a representative of a group of boaters who frequently visit via boat to Alamitos Bay either on day trips as well as overnight some of our concerns are:

1) Access to temporary short term (2hrs) tie ups during the construction phase. This would include the long dock by Khory's as well as ~~dock~~ small boat access to the Marina Pacifica long dock.

2) Access to the water based facilities of our fellow Yacht Clubs.

3) Acces during construction to the short term small boat dock near Schooner or Lafe's West Marine.

Please comment by June 10, 2009

PLEASE SEND PDF OF BOARDS

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: MICHELLE MOWERY

ADDRESS: 4826 MATNEY AVENUE CITY: LB ZIP: 90807

EMAIL ADDRESS: MOWERYCON@AOL.COM

REPRESENTING: SELF

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

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

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
(562) 570-6191

Jill_Griffiths@longbeach.gov

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

- CONTAMINATION - HAZARDOUS MATERIALS
- IMPACTS TO HABITAT / LOSS
- SILT
- NOISE
- IMPACTS TO VIEWS / AESTHETICS
- PUBLIC ACCESS
- TRAFFIC IMPACTS
- REFERENCE / INCLUDE PREVIOUS CITY STUDIES RELATIVE TO ALAMITOS BAY INCLUDING AB MASTER PLAN
- MITIGATION OF IMPACTS
- INCLUSION OF VARIOUS ALTERNATIVES INCLUDING PROPOSED PLAN, EXISTING FOOTPRINT, NO BUILD
- SAFETY
- LOSS OF OPEN SPACE

Please comment by June 10, 2009

email: j.vanblom@verizonnet

PUBLIC SCOPING MEETING (562) 438-7963
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: Joan Van Blom

ADDRESS: 240 Euclid Avenue CITY: Long Beach ZIP: 90803

EMAIL ADDRESS: j.vanblom@verizon.net

REPRESENTING: Recreational rowing

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

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

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
(562) 570-6191

Jill_Griffiths@longbeach.gov

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

Recreation – Narrowing of the channel between Basins 3 + 4 significantly impacts the recreation area for the rowing community, which includes adapted rowers, junior rowers, collegiate rowers, masters rowers, and rowers training for national and international events.
Narrowing this major rowing course significantly changes the opportunities available for recreational rowers to train regularly and to race.
It also impacts the recreation opportunities for stand-up paddlers and paddle boarders who often use the more protected waters along the Basin on Naples island. Increasing the footprint of Basins 3+4 eliminates protected waters for those circling Naples island. Rowing + padding around the (Naples) island is a popular recreational activity.

Please comment by June 10, 2009

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: Joan Van Blom

ADDRESS: 240 Euclid Avenue CITY: Long Beach ZIP: 90803

EMAIL ADDRESS: j.vanblom@verizon.net

REPRESENTING: Recreational small boaters - lifelong resident

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

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

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
(562) 570-6191

Jill_Griffiths@longbeach.gov

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

Recreation - The increased footprint of Basins 3 and 4 and the proposed new long dock on the other side of the yacht club will negatively impact recreational opportunities because the narrower waterways make it more hazardous and difficult to safely maneuver - thus decreasing the pleasure of small recreational watercraft users.

Decreasing navigable waterways by covering up water by the yacht club's southeast seawall detracts from the pleasure of human powered watercraft users - paddlers, kayakers, rowers, canoers, float fishermen, who use this area heavily for recreation.

Suggested change - Put a long dock, if needed, somewhere where it does not negatively impact the ability for small watercraft users to enjoy recreation in the Bay.

Please comment by June 10, 2009

PUBLIC SCOPING MEETING
ALAMITOS BAY MARINA REHABILITATION PROJECT
Thursday, May 28, 2009

NAME: Joan Van Blom

ADDRESS: 240 Euclid Avenue CITY: Long Beach ZIP: 90803

EMAIL ADDRESS: j.vanblom@verizon.net

REPRESENTING: Human-powered small watercraft, Recreation user

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

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

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802
(562) 570-6191

Jill_Griffiths@longbeach.gov

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

Aesthetics - The additional long dock ~~on~~ proposed for the current seawall along the LB Yacht club's southeast side significantly impairs the aesthetics of Alamitos Bay in that area. Walkers, cyclers, strollers gather to gaze by the at the bay at that point every day. The long dock for exclusive use of the Yacht Club and the accompanying boat and people traffic change the aesthetics.

Covering up current open water with a dock destroys the aesthetic aspects of the bay for viewers and for recreational boaters enjoying the open waterways. Suggested change - No long dock by yacht club not needed.

Additionally -

Narrowing the waterways by increasing the footprint of the slips in Basin 3 and Basin 4 significantly destroys the aesthetic aspect of Alamitos Bay. Instead of navigating a wide channel, boaters will need to navigate a narrower area - dodging docked boats, other boaters, and slips.

Please comment by June 10, 2009

APPENDIX B

AIR QUALITY CALCULATIONS

Alamitos Bay Marina - Phase 1

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase 1a: Remove Existing Gangways and Piles																
Diesel Crane	8 hours/day	1 unit	0.637 lb/hr	5.1	0.188 lb/hr	1.5	1.695 lb/hr	13.6	0.001 lb/hr	0.0	0.076 lb/hr	0.6	0.067 lb/hr	0.5	186.500 lb/hr	1,492.0
Gas Skiffs	2 hours/day	2 unit	37.667 lb/hr	150.7	16.521 lb/hr	66.1	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.6	0.139 lb/hr	0.6	25.432 lb/hr	101.7
Heavy Duty Trucks	40 miles	6 trips per day	6.733 gr/VMT	3.6	0.867 gr/VMT	0.5	13.366 gr/VMT	7.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.3	0.416 gr/VMT	0.2	####### gr/VMT	793.7
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				169.0		68.4		21.9		0.1		1.6		1.3		3,318.6
Phase 1b: Install New Gangways																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	8 hours/day	1 unit	0.475 lb/hr	3.8	0.131 lb/hr	1.0	1.241 lb/hr	9.9	0.001 lb/hr	0.0	0.054 lb/hr	0.4	0.048 lb/hr	0.4	132.500 lb/hr	1,060.0
Heavy Duty Trucks	40 miles	2 trips per day	6.733 gr/VMT	1.2	0.867 gr/VMT	0.2	13.366 gr/VMT	2.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	####### gr/VMT	264.6
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				16.0		2.0		16.9		0.0		0.8		0.6		2,628.8
Phase 1c: Install Temporary Docks																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	4 hours/day	1 unit	0.475 lb/hr	1.9	0.131 lb/hr	0.5	1.241 lb/hr	5.0	0.001 lb/hr	0.0	0.054 lb/hr	0.2	0.048 lb/hr	0.2	132.500 lb/hr	530.0
Heavy Duty Trucks	40 miles	5 trips per day	6.733 gr/VMT	3.0	0.867 gr/VMT	0.4	13.366 gr/VMT	5.9	0.014 gr/VMT	0.0	0.481 gr/VMT	0.2	0.416 gr/VMT	0.2	####### gr/VMT	661.4
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				15.8		1.7		15.4		0.0		0.7		0.5		2,495.6

Phase 1d: Dredging																
Diesel Clam Bucket	8 hours/day	1 unit	0.848 lb/hr	6.8	0.212 lb/hr	1.7	2.105 lb/hr	16.8	0.002 lb/hr	0.0	0.082 lb/hr	0.7	0.073 lb/hr	0.6	248.300 lb/hr	1,986.4
Diesel Tender	8 hours/day	1 unit	0.558 lb/hr	4.5	0.186 lb/hr	1.5	1.953 lb/hr	15.6	0.002 lb/hr	0.0	0.140 lb/hr	1.1	0.125 lb/hr	1.0	163.400 lb/hr	1,307.2
Heavy Duty Trucks	40 miles	0 trips per day	6.733 gr/VMT	0.0	0.867 gr/VMT	0.0	13.366 gr/VMT	0.0	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	0.0
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				20.9		3.6		33.7		0.0		1.9		1.6		4,224.8
Phase 1e: Seawall and Rip Rap Repair																
Gas Skiffs	2 hours/day	1 unit	37.667 lb/hr	75.3	16.521 lb/hr	33.0	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.3	0.139 lb/hr	0.3	25.432 lb/hr	50.9
Heavy Duty Trucks	40 miles	12 trips per day	6.733 gr/VMT	7.1	0.867 gr/VMT	0.9	13.366 gr/VMT	14.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.5	0.416 gr/VMT	0.4	######## gr/VMT	1,587.4
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				92.2		34.4		15.4		0.0		0.9		0.7		2,569.5

Phase 1f: Restroom Replacement																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	40 miles	4 trips per day	6.733 gr/VMT	2.4	0.867 gr/VMT	0.3	13.366 gr/VMT	4.7	0.014 gr/VMT	0.0	0.481 gr/VMT	0.2	0.416 gr/VMT	0.1	######## gr/VMT	529.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				23.0		4.5		26.2		0.0		1.7		1.4		3,263.5
Phase 1g: Parking Lot Asphalt																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Paving Equipment	4 hours/day	2 unit	0.469 lb/hr	3.8	0.156 lb/hr	1.2	1.033 lb/hr	8.3	0.008 lb/hr	0.1	0.071 lb/hr	0.6	0.063 lb/hr	0.5	69.000 lb/hr	552.0
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	30.300 lb/hr	121.2
Heavy Duty Trucks	40 miles	2 trips per day	6.733 gr/VMT	1.2	0.867 gr/VMT	0.2	13.366 gr/VMT	2.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	######## gr/VMT	264.6
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				20.1		3.7		22.0		0.1		1.5		1.2		2,494.6

Peak Emissions for Phase			CO	169.0	ROC	68.4	NOx	33.7	SOx	0.1	PM10	1.9	PM2.5	1.6	CO2	4,224.8
	Threshold			550		75		100		150		150		55		NA

Alamitos Bay Marina - Phase 1a

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase a: Demolition																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	2 hours/day	1 unit	0.555 lb/hr	1.1	0.173 lb/hr	0.3	1.382 lb/hr	2.8	0.001 lb/hr	0.0	0.077 lb/hr	0.2	0.069 lb/hr	0.1	89.600 lb/hr	179.2
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	69.000 lb/hr	276.0
Heavy Duty Trucks	40 miles	18 trips per day	6.733 gr/VMT	10.7	0.867 gr/VMT	1.4	13.366 gr/VMT	21.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.8	0.416 gr/VMT	0.7	######## gr/VMT	2,381.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				26.4		3.8		33.1		0.0		1.7		1.4		4,301.9
Phase b: Reroute Utilities																
Backhoe	2 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Bobcat	2 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	40 miles	18 trips per day	6.733 gr/VMT	10.7	0.867 gr/VMT	1.4	13.366 gr/VMT	21.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.8	0.416 gr/VMT	0.7	######## gr/VMT	2,381.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				26.9		4.2		31.7		0.0		1.7		1.4		4,398.7
Phase c: Excavation																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Heavy Duty Trucks	40 miles	18 trips per day	6.733 gr/VMT	10.7	0.867 gr/VMT	1.4	13.366 gr/VMT	21.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.8	0.416 gr/VMT	0.7	######## gr/VMT	2,381.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				28.1		4.2		40.1		0.0		2.0		1.7		4,563.5

Phase d: Salvage Stone																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Heavy Duty Trucks	40 miles	18 trips per day	6.733 gr/VMT	10.7	0.867 gr/VMT	1.4	13.366 gr/VMT	21.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.8	0.416 gr/VMT	0.7	######## gr/VMT	2,381.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				28.1		4.2		40.1		0.0		2.0		1.7		4,563.5
Phase e: Rip Rap Construction																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Heavy Duty Trucks	40 miles	18 trips per day	6.733 gr/VMT	10.7	0.867 gr/VMT	1.4	13.366 gr/VMT	21.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.8	0.416 gr/VMT	0.7	######## gr/VMT	2,381.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				24.3		3.0		31.3		0.0		1.4		1.2		3,937.9
Phase f: Sidewalk Construction																
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	40 miles	18 trips per day	6.733 gr/VMT	10.7	0.867 gr/VMT	1.4	13.366 gr/VMT	21.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.8	0.416 gr/VMT	0.7	######## gr/VMT	2,381.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				28.0		4.5		36.1		0.0		1.8		1.5		4,581.1

Peak Emissions for Phase			CO	28.1	ROC	4.5	NOx	40.1	SOx	0.0	PM10	2.0	PM2.5	1.7	CO2	4,581.1
	Threshold			550		75		100		150		150		55		NA

Alamitos Bay Marina - Phases 2 and 3

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase 2a: Remove Existing Gangways and Piles																
Gas Skiffs	2 hours/day	2 unit	37.667 lb/hr	150.7	16.521 lb/hr	66.1	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.6	0.139 lb/hr	0.6	25.432 lb/hr	101.7
Diesel Crane	8 hours/day	1 unit	0.637 lb/hr	5.1	0.188 lb/hr	1.5	1.695 lb/hr	13.6	0.001 lb/hr	0.0	0.076 lb/hr	0.6	0.067 lb/hr	0.5	186.500 lb/hr	1,492.0
Heavy Duty Trucks	40 miles	6 trips per day	6.733 gr/VMT	3.6	0.867 gr/VMT	0.5	13.366 gr/VMT	7.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.3	0.416 gr/VMT	0.2	####### gr/VMT	793.7
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				169.0		68.4		21.9		0.1		1.6		1.3		3,318.6
Phase 2b: Install New Gangways																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	8 hours/day	1 unit	0.475 lb/hr	3.8	0.131 lb/hr	1.0	1.241 lb/hr	9.9	0.001 lb/hr	0.0	0.054 lb/hr	0.4	0.048 lb/hr	0.4	132.500 lb/hr	1,060.0
Heavy Duty Trucks	40 miles	2 trips per day	6.733 gr/VMT	1.2	0.867 gr/VMT	0.2	13.366 gr/VMT	2.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	####### gr/VMT	264.6
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				16.0		2.0		16.9		0.0		0.8		0.6		2,628.8
Phase 2c: Dredging																
Diesel Clam Bucket	8 hours/day	1 unit	0.848 lb/hr	6.8	0.212 lb/hr	1.7	2.105 lb/hr	16.8	0.002 lb/hr	0.0	0.082 lb/hr	0.7	0.073 lb/hr	0.6	248.300 lb/hr	1,986.4
Diesel Tender	8 hours/day	1 unit	0.558 lb/hr	4.5	0.186 lb/hr	1.5	1.953 lb/hr	15.6	0.002 lb/hr	0.0	0.140 lb/hr	1.1	0.125 lb/hr	1.0	163.400 lb/hr	1,307.2
Heavy Duty Trucks	400 miles	22 trips per day	6.733 gr/VMT	130.6	0.867 gr/VMT	16.8	13.366 gr/VMT	259.3	0.014 gr/VMT	0.3	0.481 gr/VMT	9.3	0.416 gr/VMT	8.1	####### gr/VMT	29,102.7
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				151.6		20.4		293.0		0.3		11.2		9.7		33,327.5

Phase 2d: Seawall and Rip Rap Repair																
Gas Skiffs	2 hours/day	1 unit	37.667 lb/hr	75.3	16.521 lb/hr	33.0	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.3	0.139 lb/hr	0.3	25.432 lb/hr	50.9
Heavy Duty Trucks	40 miles	48 trips per day	6.733 gr/VMT	28.5	0.867 gr/VMT	3.7	13.366 gr/VMT	56.6	0.014 gr/VMT	0.1	0.481 gr/VMT	2.0	0.416 gr/VMT	1.8	######## gr/VMT	6,349.7
Worker Commute (Light Duty Auto)	40 miles	12 trips per day	3.430 gr/VMT	3.6	0.150 gr/VMT	0.2	0.420 gr/VMT	0.4	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	349.2
<TOTAL>				107.4		36.9		57.0		0.1		2.3		2.0		6,749.7
Phase 2e: Restroom Replacement																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	40 miles	4 trips per day	6.733 gr/VMT	2.4	0.867 gr/VMT	0.3	13.366 gr/VMT	4.7	0.014 gr/VMT	0.0	0.481 gr/VMT	0.2	0.416 gr/VMT	0.1	######## gr/VMT	529.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				23.0		4.5		26.2		0.0		1.7		1.4		3,263.5
Phase 2f: Parking Lot Asphalt																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Paving Equipment	4 hours/day	2 unit	0.469 lb/hr	3.8	0.156 lb/hr	1.2	1.033 lb/hr	8.3	0.008 lb/hr	0.1	0.071 lb/hr	0.6	0.063 lb/hr	0.5	69.000 lb/hr	552.0
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	30.300 lb/hr	121.2
Heavy Duty Trucks	40 miles	2 trips per day	6.733 gr/VMT	1.2	0.867 gr/VMT	0.2	13.366 gr/VMT	2.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	######## gr/VMT	264.6
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				20.1		3.7		22.0		0.1		1.5		1.2		2,494.6

Peak Emissions for Phase		CO	169.0	ROC	68.4	NOx	293.0	SOx	0.3	PM10	11.2	PM2.5	9.7	CO2	33,327.5
	Threshold		550		75		100		150		150		55		NA

Alamitos Bay Marina - Phases 4 - 12

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase 2a: Remove Existing Gangways and Piles																
Diesel Crane	8 hours/day	1 unit	0.637 lb/hr	5.1	0.188 lb/hr	1.5	1.695 lb/hr	13.6	0.001 lb/hr	0.0	0.076 lb/hr	0.6	0.067 lb/hr	0.5	186.500 lb/hr	1,492.0
Gas Skiffs	2 hours/day	2 unit	37.667 lb/hr	150.7	16.521 lb/hr	66.1	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.6	0.139 lb/hr	0.6	25.432 lb/hr	101.7
Heavy Duty Trucks	40 miles	6 trips per day	6.733 gr/VMT	3.6	0.867 gr/VMT	0.5	13.366 gr/VMT	7.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.3	0.416 gr/VMT	0.2	####### gr/VMT	793.7
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				169.0		68.4		21.9		0.1		1.6		1.3		3,318.6
Phase 2b: Install New Gangways																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	8 hours/day	1 unit	0.475 lb/hr	3.8	0.131 lb/hr	1.0	1.241 lb/hr	9.9	0.001 lb/hr	0.0	0.054 lb/hr	0.4	0.048 lb/hr	0.4	132.500 lb/hr	1,060.0
Heavy Duty Trucks	40 miles	2 trips per day	6.733 gr/VMT	1.2	0.867 gr/VMT	0.2	13.366 gr/VMT	2.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	####### gr/VMT	264.6
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				16.0		2.0		16.9		0.0		0.8		0.6		2,628.8
Phase 2c: Dredging																
Diesel Clam Bucket	8 hours/day	1 unit	0.848 lb/hr	6.8	0.212 lb/hr	1.7	2.105 lb/hr	16.8	0.002 lb/hr	0.0	0.082 lb/hr	0.7	0.073 lb/hr	0.6	248.300 lb/hr	1,986.4
Diesel Tender	8 hours/day	1 unit	0.558 lb/hr	4.5	0.186 lb/hr	1.5	1.953 lb/hr	15.6	0.002 lb/hr	0.0	0.140 lb/hr	1.1	0.125 lb/hr	1.0	163.400 lb/hr	1,307.2
Heavy Duty Trucks	40 miles	0 trips per day	6.733 gr/VMT	0.0	0.867 gr/VMT	0.0	13.366 gr/VMT	0.0	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	0.0
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				20.9		3.6		33.7		0.0		1.9		1.6		4,224.8

Phase 2d: Seawall and Rip Rap Repair																
Gas Skiffs	2 hours/day	1 unit	37.667 lb/hr	75.3	16.521 lb/hr	33.0	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.3	0.139 lb/hr	0.3	25.432 lb/hr	50.9
Heavy Duty Trucks	40 miles	12 trips per day	6.733 gr/VMT	7.1	0.867 gr/VMT	0.9	13.366 gr/VMT	14.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.5	0.416 gr/VMT	0.4	####### gr/VMT	1,587.4
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				92.2		34.4		15.4		0.0		0.9		0.7		2,569.5
Phase 2e: Restroom Replacement																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	40 miles	4 trips per day	6.733 gr/VMT	2.4	0.867 gr/VMT	0.3	13.366 gr/VMT	4.7	0.014 gr/VMT	0.0	0.481 gr/VMT	0.2	0.416 gr/VMT	0.1	####### gr/VMT	529.1
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				23.0		4.5		26.2		0.0		1.7		1.4		3,263.5
Phase 2f: Parking Lot Asphalt																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Paving Equipment	4 hours/day	2 unit	0.469 lb/hr	3.8	0.156 lb/hr	1.2	1.033 lb/hr	8.3	0.008 lb/hr	0.1	0.071 lb/hr	0.6	0.063 lb/hr	0.5	69.000 lb/hr	552.0
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	30.300 lb/hr	121.2
Heavy Duty Trucks	40 miles	2 trips per day	6.733 gr/VMT	1.2	0.867 gr/VMT	0.2	13.366 gr/VMT	2.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	####### gr/VMT	264.6
Worker Commute (Light Duty Auto)	40 miles	32 trips per day	3.430 gr/VMT	9.7	0.150 gr/VMT	0.4	0.420 gr/VMT	1.2	0.003 gr/VMT	0.0	0.032 gr/VMT	0.1	0.017 gr/VMT	0.0	330.290 gr/VMT	931.2
<TOTAL>				20.1		3.7		22.0		0.1		1.5		1.2		2,494.6

Peak Emissions for Phase		CO	169.0	ROC	68.4	NOx	33.7	SOx	0.1	PM10	1.9	PM2.5	1.6	CO2	4,224.8
	Threshold		550		75		100		150		150		55		NA

Alamitos Bay Marina - Phase 1 LST

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase 1a: Remove Existing Gangways and Piles																
Diesel Crane	8 hours/day	1 unit	0.637 lb/hr	5.1	0.188 lb/hr	1.5	1.695 lb/hr	13.6	0.001 lb/hr	0.0	0.076 lb/hr	0.6	0.067 lb/hr	0.5	186.500 lb/hr	1,492.0
Gas Skiffs	2 hours/day	2 unit	37.667 lb/hr	150.7	16.521 lb/hr	66.1	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.6	0.139 lb/hr	0.6	25.432 lb/hr	101.7
Heavy Duty Trucks	2 miles	6 trips per day	6.733 gr/VMT	0.2	0.867 gr/VMT	0.0	13.366 gr/VMT	0.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	39.7
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				156.4		67.6		14.1		0.1		1.2		1.1		1,680.0
Phase 1b: Install New Gangways																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	8 hours/day	1 unit	0.475 lb/hr	3.8	0.131 lb/hr	1.0	1.241 lb/hr	9.9	0.001 lb/hr	0.0	0.054 lb/hr	0.4	0.048 lb/hr	0.4	132.500 lb/hr	1,060.0
Heavy Duty Trucks	2 miles	2 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	13.2
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				5.6		1.4		13.5		0.0		0.6		0.5		1,492.8
Phase 1c: Install Temporary Docks																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	4 hours/day	1 unit	0.475 lb/hr	1.9	0.131 lb/hr	0.5	1.241 lb/hr	5.0	0.001 lb/hr	0.0	0.054 lb/hr	0.2	0.048 lb/hr	0.2	132.500 lb/hr	530.0
Heavy Duty Trucks	2 miles	5 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.3	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	33.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				3.8		0.9		8.7		0.0		0.4		0.3		982.7

Phase 1d: Dredging																
Diesel Clam Bucket	8 hours/day	1 unit	0.848 lb/hr	6.8	0.212 lb/hr	1.7	2.105 lb/hr	16.8	0.002 lb/hr	0.0	0.082 lb/hr	0.7	0.073 lb/hr	0.6	248.300 lb/hr	1,986.4
Diesel Tender	8 hours/day	1 unit	0.558 lb/hr	4.5	0.186 lb/hr	1.5	1.953 lb/hr	15.6	0.002 lb/hr	0.0	0.140 lb/hr	1.1	0.125 lb/hr	1.0	163.400 lb/hr	1,307.2
Heavy Duty Trucks	2 miles	0 trips per day	6.733 gr/VMT	0.0	0.867 gr/VMT	0.0	13.366 gr/VMT	0.0	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	0.0
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				11.7		3.2		32.6		0.0		1.8		1.6		3,340.2
Phase 1e: Seawall and Rip Rap Repair																
Gas Skiffs	2 hours/day	1 unit	37.667 lb/hr	75.3	16.521 lb/hr	33.0	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.3	0.139 lb/hr	0.3	25.432 lb/hr	50.9
Heavy Duty Trucks	2 miles	12 trips per day	6.733 gr/VMT	0.4	0.867 gr/VMT	0.0	13.366 gr/VMT	0.7	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	79.4
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				76.2		33.1		0.8		0.0		0.3		0.3		176.8
Phase 1f: Restroom Replacement																
Backhoe	8	1	0.414	3.3	0.131	1.0	0.830	6.6	0.001	0.0	0.064	0.5	0.057	0.5	66.800	534.4

	hours/day	unit	lb/hr		lb/hr		lb/hr		lb/hr		lb/hr		lb/hr		lb/hr	
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	2 miles	4 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	26.5
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				11.6		3.8		20.7		0.0		1.4		1.3		1,876.3
Phase 1g: Parking Lot Asphalt																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Paving Equipment	4 hours/day	2 unit	0.469 lb/hr	3.8	0.156 lb/hr	1.2	1.033 lb/hr	8.3	0.008 lb/hr	0.1	0.071 lb/hr	0.6	0.063 lb/hr	0.5	69.000 lb/hr	552.0
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	30.300 lb/hr	121.2
Heavy Duty Trucks	2 miles	2 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	13.2
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				9.8		3.1		18.6		0.1		1.3		1.1		1,358.6

Peak Emissions for Phase		CO	156.4	ROC	67.6	NOx	32.6	SOx	0.1	PM10	1.8	PM2.5	1.6	CO2	3,340.2
	Threshold		550		75		100		150		150		55		NA

Alamitos Bay Marina - Phase 1a LST

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase a: Demolition																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	2 hours/day	1 unit	0.555 lb/hr	1.1	0.173 lb/hr	0.3	1.382 lb/hr	2.8	0.001 lb/hr	0.0	0.077 lb/hr	0.2	0.069 lb/hr	0.1	89.600 lb/hr	179.2
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	69.000 lb/hr	276.0
Heavy Duty Trucks	2 miles	18 trips per day	6.733 gr/VMT	0.5	0.867 gr/VMT	0.1	13.366 gr/VMT	1.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	119.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				7.1		2.1		11.9		0.0		0.9		0.8		1,155.3
Phase b: Reroute Utilities																
Backhoe	2 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Bobcat	2 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	2 miles	18 trips per day	6.733 gr/VMT	0.5	0.867 gr/VMT	0.1	13.366 gr/VMT	1.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	119.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				7.5		2.5		10.4		0.0		0.9		0.8		1,252.1
Phase c: Excavation																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Heavy Duty Trucks	2 miles	18 trips per day	6.733 gr/VMT	0.5	0.867 gr/VMT	0.1	13.366 gr/VMT	1.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	119.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				8.8		2.5		18.9		0.0		1.2		1.0		1,416.9

Phase d: Salvage Stone																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Heavy Duty Trucks	2 miles	18 trips per day	6.733 gr/VMT	0.5	0.867 gr/VMT	0.1	13.366 gr/VMT	1.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	119.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				8.8		2.5		18.9		0.0		1.2		1.0		1,416.9
Phase e: Rip Rap Construction																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Heavy Duty Trucks	2 miles	18 trips per day	6.733 gr/VMT	0.5	0.867 gr/VMT	0.1	13.366 gr/VMT	1.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	119.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				4.9		1.3		10.0		0.0		0.6		0.5		791.3
Phase f: Sidewalk Construction																
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	2 miles	18 trips per day	6.733 gr/VMT	0.5	0.867 gr/VMT	0.1	13.366 gr/VMT	1.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	119.1
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				8.7		2.8		14.8		0.0		1.0		0.9		1,434.5

Peak Emissions for Phase		CO	8.8	ROC	2.8	NOx	18.9	SOx	0.0	PM10	1.2	PM2.5	1.0	CO2	1,434.5
	Threshold		550		75		100		150		150		55		NA

Alamitos Bay Marina - Phases 2 and 3 LST

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase 2a: Remove Existing Gangways and Piles																
Gas Skiffs	2 hours/day	2 unit	37.667 lb/hr	150.7	16.521 lb/hr	66.1	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.6	0.139 lb/hr	0.6	25.432 lb/hr	101.7
Diesel Crane	8 hours/day	1 unit	0.637 lb/hr	5.1	0.188 lb/hr	1.5	1.695 lb/hr	13.6	0.001 lb/hr	0.0	0.076 lb/hr	0.6	0.067 lb/hr	0.5	186.500 lb/hr	1,492.0
Heavy Duty Trucks	2 miles	6 trips per day	6.733 gr/VMT	0.2	0.867 gr/VMT	0.0	13.366 gr/VMT	0.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	39.7
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				156.4		67.6		14.1		0.1		1.2		1.1		1,680.0
Phase 2b: Install New Gangways																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	8 hours/day	1 unit	0.475 lb/hr	3.8	0.131 lb/hr	1.0	1.241 lb/hr	9.9	0.001 lb/hr	0.0	0.054 lb/hr	0.4	0.048 lb/hr	0.4	132.500 lb/hr	1,060.0
Heavy Duty Trucks	2 miles	2 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	13.2
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				5.6		1.4		13.5		0.0		0.6		0.5		1,492.8
Phase 2c: Dredging																
Diesel Clam Bucket	8 hours/day	1 unit	0.848 lb/hr	6.8	0.212 lb/hr	1.7	2.105 lb/hr	16.8	0.002 lb/hr	0.0	0.082 lb/hr	0.7	0.073 lb/hr	0.6	248.300 lb/hr	1,986.4
Diesel Tender	8 hours/day	1 unit	0.558 lb/hr	4.5	0.186 lb/hr	1.5	1.953 lb/hr	15.6	0.002 lb/hr	0.0	0.140 lb/hr	1.1	0.125 lb/hr	1.0	163.400 lb/hr	1,307.2
Heavy Duty Trucks	2 miles	22 trips per day	6.733 gr/VMT	0.7	0.867 gr/VMT	0.1	13.366 gr/VMT	1.3	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	145.5
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				12.4		3.3		33.9		0.0		1.8		1.6		3,485.7

Phase 2d: Seawall and Rip Rap Repair																
Gas Skiffs	2 hours/day	1 unit	37.667 lb/hr	75.3	16.521 lb/hr	33.0	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.3	0.139 lb/hr	0.3	25.432 lb/hr	50.9
Heavy Duty Trucks	2 miles	48 trips per day	6.733 gr/VMT	1.4	0.867 gr/VMT	0.2	13.366 gr/VMT	2.8	0.014 gr/VMT	0.0	0.481 gr/VMT	0.1	0.416 gr/VMT	0.1	####### gr/VMT	317.5
Worker Commute (Light Duty Auto)	2 miles	12 trips per day	3.430 gr/VMT	0.2	0.150 gr/VMT	0.0	0.420 gr/VMT	0.0	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	17.5
<TOTAL>				77.0		33.2		2.9		0.0		0.4		0.4		385.8
Phase 2e: Restroom Replacement																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	2 miles	4 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	26.5
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				11.6		3.8		20.7		0.0		1.4		1.3		1,876.3
Phase 2f: Parking Lot Asphalt																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Paving Equipment	4 hours/day	2 unit	0.469 lb/hr	3.8	0.156 lb/hr	1.2	1.033 lb/hr	8.3	0.008 lb/hr	0.1	0.071 lb/hr	0.6	0.063 lb/hr	0.5	69.000 lb/hr	552.0
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	30.300 lb/hr	121.2
Heavy Duty Trucks	2 miles	2 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	13.2
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				9.8		3.1		18.6		0.1		1.3		1.1		1,358.6

Peak Emissions for Phase			CO	156.4	ROC	67.6	NOx	33.9	SOx	0.1	PM10	1.8	PM2.5	1.6	CO2	3,485.7
	Threshold			550		75		100		150		150		55		NA

Alamitos Bay Marina - Phases 4 - 12 LST

ENGINE EXHAUST EMISSIONS

Source [1]	Parameter 1	Parameter 2	CO Emission Factor	CO Emission (lbs/day)	ROC Emission Factor	ROC Emission (lbs/day)	NOx Emission Factor	NOx Emission (lbs/day)	SOx Emission Factor	SOx Emission (lbs/day)	PM10 Emission Factor	PM10 Emission (lbs/day)	PM2.5 Emission Factor	PM2.5 Emission (lbs/day)	CO2 Emission Factor	CO2 Emission (lbs/day)
Phase 2a: Remove Existing Gangways and Piles																
Diesel Crane	8 hours/day	1 unit	0.637 lb/hr	5.1	0.188 lb/hr	1.5	1.695 lb/hr	13.6	0.001 lb/hr	0.0	0.076 lb/hr	0.6	0.067 lb/hr	0.5	186.500 lb/hr	1,492.0
Gas Skiffs	2 hours/day	2 unit	37.667 lb/hr	150.7	16.521 lb/hr	66.1	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.6	0.139 lb/hr	0.6	25.432 lb/hr	101.7
Heavy Duty Trucks	2 miles	6 trips per day	6.733 gr/VMT	0.2	0.867 gr/VMT	0.0	13.366 gr/VMT	0.4	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	39.7
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				156.4		67.6		14.1		0.1		1.2		1.1		1,680.0
Phase 2b: Install New Gangways																
Diesel Crane	2 hours/day	1 unit	0.637 lb/hr	1.3	0.188 lb/hr	0.4	1.695 lb/hr	3.4	0.001 lb/hr	0.0	0.076 lb/hr	0.2	0.067 lb/hr	0.1	186.500 lb/hr	373.0
Pile Driver	8 hours/day	1 unit	0.475 lb/hr	3.8	0.131 lb/hr	1.0	1.241 lb/hr	9.9	0.001 lb/hr	0.0	0.054 lb/hr	0.4	0.048 lb/hr	0.4	132.500 lb/hr	1,060.0
Heavy Duty Trucks	2 miles	2 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	13.2
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				5.6		1.4		13.5		0.0		0.6		0.5		1,492.8
Phase 2c: Dredging																
Diesel Clam Bucket	8 hours/day	1 unit	0.848 lb/hr	6.8	0.212 lb/hr	1.7	2.105 lb/hr	16.8	0.002 lb/hr	0.0	0.082 lb/hr	0.7	0.073 lb/hr	0.6	248.300 lb/hr	1,986.4
Diesel Tender	8 hours/day	1 unit	0.558 lb/hr	4.5	0.186 lb/hr	1.5	1.953 lb/hr	15.6	0.002 lb/hr	0.0	0.140 lb/hr	1.1	0.125 lb/hr	1.0	163.400 lb/hr	1,307.2
Heavy Duty Trucks	2 miles	0 trips per day	6.733 gr/VMT	0.0	0.867 gr/VMT	0.0	13.366 gr/VMT	0.0	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	####### gr/VMT	0.0
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				11.7		3.2		32.6		0.0		1.8		1.6		3,340.2

Phase 2d: Seawall and Rip Rap Repair																
Gas Skiffs	2 hours/day	1 unit	37.667 lb/hr	75.3	16.521 lb/hr	33.0	0.011 lb/hr	0.0	0.011 lb/hr	0.0	0.156 lb/hr	0.3	0.139 lb/hr	0.3	25.432 lb/hr	50.9
Heavy Duty Trucks	2 miles	12 trips per day	6.733 gr/VMT	0.4	0.867 gr/VMT	0.0	13.366 gr/VMT	0.7	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	79.4
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				76.2		33.1		0.8		0.0		0.3		0.3		176.8
Phase 2e: Restroom Replacement																
Backhoe	8 hours/day	1 unit	0.414 lb/hr	3.3	0.131 lb/hr	1.0	0.830 lb/hr	6.6	0.001 lb/hr	0.0	0.064 lb/hr	0.5	0.057 lb/hr	0.5	66.800 lb/hr	534.4
Loader	8 hours/day	1 unit	0.555 lb/hr	4.4	0.173 lb/hr	1.4	1.382 lb/hr	11.1	0.001 lb/hr	0.0	0.077 lb/hr	0.6	0.069 lb/hr	0.5	89.600 lb/hr	716.8
Bobcat	8 hours/day	1 unit	0.399 lb/hr	3.2	0.168 lb/hr	1.3	0.329 lb/hr	2.6	0.000 lb/hr	0.0	0.039 lb/hr	0.3	0.035 lb/hr	0.3	69.000 lb/hr	552.0
Heavy Duty Trucks	2 miles	4 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.2	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	26.5
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				11.6		3.8		20.7		0.0		1.4		1.3		1,876.3
Phase 2f: Parking Lot Asphalt																
Backhoe	4 hours/day	1 unit	0.414 lb/hr	1.7	0.131 lb/hr	0.5	0.830 lb/hr	3.3	0.001 lb/hr	0.0	0.064 lb/hr	0.3	0.057 lb/hr	0.2	66.800 lb/hr	267.2
Loader	4 hours/day	1 unit	0.555 lb/hr	2.2	0.173 lb/hr	0.7	1.382 lb/hr	5.5	0.001 lb/hr	0.0	0.077 lb/hr	0.3	0.069 lb/hr	0.3	89.600 lb/hr	358.4
Paving Equipment	4 hours/day	2 unit	0.469 lb/hr	3.8	0.156 lb/hr	1.2	1.033 lb/hr	8.3	0.008 lb/hr	0.1	0.071 lb/hr	0.6	0.063 lb/hr	0.5	69.000 lb/hr	552.0
Bobcat	4 hours/day	1 unit	0.399 lb/hr	1.6	0.168 lb/hr	0.7	0.329 lb/hr	1.3	0.000 lb/hr	0.0	0.039 lb/hr	0.2	0.035 lb/hr	0.1	30.300 lb/hr	121.2
Heavy Duty Trucks	2 miles	2 trips per day	6.733 gr/VMT	0.1	0.867 gr/VMT	0.0	13.366 gr/VMT	0.1	0.014 gr/VMT	0.0	0.481 gr/VMT	0.0	0.416 gr/VMT	0.0	######## gr/VMT	13.2
Worker Commute (Light Duty Auto)	2 miles	32 trips per day	3.430 gr/VMT	0.5	0.150 gr/VMT	0.0	0.420 gr/VMT	0.1	0.003 gr/VMT	0.0	0.032 gr/VMT	0.0	0.017 gr/VMT	0.0	330.290 gr/VMT	46.6
<TOTAL>				9.8		3.1		18.6		0.1		1.3		1.1		1,358.6

Peak Emissions for Phase		CO	156.4	ROC	67.6	NOx	32.6	SOx	0.1	PM10	1.8	PM2.5	1.6	CO2	3,340.2
	Threshold		550		75		100		150		150		55		NA

One Acre Site - Site Preparation Phase

Two Acre Site	Construction Activity		
	Site Preparation	84,000	Square Feet[a]
Site Preparation Schedule -	5	days[a]	

Equipment Type[a,b]	No. of Equipment	hr/day	Crew Size
Rubber Tired Dozers	1	8.0	6
Tractors/Loaders/Backhoes	2	8.0	

Fugitive Dust Clearing Parameters

Silt Content[d]	Moisture Content[d]
6.9	7.9

Fugitive Dust Stockpiling Parameters

Silt Content[d]	Precipitation Days[e]	Mean Wind Speed Percent[f]	TSP Fraction	Area[g] (acres)
6.9	10	100	0.5	0.21

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[h]	Mean Wind Speed[i] mph	Moisture Content[d]	Dirt Handled[a] cy	Debris Handled[a] cy	Dirt Handled[j] lb/day
0.35	10	7.9	1,481	185	740,500

One Acre Site - Site Preparation Phase

Construction Worker Number of Trips and Trip Length

Vehicle	No. of One-Way Trips/Day	One WayTrip Length (miles)
Haul Truck[l]	10	0.1
Water Truck[m]	3	2.7

Fugitive Dust Emissions from Construction Operations

Equations:

Clearing[n]: PM10 Emissions (lb/day) = 0.75 x (silt content$^{1.5}$)/(moisture content$^{1.4}$) x hours operated (hr/day) x (1 - control efficiency)

Storage Piles[o]: PM10 Emissions (lb/day) = 1.7 x (silt content/1.5) x ((365-precipitation days)/235) x wind speed percent/15 x TSP fraction x Area) x (1 - control efficiency)

Material Handling[p]: PM10 Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton) (1 - control efficiency)

Description	Control Efficiency %	Unmitigated PM10 lb/day	Mitigated PM10[q] lb/day	Mititgated PM2.5 lb/day
Clearing	68	6.02	1.93	0.40
Storage Piles	68	8.27	2.65	0.55
Material Handling	68	0.15	0.05	0.01
Total		**14.4**	**4.63**	**0.96**

ARB OffRoad Model Emission Factors

Sum of Ems Factor #/hr		Year	Pollutant			
		2008				
Eq Name	Hp	CO	NOx	PM10	SOx	VOC
Bore/Drill Rigs	Composite	0.472	1.099	0.043	0.329	0.056
Cement and Mortar Mixers	Composite	0.046	0.072	0.005	0	0.01
Concrete/Industrial Saws	Composite	0.457	0.764	0.071	0.128	0.118
Cranes	Composite	0.35	0.941	0.049	0.196	0.08
Crawler Tractors	Composite	0.616	1.48	0.099	0.232	0.156
Crushing/Proc. Equipment	Composite	0.836	1.703	0.125	0.268	0.217
Dumpers/Tenders	Composite	0.022	0.076	0	0	0
Excavators	Composite	0.469	1.029	0.055	0.243	0.086
Forklifts	Composite	0.254	0.432	0.048	0	0.074
Generator Sets	Composite	0.315	0.635	0.047	0.001	0.09
Graders	Composite	0.54	1.331	0.069	0.276	0.112
Off-Highway Tractors	Composite	0.679	1.898	0.093	0.31	0.165
Off-Highway Trucks	Composite	0.607	2.525	0.09	0.494	0.175
Other Construction Equipment	Composite	0.534	1.336	0.063	0.223	0.115
Pavers	Composite	0.429	0.745	0.053	0.165	0.086
Paving Equipment	Composite	0.408	0.885	0.065	0.144	0.104
Plate Compactors	Composite	0.026	0.037	0.002	0	0
Rollers	Composite	0.36	0.648	0.046	0.139	0.068
Rough Terrain Forklifts	Composite	0.442	0.754	0.067	0.15	0.09
Rubber Tired Dozers	Composite	0.952	2.728	0.108	0.452	0.204
Rubber Tired Loaders	Composite	0.421	1.022	0.059	0.221	0.09
Scrapers	Composite	0.748	2.625	0.105	0.496	0.19
Signal Boards	Composite	0.096	0.18	0.013	0.024	0.02
Skid Steer Loaders	Composite	0.194	0.27	0.022	0.067	0.034
Surfacing Equipment	Composite	0.628	1.77	0.062	0.307	0.103
Tractors/Loaders/Backhoes	Composite	0.42	0.799	0.083	0.115	0.122
Trenchers	Composite	0.357	0.556	0.045	0.127	0.071
Welders	Composite	0.23	0.311	0.033	0	0.077

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	3.759	11.303	0	0	1
1	0.843	0.929	1.266	9.369	4.506	6.619	1.326
5	0.684	0.757	1.101	9.369	4.506	6.619	1.169
10	0.468	0.521	0.745	5.445	3.083	5.219	0.764
15	0.336	0.377	0.528	2.858	2.199	4.308	0.508
20	0.253	0.285	0.392	1.646	1.633	3.723	0.365
25	0.2	0.227	0.305	1.305	1.262	3.366	0.291
30	0.166	0.189	0.249	1.05	1.015	3.186	0.242
35	0.145	0.164	0.212	0.867	0.85	3.155	0.21
40	0.132	0.15	0.189	0.749	0.739	3.27	0.191
45	0.126	0.143	0.176	0.69	0.669	3.546	0.184
50	0.126	0.143	0.172	0.687	0.628	4.025	0.186
55	0.132	0.149	0.176	0.738	0.614	4.781	0.198
60	0.145	0.164	0.188	0.842	0.622	5.943	0.223
65	0.167	0.188	0.211	1	0.656	7.732	0.262

Pollutant Name: Carbon Monoxide Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	21.774	45.122	0	0	4.948
1	7.521	9.049	11.927	30.199	34.129	48.289	9.872
5	6.804	8.169	11.069	30.199	34.129	48.289	9.118
10	5.705	6.815	8.525	21.226	22.233	39.649	7.341
15	4.914	5.845	6.88	15.373	15.341	34.269	6.123
20	4.327	5.128	5.775	11.616	11.211	31.176	5.268
25	3.882	4.588	5.013	9.398	8.674	29.851	4.665
30	3.542	4.179	4.48	7.831	7.105	30.085	4.226
35	3.283	3.871	4.115	6.733	6.161	31.919	3.914
40	3.094	3.649	3.881	6.005	5.655	35.656	3.709

45	2.971	3.508	3.764	5.594	5.493	41.944	3.608
50	2.914	3.449	3.767	5.487	5.647	51.965	3.619
55	2.936	3.485	3.908	5.699	6.143	67.814	3.769
60	3.059	3.644	4.231	6.282	7.072	93.219	4.108
65	3.328	3.979	4.817	7.34	8.615	134.982	4.733

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	3.772	76.692	0	0	3.707
1	0.657	1.084	1.676	30.703	34.422	1.216	2.246
5	0.609	0.999	1.585	30.703	34.422	1.216	2.182
10	0.532	0.86	1.382	21.944	26.627	1.267	1.695
15	0.475	0.759	1.239	16.599	21.678	1.319	1.385
20	0.433	0.686	1.14	14.544	18.555	1.374	1.237
25	0.403	0.633	1.073	13.947	16.675	1.43	1.168
30	0.382	0.597	1.033	13.559	15.714	1.487	1.123
35	0.369	0.574	1.015	13.366	15.509	1.546	1.098
40	0.362	0.563	1.016	13.365	16.022	1.606	1.093
45	0.361	0.562	1.037	13.563	17.324	1.666	1.106
50	0.367	0.573	1.08	13.984	19.615	1.728	1.14
55	0.378	0.596	1.147	14.667	23.281	1.79	1.198
60	0.397	0.632	1.245	15.676	29.005	1.853	1.285
65	0.425	0.685	1.386	17.117	37.98	1.916	1.412

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	875.168	4999.75	0	0	330.705
1	1123.438	1374.586	1916.091	2817.97	2725.021	226.914	1383.671
5	963.187	1178.857	1697.449	2817.969	2725.021	226.914	1211.681
10	728.057	891.671	1256.615	2345.632	2503.834	193.773	922.195
15	571.206	700.094	971.73	1984.466	2373.215	168.225	728.487
20	465.141	570.547	783.859	1732.223	2293.683	148.468	597.842
25	393.124	482.586	658.779	1632.284	2244.256	133.206	512.437
30	344.839	423.611	576.189	1554.877	2213.462	121.505	454.919
35	313.928	385.857	523.961	1495.986	2194.933	112.697	417.797
40	296.594	364.684	495.017	1453.412	2185.179	106.311	396.625
45	290.805	357.614	485.658	1426.072	2182.487	102.034	389.043
50	295.902	363.839	494.733	1413.678	2186.396	99.684	394.293
55	312.466	384.07	523.399	1416.65	2197.575	99.201	413.069
60	342.431	420.67	575.372	1436.241	2218.01	100.658	447.655
65	389.467	478.119	657.778	1474.915	2251.606	104.28	502.4

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0.009	0.048	0	0	0.003
1	0.011	0.013	0.019	0.027	0.026	0.003	0.013
5	0.009	0.011	0.016	0.027	0.026	0.003	0.012
10	0.007	0.009	0.012	0.023	0.024	0.003	0.009
15	0.006	0.007	0.009	0.019	0.023	0.002	0.007
20	0.005	0.006	0.008	0.017	0.022	0.002	0.006
25	0.004	0.005	0.006	0.016	0.022	0.002	0.005
30	0.003	0.004	0.006	0.015	0.021	0.002	0.004
35	0.003	0.004	0.005	0.014	0.021	0.002	0.004
40	0.003	0.004	0.005	0.014	0.021	0.002	0.004
45	0.003	0.003	0.005	0.014	0.021	0.002	0.004
50	0.003	0.004	0.005	0.014	0.021	0.002	0.004
55	0.003	0.004	0.005	0.014	0.021	0.002	0.004
60	0.003	0.004	0.006	0.014	0.021	0.003	0.004
65	0.004	0.005	0.006	0.014	0.022	0.003	0.005

Pollutant Name: PM10 Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0.042	1.503	0	0	0.068
1	0.063	0.114	0.111	2.053	0.792	0.066	0.17
5	0.051	0.091	0.091	2.053	0.792	0.066	0.154
10	0.033	0.06	0.061	1.423	0.573	0.052	0.104
15	0.023	0.042	0.043	0.963	0.429	0.043	0.072
20	0.017	0.031	0.032	0.693	0.333	0.037	0.052
25	0.013	0.024	0.024	0.581	0.268	0.034	0.042
30	0.01	0.019	0.02	0.496	0.224	0.032	0.035
35	0.009	0.016	0.017	0.436	0.193	0.032	0.031
40	0.008	0.014	0.015	0.401	0.173	0.033	0.028
45	0.007	0.014	0.014	0.389	0.16	0.036	0.027
50	0.007	0.013	0.014	0.401	0.153	0.041	0.027
55	0.008	0.014	0.014	0.436	0.152	0.048	0.029
60	0.008	0.015	0.015	0.493	0.157	0.06	0.032
65	0.01	0.017	0.017	0.573	0.167	0.078	0.037

Pollutant Name: PM10 - Tire Wear Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL

0	0	0	0	0	0	0	0
1	0.008	0.008	0.009	0.024	0.009	0.004	0.009
5	0.008	0.008	0.009	0.024	0.009	0.004	0.009
10	0.008	0.008	0.009	0.024	0.009	0.004	0.009
15	0.008	0.008	0.009	0.024	0.009	0.004	0.009
20	0.008	0.008	0.009	0.024	0.009	0.004	0.009
25	0.008	0.008	0.009	0.024	0.009	0.004	0.009
30	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
50	0.008	0.008	0.009	0.024	0.009	0.004	0.009
55	0.008	0.008	0.009	0.024	0.009	0.004	0.009
60	0.008	0.008	0.009	0.024	0.009	0.004	0.009
65	0.008	0.008	0.009	0.024	0.009	0.004	0.009

Pollutant Name: PM10 - Break Wear Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0	0	0	0	0
1	0.013	0.013	0.013	0.021	0.013	0.006	0.013
5	0.013	0.013	0.013	0.021	0.013	0.006	0.013
10	0.013	0.013	0.013	0.021	0.013	0.006	0.013
15	0.013	0.013	0.013	0.021	0.013	0.006	0.013
20	0.013	0.013	0.013	0.021	0.013	0.006	0.013
25	0.013	0.013	0.013	0.021	0.013	0.006	0.013
30	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
50	0.013	0.013	0.013	0.021	0.013	0.006	0.013
55	0.013	0.013	0.013	0.021	0.013	0.006	0.013
60	0.013	0.013	0.013	0.021	0.013	0.006	0.013
65	0.013	0.013	0.013	0.021	0.013	0.006	0.013

Pollutant Name: Gasoline - mi/gal Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0	0	0	0	0
1	7.8	6.328	4.452	3.326	3.335	27.578	6.93
5	9.094	7.379	5.106	3.326	3.335	27.578	8.034
10	12.022	9.754	6.846	5	5.014	32.744	10.615
15	15.311	12.424	8.839	7.115	7.135	37.864	13.518

20	18.79	15.249	10.984	9.582	9.611	42.657	16.591
25	22.223	18.035	13.131	12.216	12.255	46.798	19.625
30	25.329	20.557	15.096	14.741	14.792	49.933	22.372
35	27.826	22.583	16.684	16.836	16.899	51.708	24.576
40	29.463	23.911	17.721	18.201	18.274	51.806	26.013
45	30.067	24.399	18.088	18.624	18.704	50.008	26.528
50	29.572	23.994	17.739	18.037	18.12	46.269	26.062
55	28.027	22.738	16.718	16.533	16.614	40.785	24.662
60	25.596	20.762	15.142	14.343	14.418	34.032	22.477
65	22.522	18.265	13.185	11.778	11.841	26.723	19.73

Pollutant Name: Diesel - mi/gal Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0	0	0	0	0
1	27.709	28.977	19.711	4.305	3.599	0	8.885
5	27.709	28.977	19.711	4.305	3.599	0	8.885
10	27.709	28.977	19.711	4.636	3.599	0	9.125
15	27.709	28.977	19.711	5.046	3.599	0	9.424
20	27.709	28.977	19.711	5.477	3.599	0	9.737
25	27.709	28.977	19.711	5.663	3.599	0	9.873
30	27.709	28.977	19.711	5.841	3.599	0	10.003
35	27.709	28.977	19.711	6.003	3.599	0	10.121
40	27.709	28.977	19.711	6.141	3.599	0	10.221
45	27.709	28.977	19.711	6.245	3.599	0	10.296
50	27.709	28.977	19.711	6.308	3.599	0	10.342
55	27.709	28.977	19.711	6.325	3.599	0	10.355
60	27.709	28.977	19.711	6.296	3.599	0	10.334
65	27.709	28.977	19.711	6.223	3.599	0	10.281

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.215	0.2	0.401	1.275	0.42	2.728	0.321
10	0.335	0.316	0.677	1.589	0.661	2.821	0.479
20	0.561	0.533	1.192	2.191	1.107	3.059	0.775
30	0.766	0.732	1.656	2.757	1.508	3.365	1.045
40	0.951	0.911	2.068	3.287	1.862	3.738	1.29
50	1.116	1.072	2.428	3.782	2.171	4.179	1.509
60	1.251	1.205	2.727	4.145	2.417	4.421	1.686
120	1.417	1.344	2.426	2.889	1.7	2.679	1.668
180	0.939	0.92	2.129	3.087	1.808	2.843	1.28
240	0.996	0.975	2.253	3.281	1.912	3.063	1.357
300	1.05	1.029	2.374	3.471	2.014	3.282	1.432
360	1.104	1.082	2.492	3.657	2.113	3.5	1.506
420	1.157	1.134	2.607	3.838	2.208	3.717	1.577
480	1.208	1.185	2.718	4.016	2.301	3.934	1.647
540	1.258	1.234	2.827	4.19	2.39	4.149	1.716
600	1.306	1.283	2.932	4.359	2.477	4.364	1.783
660	1.354	1.33	3.035	4.525	2.56	4.578	1.848
720	1.4	1.376	3.134	4.686	2.641	4.791	1.911

Pollutant Name: Carbon Monoxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	1.62	1.701	4.433	11.611	4.779	6.207	2.722
10	2.825	3.021	8.134	16.863	8.687	6.366	4.62
20	5.106	5.523	15.097	26.768	16.014	6.733	8.205
30	7.215	7.84	21.474	35.875	22.69	7.162	11.507
40	9.152	9.971	27.267	44.182	28.714	7.654	14.527
50	10.918	11.918	32.474	51.691	34.086	8.208	17.265
60	12.512	13.679	37.096	58.402	38.807	8.825	19.721
120	16.139	17.128	28.387	35.823	21.59	8.024	19.622
180	10.013	10.977	23.506	39.422	22.515	9.992	14.3
240	10.64	11.67	24.64	42.766	23.427	12.437	15.196
300	11.219	12.307	25.721	45.855	24.327	14.606	16.029
360	11.751	12.89	26.751	48.689	25.214	16.496	16.799
420	12.235	13.418	27.729	51.269	26.089	18.109	17.505
480	12.672	13.891	28.655	53.594	26.951	19.444	18.149
540	13.061	14.31	29.529	55.664	27.801	20.502	18.729
600	13.402	14.673	30.351	57.48	28.638	21.282	19.246
660	13.696	14.982	31.121	59.041	29.463	21.784	19.699
720	13.942	15.235	31.839	60.347	30.276	22.009	20.09

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.296	0.453	0.939	0.85	0.674	0.267	0.486
10	0.35	0.522	1.197	1.244	1.011	0.295	0.6
20	0.447	0.645	1.652	1.937	1.603	0.346	0.8
30	0.527	0.746	2.025	2.503	2.086	0.389	0.965
40	0.589	0.827	2.316	2.941	2.459	0.425	1.094
50	0.635	0.886	2.525	3.251	2.723	0.454	1.187
60	0.664	0.925	2.652	3.434	2.877	0.476	1.245
120	0.696	0.981	2.76	3.515	2.943	0.493	1.3
180	0.743	1.044	2.802	3.499	2.932	0.482	1.346
240	0.737	1.036	2.784	3.475	2.915	0.468	1.337
300	0.729	1.025	2.758	3.444	2.892	0.45	1.323
360	0.718	1.009	2.724	3.405	2.863	0.429	1.305
420	0.705	0.99	2.683	3.358	2.829	0.404	1.283
480	0.689	0.967	2.634	3.304	2.789	0.376	1.257
540	0.671	0.94	2.577	3.242	2.742	0.344	1.227
600	0.65	0.909	2.512	3.172	2.691	0.309	1.193
660	0.626	0.875	2.44	3.094	2.633	0.27	1.154
720	0.6	0.837	2.359	3.009	2.569	0.227	1.112

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	11.023	13.776	16.753	11.639	3.905	28.714	13.009
10	13.727	16.71	22.243	15.459	6.424	31.442	16.343
20	19.425	22.993	33.593	23.003	11.412	36.752	23.327
30	25.508	29.834	45.435	30.421	16.338	41.863	30.732
40	31.977	37.23	57.769	37.714	21.2	46.777	38.557
50	38.831	45.183	70.595	44.88	26	51.493	46.803
60	46.07	53.692	83.914	51.919	30.735	56.012	55.47
120	92.799	111.833	162.738	82.837	51.313	77.056	110.172
180	106.312	127.853	187.785	94.021	59.945	78.231	126.258
240	119.47	143.541	211.963	104.545	68.068	79.339	141.888
300	132.273	158.898	235.272	114.411	75.682	80.382	157.063
360	144.721	173.923	257.712	123.617	82.786	81.359	171.782
420	156.814	188.616	279.283	132.164	89.381	82.27	186.046
480	168.553	202.978	299.986	140.052	95.467	83.114	199.854
540	179.937	217.009	319.819	147.281	101.043	83.893	213.206
600	190.966	230.707	338.783	153.851	106.11	84.605	226.103
660	201.64	244.075	356.879	159.762	110.668	85.252	238.544
720	211.96	257.111	374.105	165.013	114.716	85.832	250.529

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	0	0	0.001	0.001	0	0.001	0
30	0	0	0.001	0.001	0.001	0.001	0
40	0	0.001	0.001	0.001	0.001	0.001	0.001
50	0.001	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	0.002	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	0.002	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	0.002	0.001	0.003
660	0.002	0.003	0.004	0.003	0.002	0.001	0.003
720	0.002	0.003	0.004	0.003	0.002	0.001	0.003

Pollutant Name: PM10 Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.001	0.001	0.001	0.001	0	0.016	0.001
10	0.001	0.002	0.002	0.001	0.001	0.015	0.002
20	0.003	0.004	0.004	0.002	0.001	0.011	0.003
30	0.004	0.006	0.006	0.002	0.002	0.009	0.005
40	0.005	0.008	0.008	0.003	0.003	0.007	0.006
50	0.006	0.01	0.009	0.003	0.003	0.005	0.007
60	0.006	0.011	0.011	0.004	0.003	0.004	0.008
120	0.009	0.016	0.015	0.005	0.005	0.011	0.012
180	0.01	0.017	0.016	0.006	0.005	0.017	0.013
240	0.01	0.018	0.017	0.006	0.005	0.022	0.014
300	0.011	0.019	0.017	0.006	0.005	0.027	0.014
360	0.011	0.02	0.018	0.007	0.005	0.031	0.015
420	0.012	0.021	0.019	0.007	0.006	0.035	0.016
480	0.012	0.022	0.019	0.007	0.006	0.038	0.016
540	0.013	0.022	0.02	0.008	0.006	0.04	0.017
600	0.013	0.023	0.02	0.008	0.006	0.041	0.017
660	0.013	0.023	0.021	0.008	0.006	0.042	0.017
720	0.013	0.024	0.021	0.008	0.006	0.043	0.018

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.051	0.041	0.028	0.012	0.035	0.105	0.042
10	0.094	0.076	0.053	0.022	0.065	0.195	0.078
20	0.16	0.13	0.091	0.038	0.111	0.332	0.134
30	0.205	0.168	0.118	0.05	0.142	0.428	0.172
40	0.222	0.182	0.128	0.054	0.154	0.463	0.187

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

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Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.011	0.009	0.007	0.001	0	0.012	0.01

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 5b: Multi-Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.001	0.001	0.001	0	0	0.001	0.001

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 6a: Partial Day Resting Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.009	0.007	0.006	0.001	0	0.01	0.008

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 6b: Multi-Day Resting Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.001	0.001	0	0	0	0.001	0.001

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.488	0.321	0.142	0.041	0.002	0.006	1
%TRIP	0.477	0.28	0.182	0.053	0	0.008	1
%VEH	0.52	0.303	0.126	0.024	0.001	0.028	1

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.034	0.336	0.291	0.147	0.347	0.13	0.173
2	0.039	0.177	0.154	0.082	0.188	0.163	0.102
3	0.043	0.126	0.11	0.061	0.135	0.18	0.081
4	0.046	0.102	0.089	0.051	0.109	0.189	0.071
5	0.049	0.088	0.076	0.044	0.094	0.196	0.066
10	0.054	0.063	0.054	0.032	0.063	0.214	0.057
15	0.055	0.057	0.05	0.029	0.053	0.223	0.055
20	0.056	0.057	0.05	0.027	0.049	0.23	0.055
25	0.057	0.058	0.051	0.026	0.047	0.235	0.056
30	0.056	0.058	0.05	0.026	0.046	0.234	0.056
35	0.056	0.057	0.05	0.026	0.046	0.232	0.055
40	0.055	0.056	0.049	0.026	0.046	0.23	0.055
45	0.055	0.056	0.049	0.025	0.045	0.229	0.054

50	0.054	0.055	0.048	0.025	0.045	0.223	0.053
55	0.052	0.054	0.048	0.025	0.045	0.217	0.052
60	0.051	0.054	0.047	0.025	0.044	0.211	0.051

Summary of Two Acre Site Example Results By Phase

Total On-Site

	CO	NOx	PM10	PM2.5
Paving	8.3	16.7	1.5	1.4
Localized Significance Threshold*	647.0	180.0	7.0	5.0
Exceed Significance?	NO	NO	NO	NO

* Thresholds for the South Coastal Los Angeles County area (Area 4) Source Receptor Area (SRA) at 25 meters.

Total Regional

	CO	VOC	NOx	SOx	PM10	PM2.5
Paving	13.5	3.0	23.5	2.5	1.6	1.5
SCAQMD Emissions Threshold	**550**	**75**	**100**	**150**	**150**	**55**
Exceed Significance?	NO	NO	NO	NO	NO	NO

Construction Summary By Phase and Equipment

Asphalt Paving of Parking Lot

Vehicle Description	No. of Vehicle	Hours	Trips	Length	CO	VOC	NOx	SOx	PM10	PM2.5
Pavers	0	4.0			0.0	0.00	0.0	0.0	0.00	0.00
Rollers	0	4.0			0.0	0.00	0.0	0.0	0.00	0.00
Paving Equipment	2	4.0			3.3	0.8	7	1.2	0.52	0.48
Cement and Mortar Mixers	0	4.0			0.00	0.00	0.00	0.00	0.000	0.000
Tractors/Loaders/Backhoes	3	4.0			5.0	1.5	9.6	1.38	1.00	0.92
Haul Trucks			5	20	5	0.7	7	0.007	0.13	0.12
Water Trucks			0	6.4	0.0	0.00	0.0	0.0000	0.000	0.000
Worker Trips			8	40	5	0.20	0.8	0.004	0.05	0.04
Total Emissions					**14**	**3.0**	**23**	**2.5**	**1.6**	**1.5**
SCAQMD Emissions Threshold					**550**	**75**	**100**	**150**	**150**	**55**
Exceed Significance?					**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Summary of Two Acre Site Results By Phase and Equipment

Asphalt Paving of Parking Lot

Vehicle Description	No. of Vehicle	Hours	Trips	Length	CO	NOx	PM10	PM2.5
Pavers	0	4.0			0.0	0.0	0.00	0.00
Rollers	0	4.0			0.0	0.0	0.00	0.00
Paving Equipment	2	4.0			3.3	7	0.52	0.48
Cement and Mortar Mixers	0	4.0			0.00	0.00	0.00	0.000
Tractors/Loaders/Backhoes	3	4.0			5.0	9.6	1.00	0.92
Haul Trucks			5	0.1	0.026	0.034	0.0006	0.0006
Water Trucks			0	6.4	0.0	0.0	0.000	0.000
Total Onsite Emissions					**8**	**17**	**1.5**	**1.4**
Localized Significance Threshold*					**647**	**180**	**7**	**5**
Exceed Significance?					**NO**	**NO**	**NO**	**NO**

* Thresholds for the South Coastal Los Angeles County area (Area 4) Source Receptor Area (SRA) at 25 meters.

Two Acre Site - Architectural Coating and Asphalt Paving

One Acre Site	Construction Activity Asphalt Paving
Construction Schedule -	**18 days**[a]

Equipment Type[a,b]	**No. of Equipment**	**hr/day**	**Crew Size**
Pavers	0	4.0	8
Rollers	0	4.0	
Paving Equipment	2	4.0	
Cement and Mortar Mixers	0	4.0	
Tractors/Loaders/Backhoes	3	4.0	

Construction Equipment Combustion Emission Factors

Equipment Type[c]	**CO** lb/hr	**NOx** lb/hr	**PM10** lb/hr
Pavers	0.429	0.745	0.053
Rollers	0.360	0.648	0.046
Paving Equipment	0.408	0.885	0.065
Cement and Mortar Mixers	0.046	0.072	0.005
Tractors/Loaders/Backhoes	0.420	0.799	0.083

Construction Vehicle (Mobile Source) Emission Factors

	CO lb/mile	**NOx** lb/mile	**PM10** lb/mile
Heavy-Duty Truck[d]	0.026167	0.034155	0.000626

Construction Worker Number of Trips and Trip Length

Vehicle	**No. of One-Way Trips/Day**	**Trip Length (miles)**
Delivery Truck[e]	5	0.1
Water Truck[f]	0	6.4

Two Acre Site - Architectural Coating and Asphalt Paving

Incremental Increase in Onsite Combustion Emissions from Construction Equipment

Equation: Emission Factor (lb/BHP-hr) x No. of Equipment x Work Day (hr/day) x Equipment rating (hp) x Load Factor (%/100) = Onsite Construction Emissions (lb/day)

Equipment Type	CO lb/day	NOx lb/day	PM10 lb/day
Pavers	0.00	0.00	0.00
Rollers	0.00	0.00	0.00
Paving Equipment	3.26	7.08	0.52
Cement and Mortar Mixers	0.00	0.00	0.00
Tractors/Loaders/Backhoes	5.04	9.59	1.00
Total	**8.3**	**16.7**	**1.5**

Incremental Increase in Onsite Combustion Emissions from Onroad Mobile Vehicles

Equation: Emission Factor (lb/mile) x No. of One-Way Trips/Day x 2 x Trip length (mile) = Mobile Emissions (lb/day)

Vehicle	CO lb/day	NOx lb/day	PM10 lb/day
Delivery Truck	0.03	0.03	0.00
Water Truck	0.00	0	0
Total	**0.03**	**0.03**	**0.00**

Total Incremental Combustion Emissions from Construction Activities

Sources	CO lb/day	NOx lb/day	PM10 lb/day
On-Site Emissions	**8.3**	**16.7**	**1.5**
Significance Threshold[g]	*647*	*180*	*7*
Exceed Significance?	**NO**	**NO**	**NO**

Notes:

Project specific data may be entered into shaded cells. Changing the values in the shaded cells will not affect the integrity of the worksheets. Verify that units of values entered match units for cell.

Adding lines or entering values with units different than those associated with the shaded cells may alter the integrity of the sheets or produce incorrect results.

a) SCAQMD, estimated from survey data, Sept 2004

b) Equipment name must match CARB Off-Road Model (see Off-Road Model EF worksheet) equipment name for sheet to look up EFs automatically

c) SCAB values provided by the ARB, Aug 2004. Assumed equipment is diesel fueled except the welders which are powered by the generator.

d) CARB, EMFAC2002 (version 2.2) Burden Model, Winter 2005, 75 F, 40% RH: EF, lb/yr = (EF, ton/yr x 2,000 lb/ton)/VMT

e) Assumed haul truck travels 0.1 miles through facility

f) Assumed six foot wide water truck traverses over 200,000 square feet of disturbed area

g) Thresholds for the South Coastal Los Angeles County area (Area 4) Source Receptor Area (SRA) at 25 meters.

ARB OffRoad Model Emission Factors

Sum of Ems Factor #/hr		Year	Pollutant			
		2008				
Eq Name	Hp	CO	NOx	PM10	SOx	VOC
Bore/Drill Rigs	Composite	0.472	1.099	0.043	0.329	0.056
Cement and Mortar Mixers	Composite	0.046	0.072	0.005	0	0.01
Concrete/Industrial Saws	Composite	0.457	0.764	0.071	0.128	0.118
Cranes	Composite	0.35	0.941	0.049	0.196	0.08
Crawler Tractors	Composite	0.616	1.48	0.099	0.232	0.156
Crushing/Proc. Equipment	Composite	0.836	1.703	0.125	0.268	0.217
Dumpers/Tenders	Composite	0.022	0.076	0	0	0
Excavators	Composite	0.469	1.029	0.055	0.243	0.086
Forklifts	Composite	0.254	0.432	0.048	0	0.074
Generator Sets	Composite	0.315	0.635	0.047	0.001	0.09
Graders	Composite	0.54	1.331	0.069	0.276	0.112
Off-Highway Tractors	Composite	0.679	1.898	0.093	0.31	0.165
Off-Highway Trucks	Composite	0.607	2.525	0.09	0.494	0.175
Other Construction Equipment	Composite	0.534	1.336	0.063	0.223	0.115
Pavers	Composite	0.429	0.745	0.053	0.165	0.086
Paving Equipment	Composite	0.408	0.885	0.065	0.144	0.104
Plate Compactors	Composite	0.026	0.037	0.002	0	0
Rollers	Composite	0.36	0.648	0.046	0.139	0.068
Rough Terrain Forklifts	Composite	0.442	0.754	0.067	0.15	0.09
Rubber Tired Dozers	Composite	0.952	2.728	0.108	0.452	0.204
Rubber Tired Loaders	Composite	0.421	1.022	0.059	0.221	0.09
Scrapers	Composite	0.748	2.625	0.105	0.496	0.19
Signal Boards	Composite	0.096	0.18	0.013	0.024	0.02
Skid Steer Loaders	Composite	0.194	0.27	0.022	0.067	0.034
Surfacing Equipment	Composite	0.628	1.77	0.062	0.307	0.103
Tractors/Loaders/Backhoes	Composite	0.42	0.799	0.083	0.115	0.122
Trenchers	Composite	0.357	0.556	0.045	0.127	0.071
Welders	Composite	0.23	0.311	0.033	0	0.077

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile; grams/idle-hour)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	3.759	11.303	0	0	1
1	0.843	0.929	1.266	9.369	4.506	6.619	1.326
5	0.684	0.757	1.101	9.369	4.506	6.619	1.169
10	0.468	0.521	0.745	5.445	3.083	5.219	0.764
15	0.336	0.377	0.528	2.858	2.199	4.308	0.508
20	0.253	0.285	0.392	1.646	1.633	3.723	0.365
25	0.2	0.227	0.305	1.305	1.262	3.366	0.291
30	0.166	0.189	0.249	1.05	1.015	3.186	0.242
35	0.145	0.164	0.212	0.867	0.85	3.155	0.21
40	0.132	0.15	0.189	0.749	0.739	3.27	0.191
45	0.126	0.143	0.176	0.69	0.669	3.546	0.184
50	0.126	0.143	0.172	0.687	0.628	4.025	0.186
55	0.132	0.149	0.176	0.738	0.614	4.781	0.198
60	0.145	0.164	0.188	0.842	0.622	5.943	0.223
65	0.167	0.188	0.211	1	0.656	7.732	0.262

Pollutant Name: Carbon Monoxide Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	21.774	45.122	0	0	4.948
1	7.521	9.049	11.927	30.199	34.129	48.289	9.872
5	6.804	8.169	11.069	30.199	34.129	48.289	9.118
10	5.705	6.815	8.525	21.226	22.233	39.649	7.341
15	4.914	5.845	6.88	15.373	15.341	34.269	6.123
20	4.327	5.128	5.775	11.616	11.211	31.176	5.268
25	3.882	4.588	5.013	9.398	8.674	29.851	4.665
30	3.542	4.179	4.48	7.831	7.105	30.085	4.226
35	3.283	3.871	4.115	6.733	6.161	31.919	3.914
40	3.094	3.649	3.881	6.005	5.655	35.656	3.709

45	2.971	3.508	3.764	5.594	5.493	41.944	3.608
50	2.914	3.449	3.767	5.487	5.647	51.965	3.619
55	2.936	3.485	3.908	5.699	6.143	67.814	3.769
60	3.059	3.644	4.231	6.282	7.072	93.219	4.108
65	3.328	3.979	4.817	7.34	8.615	134.982	4.733

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	3.772	76.692	0	0	3.707
1	0.657	1.084	1.676	30.703	34.422	1.216	2.246
5	0.609	0.999	1.585	30.703	34.422	1.216	2.182
10	0.532	0.86	1.382	21.944	26.627	1.267	1.695
15	0.475	0.759	1.239	16.599	21.678	1.319	1.385
20	0.433	0.686	1.14	14.544	18.555	1.374	1.237
25	0.403	0.633	1.073	13.947	16.675	1.43	1.168
30	0.382	0.597	1.033	13.559	15.714	1.487	1.123
35	0.369	0.574	1.015	13.366	15.509	1.546	1.098
40	0.362	0.563	1.016	13.365	16.022	1.606	1.093
45	0.361	0.562	1.037	13.563	17.324	1.666	1.106
50	0.367	0.573	1.08	13.984	19.615	1.728	1.14
55	0.378	0.596	1.147	14.667	23.281	1.79	1.198
60	0.397	0.632	1.245	15.676	29.005	1.853	1.285
65	0.425	0.685	1.386	17.117	37.98	1.916	1.412

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	875.168	4999.75	0	0	330.705
1	1123.438	1374.586	1916.091	2817.97	2725.021	226.914	1383.671
5	963.187	1178.857	1697.449	2817.969	2725.021	226.914	1211.681
10	728.057	891.671	1256.615	2345.632	2503.834	193.773	922.195
15	571.206	700.094	971.73	1984.466	2373.215	168.225	728.487
20	465.141	570.547	783.859	1732.223	2293.683	148.468	597.842
25	393.124	482.586	658.779	1632.284	2244.256	133.206	512.437
30	344.839	423.611	576.189	1554.877	2213.462	121.505	454.919
35	313.928	385.857	523.961	1495.986	2194.933	112.697	417.797
40	296.594	364.684	495.017	1453.412	2185.179	106.311	396.625
45	290.805	357.614	485.658	1426.072	2182.487	102.034	389.043
50	295.902	363.839	494.733	1413.678	2186.396	99.684	394.293
55	312.466	384.07	523.399	1416.65	2197.575	99.201	413.069
60	342.431	420.67	575.372	1436.241	2218.01	100.658	447.655
65	389.467	478.119	657.778	1474.915	2251.606	104.28	502.4

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0.009	0.048	0	0	0.003
1	0.011	0.013	0.019	0.027	0.026	0.003	0.013
5	0.009	0.011	0.016	0.027	0.026	0.003	0.012
10	0.007	0.009	0.012	0.023	0.024	0.003	0.009
15	0.006	0.007	0.009	0.019	0.023	0.002	0.007
20	0.005	0.006	0.008	0.017	0.022	0.002	0.006
25	0.004	0.005	0.006	0.016	0.022	0.002	0.005
30	0.003	0.004	0.006	0.015	0.021	0.002	0.004
35	0.003	0.004	0.005	0.014	0.021	0.002	0.004
40	0.003	0.004	0.005	0.014	0.021	0.002	0.004
45	0.003	0.003	0.005	0.014	0.021	0.002	0.004
50	0.003	0.004	0.005	0.014	0.021	0.002	0.004
55	0.003	0.004	0.005	0.014	0.021	0.002	0.004
60	0.003	0.004	0.006	0.014	0.021	0.003	0.004
65	0.004	0.005	0.006	0.014	0.022	0.003	0.005

Pollutant Name: PM10 Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0.042	1.503	0	0	0.068
1	0.063	0.114	0.111	2.053	0.792	0.066	0.17
5	0.051	0.091	0.091	2.053	0.792	0.066	0.154
10	0.033	0.06	0.061	1.423	0.573	0.052	0.104
15	0.023	0.042	0.043	0.963	0.429	0.043	0.072
20	0.017	0.031	0.032	0.693	0.333	0.037	0.052
25	0.013	0.024	0.024	0.581	0.268	0.034	0.042
30	0.01	0.019	0.02	0.496	0.224	0.032	0.035
35	0.009	0.016	0.017	0.436	0.193	0.032	0.031
40	0.008	0.014	0.015	0.401	0.173	0.033	0.028
45	0.007	0.014	0.014	0.389	0.16	0.036	0.027
50	0.007	0.013	0.014	0.401	0.153	0.041	0.027
55	0.008	0.014	0.014	0.436	0.152	0.048	0.029
60	0.008	0.015	0.015	0.493	0.157	0.06	0.032
65	0.01	0.017	0.017	0.573	0.167	0.078	0.037

Pollutant Name: PM10 - Tire Wear Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL

0	0	0	0	0	0	0	0
1	0.008	0.008	0.009	0.024	0.009	0.004	0.009
5	0.008	0.008	0.009	0.024	0.009	0.004	0.009
10	0.008	0.008	0.009	0.024	0.009	0.004	0.009
15	0.008	0.008	0.009	0.024	0.009	0.004	0.009
20	0.008	0.008	0.009	0.024	0.009	0.004	0.009
25	0.008	0.008	0.009	0.024	0.009	0.004	0.009
30	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
50	0.008	0.008	0.009	0.024	0.009	0.004	0.009
55	0.008	0.008	0.009	0.024	0.009	0.004	0.009
60	0.008	0.008	0.009	0.024	0.009	0.004	0.009
65	0.008	0.008	0.009	0.024	0.009	0.004	0.009

Pollutant Name: PM10 - Break Wear Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0	0	0	0	0
1	0.013	0.013	0.013	0.021	0.013	0.006	0.013
5	0.013	0.013	0.013	0.021	0.013	0.006	0.013
10	0.013	0.013	0.013	0.021	0.013	0.006	0.013
15	0.013	0.013	0.013	0.021	0.013	0.006	0.013
20	0.013	0.013	0.013	0.021	0.013	0.006	0.013
25	0.013	0.013	0.013	0.021	0.013	0.006	0.013
30	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
50	0.013	0.013	0.013	0.021	0.013	0.006	0.013
55	0.013	0.013	0.013	0.021	0.013	0.006	0.013
60	0.013	0.013	0.013	0.021	0.013	0.006	0.013
65	0.013	0.013	0.013	0.021	0.013	0.006	0.013

Pollutant Name: Gasoline - mi/gal Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0	0	0	0	0
1	7.8	6.328	4.452	3.326	3.335	27.578	6.93
5	9.094	7.379	5.106	3.326	3.335	27.578	8.034
10	12.022	9.754	6.846	5	5.014	32.744	10.615
15	15.311	12.424	8.839	7.115	7.135	37.864	13.518

20	18.79	15.249	10.984	9.582	9.611	42.657	16.591
25	22.223	18.035	13.131	12.216	12.255	46.798	19.625
30	25.329	20.557	15.096	14.741	14.792	49.933	22.372
35	27.826	22.583	16.684	16.836	16.899	51.708	24.576
40	29.463	23.911	17.721	18.201	18.274	51.806	26.013
45	30.067	24.399	18.088	18.624	18.704	50.008	26.528
50	29.572	23.994	17.739	18.037	18.12	46.269	26.062
55	28.027	22.738	16.718	16.533	16.614	40.785	24.662
60	25.596	20.762	15.142	14.343	14.418	34.032	22.477
65	22.522	18.265	13.185	11.778	11.841	26.723	19.73

Pollutant Name: Diesel - mi/gal Temperature: 50F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
0	0	0	0	0	0	0	0
1	27.709	28.977	19.711	4.305	3.599	0	8.885
5	27.709	28.977	19.711	4.305	3.599	0	8.885
10	27.709	28.977	19.711	4.636	3.599	0	9.125
15	27.709	28.977	19.711	5.046	3.599	0	9.424
20	27.709	28.977	19.711	5.477	3.599	0	9.737
25	27.709	28.977	19.711	5.663	3.599	0	9.873
30	27.709	28.977	19.711	5.841	3.599	0	10.003
35	27.709	28.977	19.711	6.003	3.599	0	10.121
40	27.709	28.977	19.711	6.141	3.599	0	10.221
45	27.709	28.977	19.711	6.245	3.599	0	10.296
50	27.709	28.977	19.711	6.308	3.599	0	10.342
55	27.709	28.977	19.711	6.325	3.599	0	10.355
60	27.709	28.977	19.711	6.296	3.599	0	10.334
65	27.709	28.977	19.711	6.223	3.599	0	10.281

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 2: Starting Emissions (grams/trip)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.215	0.2	0.401	1.275	0.42	2.728	0.321
10	0.335	0.316	0.677	1.589	0.661	2.821	0.479
20	0.561	0.533	1.192	2.191	1.107	3.059	0.775
30	0.766	0.732	1.656	2.757	1.508	3.365	1.045
40	0.951	0.911	2.068	3.287	1.862	3.738	1.29
50	1.116	1.072	2.428	3.782	2.171	4.179	1.509
60	1.251	1.205	2.727	4.145	2.417	4.421	1.686
120	1.417	1.344	2.426	2.889	1.7	2.679	1.668
180	0.939	0.92	2.129	3.087	1.808	2.843	1.28
240	0.996	0.975	2.253	3.281	1.912	3.063	1.357
300	1.05	1.029	2.374	3.471	2.014	3.282	1.432
360	1.104	1.082	2.492	3.657	2.113	3.5	1.506
420	1.157	1.134	2.607	3.838	2.208	3.717	1.577
480	1.208	1.185	2.718	4.016	2.301	3.934	1.647
540	1.258	1.234	2.827	4.19	2.39	4.149	1.716
600	1.306	1.283	2.932	4.359	2.477	4.364	1.783
660	1.354	1.33	3.035	4.525	2.56	4.578	1.848
720	1.4	1.376	3.134	4.686	2.641	4.791	1.911

Pollutant Name: Carbon Monoxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	1.62	1.701	4.433	11.611	4.779	6.207	2.722
10	2.825	3.021	8.134	16.863	8.687	6.366	4.62
20	5.106	5.523	15.097	26.768	16.014	6.733	8.205
30	7.215	7.84	21.474	35.875	22.69	7.162	11.507
40	9.152	9.971	27.267	44.182	28.714	7.654	14.527
50	10.918	11.918	32.474	51.691	34.086	8.208	17.265
60	12.512	13.679	37.096	58.402	38.807	8.825	19.721
120	16.139	17.128	28.387	35.823	21.59	8.024	19.622
180	10.013	10.977	23.506	39.422	22.515	9.992	14.3
240	10.64	11.67	24.64	42.766	23.427	12.437	15.196
300	11.219	12.307	25.721	45.855	24.327	14.606	16.029
360	11.751	12.89	26.751	48.689	25.214	16.496	16.799
420	12.235	13.418	27.729	51.269	26.089	18.109	17.505
480	12.672	13.891	28.655	53.594	26.951	19.444	18.149
540	13.061	14.31	29.529	55.664	27.801	20.502	18.729
600	13.402	14.673	30.351	57.48	28.638	21.282	19.246
660	13.696	14.982	31.121	59.041	29.463	21.784	19.699
720	13.942	15.235	31.839	60.347	30.276	22.009	20.09

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.296	0.453	0.939	0.85	0.674	0.267	0.486
10	0.35	0.522	1.197	1.244	1.011	0.295	0.6
20	0.447	0.645	1.652	1.937	1.603	0.346	0.8
30	0.527	0.746	2.025	2.503	2.086	0.389	0.965
40	0.589	0.827	2.316	2.941	2.459	0.425	1.094
50	0.635	0.886	2.525	3.251	2.723	0.454	1.187
60	0.664	0.925	2.652	3.434	2.877	0.476	1.245
120	0.696	0.981	2.76	3.515	2.943	0.493	1.3
180	0.743	1.044	2.802	3.499	2.932	0.482	1.346
240	0.737	1.036	2.784	3.475	2.915	0.468	1.337
300	0.729	1.025	2.758	3.444	2.892	0.45	1.323
360	0.718	1.009	2.724	3.405	2.863	0.429	1.305
420	0.705	0.99	2.683	3.358	2.829	0.404	1.283
480	0.689	0.967	2.634	3.304	2.789	0.376	1.257
540	0.671	0.94	2.577	3.242	2.742	0.344	1.227
600	0.65	0.909	2.512	3.172	2.691	0.309	1.193
660	0.626	0.875	2.44	3.094	2.633	0.27	1.154
720	0.6	0.837	2.359	3.009	2.569	0.227	1.112

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	11.023	13.776	16.753	11.639	3.905	28.714	13.009
10	13.727	16.71	22.243	15.459	6.424	31.442	16.343
20	19.425	22.993	33.593	23.003	11.412	36.752	23.327
30	25.508	29.834	45.435	30.421	16.338	41.863	30.732
40	31.977	37.23	57.769	37.714	21.2	46.777	38.557
50	38.831	45.183	70.595	44.88	26	51.493	46.803
60	46.07	53.692	83.914	51.919	30.735	56.012	55.47
120	92.799	111.833	162.738	82.837	51.313	77.056	110.172
180	106.312	127.853	187.785	94.021	59.945	78.231	126.258
240	119.47	143.541	211.963	104.545	68.068	79.339	141.888
300	132.273	158.898	235.272	114.411	75.682	80.382	157.063
360	144.721	173.923	257.712	123.617	82.786	81.359	171.782
420	156.814	188.616	279.283	132.164	89.381	82.27	186.046
480	168.553	202.978	299.986	140.052	95.467	83.114	199.854
540	179.937	217.009	319.819	147.281	101.043	83.893	213.206
600	190.966	230.707	338.783	153.851	106.11	84.605	226.103
660	201.64	244.075	356.879	159.762	110.668	85.252	238.544
720	211.96	257.111	374.105	165.013	114.716	85.832	250.529

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
20	0	0	0.001	0.001	0	0.001	0
30	0	0	0.001	0.001	0.001	0.001	0
40	0	0.001	0.001	0.001	0.001	0.001	0.001
50	0.001	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	0.002	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	0.002	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	0.002	0.001	0.003
660	0.002	0.003	0.004	0.003	0.002	0.001	0.003
720	0.002	0.003	0.004	0.003	0.002	0.001	0.003

Pollutant Name: PM10 Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.001	0.001	0.001	0.001	0	0.016	0.001
10	0.001	0.002	0.002	0.001	0.001	0.015	0.002
20	0.003	0.004	0.004	0.002	0.001	0.011	0.003
30	0.004	0.006	0.006	0.002	0.002	0.009	0.005
40	0.005	0.008	0.008	0.003	0.003	0.007	0.006
50	0.006	0.01	0.009	0.003	0.003	0.005	0.007
60	0.006	0.011	0.011	0.004	0.003	0.004	0.008
120	0.009	0.016	0.015	0.005	0.005	0.011	0.012
180	0.01	0.017	0.016	0.006	0.005	0.017	0.013
240	0.01	0.018	0.017	0.006	0.005	0.022	0.014
300	0.011	0.019	0.017	0.006	0.005	0.027	0.014
360	0.011	0.02	0.018	0.007	0.005	0.031	0.015
420	0.012	0.021	0.019	0.007	0.006	0.035	0.016
480	0.012	0.022	0.019	0.007	0.006	0.038	0.016
540	0.013	0.022	0.02	0.008	0.006	0.04	0.017
600	0.013	0.023	0.02	0.008	0.006	0.041	0.017
660	0.013	0.023	0.021	0.008	0.006	0.042	0.017
720	0.013	0.024	0.021	0.008	0.006	0.043	0.018

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 4: Hot Soak Emissions (grams/trip)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
5	0.051	0.041	0.028	0.012	0.035	0.105	0.042
10	0.094	0.076	0.053	0.022	0.065	0.195	0.078
20	0.16	0.13	0.091	0.038	0.111	0.332	0.134
30	0.205	0.168	0.118	0.05	0.142	0.428	0.172
40	0.222	0.182	0.128	0.054	0.154	0.463	0.187

Hot soak results are scaled to reflect zero emissions for trip lengths of less than 5 minutes (about 25% of in-use trips).

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 5a: Partial Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.011	0.009	0.007	0.001	0	0.012	0.01

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 5b: Multi-Day Diurnal Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.001	0.001	0.001	0	0	0.001	0.001

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 6a: Partial Day Resting Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.009	0.007	0.006	0.001	0	0.01	0.008

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 6b: Multi-Day Resting Loss Emissions (grams/hour)

Pollutant Name: Total Organic Gases Temperature: ALL Relative Humidity: ALL

Temp degF	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
50	0.001	0.001	0	0	0	0.001	0.001

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 7: Estimated Travel Fractions

Pollutant Name: Temperature: ALL Relative Humidity: ALL

	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
%VMT	0.488	0.321	0.142	0.041	0.002	0.006	1
%TRIP	0.477	0.28	0.182	0.053	0	0.008	1
%VEH	0.52	0.303	0.126	0.024	0.001	0.028	1

Title : South Coast Air Basin Avg Annual CYr 2007
Version : Emfac2007 V2.3 Nov 1 2006
Run Date : 2006/12/04 10:12:08
Scen Year: 2007 -- All model years in the range 1965 to 2007 selected
Season : Annual
Area : South Coast
****

Year: 2007 -- Model Years 1965 to 2007 Inclusive -- Annual
Emfac2007 Emission Factors: V2.3 Nov 1 2006

South Coast Basin Average Basin Average

Table 8: Evaporative Running Loss Emissions (grams/minute)

Pollutant Name: Total Organic Gases Temperature: 50F Relative Humidity: ALL

Time min	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	0.034	0.336	0.291	0.147	0.347	0.13	0.173
2	0.039	0.177	0.154	0.082	0.188	0.163	0.102
3	0.043	0.126	0.11	0.061	0.135	0.18	0.081
4	0.046	0.102	0.089	0.051	0.109	0.189	0.071
5	0.049	0.088	0.076	0.044	0.094	0.196	0.066
10	0.054	0.063	0.054	0.032	0.063	0.214	0.057
15	0.055	0.057	0.05	0.029	0.053	0.223	0.055
20	0.056	0.057	0.05	0.027	0.049	0.23	0.055
25	0.057	0.058	0.051	0.026	0.047	0.235	0.056
30	0.056	0.058	0.05	0.026	0.046	0.234	0.056
35	0.056	0.057	0.05	0.026	0.046	0.232	0.055
40	0.055	0.056	0.049	0.026	0.046	0.23	0.055
45	0.055	0.056	0.049	0.025	0.045	0.229	0.054

50	0.054	0.055	0.048	0.025	0.045	0.223	0.053
55	0.052	0.054	0.048	0.025	0.045	0.217	0.052
60	0.051	0.054	0.047	0.025	0.044	0.211	0.051

APPENDIX C

MARINE BIOLOGY REPORTS AND NESTING BIRD SURVEYS

MARINE RESOURCES ENVIRONMENTAL ASSESSMENT FOR THE FOR THE ALAMITOS BAY MARINA RENOVATION PROJECT ENVIRONMENTAL IMPACT REPORT

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October 31st, 2007
Revised October 1st, 2009

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND AND PURPOSE

The City of Long Beach is preparing to renovate the Alamitos Bay Marina dock system and conduct dredging in the Alamitos Bay marina basins. The project will be conducted within seven marina basins, and phased over a six year period beginning in 2009. The project plans include replacing the degraded dock systems within each basin and dredging to depths of between -13 and -15 ft MLLW within Marina Basin 1, and to depths of -10 ft MLLW in Basins 2, 3, 4, 5, and 7. General renovation plans are provided in Figure 2 (existing dock system) and Figure 3 (proposed dock system). An additional dock will be constructed along bulkhead southeast of the Long Beach Yacht Club. The dredge material collected from each marina basin will be transported by barge to a location designated for sediment disposal. A detailed discussion of the project components is provided in Section 3.0.

Coastal Resources Management, Inc. (CRM) was retained by LSA Associates, Inc. and the City of Long Beach to conduct marine biological surveys in Alamitos Bay, Long Beach, California, to prepare a project environmental assessment focused on eelgrass (*Zostera marina* habitat (Coastal Resources Management, Inc. 2009a), to prepare an Essential Fish Habitat (EFH) analysis, to evaluate potential eelgrass mitigation sites in Alamitos Bay, to and lastly, to prepare a comprehensive marine resources environmental assessment for the project MND. This document updates previous CRM studies and contains the comprehensive marine resources environmental assessment, including the Essential Fish Habitat (EFH) analysis for the project Environmental Impact Report (EIR).

1.2 PROJECT LOCATION

Alamitos Bay is located within the southeast region of the City of Long Beach, California (Figure 1). It is bounded on the northwest by the community of Belmont Shore and the Colorado Lagoon, on the northeast by Pacific Coast Highway and the Cerritos Channel, on the southeast by the San Gabriel River, and on the southwest by the Alamitos Bay Peninsula (Figure 1). Initially the area around Alamitos Bay was a marsh, with the San Gabriel River and the bay sharing a common opening into the ocean (Reish, 1968). Naples Island was developed in 1908-1909,

Figure 1.
Alamitos Bay Project Location

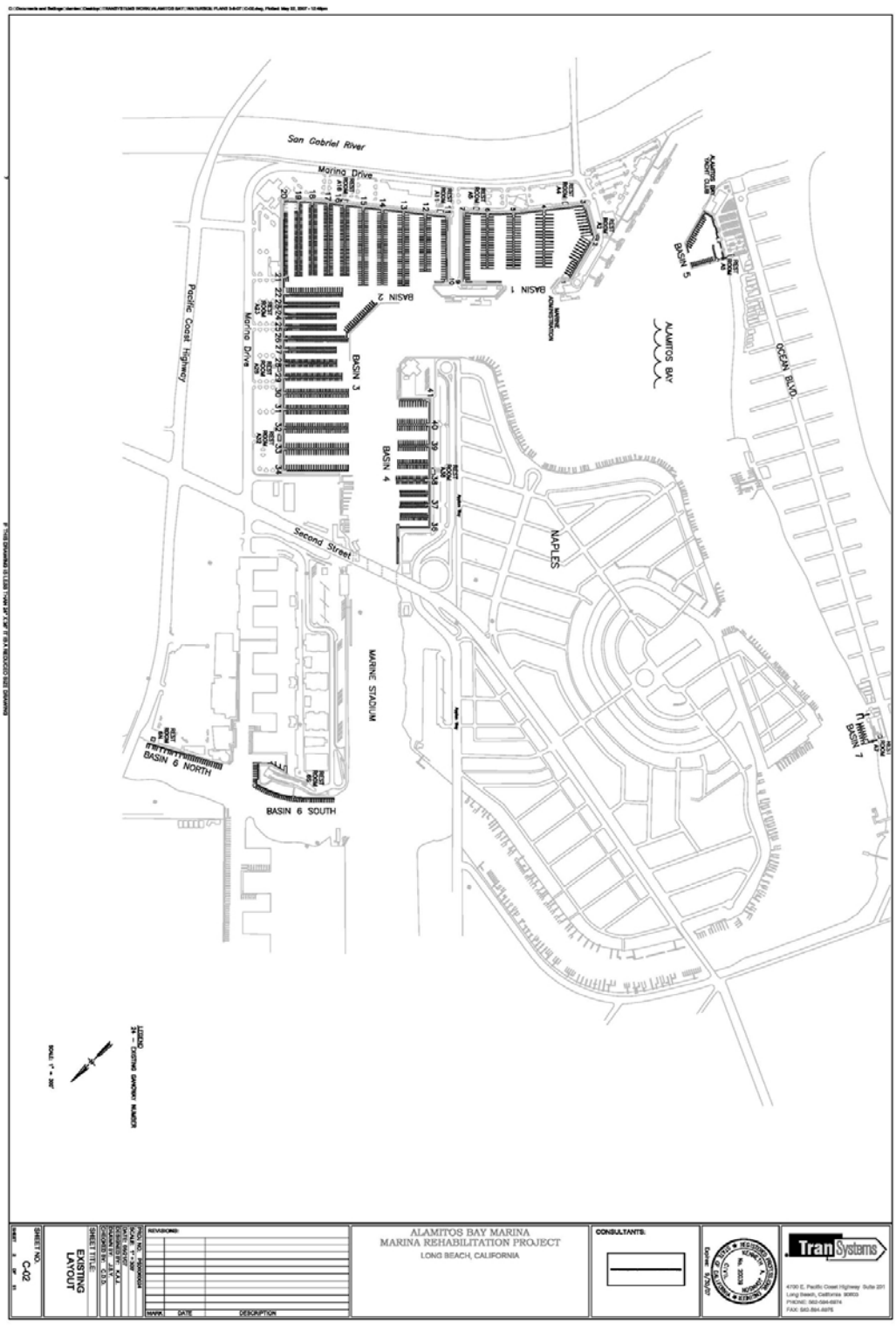


Figure 2. Existing Marina Basin Dock Configurations, Basins 1 through 7

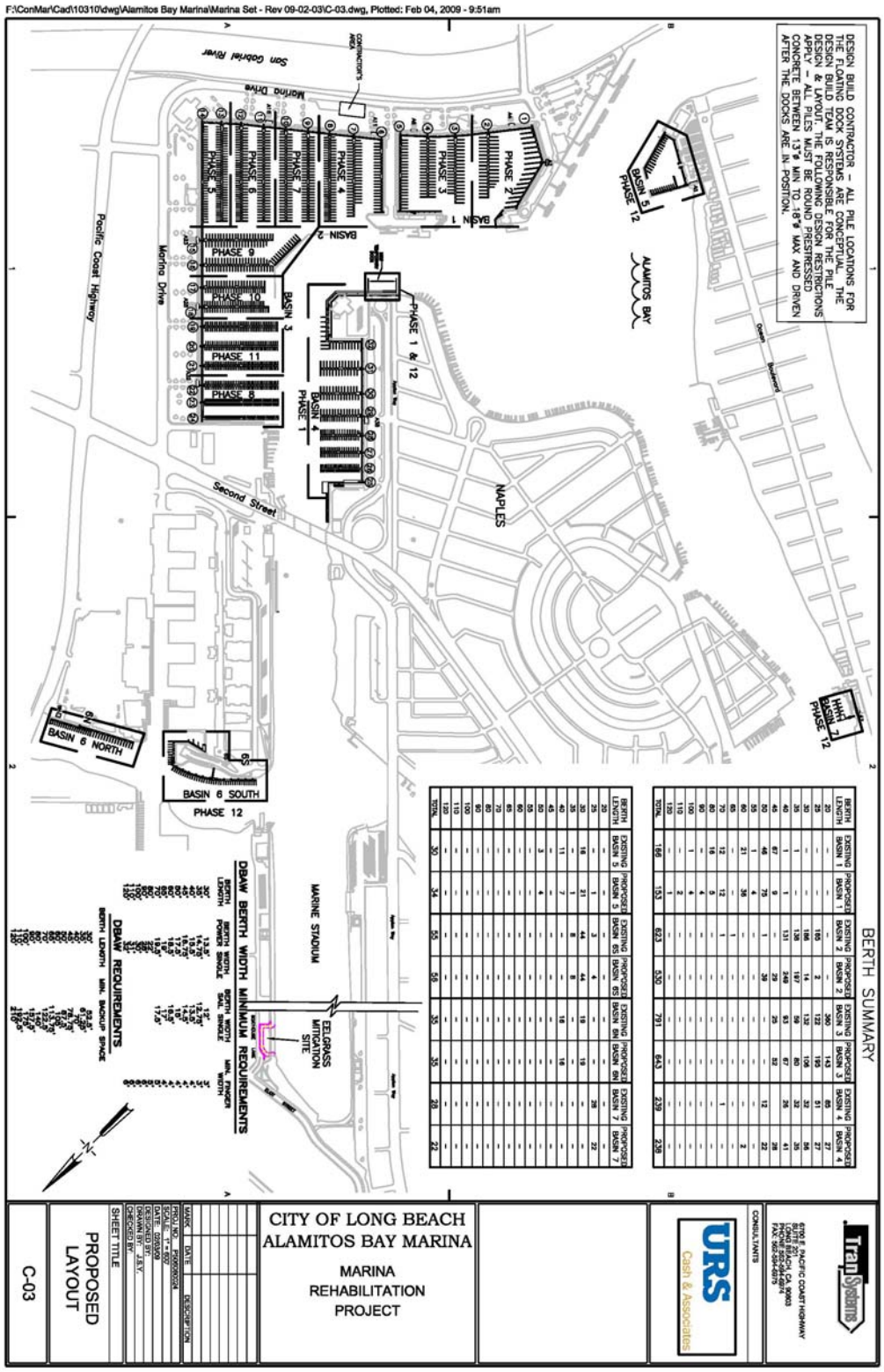


Figure 3. Proposed Marina Basin Dock Configurations, Basins 1 through 7

which was followed by the separation of the San Gabriel River and the bay with the construction of a rock jetty (early 1920s), the dredging of the Marine Stadium in 1932 for the 1932 Olympics, the construction of the Alamitos Bay Marina Basins between the mid-1950s and the mid 1960s, and the more recent additions of the Marina Pacifica and Spinnaker Cove development. Currently, there are 1967 slips located within Alamitos Bay Marina Basins 1-7.

2.0 EXISTING CONDITIONS

2.1 MARINE BIOLOGICAL ENVIRONMENT

The Alamitos Bay marine biological project area consists of several habitat types. Intertidal habitats extend from the extreme low to extreme high water mark (-1.2 to +7.0 ft MLLW). The types of habitats in this zone include sandy intertidal, quarry rock (rip rap), dock piles, and sloping cement bulkheads. Portions of, or all of these shoreline types are exposed to both air and water during the tidal cycle. Habitats below the extreme low tide zone are "subtidal" and are never exposed. Project area subtidal habitats include unconsolidated, soft bottom (sands and muds) which make up the majority of the harbor's benthic (bottom) environment, portions of docks, pilings, bulkheads, and the water column. These habitats support marine plants, invertebrates, fishes, and birds.

2.1.1 Intertidal Sandy Beach

Sand beach habitat is found along the Alamitos Bay Peninsula and Bayshore Avenue, at Mothers Beach, End Beach in the Marine Stadium, and within the Cerritos Channel (Jack Dunster Marine Life Preserve). The sand beach environment is a low-energy environment that is affected primarily by wind waves and tidal action. Beaches along the Alamitos Bay Peninsula, Bayshore Ave, and at Mothers Beach are groomed whereas the other sandy shorelines are not. The high intertidal portion of the groomed public beach supports few if any marine organisms in the sediments because of the infrequent tidal exposure and periodic cleaning and grooming. This higher elevation however, provides resting habitat for seabirds (gulls and pelicans). The middle and low intertidal zones provide more consistent tidal inundation and therefore support burrowing species of invertebrates (primarily clams, crustaceans, and polychaete worms). These organisms attract shorebirds to the beach that utilize the invertebrates as their food sources.

2.1.2 Subtidal Soft Bottom Habitat

Benthic Infauna. The benthic (bottom-dwelling) invertebrate community of bays and harbors is made up of a complex of species that live on the sediment surface (epibenthic) or in the soft bottom sediments (infauna). The organisms are found in a range of sediment regimes from fine to coarse, and have affinities to both offshore benthic communities as well as to coastal bay and harbor communities that live in finer sediments and areas of restricted water circulation. While the majority of benthic invertebrates obtain their nutrition by consuming organic detritus, some graze on diatoms and algae or actively prey on other invertebrates. In turn, bottom feeding fishes and resident soft

bottom-dwelling fishes (gobies, juvenile flatfish, and sand bass) rely upon these benthic organisms as food sources.

Common types of benthic organisms that are associated with bay and harbor sediments include flat worms, amphipod crustaceans, crabs, snails, clams, polychaete worms (capitellids, spionids, cirratulids, and ophelliids), oligochaete worms and brittle stars. Sediment physical and chemical characteristics, water column properties, tidal circulation, proximity to storm water outfalls and other contaminant sources, and harbor configuration all play a role in the types of benthic organisms present in the harbor as well as where these organisms live. As part of the characterization of marine sediments and water quality in southern California, California State Water Resources Control Board (SWRCB, 1998) sampled three stations within Alamitos Bay in 1992. One station, (Station 4023) was located immediately outboard of Basin 2 docks that front in the Long Beach Marina (see Figure 3). The five most abundance infaunal species identified from replicate grab samples taken in September 1992 included three polychaete worms (*Mediomastus californiensis, Prionospio heterobranchia* , *P. lighti* and two amphipod crustaceans (*Rudilemboides stenopropdus* and *Mayerella banksia*).

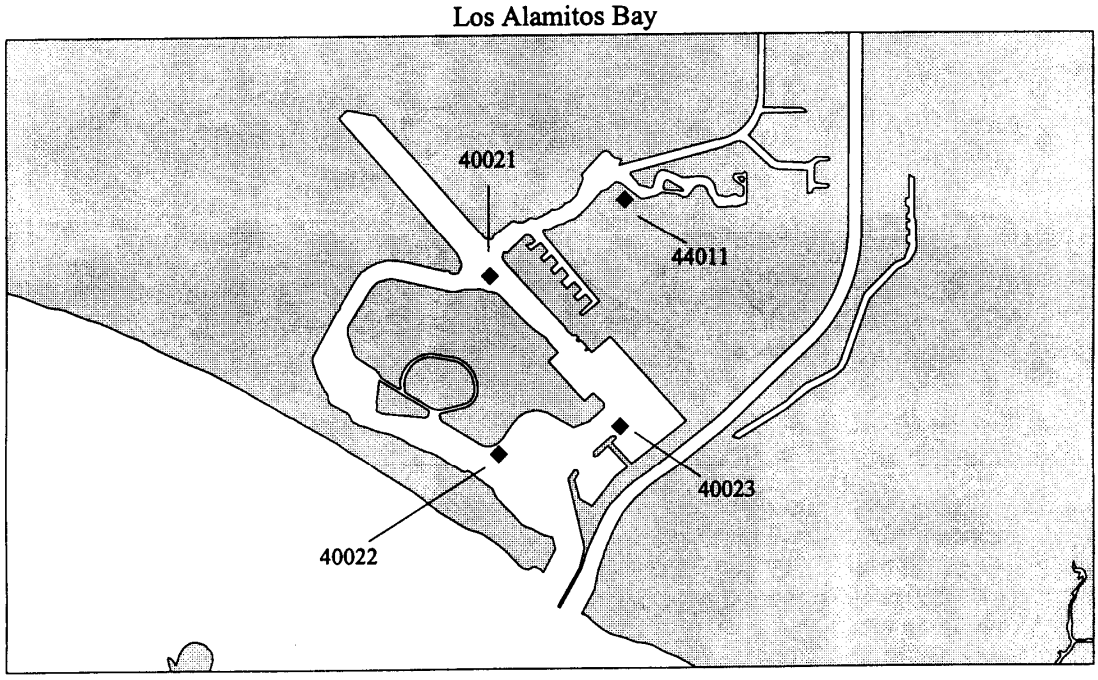


Figure 4. SCWRCB Benthic Infaunal Sampling Stations

Coastal Resources Management conducted intertidal and benthic infaunal sampling at End Beach in the Marine Stadium and Mothers Beach nearby the Alamitos Bay Marina in July, August, and September 1997 for the End Beach Mitigation Project at depths between -3 and +7 ft MLLW (Coastal Resources Management 1998). Fifty four species were identified, of these 16 were common to both areas sampled. Of 17 species of mollusks collected, only one of these occurred at End Beach, while 16 were present at Mothers Beach. Annelid worms, crustaceans, snails, and clams were the most abundant

and frequently occurring taxa. The most common species represented in the samples included the horse mussel *Musculista senhousia*, and the polychaete worms *Pseudopolydora paucibranchia*, *Neanthes acuminata*, *Capitella capitata*, *Armandia brevis*, *Leitoscoloplos pugettensis*, and *Lumbrineries* sp.

Clam beds are found within Alamitos Bay, primarily in the mid-to-low tide zone of sandy beaches and shallow subtidal habitats along the Peninsula, Bayshore Avenue, End Beach, Jack Dunster Marine Life Preserve, Mothers Beach and the inlet inshore of Basin 6 North, on the Cerritos Channel (R. Ware, pers. observations). The most common species present are Japanese littleneck clams (*Protothaca staminea*), *and "cockles" (Chione californiensis and C. undatella)* and secondarily, jackknife clams (*Tagelus* spp.) (Coastal Resources Management 1994, 1998). During September 2007 Coastal Resources Management, Inc. dive surveys in the Alamitos Bay project area for the proposed Alamitos Bay Marina renovation project, clams (*Protothaca staminea* and *Chione undatella*) were abundant within the shallow water habitat located behind the Basin 6 North docks (Coastal Resources Management, Inc. 2007a). Clams were only occasionally found in each of the other marina basins. A map of the CRM project area and a listing of all species observed by CRM biologists during the dive surveys and the remote video surveys are provided in Figure 5 and Table 1.

Epibenthic, Soft-Bottom Benthic Organisms. The sediments in the Alamitos Bay marina basins were uniformly silts with the exception of rip rap lining the bulkheads. Eighteen species of epibenthic organisms were observed during September 2007 and January 2009 diver and remote video surveys of the marina basins and channels (Table 1) and included large colonies of the ectoproct *Zoobotryon verticillatum*-a large, tree-like mass colonial species that is commonly found in high abundances during warm winter months attached to boat docks (Coastal Resources Management, Inc. 2007a, 2009a). However, when it breaks loose, it settles on the bayfloor to form a "bolus' of biofouling debris.

Other species that were observed, but were not abundant during the dive surveys included burrowing anemones (*Pachycerianthus fimbriatus*), octopus (*Octopus bimaculatus*), California horn snail (*Cerithidea californica),* Gould's bubble snails (*Bulla gouldiana*), predatory sea slugs (*Navanax inermis*), and tunicates. Of these, only the ectoproct *Zoobotryon* and burrowing anemones were present to common in the marina basins. A species-poor community of benthic epibiota is not uncommon in unvegetated environments compared to vegetated bayfloors (i.e., eelgrass) where the added structure of eelgrass above and beneath the sediment surface provides habitat and a food sources for many invertebrates.

Common epibiota in the low intertidal and shallow subtidal zones of Mothers Beach and End Beach in 1997 included benthic green algae the *Enteromorpha* spp,, the red algae *Gracilariopsis* sp., bubble snails Bulla *gouldiana*, and predatory sea slugs *Navanax inermis* (Coastal Resources Management, 1998).

Figure 5. Location of eelgrass surveys in Alamitos Bay. B1-B7 are marina basins; TD=proposed temporary dock during construction; MP=Marina Pacifica eelgrass survey area; DB=Davies Bridge eelgrass survey area

Table 1. List of Organisms Observed During Marine Biological Surveys in Alamitos Bay, September 2007-January 2009. Coastal Resources Management, Inc.

Common Name	Scientific Name	Eelgrass Beds and or/Soft Bottom Benthos	Marina Pilings , Rip Rap, and Bulkhead	All Areas
green algae	*Ulva intestinalis*			x
green algae	*Ulva californica*		x	x
brown algae	*Colpomenia perigrina*		x	x
brown algae	*Sargassum muticum*		x	x
red algae	*Caulacanthus sp.*		x	x
red algae	*Corallina spp.*		x	x
red algae	red turf algae (complex)		x	x
red algae	*Rhodymenia* sp.		x	x
sponge	*Haliclona* sp.	x	x	x
encrusting red algae	*Pseudolithopoma sp.*		x	x
green anemone	*Anthopleura sola*		x	x
hydroid	*Tubularia sp.*		x	x
stinging anemone	*Bunodeopsis sp*	x		x
burrowing anemone	*Pachycerianthus fimbriatus*	x		x
hydroid	*Corymorpha palma*	x		x
barnacle	*Balanus glandula*		x	x
barnacle	*Chthamalus fissus/dalli*		x	x
lined shore crab	*Pachygrapsus crassipes*		x	x
limpets	*MacClintokia (Collisella) spp*		x	x
giant keyhole limpet	*Megathura crenulata*		x	x
file limpet	*Lottia limatula*		x	x
slipper shell	*Crepidula onyx*		x	x
horn snail	*Cerithidea californica*	x		x
reverse chama	*Pseudochama exogyra*		x	x
ringed nudibranch	*Dialula sandiegensis*		x	x
lemon nudibranch	*Anisodoris nobilis*		x	x
sea slug	*Navanax inermis*	x		x
sea hare	*Aplysia vaccaria*	x	x	x
octopus	*Octopus bimaculoides*	x	x	x
carinate snail	*Alia carinata*	x		x
angled unicorn snail	*Acanthina spirata*		x	x
kellet's whelk	*Kelletia kelletii*		x	x
turban snail	*Tegula eiseni*		x	x
oyster	*Ostrea conchicola*		x	x

Table 5 (Continued)	Scientific Name	Eelgrass Beds and or/Soft Bottom Benthos	Marina Pilings, Rip Rap, and Bulkheads	All Areas
wavy top snail	*Lithopoma undosa*		x	x
Japanese littleneck	*Protothaca staminea*	x		x
wavy chione	*Chione undatella*	x		x
bay mussel	*Mytilus galloprovincialis*		x	x
soft ectoproct	*Zoobotryon verticillatum*	x	x	x
moss animal	*Thalamoporella californica*	x	x	x
ochre sea star	*Pisaster ochraceus*			x
bat star	*Asterina miniata*		x	x
sea cucumber	*Parastichopus parvimensis*		x	x
colonial tunicate	*Botrylloides spp.*			x
solitary tunicate	*Ciona intestinalis*		x	x
solitary tunicate	*Styela plicata*		x	x
round sting ray	*Urolophus halleri*	x		x
topsmelt	*Atherinops affinis*	x	x	x
black surfperch	*Embiotoca jacksoni*	x	x	x
opaleye perch	*Girella nigricans*		x	x
speckled sand dab	*Citharichthys stigmaeus*	x		x
California halibut	*Paralichthys californicus*	x		x
flatfish	unid. flatfish	x		x
	Total Taxa	**18**	**38**	**53**

2.1.3 Intertidal and Subtidal Hardscape Plants and Invertebrates (Marina Docks, Pier Pilings, Rip Rap, and Cement Bulkheads)

Man-made substrates (bulkheads, seawalls, docks, pilings, jetties) in Alamitos Bay are not particularly biologically sensitive habitats. However, hard substrate provides surface area for sessile marine animals and plants and mobile macro-invertebrates that would not be present in the absence of these structures. The hardscape of these structures support mussels, barnacles, sponges, and other types of invertebrates and plants that constitute the "biofouling community". The undersides of boat floats and docks are commonly colonized by green algae, barnacles, mussels, limpets, polychaete worms, moss animals (ectoprocts), and sea squirts (tunicates). Bay fishes are attracted to the biofouling habitat because it a constant source of food.

A total of 38 species were identified during dive and remote video surveys and included green algae (*Ulva intestinalis*, and *U. californica)*; brown algae (*Colpomenia perigrinus* and *Sargassum muticum*) *and red algae* (*Corallina* spp., *Caulacanthus* sp, *Rhodymenia* sp. and turf red algae complex); sponges (*Haliclona* sp.); green anemones (*Anthopleura sola*) angled unicorn whelk (*Acanthina spirata),* mussels (*Mytilus galloprovincialis*); barnacles (*Balanus glandula*, *Chthamalus fissus/dalli*); ectoprocts (*Zoobotryon verticillatum*); sea

stars (*Pisaster ochraceus*); and tunicates (*Botryllus/Botrylloides* complex, *Ciona intestinalis*, and *Styela plicata*). The rip rap in the vicinity of Basin 1 and Basin 2 also included numerous, larger macroinvertebrates, such as the nudibranchs *Dialula sandiegensis, Anisodoris nobilis;* sea hares *(Aplysia vaccaria),* octopus *(Octopus bimaculatus),* kellet's whelk *(Kelletia kelletii),* wavy top snails *(Lithopoma undosa*) sea stars *(Pisaster ochraceus), oysters* (*Ostrea conchilcola*); bat stars *(Asterina miniata*), and purple sea urchins *(Strongylocentrotus purpuratus).* Many of these species are more commonly associated with open coastal rocky and shallow subtidal reef environments, which suggests that water quality and water circulation within Basins 1 and 2 are more than adequate to support species typically associated with open coastal environments

2.1.4 Fishes

The types of fishes which commonly occur in protected marinas and harbors of southern California such as Alamitos Bay are a combination of species that are associated with soft-bottom habitat, hardscape of pilings, docks, cement bulkheads, and jetties. And open water (water column) species. Valle et al. (1999) identified 46 species of fish from Alamitos Bay during beam trawl surveys of vegetated and unvegetated soft bottom habitats between 1992 and 1995. The catch was dominated by only a few species and consisted mostly of juveniles and gobiid larvae. California halibut were six times more abundant in unvegetated areas than in eelgrass beds, whereas barred sand bass were captured almost exclusively in eelgrass. While the abundances of both halibut and barred sand bass decreased with distances from the bay mouth, other species abundances increased.

Studies conducted by Reish, (1968), Horn, (1974), and Allen (1976), also documented the presence of fishes within Alamitos Bay. Bottom-dwelling species such as various gobies (Gobiidae), staghorn sculpin (Leptocottus armatus), sand bass (*Paralabrax nebulifer*), spotted sand bass (*P. maculatofasciatus*), California halibut *(Paralichthys californicus*), diamond turbot *(Hypsopsetta guttulata*) are also representative of the soft-bottom bay environment. Many of these species are also associated with eelgrass habitat, or the ecotone between the sandy bottom and the vegetated eelgrass habitat.

Marinas provide additional structure (pilings, docks, and jetties) that attract different groups of fish (Coastal Resources Management, 1993). Hard substrate in marinas offer cover, protection, or sources of food for pile perch (*Damalichthys vacca*), pipefish (*Sygnathus* spp.), kelpfish (*Heterostichus* spp.), and opaleye (*Girella nigricans*), while the jetty riprap protecting Alamitos Bay provides a habitat for species such as kelp bass (*P. clathratus*), sargo (*Anisotremus davidsoni*), halfmoon (*Medialuna californiensis*), and cryptic species (blennies and sculpins).

The most common species observed during 2005 eelgrass surveys in the Marine Stadium for the Termino Avenue Drain Project (Coastal Resources Management, 2005) included topsmelt (*Atherinops affinis*), black surfperch (*Embiotoca jacksoni*), shiner surfperch (*Cymatogaster aggregata*), unidentified gobies, round sting ray (*Urolophus halleri*), California halibut (*Paralichthys californicus*), and barred sand bass (*Paralabrax nebulifer*).

Fishes observed in the Colorado Lagoon for the Colorado Lagoon Restoration Feasibility Study by Chambers Group (2004) included 12 species; topsmelt, arrow goby (*Clevelandia ios*), bay pipefish, yellowfin goby (*Acanthogobius flavimanus*), shiner surf perch, shadow goby (*Quietula y-cauda*), round sting ray, California needlefish (*Stongylura exilis*), slough anchovy (*Anchoa delicatissima*, longjaw mudsucker (*Gillichthys mirabilis*), northern anchovy (2 individuals), and cheekspot goby (*Ilypnus gilberti*).

Common water column species in Alamitos Bay include northern anchovy (*Engraulis mordax*), topsmelt (*Atherinops affinis),* queenfish (*Seriphus politus*), white croaker (*Genyonemus lineatus*), although several other sciaenids such as black croaker, yellowfin croaker are also reported to be present. Shiner surfperch (*Cymatogaster aggregata*), black perch (*Embiotoca jacksoni*) and white surf perch (*Phanerodon furcatus*) are common-to-abundant in the bay (Coastal Resources Management, 2005).

Water column fishes in the vicinity of the Alamitos Bay Marina were studied as part of an entrainment/impingement study for the Haynes Generating facility by Intersea Research Corporation (1981), who sampled fish and planking from November 1978 through September 1979. The study included trawl and plankton sampling at several stations throughout Alamitos Bay (Figure 6).

The results of the Intersea Research study indicate seasonal variations in the plankton and ichthyofauna communities in Alamitos Bay. White croaker, queenfish, shiner surfperch (*Cymatogaster aggregata*), northern anchovy, and black perch (*Embiotoca jacksoni*) dominated fish collected in trawl samples at the "nearfield" station near Marina Basin 2.

The Intersea Research study also sampled fish impinged on the pump chamber (intake) screens of each generating unit. The composition of the fish fauna collected on the intake screens at the plant differed somewhat from that collected in trawls taken outboard of the small boat docks that front the intakes in Basin 2 of the Alamitos Bay. The species most commonly impinged and entrained were shiner surfperch, butterfish (*Peprilus simillimus*), white surfperch (*Phanerodon furcatus*), walleye surfperch (*Hyperprospon argenteus*), and topsmelt (*Atherinops affinis*). Most of these species are pelagic (commonly found in the near-surface water) and the perch are generally associated with pilings and other high-relief substrate.

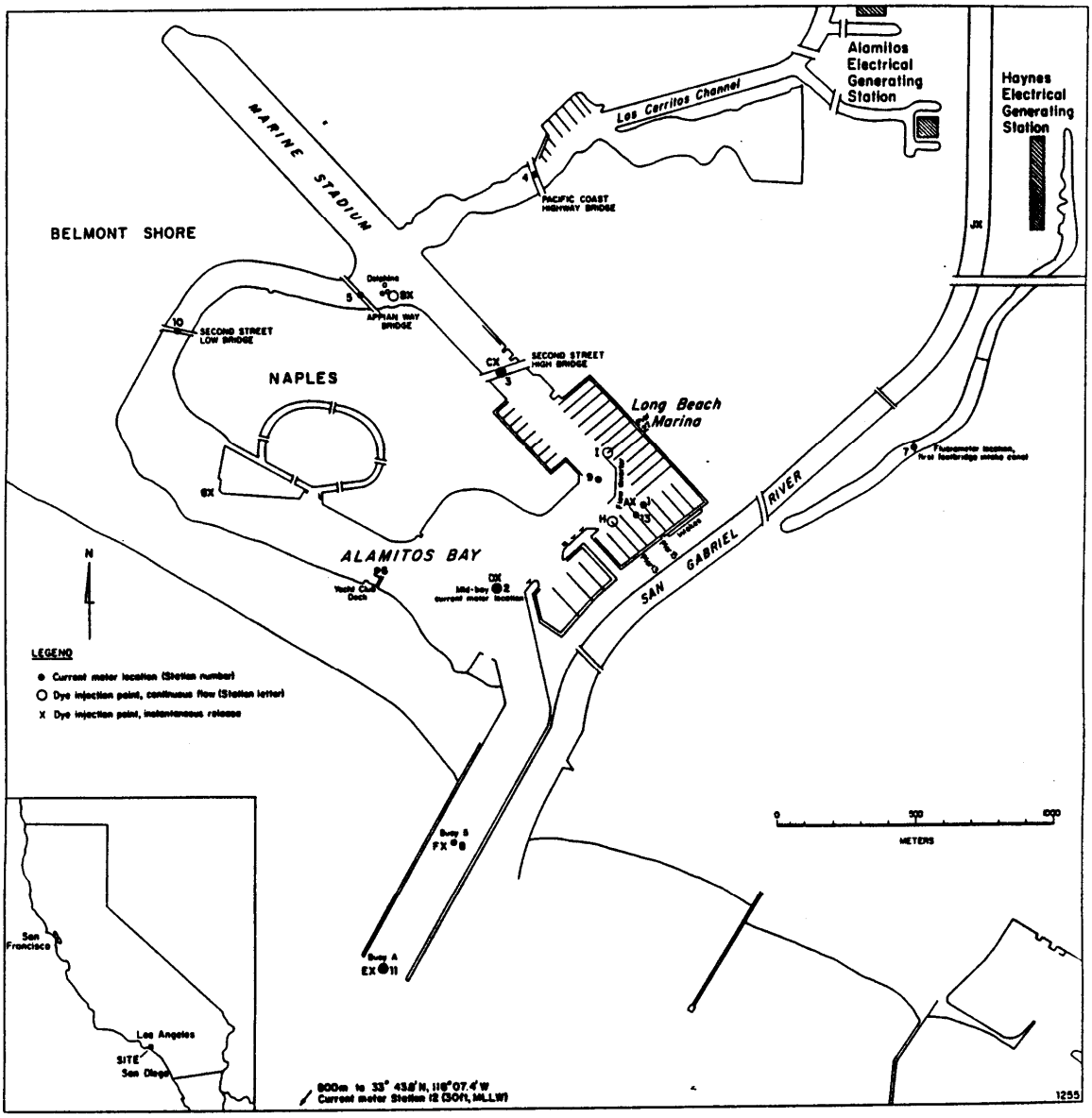


Figure 6. Intersea Research Corporation Fish Sampling Stations

During September 2007 dive surveys, CRM biologists observed only a few fish species within the marina basins, in the main channels of Alamitos Bay, or in the Cerritos Channel, in part due to poor water visibility. Those species observed included topsmelt (*Atherinops affinis*), black perch (*Embiotoca jacksoni*), unidentified flatfish, sand dabs (Citharichthys *stigmaeus*), and round sting ray (*Urolophus halleri*).

2.1.5 Essential Fish Habitat

This assessment of Essential Fish Habitat (EFH) for the Alamitos Bay Marina project is being provided in conformance with the 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (FR 62, 244, December 19, 1997). The 1996 amendments to the Magnuson-Stevens Act set forth a number of new mandates for the National Marine Fisheries Service, eight regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The councils, with the assistance from NMFS are required to delineate EFH for all managed species. Federal action agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential effects of their actions on EFH, and respond in writing to the NMFS recommendations. Impacts to Habitat Areas of Particular Concern (HAPC) are described in the regulations as subsets of EFH which are rare, particularly susceptible to human induced degradation, especially ecologically important habitats, or located in an environmentally stressed area, including estuaries and eelgrass.

The proposed project is located within an area designated as EFH for the Coastal Pelagics (Pacific Fisheries Management Council (1998a) and the Pacific Groundfish (PFMC 1998b) . Species managed under the Highly Migratory Species Fisheries Management Plan may have EFH within the project area but EFH has not been designated for these species under the Migratory Species Act (MSA). In addition, because these are highly mobile species, these species are likely to be transient rather than stationary at the project site. Salmonids have designated EFH under the Pacific Salmonid Management Plan, but it is highly unlikely that the would occur in the project area, and therefore, are not considered.

Of 86 coastal pelagic species managed under all of the FMP, four are known to occur in the San Pedro Channel area, and potentially within Alamitos Bay (Table 2a). Northern anchovy, the only coastal pelagic management species known to occur within Alamitos Bay, comprise a significant portion of nearshore otter trawl catches and contribute moderately to the nearshore fish biomass of the nearshore area of San Pedro Bay (MBC 1997). It ranked highest in abundance during 6 of the 11 monitoring surveys between 1972 and 1997 offshore of the San Gabriel River and was never ranked lower than the 5th most abundant species. Northern anchovy comprise a portion of the commercial bait fishery in San Pedro Bay. This species is a planktivore, and is preyed upon by larger fish and seabirds. Larvae of northern anchovy are also part of the Alamitos Bay ichthyofauna and icthyoplankton community.

Eight Pacific Groundfish FMP species have a potential to be present in Alamitos Bay (Table 3). Of these, three species-leopard shark, California sculpin, and Sebastes spp. have been reported within Alamitos Bay, each with very low occurrences. The potential presence of groundfish species occurring within the Alamitos Bay Marina project area is low, due to a lack of suitable habitat. Of the three species that may occur in the project area (Table 2b) all are be expected to be rare within marina habitat.

Table 2a. Coastal Pelagic Management Plan Species Potentially Affected By The Alamitos Marina Renovation Project

Common Name	Scientific Name	Comment
Northern anchovy	*Engraulis mordax*	Common to abundant during each of 11 surveys between 1972 and 1997. 2nd most abundant species overall offshore. Adult and larvae present in area. [1,2,3]. Present to abundant in fish trawls in Alamitos Bay Marina [4]
Pacific sardine	*Sardinops sagax*	Present during 6 of 11 surveys, low to moderate abundance; Mid-ranked in abundance compared to other species. Mostly adults in the general area. [1,2] Not known within Alamitos Bay proper
Pacific mackerel	*Scomber japonicus*	Incidental catch at depths shallower than 30 feet. Present in one survey (1997) Predominantly adults in project area [1,2,3] Not known within Alamitos Bay proper.
Jack mackerel	*Trachurus symmetricus*	Incidental catch at depths shallower than 30 feet. Present during one survey (1994). Predominantly adults in project area [1,2,3] . Not known from within Alamitos Bay.

Table 2b. Pacific Groundfish Managed Species Potentially Within the Project Area

Common Name	Scientific Name	Comment
English sole	*Parophrys vetulus*	Not reported from Alamitos Bay; present offshore
Pacific sanddab	*Citharichthys sordidus*	not present in Alamitos Bay
Leopard shark	*Triakis semifasciata*	Rare occurrence of adult individuals impinged upon Haynes Alamitos Generating Station Intake Screens-cooling water intake is located within the southeast corner of the Alamitos Bay Marina
Bocaccio	*Sebastes paucispinis*	Not present in Alamitos Bay; no suitable habitat in Alamitos Bay Marina
Rockfish	*Sebastes miniatus*	Juvenile *Sebastes* (*S. miniatus*) have been impinged on Haynes Alamitos intake screens, although in low numbers. Rare occurrences likely within the marina.
California scorpion fish	*Scorpaena guttata*	Potentially present on Alamitos Bay entrance channel jetty; rock rip rap present in the marina, although it is more commonly found in open coastal environs rather than bays and estuaries
Lingcod	*Ophiodon elongatus*	Not present in Alamitos Bay; no suitable habitat in Alamitos Bay Marina
Cabezon	*Scorpaenichthys marmoratus*	Not present in Alamitos Bay; no suitable habitat in Alamitos Bay Marina

Source: MBC Applied Environmental Sciences (2006); [1] MBC 1997;[2] MEC 1988;[3] MEC 1999; 4 Intersea Research Corporation, 1981

2.2 SENSITIVE SPECIES

2.2.1 Eelgrass (*Zostera marina*)

Eelgrass is considered a Habitat Area of Particular Concern (HAPC) and a subset of Essential Fish Habitat under 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (FR 62, 244, December 19, 1997). Eelgrass grows on sand and mud sediments throughout the bay in the Alamitos Bay Jetty entrance channel (Coastal Resources Management, 1994) along Bayshore Ave. and Ocean Blvd (Coastal Resources Management, 1999, Wetlands Support and Coastal Research, 2003), in the Marine Stadium (Coastal Resources Management, 1998, 2002, 2005); Spinnaker Cove and the Cerritos Channel (Coastal Resources Management, 1994, 1996), in the Naples Island Canals (Coastal Resources Management, Inc. 2007, Wetlands Support and Coastal Research, 2003,) and the periphery of Naples and Treasure Islands (Wetlands Support,2003, Coastal Resources Management, 2003). Very small patches of eelgrass have also been found in the Colorado Lagoon (Chambers Group, Inc., 2004).

This seagrass provides habitat and structure for benthic invertebrates and organisms that live on the protruding blades and shoots. Common invertebrates that live on this species of seagrass include anemones (*Epiactis* sp., and *Bunodeopsis* sp.), flatworms, polychaete worms, snails (*Alia carinata*), gammarid amphipods, and caprellid amphipods. These in turn, are fed upon by fishes that forage in the eelgrass beds.

Eelgrass canopy (consisting of shoots and leaves approximately two to three feet long) attracts many marine invertebrates and fishes. The vertical relief of the vegetation enhances the abundance and the diversity of the marine life compared to areas where the sediments are barren (Phillips, 1984; MBC, 1986; Hoffman, 1986, 1990, 1991. 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). A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) live within the soft sediments that cover the root and rhizome mass system. Eelgrass meadows are critical foraging centers for seabirds (such as the endangered California least tern) that seek out 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.

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 in Alamitos Bay and to mitigate any losses by avoiding or reducing, or compensating for any adverse effects on eelgrass habitats and communities.

Photograph 1. Eelgrass, *Zostera marina* Figure One "shoot" and the cluster of "blades" arising from the shoot is considered a "turion unit".

While their presence is not documented within Alamitos Bay, two other species of *Zostera* have a potential to be in the area. A wide-bladed eelgrass (*Zostera pacifica)* is known to occur along the outer coast of Santa Barbara County and the Channel Islands (Coyer et al. 2007), while a second species, *Zostera japonica,* (dwarf eelgrass) is an invasive and native to Asia. It threatens to upset the natural balance of California's wetlands. It has been found in Humboldt Bay (Frimodig and Ramey, 2009; Foss et al., 2007).

Results of the September 2007 and October 2008 Focused Eelgrass Survey in the Project Area

Coastal Resources Management conducted marine biological surveys between September 17-21st, September 24th-25th, and October 2nd, 2007 (Coastal Resources Management, Inc.,2009a). Surveys were conducting using three methods; side scan sonar, remote underwater video, and biologist-diver underwater studies to map and to record eelgrass bed characteristics. Nearshore and Wetland Surveys, Inc. provided side scan sonar field and data reduction assistance for CRM. The results of that survey are provided under separate cover. A breakdown of the amount of eelgrass within each area is provided in Table 3, and eelgrass maps are presented in Appendix 1. Eelgrass was found between the depths of 0.0 and -8.5 ft MLLW. Based on the combined mapping effort of the side-scan sonar and underwater diver-mapping surveys, a total of 2.9 acres (126,926 sq ft) of eelgrass was located in Basin 2, Basin 4, Basin 6N and 6S, Basin 7, the Marina Pacifica Channel, the Cerritos Channel extending east of Coast Highway Bridge, the main channel between the Davies Bridge and the Cerritos Channel, and along the Alamitos Bay Peninsula between 56th and 71st Places. It

did not occur in Basin 1, Basin 3, Basin 5, or in the vicinity of the proposed temporary dock located on the southeast side of the Long Beach Yacht Club bulkhead at the end of Appian Way. Of the 2.9 acres mapped, 1,373.04 sq ft of eelgrass is present within marina basins where dredging will occur. A total of 256 sq ft of eelgrass was present in the vicinity of Basin 7, but it is outside the zone of potential dredging activity.

CRM revisited each of the areas in the Marina in October 2008, and January using divers and remote video and determined that each of the areas mapped in 2007 was still vegetated with eelgrass, there was no observable increase in areal cover within these areas, and that eelgrass had not recolonized other areas of the Marina since the 2007 survey. CRM surveyed the fairways within Basin 3 where the marina docks have been abandoned (due to safety issues) to determine if a lack of vessel activity has resulted in any eelgrass colonization of the bayfloor since the Oct 2007 CRM eelgrass bed survey. The results indicate that eelgrass had not colonized any of these areas, despite a range of depths (less than 8 ft) where eelgrass can grow, and no light-limiting features due to shading, or turbidity caused by vessel activities.

Table 3. Acreage of Eelgrass Surveyed in Alamitos Bay
(Refer to Appendix 1 for Locations on Map)

Location	Eelgrass Area (sq ft)	% Total
Basin 1	0.00	0.00
Basin 2	1,019.78	0.80
Basin 3	0.00	0.00
Basin 4	123.26	0.10
Basin 5	0.00	0.00
Basin 6 South	11,943.40	9.41
Basin 6 North	230.00	0.18
Basin 7	255.97	0.20
Marina Pacifica Channels	11,543.54	9.09
West of Davies Launch Ramp	46,007.60	36.25
LBYC Long Dock (Proposed Temporary Dock	0.00	0.00
(55th-61st Place)	1,977.64	1.56
Peninsula 2 (63rd-71st Place)	32,682.41	25.75
Upper Cerritos Channel	21,142.88	16.66
Summary	Total Area (sq ft)	% Total
Eelgrass Area (sq ft)	126,926.5	100.00
Eelgrass Area (sq m)	11,796.1	
Eelgrass Area (acres)	2.9	

Eelgrass within the marina basins (B1-B7) accounted for 10.7% of the total amount mapped (13,572.41 sq ft), of which most occurred behind the docks of Basin 6 South. In Basins 2, 4, 6 North, and 7, eelgrass was extremely patchy, scattered, and accounted for only a small portion of eelgrass within all of the marina basins. The Marina Pacifica Channel accounted for 9.09% (11,543.54 sq ft); most of this was found at the confluence of the Cerritos Channel, with amounts decreasing with distance into the Marina Pacifica Channel.

The shallow subtidal habitat between the Davies Bridge Launch Ramp and the Cerritos Channel/Marine Stadium confluence accounted for the highest percentage of eelgrass within any one region, 36.25% or 46,007.6 sq ft. The combined total amount of eelgrass located along the Alamitos Bay Peninsula Beach contributed 27.31% to the total amount of eelgrass (34,060.05 sq ft) of which nearly all was located between 63rd and 71st Places. The Upper Cerritos Channel, east of the PCH Bridge, was also vegetated with a moderate amount of eelgrass, accounting for 16.66% of the total (21,142.88 sq ft).

2.2.2 Fishes

California Grunion (*Leuresthes tenuis*). This fish species is not a formally listed species but is considered sensitive because of its beach spawning activity and potential impacts from beach disturbances such as beach cleaning and beach nourishment. This species is also an important forage fish for several species that are protected or regulated. It uses the high intertidal sandy beach habitat of many southern California beaches as spawning habitat. Grunion lay their eggs in the wet beach sands during the highest spring tides between late February or early March to as late as early September (Walker 1952). The beaches on the Oceanside of the Alamitos Bay Peninsula are known spawning areas; they are not know to utilize Alamitos Bay proper.

Steelhead Trout (*Onchorynchus mykiss*). Steelhead trout are a Federal endangered and California State species of special concern. It is also one of the species listed in the . Pacific Salmonid Management Plan The steelhead trout is an anadromous sea-going rainbow trout that lives approximately two to four years of its life (but this period varies greatly) in the open ocean prior to returning to the stream where it was spawned. It is dependent on small, clear-flowing but not rapid, streams with gravel beds to complete its spawning cycle. The area must also have protective cover and an adequate food source. Steelhead populations are declining because of impacts on habitat such as dams, turbidity, and other habitat incursions (http://www.nmfs.noaa.gov/pr/species).

Except for the colonization of a small population in San Mateo Creek in northern San Diego County, steelhead appear to have been completely extirpated from nearly all systems in the southern portion of the range of the Distinct Population Segment (DPS) from Malibu Creek to the Mexican border (http://www.nmfs.noaa.gov/pr/species).

Tidewater Goby (*Eucyclogobius newberryi).* The tidewater goby 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 (U.S. Fish and Wildlife 1994). 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). Habitat conducive to tidewater gobies is absent from Alamitos Bay.

California Halibut (*Paralichthys californicus*). Although it does not have a formal special status, the California halibut 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 and is a dominant member of the Alamitos Bay fish assemblage (Valle et al., 2009). 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. Young-of-the-Year fish (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 Bay (Horn and Allen, 1981; Allen, 1976b, Allen 1986. The species uses inshore waters of bays, harbors, and estuaries as a nursery and foraging habitat. Juvenile to sub-adult halibut are known to occur through Alamitos Bay (Valle et al., 1999; Coastal Resources Management, Inc. 2009a).

2.2.3 Reptiles

Sea Turtles. Several species of federally-listed threatened and endangered sea turtles could potentially occur in the nearshore open water habitats surrounding Alamitos Bay. There are no known nesting beaches for these species in the United States, but they have been observed off the coast of southern California (California State Lands Commission 1998). These include the endangered leatherback sea turtle (*Dermochelys coriacea*), the threatened green sea turtle (*Chelonia mydas*), loggerhead sea turtle (*Caretta caretta*), and olive ridley sea turtle *(Lepodochelys olivacea*).

In the eastern North Pacific, green turtles have been sighted from Baja California to southern Alaska, but most commonly occur from San Diego south. Occasionally, green sea turtles have been found offshore of Orange County and Los Angeles County, north of their more common southerly range limit due to movement during warmer water El Nino periods (Coastal Resources Management, 2007c and d; pers. com with Eric Wilson, EDAW, Inc.). Green sea turtles have been reported in the San Gabriel River where they encounter the warmer, discharged waters of the power generating facilities located farther up the River. According to the Long Beach Lifeguards and Marine Bureau staff, green sea turtles have been seen in Alamitos Bay and appear to be curious (Vivian Cook, Marine Bureau; Allen Powder, Long Beach Lifeguards pers. Com with R. Ware 27 July 2007). However, no records are kept as to where they have been seen, the time of year of occurrence, or the numbers observed.

There is no evidence that these species breed in the project area. Green turtles are mostly herbivorous. They spend most of their time feeding on algae in the sea and seagrasses that grow in shallow waters. As juveniles, they eat plants and other organisms such as: jellyfish, crabs, sponges, snails, and worms. As adults, they are strictly herbivorous (Ernst 1994; Crite, J. 2000). Because Alamitos Bay has a productive eelgrass system, green sea turtles may be utilizing the seagrass beds located throughout the bay as one source of their nutritional requirements, (Coastal Resources Management 2009; pers. com with Eric Wilson, EDAW, Inc).

Green sea turtles have been stranded or have been sighted along the Long Beach shoreline and the vicinity of Alamitos Bay In October, 2004, three green sea turtles stranded in the Belmont Shore area and one green sea turtle stranded in the Treasure Island Marina area. In October, 2006, the Long Beach Aquarium attached a satellite transmitter to a green sea turtle that had live-stranded in Long Beach. The turtle was tracked south to the San Clemente area and then turned around and headed back north to the Long Beach area, where it remained for several weeks, presumably foraging on eel grass or algae in the area (EDAW, 2007; Christina Fahy, National Marine Fisheries pers. com. with EDAW, Inc. July 2007). A 21-inch juvenile green sea turtle (estimated to be between three to five years old) was found by fishermen casting lines in the channel at the intersection of Pacific Coast Highway and the San Gabriel River on 29 August, 2008 (Aquarium of the Pacific, 2008), stranded within the intake channel, and was reported to have been harassed by several unknown individuals. It was removed and transferred to the Long Beach Aquarium for rehabilitation from minor injuries.

2.2.4 Marine Mammals

The occurrences of any cetacean, including gray whales (*Eschricthius robustus*), would be uncommon within Alamitos Bay although both bottlenose dolphins (*Tursiops truncatus*) and gray whales may occasionally be found in the Alamitos Bay entrance channel or the San Gabriel River mouth (R. Ware, pers. observation). California sea lions (*Zalophus californianus*) and harbor seals (*Phoca vitulina*) rest on harbor buoys outside the harbor, but will also occasionally enter Alamitos Bay although in very low numbers (Chambers Group, Inc. 2004). Alamitos Bay is not considered a breeding habitat for pinnipeds (Bonnell and Dailey, 1993) but it is a potential secondary foraging area due to their observed presence within the bay and the presence of fishes that make up their prey base.

Two distinct populations of gray whales occur in the North Pacific Ocean, a western and an eastern stock. The eastern stock occurs along the eastern Pacific coastline and is known as the California gray whale (Brownell, 1977). In June 1994, the eastern pacific population was removed from the Federal Endangered Species List, due to recovery of population numbers to near the estimated sustainable population size.

The California gray whale migrates through the SCB twice each year, traveling between its feeding grounds in Alaska and its breeding grounds in Baja California. The southern migration through the SCB occurs from December through February, with pregnant females moving through the area first. The northward migration begins in February and

lasts through May, peaking in March (Brownell and Dailey. 1993). Solitary animals generally lead the northbound migration with cow-calf pairs following 1 to 2 months later (Foster and Schiel 1985). Gray whales migrate within 125 miles (200 km) of the shoreline and many are sighted within 9 miles (15 km) of shore (Brownell and Dailey. 1993). On the northbound migration, cow-calf pairs are believed to more closely follow the shoreline rather than the offshore route (Brownell and Dailey. 1993). Gray whales are observed commonly in the nearshore waters in the San Pedro Channel, but are not expected to enter Alamitos Bay except perhaps on a rare occasion.

2.3 INVASIVE SPECIES

Caulerpa taxifolia. The invasive *Caulerpa taxifolia* algae (Photograph 2) 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 (National Marine Fisheries Service, 2008). *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

Photograph 2. *Caulerpa taxifolia*. Source: NMFS

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 (National Marine Fisheries Service, 2008).

No *Caulerpa* algae was observed during the remote video or diver surveys within the project area. During the survey, a total of 7.82 acres were surveyed, of a total 43.97 acres of bayfloor habitat with the marina basins and the proposed temporary dock areas. This represents a total of 17.9 percent cover. It should be noted that the surveys were not conducted specifically to address pre-construction survey invasive algae conditions which are conducted using more stringent protocols related to areas of coverage. A 20% minimum covered is required in non-infected systems (including Alamitos Bay) when Caulerpa pre-and-post construction surveys are conducted.

Undaria pinnatifida. The brown macrophyte *Undaria pinnatifida* has been recorded in Long Beach Harbor and Anaheim Bay (R. Ware, pers. observation) This species was not observed during the survey of the marina basins or the temporary dock area.

Zostera japonica. Dwarf eelgrass is native to Asia and threatens to upset the natural balance of California's wetlands. It has been found in Humboldt Bay (http://www.dfg.ca.gov/invasives/dwarfeelgrass; Foss et al., 2007). It has not been found in Alamitos Bay.

3.0 IMPACT ASSESSMENT

3.1 PROJECT COMPONENTS

The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the harbor. The project encourages boating use by providing upgraded ADA-compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation. The project will be completed over a sequence of 12 phases. Table 4 summarizes the project components.

Table 4. Alamitos Bay Marina Renovation

Component	Existing Conditions	Proposed Project Improvements
Dock System (Basins 1-7)	Floating docks supported by 808 concrete steel reinforced pipes	Replace existing piles with 620 piles (loss of 188 piles). Average pile diameter 15”
	1,967 boat slips provided by timber floating docks	1,646 boat slips provided by floating concrete docks. Loss of 321 slips.
	Approximately 476,839 square feet of area covered by floating docks	Approximately 474,239 square feet of area covered by floating docks. Loss of 2,600 square feet.
Temporary/Long Dock	N/A	One 565’ x 10’ long dock to be located adjacent to Long Beach Yacht Club (Basin 4). Approx 200’ of this dock is temporary. Approx. 3,150 sq ft. of water area covered permanently and 2,000 sq ft. covered temporarily during construction.
Access	47 ADA gangways (none ADA)	46 gangways (including 9 ADA)
Dredging	N/A	Basin 1 – 53,700 cy Basin 2 – 89,900 cy Basin 3 – 55,900 cy Basin 4 – 65,300 cy Basins 5, 6S, 6N, 7 – 22,320 cy Total: 287,120 cy (with 2 ft over-dredge) Target dredging depth is -13 to -15 MLLW in Basin 1; -10 MLLW in Basins 2-7
Sea Wall Repairs	N/A	Approx. 8,250 lf of repair required
Habitat Mitigation Area	N/A	Site in north east Marine Stadium to be excavated to a depth of -2 to -3 MLLW. Approximately 10,500 sq ft.
Dry Boat Storage	None	23 new spaces for boats under 30’ in Basin 4 parking lot. Loss of 16 spaces at habitat mitigation site. Total gain of 7 dry storage spaces.
Restroom Facilities	13 restroom buildings	Refurbish 3 restroom buildings in place; demolish and rebuild 10 restroom buildings. Total of 13 restroom buildings.
Parking Lots	2,515 parking spaces	2,524 parking spaces provided including ADA spaces. 930,622 sq ft of parking lot areas to be repaved

The Marina Rehabilitation Project would accommodate changes in the boating needs of the public by providing longer average slip lengths. The dock and slip facilities were developed 50+ years ago, when the average length of recreational boating slips was shorter than current boater demand. However, providing longer slips will reduce the total number of slips within the Marinas. There are currently 1,967 existing slips in Marina Basins 1 through 7; the proposed project includes installation of 1,646 slips, resulting in the loss of 321 slips. As of the date of this notice, there are 1,430 customers in the Marina, so there would be a slip for every existing customer once the renovations are complete.

The proposed project consists of a number of improvements to the existing Marina and includes the following: (1) dredging the Marina basins down to original design depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) complete dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project includes two construction staging areas: one located in a parking lot on Marina Drive near Basin 2; and a second staging area located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard.

Based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an open space/habitat mitigation site. This mitigation habitat area will therefore be analyzed in the Environmental Impact Report (EIR) as a part of the project. Each of these project components is described in greater detail below.

Dredging. As part of the proposed project, the Marina basins would be dredged to the original design depths. The purpose of this dredging is to remove accumulated materials that prevent safe navigation throughout the Marina basins. The total dredge quantity is approximately 262,000 cy of sediment. The proposed disposal site for dredge materials from Basins 2 through 7 is the United States Environmental Protection Agency (EPA) designated offshore disposal site, known as LA-2, with material discharged via a dump barge. Preliminary testing indicates that a portion of dredge materials from Basin 1 contain elevated levels of metals and would not be acceptable at LA-2. Therefore, approximately 25, 504 cy of material from Basin 1 would be trucked off-site and disposed of at an appropriate landfill, with the remainder being disposed of at LA-2. The dredging work would be phased by basin along with the dock and piling replacement work. Dredge depths for Basins 2,3,4,5, 6 North, 6 South, and 7 will be -10 MLLW, Basin 1 dredge depths will be -13 to -15 ft MLLW.

Restrooms. There are a total of 13 restrooms located throughout the Marina basins that are included as part of this project. Three (3) restroom structures, located in Basin 6-South, Basin 6-North, and Basin 7, respectively, would be remodeled and renovated in place. The remaining 10 restroom buildings would be demolished and replaced with similar structures that contain toilet, shower, and laundry facilities. Six of the 10 structures to be demolished would be relocated to accommodate ADA ramps and

gangways. However, each basin would continue to have the same number of restroom buildings that currently exist, in the same approximate locations.

The restrooms would be constructed in compliance with the ADA guidelines. This portion of the project includes replacement of the existing water and sewer lines with 6-inch (in) lines from all restrooms to the existing water and sewer mains.

Sea Wall Repairs. It is anticipated that 8,250 linear feet (lf) of sea wall repair would be required as part of the proposed project. The repairs are primarily focused on restoring the eroded bearing surface and reestablishing the rock revetment along the slope to the basin floor. Sea wall repairs would be done in phases that correspond with each basin's dock and piling replacement work.

Dock and Piling Replacement. There are 1,967 existing slips in Marina basins 1 through 7 that total approximately 476,839 sf of dock surface area. The proposed project includes installation of 1,646 slips that total approximately 474,239 of new dock surface area. Therefore, the proposed project would result in the loss of approximately 321 slips and a reduction of approximately 2,600 sf of dock surface area. In addition, the proposed project would result in the removal of approximately 808 existing piles and installation of 620 new piles to support the new dock system. The new docks, accessory gangways, and ramps would meet ADA requirements. Upgraded water, electricity, and phone utilities would be provided to the new slip facilities.

Temporary/Long Dock. The project includes one temporary dock that would accommodate displaced boats during each phase of the rehabilitation process. The temporary dock would be located adjacent to the parking lot of the Long Beach Yacht Club. It is anticipated that a portion of the temporary dock would remain in place as a permanent dock at the completion of the Marina rehabilitation.

Parking Lot Replacement. The project includes the replacement of the paved parking lot surfaces adjacent to the Marina slips in Basins 1, 2, 3, 4, 6-North, and 6-South. New asphalt paving would be installed and the lots would be restriped (repaving areas total 930,622 sf). No landscaped islands within the parking lots areas would be removed. In addition, new utility connections including electricity, water, wastewater, and storm drain facilities would be installed in conjunction with the repaving of the parking areas. Concrete ramps meeting ADA requirements and concrete sidewalks and curbs are also included in the parking lot or landside improvement portion of the project.

Open Space/Habitat Mitigation Site. The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an open space/habitat mitigation site. The open space/habitat mitigation site is located within a City-owned storage area. The fenced storage area is currently used, in part, to store impounded items. The project includes abandoning a portion of the storage yard to create an open space habitat. An area of 218 feet by 105 feet would be excavated to a depth of 2 to 3 feet below MLLW. The rock revetment would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel. [Alternatively, culverts would be placed in the

rock revetment to allow water to circulate into the planting area. Design is still underway] The new open space area would be planted with eelgrass to mitigate for the project's potential impacts to marine biological resources.

Project Timing. Implementation of the project is anticipated to be accomplished in a 12-phase program, extending over approximately six years. Each basin will be dredged after removal of the docks and slips within that respective basin. Seawall repair will occur as necessary within each phase. Rehabilitation of the restroom facilities and the parking lot replacement will be completed after installation of all dock facilities and related utilities.

3.2 SHORT-TERM CONSTRUCTION IMPACTS

3.2.1 Water and Sediment Quality

Pile and Dock Extraction and Placement. Concrete production piles (averaging 15 inches in diameter will be driven into the sediments. These activities could increase the levels of water turbidity as each phase of the project is being conducted. However, this method is the environmentally preferred alternative over hydro jetting because it produces less turbidity, and the potential for resuspension of potential contaminants is lower. Turbidity is expected to be limited to the specific basin where dock improvements will be made, and the turbidity plume will dissipate as a function of tidal exchange within the basins. While the impact is expected to be short-term and have a less-than-significant impact on water quality within each specific phase, the project will be conducted over a period of six years. Thus, site-specific turbidity levels may be above-ambient with a portion of the Alamitos Bay Marina for an extended period. Turbidity may also increase if vessel propellers impact the bay floor or prop wash stirs up bottom sediments. To prevent the spread of any turbidity plume out of the area, Best Management Practices (BMPs) should be implemented, when feasible, by installing a siltation curtain around the work zone.

Pile replacement activities will also have a potential to release detectable levels of sediment-bound contaminants into the water column that will be redistributed through the tidally-induced movement of the turbidity plume. Organically enriched sediments resuspended into the water column during pile replacement will also cause a slight decrease in dissolved oxygen levels. Tidal currents will slowly dissipate the oxygen-poor water mass and replenish ambient oxygen levels within one-to-several tidal exchanges.

Consequently, pile removal and replacement in the vicinity may result in the resuspension of material that could degrade water quality. This has a potential to result in a potentially short-term adverse, significant impact to water quality within each Basin. Mitigation measures to reduce the level of impact to less-than-significant is provided in Section 4, Mitigation Measures.

Seawall repairs will result in site-specific, short-term increases in local turbidity. Such activities include the lifting, repositioning and subsequent placement of protective rip rap, against the seawall and repairing the seawall's surface. Turbidity increases will be short-

term, and limited to specific sections of seawalls involving the repair of 8,250 linear feet (lf) of seawall. This will be a less-than-significant impact on water quality with the implementation of Water Quality Best Management practices during seawall repairs.

Oil and Fuel Discharges. Accidental oil or fuel spills that could potentially occur during the proposed dredging and pile removal and dock emplacement operations could result in significant effects on water quality, and subsequently, the fish and wildlife of the harbor depending on the severity of the spill. Such events are likely to be localized spills of lighter, refined diesel fuels, gasoline, and lubricating oils that are highly toxic to marine life. The potential for the occurrence of petroleum-product leaks or spills would be low but the potential for significant, long-term effect on marine resources would be moderate to high. The inclusion and implementation of a Marina Construction and Dredging Management Plan for the project will assist in preventing accidental spills and providing the necessary guidelines to follow in case of an oil or fuel spill and reduce the potential for a significant long term impact to less than significant.

Mitigation measures and Best Management Measures (BMPs) to avoid water quality degradation are provided in Section 4. With the inclusion of avoidance/mitigation measures, there will be no adverse environmental impacts on water quality.

3.2.2 Water Column Biota

Pile Removal and Replacement. The project area water column habitat supports a plankton and fish community of species that are common to bays and harbors of southern California. Living in bays and harbors, with constant sources of turbidity from runoff and other sources, this community of marine organisms has acclimated to some degree, to turbid conditions that might arise from site-specific pile removal and replacement.

During pile replacement, an increase in turbidity will result in a temporary reduction in submarine light levels. Increased turbidity will temporarily reduce the amount of submarine light levels, resulting in a short-term reduction of plankton productivity. Because plankton drift with the currents and turbidity is expected to be localized, there will be only short-term, less-than-significant impacts to the plankton community.

There will be no mortality of open water schooling fishes (atheriniids or anchovies) or fishes associated with piling habitats (i.e., black surfperch, pile perch, kelpfish, and pipefish). Water column fishes will swim away from the immediate work area due to a potential increase in underwater pressure and noise levels from work equipment. Pile-associated species will also avoid the immediate area of pile activity, but may also but may be attracted to biofouling debris that is removed from piles that settles on the harbor floor.

Mortality of bottom-dwelling species such as halibut and gobies is not expected because they will move away from the source of impact upon disturbance. Once piles are in-place, bottom-dwellers will return to the area.

Secondary impacts of increased water turbidity on fishes will be less-than-significant. A greater-than ambient suspended sediment load related to higher turbidity may temporarily reduce the ability of both visual foraging fishes to feed i.e., surfperch and halibut) and planktivores (i.e., topsmelt, anchovy, juvenile surfperch, and juvenile sciaenids). Phasing of the dock and pile replacement over six years will allow fish to find sources of food on nearby hard substrata.

Water column dissolved oxygen concentrations would decrease due to the resuspension of organically-enriched sediments and the resuspension of potentially toxic levels of copper and DDT would increase, particularly in areas near storm drains. These impacts would physiologically stress the fish in the area, and result in their movement out of the area. Because fish will likely move out of the immediate zone of turbidity, their exposure to elevated levels of contaminants is expected to be minimal. Turbidity will return to ambient levels upon cessation of pile removal and replacement through tidal flushing and circulation and fishes would return to the area. Overall, potential impacts arising from pile and dock removal and construction activity will result in less than significant impacts to the fish community.

3.2.3 Soft-Bottom Benthic and Hardscape Associated Communities

Dredging. Dredging will be phased over a 6-year period so that it will occur at the beginning of each of the 12 phases of renovation. Dredging will result in the temporary loss (mortality) of all benthic infauna within the dredge footprint. This will have an unavoidable, significant, but short-term localized impact on the benthic community. There will be no long-term reductions in the amount of benthic soft bottom habitat or populations of benthic invertebrates within the marina basins as a consequence of dredging. The affected species are typical of other bay and estuarine environments in southern California and are dominated by species adapted to constant environmental stresses. Following the completion of dredging, benthic invertebrates will begin the recolonization process. Within one to 3 years, the benthic community in the dredge zone would be expected to recover to pre-impact levels of species diversity and abundance, assuming successful recruitment and recolonization, and water quality and adequate flushing is maintained.

Pile Removal and Placement. The removal of docks and dock pilings will result in an initial loss of biofouling (pile-dwelling) associated flora and fauna on each of the 808 piles and the 476,839 sq ft of dock space. Because the marina redevelopment will occur over several phases, losses will not occur throughout the harbor at the same time, limiting the overall impact to a particular area within each phase over a six year period. Some of the biofouling cover will be dislodged during the pile removal process, creating a zone of organic debris on the harbor bottom in the immediate vicinity of the docks. However, most of the biofouling organisms will be removed and transported offsite to a proper disposal area eliminating a significant localized impact related to an accumulation of decaying organic material on the harbor seafloor. The removal of the pilings is unlikely to result in the release of a significant amount of contaminants; most contaminants present on the pilings would be bound up within the tissues of the organisms being

removed. Once the new piles and docks are re-installed, they will be recolonized by similar types of organisms that were initially removed. The process of recolonization will begin immediately upon placement; however, re-establishment of mature communities on 620 of the original 808 pilings (78% of the original total) will be phased over a period of one-to-six years. The removal and replacement of pilings and docks will have a less–than-significant impact on the biofouling community. There are no sensitive species associated with the piling community that would be impacted by marina renovations.

Repairs made to the 8,250 lf of seawall and rip rap will result in short-term reductions of hard bottom associated species such as mussels, barnacles, limpets, sea squirts, and algae. Marine organisms will begin to repopulate the seawall and rip rap upon cessation of seawall repairs with no expected long-term impacts to hard-bottom benthic algae, invertebrate, or fish populations. Consequently, seawall repairs will have a temporary, less-than-significant impact upon these resource groups. All repairs will be made within the existing footprint of the hardscape of the rip rap and will not impact soft bottom ESH habitat.

3.2.4 Sensitive Species

Eelgrass. Barges, scows, and support vessels have a potential to impact eelgrass through (1) deployment of anchors and anchor chain within eelgrass habitat (2) grounding of the vessels over eelgrass habitat and (3) propeller scarring and propeller wash. These activities would create furrows and scars within the eelgrass vegetation, and perhaps temporarily increase turbidity that could potentially cause additional adverse losses of eelgrass habitat along the transit corridor in-and-out of the marina. . With Best Management Practices for vessel movements and support vessels implemented for the project, vessel-related impacts to eelgrass will be less-than-significant.

Dredging in Basins 2, 4, and 6 will remove 1,373.04 sq ft of eelgrass (Table 5) located within these basins. This will have an adverse impact on Essential Fish Habitat. This loss is discussed in Section 3.3.

Tidewater Goby. Tidewater gobies are not known to occur within Alamitos Bay Marina; no construction-related impacts will occur on this species or its habitat.

Steelhead Trout. There are no known populations of this species in Alamitos Bay, Therefore, there will be construction-related impacts on Steelhead Trout EFH for salmonids.

California Halibut. Juvenile halibut are found in many areas of Alamitos Bay, and they will potentially be present within the marina basins. During pile installation, any juveniles in the immediate area of pile driving activity will swim to areas outside the immediate impacted zone. No mortality is anticipated as a result of construction activities. The level of impact on halibut is expected to be less-than- significant.

Sea Turtles. Construction activities associated with the marina basins would occur in the mid-region of Alamitos Bay where reports from the Marine Department indicate that sightings of green sea turtle occur. In addition, dredge disposal barge activity entering and leaving Alamitos Bay would be transiting the area in which green sea turtle also enter and leave Alamitos Bay. Therefore, there is a potential that green sea turtles may be in the general project area when marina renovations are occurring, phased over a 6-year period.

Although an occasional green sea turtle may be in Alamitos Bay at the time of marina renovations, the potential for adverse impacts to an individual is low. Dredging, dock reconstruction, the construction of the temporary dock near the Long Beach Yacht Club, and vessel movements to-and-from the project area would potentially result in a behavioral modification to sea turtles that would include a change in swimming behavior to avoid excessive noise, turbidity, or the vessel movements. Sea turtles forage in Alamitos Bay outside the marina basins due to the availability of larger, lusher, eelgrass beds y compared to Basins 2, 4, and 6. Therefore, the project is expected to have less-than-significant impacts on sea turtles.

No mortality would be expected to occur as a result of the proposed project. If a sea turtle is present in the project area during marina renovation the Mitigation Measures identified in Section 4 will reduce these potential short-term construction impacts to a less-than-significant level.

Fisheries Management Plan Fishes. Project activities that would affect identified Coastal Pelagic FMP species (northern anchovy) include increased water turbidity caused by the demolition and replacement of docks, bulkheads, and dredging activities proposed for the project. These impacts could result in northern anchovy temporarily avoiding the project areas, and a minimal potential for mortality of larval anchovy. An increase in the suspended sediment load would temporarily increase the exposure of these species to potentially harmful levels of contaminants and clog their gills, resulting in a reduced ability to feed.

FMP pelagic schooling species potentially present within Alamitos Bay (four species) also use utilize large expanses of San Pedro Bay. Of the four species, only the northern anchovy is expected to be in Alamitos Bay, but numbers within individual marina basins of Alamitos Bay are not expected to be a major part of the northern anchovy population. The majority of the anchovy population is expected to occur both in the main channels of Alamitos Bay and outside of Alamitos Bay in San Pedro Bay at depths greater than 12 feet deep. Therefore, potential impacts on coastal pelagic FMP species or their EFH are expected to be less- than- significant.

Of eight identified groundfish FMP species, three species-the leopard shark, California sculpin, and rockfish- have been reported within Alamitos Bay, each with very low occurrences. The potential impact of the project on FMP groundfish species is expected to be less-than- significant.

Groundfish ESH Areas of Particular Concern (eelgrass) will be permanently affected by the project with the loss of 1,367 sq ft of eelgrass habitat. See Section 3.3 for a discussion of this impact.

There will be no construction-related impacts on salmonid or highly-migratory species or EFH.

Marine Mammals. All marine mammals are protected by the Federal Marine Mammal Protection Act of 1972 (MMPA). The MMPA prohibits the intentional taking, import, or export of marine mammals without a permit. Several of the species that occur within the SCB are also protected under the Federal Endangered Species Act of 1973 (ESA). A species that is listed as threatened or endangered under the ESA is categorized as depleted under the MMPA. Unintentional take of a depleted species is allowed by permit only if the activity is determined to have a negligible impact. Intentional take of a depleted species is only allowed under a scientific research permit.

Vessel traffic coming in and going out of Alamitos Bay (barges, tugs, work vessels) would be transiting to and from offshore waters where California sea lion, Pacific harbor seal, California gray whale, bottlenose dolphin, and other marine mammals occur. Work vessels transiting to and from Alamitos Bay Marina have a low potential to collide with marine mammals or could exposure these resource groups to contaminants and interference with foraging. Marine mammals are generally capable of avoiding boat traffic (Richardson et al., 1983) especially at the speeds the vessels will likely be transiting at. Marine mammals in the local waters have also likely habituated to vessel traffic since vessels commonly transit in-and-out of the Alamitos Bay. Vessel operators are also trained to recognize the presence of marine mammals which reduces the potential for adverse impacts. Therefore, impacts to marine mammals should be less than significant. In the event a pinniped or cetacean is injured or killed as consequence of a collision, the impact would be a locally significant impact, but it would not result in a population-level impact. Should this occur, the vessel operator and the City will immediately notify the National Marine Fisheries Service (Southwest Division) and will submit a written, follow up report within 24 hours of the incident.

Marine mammals are not anticipated to be in the immediate areas where pile removal and replacement will occur in the marina and will not suffer any direct mortality resulting from pile removal or pile replacement.

Noise Production from Pile Extraction and Pile Driving. Marine mammals are capable of hearing over long distances, and even though they may not be in immediate vicinity, there is a low potential for marine mammals to be affected by pile driving activity. The duration of such noise would be intermittent and the work at each site would be in different locations and at different times.

A total of 620 concrete production piles averaging 15 inches in diameter will be driven into the sediments. The use of concrete piles is an environmentally superior method-

acoustically speaking- to the use of steel piles since because it produces less noise from individual pile strikes (ICF Jones & Stokes and Illingworth and Rodkin, Inc. 2009). However, pile extraction and pile driving will still result in the production of some underwater noise and vibrations within Alamitos Bay that marine mammals may be capable of sensing. Overall however, moving sound sources from vessels and aircraft seem to be more disturbing than stationary sources such as drilling rigs and drill ships (Richardson et al., 1983). The initiation of these pile driving could potentially result in a minor startle response from nearby marine mammals and they would be expected to either move away from, or avoid the immediate vicinity. Over time, marine mammals would acclimate to the noise. If pinnipeds or cetaceans were present in Alamitos Bay, they would likely be located nearer to the entrance of Alamitos Bay entrance channel (nearer to Basin 5) than within the other Alamitos Bay Marina basins and although they would likely able to "sense" pile driving noise, the magnitude and intensity of the source sounds are unlikely to result in any significant changes in behavior. Such types of sounds and their intensity levels are common throughout the range in which these marine mammals live.

Pile driving in the air and water could cause seal lions to temporarily move farther away from these activities, although the sea lions are anticipated to adapt to noise. Breeding would not be affected because sea lions do not breed in Alamitos Bay (Bonnell and Dailey, 1993)

The following information is extracted the Port of Los Angeles (2008), Pacific L.A. Marine Terminal LLC Crude Oil Terminal Final SEIS/SEIR 3.3-23 and 3.3 24 in response to the National Marine Fisheries Service's comments regarding the effects of noise on pinnipeds relative to pile driving in L.A. Harbor.

"Pinnipeds appear to have greater tolerance to noise levels than cetaceans. Kastelein et al. (2006) demonstrated that captive seals avoid zones where the sound pressure levels were louder than 107 dBrms (re 1 µPa), but noted that it is possible that in the wild, seals may tolerate higher levels, in order to get food, escape predators, or stay with a pup. Finneran et al. (2003) found no measurable Temporary Threshold Shift (TTS) at sound pressure levels up to 178 to 183 dB (re 1 µPa) for California sea lions. a sea lion, harbor seal, and northern elephant seal at sound pressure levels over periods of 25 to 50 minutes. Increasing the exposure duration from 25 to 50 minutes had a greater effect on threshold shifts than increasing the exposure level from 80 dB original sound source level (SL) (137 to 159 dBrms re 1 µPa) to 95 dB SL (152 to 174 dBrms re 1 µPa); SELs resulting in TTS onset ranged from about 183 to 206 dB (re 1 µPa2 s). Kastak and Schusterman (1996) reported TTS in California sea lions exposed to airborne noise from nearby construction.

Pile driving produces noise levels of 175 to 205 dBrms 177 to 220 dB (re 1 µPa) at 33 ft (10 m) depending on the material and size of the piles (Caltrans 2007). Caltrans (2007) data indicate the sound level for the proposed steel piles could be as high as 195 dBrms at 33 ft (10m). In comparison, an underwater sound level of 180 190 dBrms (re 1 µPa) has been designated as the level A harassment level for pinnipeds (Federal Register 2005),

representing a potential effect level for marine mammals occurring close to construction noise in the Outer Harbor.

Observations during pile driving for the San Francisco-Oakland Bay Bridge East Span seismic safety project showed minimal response in harbor seals while sea lions swam rapidly out of the area (Caltrans 2001). In water, sound transmission loss is between 3 and 6 dB per doubling of distance, with approximately 4.5 dB per doubling of distance in nearshore waters (Vagle 2003). However, at distances of less than about 330 feet (100 m), the transmission loss (rate of attenuation) can be less (Caltrans 2007). For this project, marine mammals such as pinnipeds could experience sound levels approaching Level A harassment levels at around 100 m (330 feet) from the pile driving. This estimate accounts for the size of the largest steel piles, the power of the hammer that would be required to drive them, the lower rate of attenuation close to the pile, and uncertainty in the sound propagation rate that depends on site-specific characteristics (Caltrans 2007). "

Few, if any, individual sea lions or marine mammals would be expected to be present with the Alamitos Bay Marina during dredging or pile extraction or cement pile driving activities. Any sea lions or other marine mammals present would not be harmed, because they would likely either move out of range of sound produced by pile driving, or they would adapt to expected sound intensities. The effect would be of short duration for each pile. The size of the piles to be driven for the project (average of 15 inch diameter pilings) are smaller in diameter than those typically used for commercial port shipping operations and the use (cement production piles) will produce less noise. Therefore, the sound intensity produced, and the potential level of impact for the Alamitos Bay Marina project will be less than that within the Port of Los Angeles for pile driving operations, and a less-than-significant project impact.

Based on the review of data for Los Angeles Harbor, and the fact that smaller concrete production piles will used for this project do not produce as intense sounds as steel piles, the expected level of impact to marine mammals for the project will be less-than-significant. Noise levels are expected to be below that identified as harassment during therefore an application to the NMFS for an Incidental Harassment Authorization, under Section 101 of the Marine Mammal Protection Act will not be necessary. In addition, the City will add a mitigation measure to the project that requires slowly ramping up pile-driving activities (referred to as a "soft start") at the start of Alamitos Bay Marina pile-driving activities (at the beginning of the day and at restarting of construction after lunch breaks or other pile driving interruptions of longer than 15 minutes). See Section 5 for this mitigation measure.

Exposure to contaminants that could cause acute toxicity or bioaccumulation to marine mammals, sea turtles, and sea birds would be avoided by implementing a Marina Construction and Management Plan as part of the City's marina management program. With the implementation of this BMP, impacts related to contamination would be less than significant. No mitigation would be required.

Noises Production from Dredging. The duration of such noise production for each phase would be an approximately 50 days for each marine dredging phase over a six year period and the work would be conducted in different locations and at different times.

The measured sound exposure levels of a clamshell dredge may range between 75-88 dBA (re 20 /-lPa) at 50 feet. Animals have been observed flushing from haul out sites at a sound exposure level of less than 100dBA, and it is possible that marine mammals may modify their behavior as a result of the noise produced by the pile driving and dredging operations (NMFS, 2009)

Based on Port of Los Angeles responses to comments on the Port of Los Angeles (2009) Channel Deepening Project EIR/EIS, NMFS Comment NMFS 08, page 14-08, April underwater noise from the clamshell dredging would be 150-162 dB (re1 µPa) in LA Harbor, which is below the designated level A harassment threshold of190 dBrms (re 1 µPa) for pinnipeds. This would imply that clamshell and dredging effects for pinnipeds, or any other marine mammals near the Alamitos Bay Marina would be less-than-significant. Hydraulic dredging activity in the Alamitos Bay Marina would result in less sound production than clam shell dredging, and therefore, will not result in significant sound effects on sea lions or other marine mammals.

3.2.5 Invasive Species

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. However, a *Caulerpa* algae survey will be conducted according to the National Marine Fisheries Service Control Protocol prior to construction. If this species is found, then protocols for the eradication of *Caulerpa* will be implemented to remove this species from the project area. (http://swr.ucsd.edu/hcd/CaulerpaControlProtocol.htm) The City will conform to the 2008 Caulerpa Control Protocol, which requires survey results to be submitted to NOAA and California Department of Fish and Game (CDFG) within 15 days of completion. This protocol also requires that NOAA and CDFG be notified within 24 hours if Caulerpa is identified at a permitted project site.

Undaria pinnatifida. No Undaria has been reported from the Alamitos Bay marina, although it has been reported to be present in nearby Long Beach Harbor. Therefore, it is unlikely to be spread as a consequence of the renovation of the marinas.

Zostera japonica. No dwarf eelgrass has been reported from the area; its presence within the project area is unlikely, because it is found on mudflat habitat. However, if it is found within the project area during construction and/or the operation of the marina or the proposed eelgrass mitigation habitat in the Marine Stadium, then its presence will be reported immediately to the National Marine Fisheries Service and the California Department of Fish and Game and eradication efforts undertaken.

3.3 LONG TERM IMPACTS

3.3.1 Water and Sediment Quality

Marina Operations. Water and sediment quality within the marina basins will be governed by the practices of the tenants relative to their compliance with ordinances, laws, and guidelines related to discharges, vessel maintenance and marina maintenance. Periodic and/or uncontrolled discharges of various pollutants, oils, greases, and wastes will result in a long-term significant adverse effects on water quality with subsequent adverse impacts on local marine life. Surface runoff from the marina will be regulated by the NPDES permit for storm water discharges.

To prevent long-term impacts on local water and sediment quality, a Marina Management Plan should be developed to provide tenants and boaters with reasonable BMPs, safety guidelines, and steps to take in response to accidental spills, leakages and fires to reduce the potential for water quality degradation.

3.3.2 Water Column Organisms

The reduction in dock surface area by 2,600 sq ft will also have a beneficial impact on open water areas within the marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface. Consequently, there will be a greater surface area of unshaded open water habitat that will increase plankton production within each marina basin. Additionally, the increase in open water habitat will have a beneficial impact on fishes and foraging seabirds. This will result in a beneficial, long-term impact on water column resource groups.

3.3.3 Soft-Bottom Benthic and Hardscape Associated Communities

Benthic Infauna. The number of dock piles for the Alamitos Bay Marina renovation project will decrease from 808 to 620 pile surface area will decrease from 1,260.5 sq ft to 967.2 sq ft. Upon removal of the piles, there will be a net increase of 293.3 sq ft of soft bottom benthic habitat. The result will be a long-term, beneficial impact to soft bottom benthic habitat, benthic infauna, and benthos-associated fishes.

Pile, Dock, Riprap, and Bulkhead Organisms. The reduction in both the amount of pile habitat and dock structure (2,600 sq ft) will result in a loss of hardscape structure for biofouling species of invertebrates, algae, and fishes that forage on biofouling species. However, the loss will not result in population impacts to these resources groups. In addition, no sensitive species are associated with this habitat type. The reduction of pile and dock habitat will not have any long-term impacts on hardscape-associated organisms.

Seawall repairs along 8,250 sq ft of the marina periphery will be limited to existing hardscape habitat of both the seawalls and the protective rip rap that slope down from the seawall to the soft bottom environment. There will no long-term reduction in the type or abundance of marine organisms associated with seawall repair.

This work will not result in any loss of soft bottom habitat.

3.3.4 Sensitive Species

The long-term operation of the marina will not result in the mortality of any endangered species. Additionally, there will be an increase of 2,600 sq ft of open water foraging habitat for the endangered least tern and the California brown pelican.

Eelgrass. A long-term reduction of eelgrass within Basins 2, 4, and 6 is predicted, related to dredging to depths beyond eelgrass depth limits. Areas that will be affected by the proposed project's dredging activities include Basin 2, Basin 4, and Basin 6N (Table 5). Dredging will be conducted to depths of -10 ft (MLLW), removing eelgrass and deepening the basins to depths beyond the normal depth ranges for eelgrass survival. This loss is a long-term, but mitigatable impact on Essential Fish Habitat. Project-related dredging impacts will result in the loss of 1,373.04 sq ft (0.03 acres) of eelgrass vegetation. Mitigation for these losses will be required per requirements of the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service, 1991 as amended). See Section 4.0 that discusses the project's eelgrass mitigation plan. Upon successful mitigation for these losses, the level of impact will be reduced to a less than- significant impact. See Section 4.0 which describes the eelgrass mitigation plan.

Table 5. Project Habitat Impacts. Losses of Eelgrass Vegetation

Location	Total Area (sq ft)	Eelgrass Vegetation Affected (sq ft)	Mitigation Requirement
Basin 1	0.00	no impact	0.00
Basin 2 Dredge Impacts	1,019.78	1,019.78	1,223.73
Basin 3	0.00	no impact	0.00
Basin 4 Dredge Impacts	123.26	123.26	147.92
Basin 5	0.00	no impact	0.00
Basin 6 South Dredge Impacts	11,943.40	no impact	0.00
Basin 6 North Dredge Impacts	230.00	230.00	276.00
Basin 7	255.97	no impact	0.00
Marina Pacifica Channel	11,543.54	no impact	0.00
Davies Launch Ramp	46,007.60	no impact	0.00
Temporary Docks 2 (LBYC)	0.00	no impact	0.00
Peninsula (55th-61st Place) Mitigation Site	1,977.64	no impact	0.00
Peninsula 2 (63rd-71st Place)	32,682.41	no impact	0.00
Upper Cerritos Channel	21,142.88	no impact	0.00
Eelgrass Area (sq ft)	**126,926.47**	**1,373.04**	**1,647.65**
Eelgrass Area (acres)	**2.91**	**0.03**	**0.04**

Potential Eelgrass Habitat. The Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service 1991 as amended) defines potential eelgrass habitat as "areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc." It should be noted that there is no conclusive scientific basis for why eelgrass grows in some locations and not in others. It can be attributed to a combination of any of the environmental conditions listed above.

Further, in response to recent concerns regarding the interpretation of the SCEMP, correspondence between Rodney R. McInnis, Regional Administrator for the NMFS and Mr. Jack Peveler, President of the California Association of Harbor Masters and Port Captains, (Appendix 2) clarified that the potential eelgrass clause has been implemented only where "clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence)."

Abiotic features such as water salinity, temperature, and underwater light levels are within normal ranges for eelgrass survival and growth in the Alamitos Bay Marina at depths between 0.0 and -8.5 ft MLLW where eelgrass is known to occur (Coastal Resources Management, Inc. 2009b). While the marina's original design depths were below the depth limits known for eelgrass, shoaling in the marina has subsequently resulted in depths that will support eelgrass, where light levels are sufficient to support eelgrass.

The original and/or design depths of the Marina basins ranged from -12 to -15 ft MLLW. Because the shallower depths within the Marina basins are a result of shoaling over the past 50 years, and because no maintenance dredging has occurred, there are now depths within the basins which are less than 8 ft deep, or "depth suitable" for eelgrass.

Eelgrass vegetation would not be expected to occur in these areas as the site has historically and consistently been used as a marina and the basins had the depths been maintained as close as possible to the original depth (-12 to -15 MLLW). However, over time, shoaling has decreased water depths in 3.39 acres of shaded and unshaded habitat to depths less than 8.0 ft deep (Source: TranSystems, Inc. Alamitos Bay Marina Bathymetric Maps, August 2008) and within the known depth range where eelgrass can survive.

Of the 3.39 acres within the 0 to 8 ft depth range, 2.82 acres are unshaded, but depth-suitable habitat (Table 6). However, there is "clear and convincing evidence" that eelgrass has only been found in seven of the of 38 marina fairway channels (Figures 7-9, and the total amount of depth-suitable habitat within these seven marina fairway channels is 1.47 acres (Table 6). While 1.47 acres of soft bottom habitat within these areas can be classified as "depth-suitable" eelgrass habitat within the seven fairways, CRM's remote video survey in October 2008 indicated that each of the areas mapped in 2007 was still

vegetated with eelgrass, but that there was no observable increase in areal cover, and eelgrass had not colonized in any other areas in the Marina.

Therefore, based on these two (and only available) surveys indicating that eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging. Therefore, impacts to potential eelgrass habitat are considered less than significant and no mitigation is required.

Table 6. Determination of Eelgrass Habitat Vegetation Losses

Location	TranSystems Initial Amount Calculated: (sq ft)	Depth-Suitable Unshaded Eelgrass Habitat-All Marina Basins (sq ft)	Depth Suitable, Unshaded Base Minus Fairways or Basins Without Eelgrass (sq ft)	Existing Eelgrass (sq ft)	Impacted Amount of Eelgrass (sq ft)	Amount of Potential Eelgrass Habitat (sq ft)	Mitigation Requirement: Eelgrass Vegetation: 1.2 to 1
Basin 1	0.0	0.0	0.0	0.0	0.0	0.0	none
Basin 2	71,976.0	70,956.2	61,181.0	1,019.78	1,019.78	0.0	1,223.73
Basin 3	27,274.0	27,274.0		0.0	0.0	0.0	none
Basin 4	19,334.0	19,210.4	2,083.0	123.26	123.26	0.0	147.91
Basin 5	2,233.0	2,233.0		0.0	0.0	0.0	none
Basin 6 South	24,913.0	1,456.0		23,457.0	0.0	0.0	none
Basin 6 North	742.0	512.0	742.0	230.0	230.0	0.0	276
Basin 7	1,400.0	1,400.0		0.0	0.0	0.0	none
						0.0	
Total (ft)	147,872.0	123,041.6	64,006.0	24,830.4	1,373.04	0.0	1,647.65
Total (Acres)	3.39	2.82	1.47	0.57	0.03	0..0	0.04

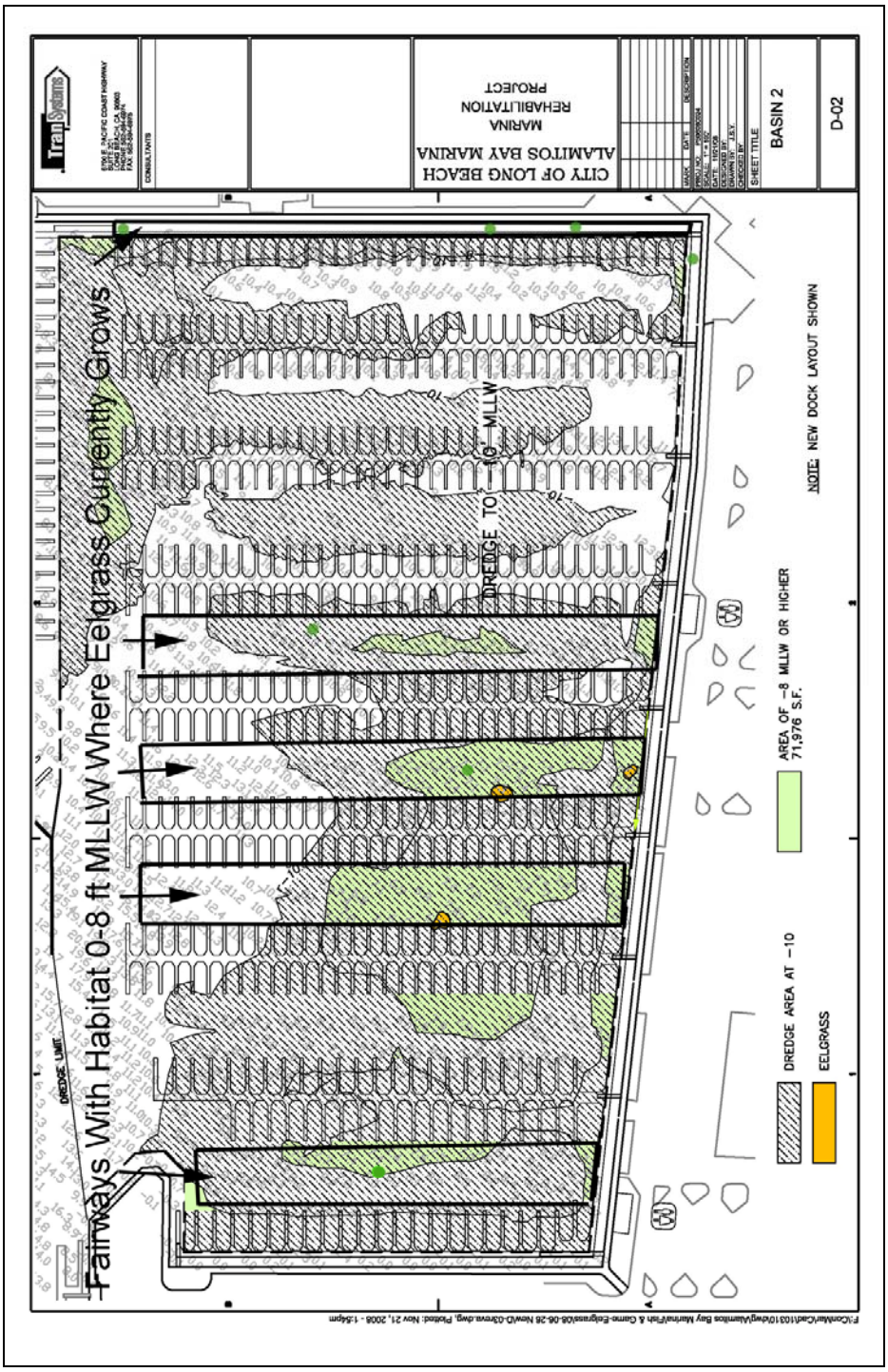


Figure 7. Depth-Suitable Eelgrass Habitat in Basin 2. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

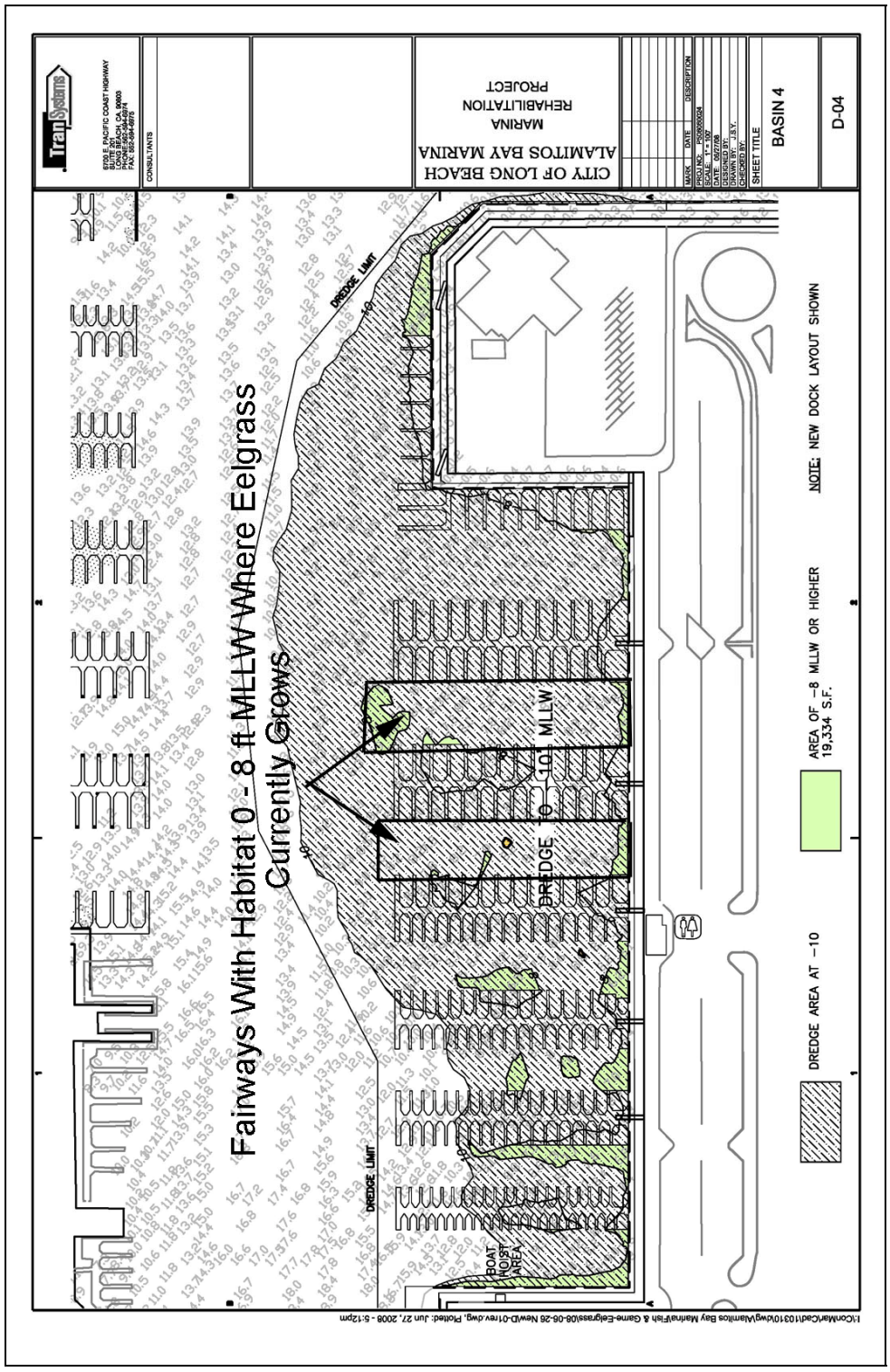


Figure 8. Depth-Suitable Eelgrass Habitat in Basin 4. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

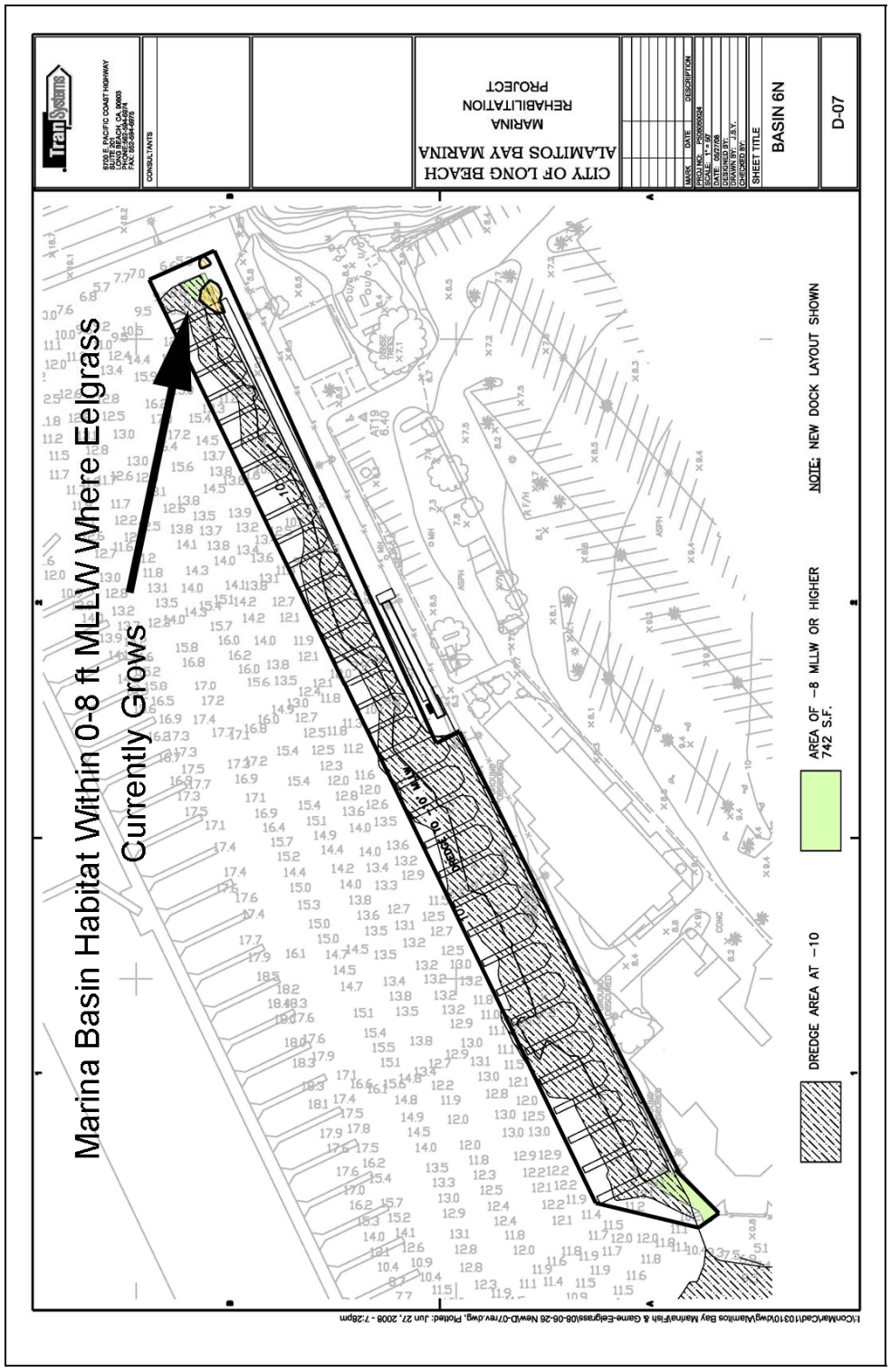


Figure 9. Depth-Suitable Eelgrass Habitat in Basin 6. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

Tidewater Goby. Tidewater gobies are not known to occur within Alamitos Bay Marina; no long-term operational impacts on this species or its habitat are anticipated to occur.

Steelhead Trout. There are no known populations of this species in Alamitos Bay, Therefore, there will be no long-term operational impacts on Steelhead Trout.

California Halibut. As a consequence of the reduction in the size of the marina docks by 2,600 sq ft, there will be an increase in the unobstructed subtidal habitat within the marina basins. In addition, there will be an increase of soft bottom habitat in the marina related to the removal of piles. These predicted changes in the amount of open water and benthic soft bottom will improve the quality of halibut nursery habitat within the marina basins. This will have a potentially beneficial impact on California halibut nursery habitat.

Sea Turtles. No operational impacts to green sea turtles are anticipated as a result of normal marina operations.

Marine Mammals. No long-term impacts to marine mammals will occur as a consequence of the operation of the renovated Alamitos Bay Marina .

Fisheries Management Plan Fishes. The proposed marina renovation project will have no long-term adverse impacts on Coastal Pelagic, Highly Migratory Species, or Salmonid EFH or species within these fishery management plans. Groundfish EFH will be adversely affected by the loss of eelgrass habitat (HAPC). This is a significant-but-mitigatable long-term impact with the successful establishment of eelgrass vegetation through a mitigation program identified in Section 4.

3.3.5 Invasive Species

Caulerpa is not currently present within Alamitos Bay. In the event that it colonizes the marina during its operation, an eradication program would be implemented immediately under the supervision of the Regional Water Quality Control Board, National Marine Fisheries Service, and the California Department of Fish and Game according to the *Caulerpa* Eradication Protocol (National Marine Fisheries Service, 2008). Informational and educational pamphlets alerting boaters and visitors of this potentially destructive species should be included in the Marina Management Plan.

Undaria pinnatifida does not currently exist in Alamitos Bay. There are no accepted procedures for the eradication of this species at the current time. In the event this species is found during pre-and-post construction surveys, the California Department of Fish and Game and the National Marine Fisheries Service will be consulted to determine if, and how to deal with any infestation.

Zostera japonica will not be impacted by this project. There are no accepted procedures for eradication of this species at the current time. In the event this species is found during pre-and-post construction surveys, the California Department of Fish and Game and the

National Marine Fisheries Service will be consulted to determine if, and how to deal with any infestation.

4.0 MITIGATION MEASURES

4.1 WATER QUALITY

Impacts to water quality associated with the Alamitos Bay Renovation Project are considered temporary, less-than-adverse, and would be minimized through (1) the implementation of construction Best Management Practices (BMP) to minimize turbidity plumes and possible contaminants released into the water column during construction activity and dredging. Turbidity will be minimized by using silt curtains where feasible. All floatable debris generated by the construction activity will be contained and trash and debris will be disposed of properly. All construction debris will be removed from the seafloor.

With the implementation of water quality BMPs to reduce the spread of any turbidity plume, there should be no significant impacts to marine resources, including benthic communities, eelgrass, and fish communities outside of the localized construction zone.

4.2 MARINE RESOURCES (General)

Project mitigation measures to reduce potential adverse impacts to marine resources, sensitive species, and rare, and endangered species are provided below.

- No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil.

- All trash shall be disposed of in the proper trash receptacles at the end of each construction day.

- Any construction debris shall be removed from the site.

- Floating booms shall be used to contain debris discharged and any debris discharged shall be removed no later than the end of each day.

- If turbid conditions are generated during construction, a silt curtain shall be utilized to control turbidity. The City of Long Beach shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column.

- Construction methods shall be used that are the least-damaging to benthic sediments and organisms.

- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. The City of Long Beach shall have adequate equipment available to contain such spills immediately.

4.3 EELGRASS PROTECTION PLAN FOR CONSTRUCTION IMPACTS

The following mitigation measures will be implemented during prior to and during construction to avoid and reduce additional adverse impacts to eelgrass.

- The project marine biologist shall provide the project engineer with the coordinates of eelgrass beds within each project construction zone (California Zone V, NAD 83, feet). prior to the initiation of any dredging to avoid unnecessary damage to eelgrass beds outside the construction zones;

- The project marine biologist shall meet with the dredging crew project manager prior to dredging to review areas of eelgrass to avoid. Eelgrass areas shall be marked prior to construction to assist the construction crew in avoiding unnecessary damage to eelgrass.

- Barges and work vessels shall avoid impacts to eelgrass beds in Basin 2 and 4 and other vegetated areas by anchoring or placing anchor chains outside of eelgrass beds and by preventing damage from vessel propellers.

4.4 MITIGATION FOR EELGRASS HABITAT LOSSES

4.4.1 Eelgrass Mitigation Requirements

- Eelgrass vegetation losses shall be mitigated at a 1.2 to 1 ratio (mitigation to impact ratio) such that the loss of 1,373.04 sq ft of eelgrass will be mitigated with the successful transplant of 1,647.65 sq ft of eelgrass vegetation, according to the *Southern California Eelgrass Mitigation Policy* (National Marine Fisheries Service, 1991 as amended).

4.4.2. Mitigation Site Siting Alternatives

Agencies require that mitigation be conducted "in kind" (i.e., mitigation of eelgrass), and "on site" (i.e., within the same system- Alamitos Bay). If this cannot be achieved, than offsite mitigation areas can be evaluated. However, off-site mitigation is extremely difficult to achieve because agencies prefer that mitigation is conducted in the system that was affected by the project impacts. The following sites were evaluated between November 2007 and July 2008 as possible eelgrass mitigation sites. The preferred project alternative is **#6 (Marine Stadium, Northeast Corner Tidal Basin).**

1. **Alamitos Bay Peninsula Between Balboa and 56th Place-Rejected Site**
    - Eelgrass grows in small patches along this section of bay shoreline, but there are open areas of bare sediments that potentially could serve as a mitigation site.

- Water quality is not limiting; good tidal current flushing. Water quality (temperature, salinity, pH, underwater light-levels) and depth are not limiting to eelgrass growth.
- However, beach and subtidal profiles indicate a steep slope and a narrow intertidal to shallow subtidal bench to depths of -5 feet Mean Lower Low Water (MLLW) is likely limiting eelgrass distribution. It is extremely abundant between 64th Place and 71st Place where the beach and subtidal profiles indicate a wide, gradual slope into the eelgrass zone.
- Public use (swimming, and sports fishing activity along shoreline and fishing from kayak/inter tube fishermen may also be limiting to eelgrass growth along this side of beach (according to the California Department of Fish and Game).
- California Department of Fish and Game does not approve of this site as an eelgrass mitigation site because of high public use.

2. Cerritos Channel (north of Pacific Coast Highway)-Rejected Site

- Eelgrass is abundant along the south bank east of PCH Bridge, leading to the Cerritos Wetlands. No opportunity to transplant along this bank.
- Potential, long-term opportunity to include eelgrass mitigation for future restoration of the Cerritos Wetlands, but these plans are not far enough along, nor is funding currently available for implementing any eelgrass mitigation for the resource agencies and regulatory agencies to approve this site as a mitigation area.

3. Basin 6-Cerritos Channel (south of Pacific Coast Highway-Rejected Site

- Initial eelgrass mitigation site evaluation was feasible from a biological standpoint. Preliminary designs for the mitigation site were prepared by Coastal Resources Management, Inc. However, the site was rejected by the Marine Bureau due to a substantial reduction in the number of boat slips and future income for the marina.

4. Long Beach Shoreline between Junipero Ave to 1st Street (Downtown Marina)-Rejected Site

- This site was investigated because eelgrass is known to occur immediately offshore of the surf zone along this stretch of protected beach. The specific site investigated was the shallow water shoal that has been formed at the junction of the Downtown Marina and the shoreline, and the shallow waters immediately outside the surf zone. Sediments tend to consist of silty sand, and water depths are between -2 and -8 ft MLLW. It actively competes with the red algae *Gracilariopsis* for light and space throughout this stretch of nearshore shallow water habitat.
- However, based on CRM diver surveys of the site in May 2008, eelgrass has colonized this shoal and grows extensively throughout the area which precludes this as a mitigation site.

5. Rainbow Marina, Along the South Jetty/Breakwall)-<u>Rejected Site</u>

- Dive surveys were conducted by CRM in May 2008 at depths between 0.0 and -15 ft MLLW. The area investigated was a narrow sandy beach/quarry rock shoreline. The quarry rock shoreline extends subtidally to a depth of -15 ft Mean Lower Low Water in front of the Long Beach Aquarium dock facilities and other commercial vessels in the marina. In order for this area to be used as an eelgrass mitigation site, the waterway would have to be narrowed and filled in with appropriate sandy sediments to depths of -2 to -5 ft MLLW between the end of the docks at the western end of the site, east to the entrance to the marina. Biologically, the subtidal rip rap is highly productive, and it would be unlikely from an agency standpoint that the loss of the subtidal, "artificial structure" and associated marine life would be approved by the resource and regulatory agencies. From a navigable waterway standpoint the narrowing of the channel could be a navigational hazard.

6. Marine Stadium, Northeast Corner Tidal Basin-<u>High Potential For Eelgrass Mitigation</u>

- The Marine Stadium supports one of the most productive eelgrass beds in Alamitos Bay based on detailed eelgrass mapping of the Bay (Coastal Resources Management, 2005).
- Modification of the Marine Stadium boundary to include an "eelgrass mitigation basin" at the northeast end near End Beach has a high potential for eelgrass mitigation success if site conditions mimic those of the Marine Stadium (tidal influence and circulation, sediment types, water depth, temperature, salinity, and pH).
- This can be accomplished by constructing a tidal basin at the site which is currently a parking lot and City boat storage area. Direct connection to the Marine Stadium is required to achieve the water quality objectives needed to support eelgrass.
- A tidal hydraulic analysis was conducted to provide water circulation information needed to evaluate existing hydrodynamic conditions, project-related differences in hydrodynamic conditions, and sedimentation rate differences within the mitigation site. (Everest International Consultants, Inc. 2009). The results of the study indicated that conditions within the proposed tidal basin would be similar to conditions within the Marine Stadium. Therefore, water quality objectives based upon tidal hydraulics can be met with the open tidal basin alternative. Secondly, the results of sediment borings and sediment chemistry analyses (Terra Costa Consulting Group 2009; Positive Lab Service, 2009) indicate alluvial deposits at depths of -2 to -3 ft MLLW (depths to which mitigation area sediments will be exposed) consist of clays, silts, and sands, and they are not toxic according to EPA standards for pesticides, PCBS, and metals. This will promote eelgrass transplant success. Tidal flushing rates and current velocities within the proposed site will be similar to those found

within the Marine Stadium. Therefore, this is the preferred alternative for the project.

7. **Marine Stadium, Northeast Corner-Muted Tidal Basin-<u>Low Potential for Eelgrass Mitigation Site Success. Rejected</u>**
    - This alternative assumes that the shoreline quarry rock rip rap must remain in place to comply with the historic design of the Marine Stadium. It should be noted however, that the historic design of the Marine Stadium has been modified for at least one City mitigation project. The End Beach Mitigation Project (construction of a sandy beach and extension of the shoreline to create the Marine Reserve) was implemented in 1995-1996 by the City Public Works Department to mitigate for the loss of sandy beach habitat associated with the construction of the Alamitos Bay Sailing Center on the Alamitos Bay Peninsula.
    - The muted-tidal basin alternative would require that a tidal basin be constructed behind the existing shoreline, and one-or-more tidal culverts be installed along the length of the tidal basin to allow for tidal exchange. This would in itself, modify the existing historic shoreline because the entire shoreline would have to be first removed, and then put back in once the tidal culverts are installed.
    - This process would likely result in the loss of a significant amount of eelgrass at the base of rip rap during construction due to the footprint of the tidal culverts, which would increase the need for mitigation.

    - Long tidal residence times and poor water quality for eelgrass growth within the muted tidal basin are likely to be limiting factors for a successful eelgrass mitigation project.

    - This alternative would not achieve eelgrass mitigation goals due to (1) long tidal residence periods that would elevate water temperatures and decrease dissolved oxygen levels (2) an accretion of fine sediments within the muted tidal basin that would remain in suspension, and (3) lower underwater light levels that would inhibit eelgrass growth.
    - Computer modeling of this is currently being conducted to determine how many culverts would be required and if this alternative is actually feasible from an engineering standpoint. Based upon the issues associated with biofouling of the Colorado Lagoon tidal culvert, it is likely that long-term maintenance of the tidal culverts would be required.
    - The costs associated with this alternative are considerably greater than the preferred alternative, due to the requirement that the shoreline be restored to its initial line, and the need for long-term and constant maintenance of tidal culverts.

8. **Off Site Mitigation-Huntington Beach Wetlands Restoration Project, Huntington Beach, California. –Rejected**
    - The Huntington Beach Wetlands Conservancy, with local and state funding has renovated wetland habitat along Pacific Coast Highway for fishery habitat, and is planning to do additional work set aside for specific wetland mitigation projects. The Conservancy has indicated willingness to accommodate the City's need for eelgrass habitat mitigation through the direct compensation of the costs required to create subtidal channel habitat to depths of -4 ft MLLW. The City however, has rejected this due to the off-site nature of the project, and believes the mitigation should be accomplished within the city's sphere of influence and not in Orange County.

The presence of large eelgrass beds in the Cerritos Channel east of the PCH Bridge, between 63rd and 71st Places along the Alamitos Bay Peninsula, and along the shoreline between Junipero Avenue and the Downtown Marina preclude these sites as project area mitigation sites. The presence of small, scattered eelgrass beds between Balboa Place to 61st Place along the Peninsula indicate that these areas, while they support limited amounts of eelgrass, are also not candidate sites for eelgrass transplants because the intertidal to shallow subtidal bottom slopes are steep and cannot support extensive amounts of eelgrass between their depth limits. In addition, public use of this part of the shoreline is high and recreational fishing in the area may be contributing to reduced eelgrass abundance (California Department of Fish and Game, pers. com, May 2008) which reduces their functional value as fishery habitat.

4.4.3 Transplant Elements

Permission to transplant within tideland areas. Permission will be required to transplant within tidelands that are under the City of Long jurisdiction. The appropriate agency will be contacted and permission to transplant obtained once the transplant site is selected. Contacts to obtain permission include Mr. Mark Sandoval, City of Long Beach Marine Bureau.

Permission to collect eelgrass donor material. State of California Scientific Collecting Permits will be required for staff involved with the actual collecting of donor material for the transplant. In addition, special permission will be required from the California Department of Fish and Game to collect eelgrass donor material. The CDF&G contact is Bill Paznokas (wpaznokas@dfg.gov.ca)

Responsible Parties. The Applicant, The City of Long Beach will be the responsible party for this project. The California Department of Fish and Game, National Marine Fisheries Service, the California Coastal Commission, and the U.S Army Corps of Engineers will be responsible for reviewing the project's monitoring program results and for determining if the project meets or does not meet criteria as a successful eelgrass mitigation project.

Selection and Construction of a Transplant (Receiver) Mitigation Area. Based upon site surveys of where eelgrass occurs and does not occur in Alamitos Bay and on historical eelgrass survey information for Alamitos Bay, the preferred eelgrass mitigation site is the northeast corner of the Marine Stadium (Figure 10). The site, currently a parking lot and boat storage area will be demolished. Proposed site plans are provided in Figure 11 and include (1) a rock revetment along three sides of the site (2) removal of all surficial material to expose pre-site fill sediments to a depth of -2 to -3 ft MLLW, an approximate 70 wide by 218 ft-long area for eelgrass transplants, and a wave attenuator to reduce the effects of wind waves within the transplant site. The approximately 10,500 sq will be used as an eelgrass mitigation site for the City of Long Beach that will include the transplant of 1,647.65 sq ft of vegetation for the Alamitos Bay Marina Project.

Eelgrass Transplant. The following program will be implemented to mitigate the loss of eelgrass associated with the Alamitos Bay Marina Renovation Project following the construction of the Marine Stadium eelgrass mitigation area (MSEMA). The eelgrass transplant will involve several steps; collecting stock material from the donor site(s), preparing the material for transplanting, replanting the eelgrass in the mitigation area receiver site, following up the transplant with monitoring surveys, and evaluating the success of the transplant.

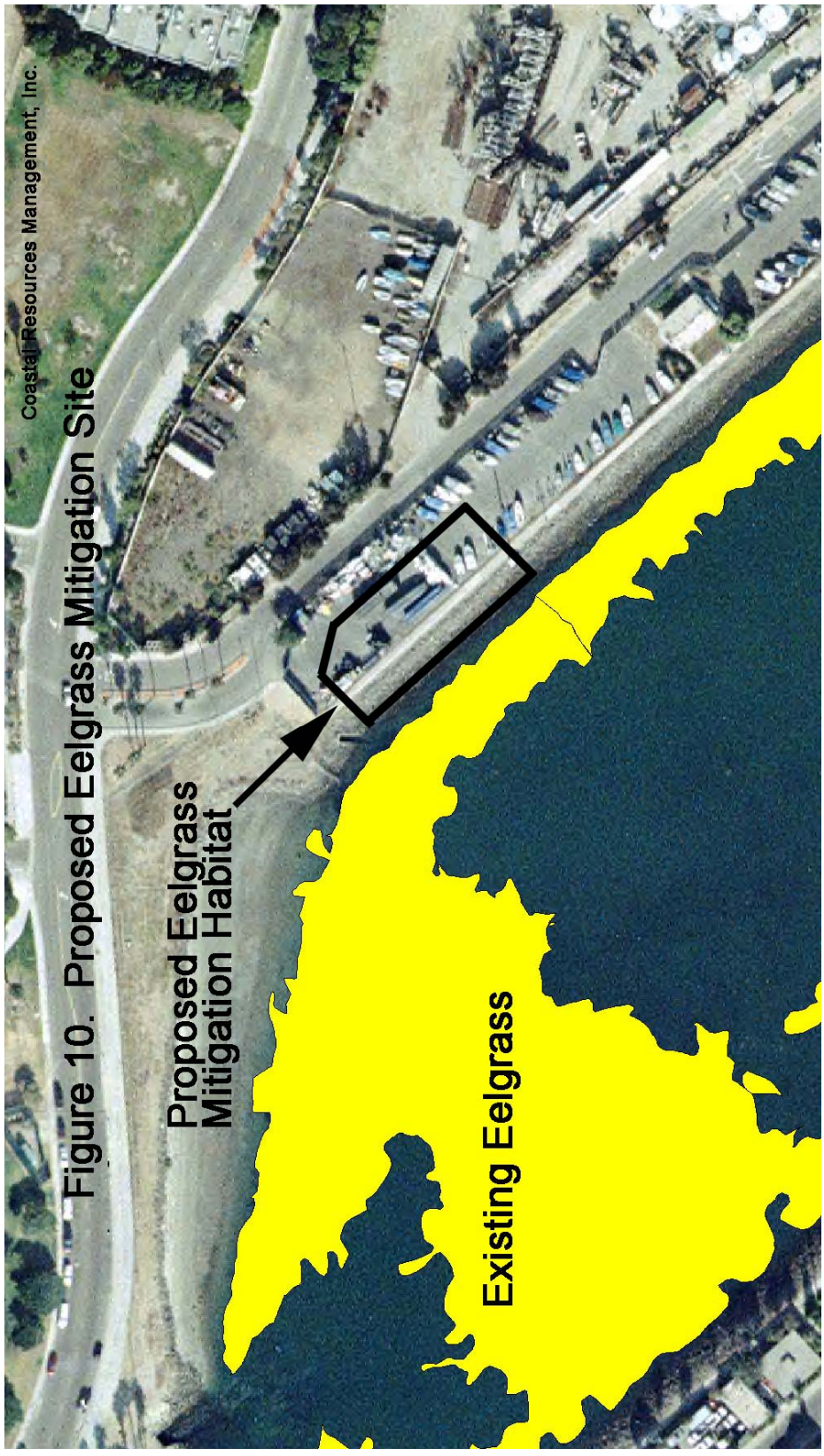
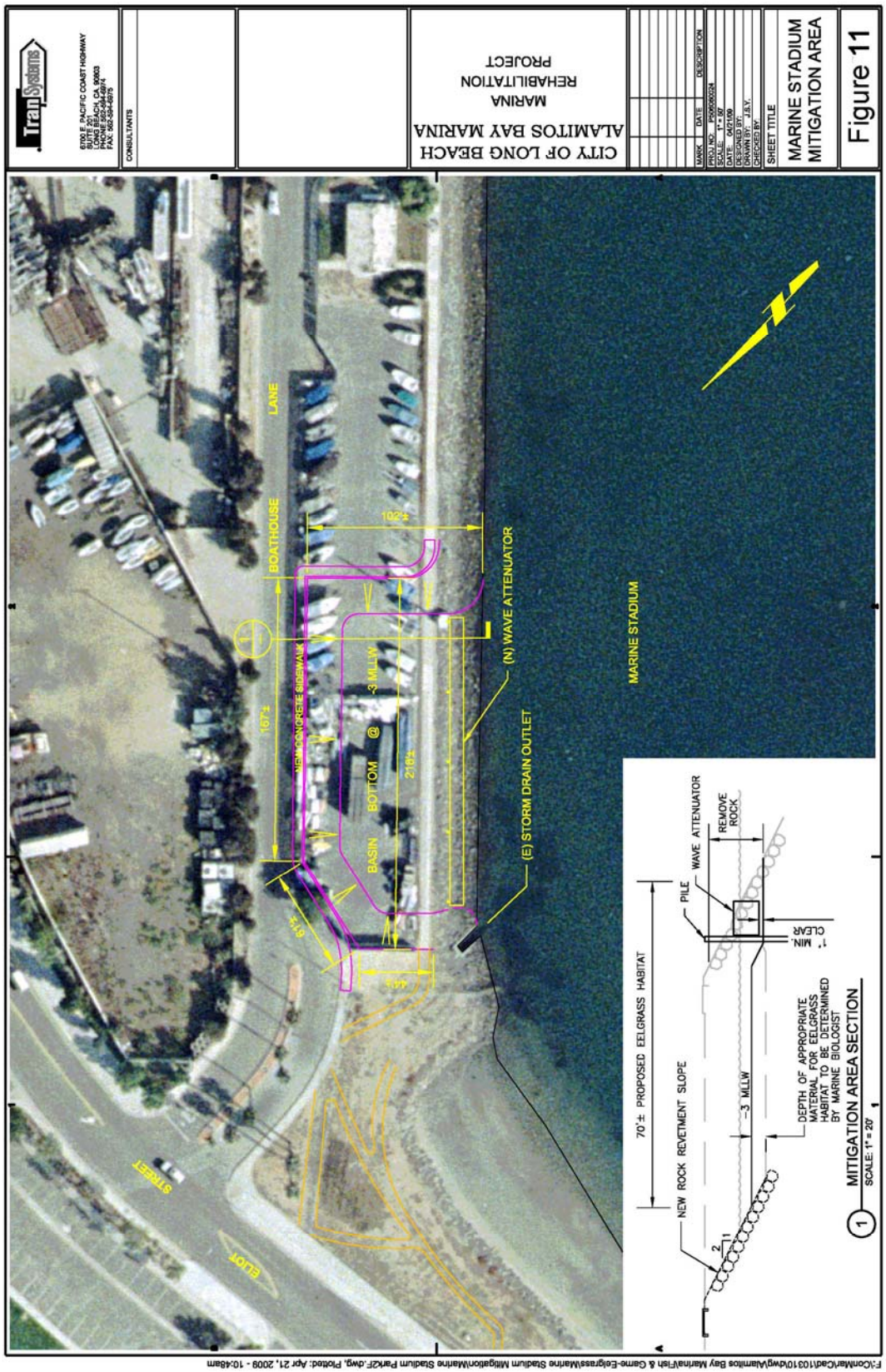


Figure 10. Proposed Eelgrass Mitigation Site


TranSystems
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CONSULTANTS
CITY OF LONG BEACH
ALAMITOS BAY MARINA
MARINA
REHABILITATION
PROJECT
MARK DATE DESCRIPTION
PROJ NO P00000024
SCALE 1" = 80'
DATE OCT 2009
DESIGNED BY
DRAWN BY J.S.V.
CHECKED BY
SHEET TITLE
MARINE STADIUM
MITIGATION AREA
Figure 11
MARINE STADIUM
(N) WAVE ATTENUATOR
(E) STORM DRAIN OUTLET
BOATHOUSE
LANE
BASIN BOTTOM @ -3 MLLW
167±
102±
216±
61±
33±
STREET
ELliOT
70'± PROPOSED EELGRASS HABITAT
NEW ROCK REVETMENT SLOPE
PILE
WAVE ATTENUATOR
REMOVE ROCK
1' MIN. CLEAR
-3 MLLW
DEPTH OF APPROPRIATE MATERIAL FOR EELGRASS HABITAT TO BE DETERMINED BY MARINE BIOLOGIST
2:1
1
MITIGATION AREA SECTION
SCALE: 1" = 20'
F:\ConMarCad\103\0\dwg\Alamitos Bay MarinaVish & Game-Eelgrass\Marine Stadium Mitigation\Marine Stadium Part2F.dwg, Plotted: Apr 21, 2009 - 10:48am

Collection and Preparation of Donor Eelgrass Material. Material will be harvested by diver-biologists from the shallow subtidal at a minimum of three sites in Alamitos Bay to increase genetic diversity in the transplanted material and to minimize disturbances within donor beds. Proposed donor sites include (1) Cerritos Channel eelgrass beds, Marine Stadium eelgrass Beds, and eelgrass in the vicinity of the Davies Launch Ramp north of the Davies Bridge. The preferred transplant method is the bundle method (Fonseca et al. 1982) in which eelgrass is collected by divers from the donor site, transferred to shore, separated into planting units, and replanted by divers along a pre-determined grid. The donor material from each area will be mixed together and then integrated into planting units consisting of about 10 shoots and associated substrate and root mass. Shoots will be bundled and tied together with biodegradable line and a sediment anchoring device.

The bundles will be transferred to the divers who will then replant the eelgrass bundles in spacing units of 1 unit per 1 sq meter. The preliminary number of eelgrass bundles and eelgrass shoots required for the transplant is calculated in Table 7.

Table 7. Estimated Amount of Eelgrass Vegetation Required for the Alamitos Bay Marina Renovation Project

MINIMUM TOTAL NUMBER OF PLANTING UNITS (P.U.)

Total eelgrass surface area/(P.U. Density)^2

$\frac{153\ m^2}{1\ m^{(2)}}$ (1,647.65 sq ft)

= 153 P.U.

Estimated Additional Material Required (20%)
=30 P.U.
Total Planting Units
= **183**

TOTAL NUMBER OF SHOOTS

Total number of P.U. x 12 shoots/P.U.
12 shoots/P.U. x 183 P.U.
= 2,196 shoots

Transplant timing. The transplants will occur during the early active growing period for eelgrass (March-June). It is anticipated that the transplants will be conducted over a three-day period. Mitigation will be conducted for losses associated with all marina renovations at the same time, regardless of marina renovation phase.

4.5 FIELD MONITORING

4.5.1 Pre-Construction Survey

An updated pre-construction eelgrass habitat mapping survey for this project will be completed within 120 days of the each of the proposed start dates of each project phase in accordance with the Southern California Eelgrass Mitigation Policy (NMFS 1991 as amended) to amend, if required, the amount of eelgrass that will likely be affected by dredging activity. The results of this survey will be integrated into a Final Eelgrass Mitigation Plan and used to calculate the amount of eelgrass to be mitigated.

4.5.2 Post-Construction Survey

A post-dredging project eelgrass survey will be completed within 30 days of the completion of dredging within each project phase in accordance with the Southern California Eelgrass Mitigation Policy (NMFS 1991 as amended). Each report will be presented to the resource agencies and the Executive Director of the California Coastal Commission within 30 days after the completion of each of the surveys. If any eelgrass has been impacted in excess of that determined in the pre-dredge survey, then any additional impacted eelgrass will be mitigated at a ratio of 1.2:1 (mitigation to impact).

4.5.3 Transplant Monitoring Surveys

A series of seven monitoring surveys will be required to evaluate transplant success over a period of five years. Furthermore, if the initial transplant fails to conform with required performance standards, a supplemental transplant area and monitoring program in conformance with the *Southern California Eelgrass Mitigation Policy* will be required.

Post-transplant monitoring surveys will be conducted during the active vegetative growth periods of eelgrass (March through October) at intervals of 3 months, 6 months, 1 year, 2 years, 3 years, 4 years, and 5 years after the transplant to determine the health of the transplanted vegetation and to evaluate transplant success based on established criteria (NMFS 1991 as amended). Eelgrass areal cover, percent cover and shoot density of eelgrass will be determined during each monitoring survey. Undisturbed areas of the eelgrass meadows in the vicinity of the transplant site will be used a control area when assessing the results of the transplant. If yearly criteria are not met, then a replant will be conducted. The amount to be replanted is based upon a formula that takes into account area and/or density deficiencies (NMFS 1991 as amended).

4.6 REPORTING

Transplant survey monitoring reports will be submitted to the resource agencies and the Executive Director of the California Coastal Commission in report format within 30 days of the pre-and post-project monitoring surveys, and seven post-transplant monitoring surveys. The reports will present eelgrass area and density data, an assessment of the functional quality of the area, a qualitative assessment of invertebrate and fish use of the area,

determination if mitigation success criteria have been met, and recommended remedial measures if the transplant is not meeting mitigation success criteria. Reporting summaries will also be included per NMFS 1991 Eelgrass Mitigation Policy Guidelines (NMFS 1991, as amended, see Appendix 2).

4.6.1 Mitigation Success Criteria (NMFS 1991 as amended, Revision 11)

Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the project adjusted impact area (i.e., original impact area multiplied by 1.2, or the amount of eelgrass habitat to be successfully mitigated at the end of five years) and mitigation site(s). Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed.

Specific criteria are as follows:

a. the mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.

b. the mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.

c. the mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet any of the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.
A_t = transplant deficiency or excess in area of coverage criterion (%).
D_t = transplant deficiency in density criterion (%).
A_c = natural decline in area of control (%).
D_c = natural decline in density of control (%).

The STA formula shall be applied to actions that result in the degradation of habitat (i.e., either loss of areal extent or reduction in density).

Five conditions apply:

1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.
2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.
3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.
4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 8 of the Southern California Eelgrass Mitigation Policy.
5) Annual monitoring will be required of the STA for five years following the implementation and all performance standards apply to the STA.

4.7 REMEDIATION AND CONTINGENCY PLANS FOR UNSUCCESSFUL EELGRASS MITIGATION

If the initial transplant is unsuccessful, then one additional replanting at the primary on-site mitigation area will occur. The amount to be transplanted will be based upon the guidelines in the *Southern California Eelgrass Mitigation Policy* (NMFS 1991 as amended). If remedial transplants at the project site are unsuccessful, then eelgrass mitigation should be pursued at the secondary eelgrass transplant location on the Alamitos Bay Peninsula.

4.8 MITIGATION MEASURES TO LESSEN IMPACTS TO SEA TURTLES

The following nine mitigation measures would specifically reduce impacts to sea turtles to a less than significant level:

- Direct permanent and temporary impacts to marine sea grasses, which are a primary food source for sea turtles shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy. A total of 1,373 sq ft of eelgrass will be replanted by the City of Long Beach within Alamitos Bay in a location determined by a qualified biologist. The proposed mitigation area is located between 56th and 61st Places, along the Alamitos Bay Peninsula. Monitoring the success of eelgrass mitigation shall be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy.

- A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone.

- The project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques.

- Barges and work vessels shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the sea floor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.

- No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil. Any construction debris within the temporary cofferdam area shall be removed from the site at the end of each construction day.

- During construction, floating booms shall be used to assist in containing debris discharged and any debris discharged shall be removed as soon as possible but no later than the end of each day.

- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Alamitos Bay. Such measures include deployed oil booms and a silt curtain around the proposed construction zone at all times to minimize the spread of any accidental fuel spills, turbid construction-related water discharge, and debris. Other measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits.

- A qualified biologist shall be on site during the construction period to monitor the presence of sensitive and endangered species, to ensure that all water quality Best Management Practices (BMPs) are implemented, and to assist the project engineers in avoiding and minimizing environmental effects to marine resources. The onsite biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.

To further reduce any potential impacts to green sea turtles, the City of Long Beach shall implement the following additional measures as part of the US Army Corps of Engineers permitting process under Section 404 of the Clean Water Act. These measures are above and beyond those required under the California Environmental Quality Act to mitigate biological resource impacts to a less than significant level:

- A qualified marine biologist shall be on site during the construction period to monitor the presence of endangered species. The onsite biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.

- Construction crews and work vessel crews shall be briefed on potential for this species to be present and will be provided with identification

characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.

- In the event that a sea turtle is sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.

- The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his crews aware of the potential for additional sightings. The report shall be provided within 24 hrs to the California Department of Fish and Game and the National Marine Fisheries Service.

4.9 MITIGATION MEASURES TO LESSEN IMPACTS TO MARINE MAMMALS

- The contractor shall be required to use sound abatement techniques to reduce noise and vibrations from pile-driving activities. Recommended sound abatement techniques can include, but not be limited to vibration or hydraulic insertion techniques, drilled or augured holes for cast-in-place piles, bubble curtain technology, and sound aprons depending upon their feasibility for the project.

- At the initiation of each pile-driving event and after breaks of more than 15 minutes, the pile driving shall also employ a "soft-start" in which the hammer is operated at less than full capacity (i.e., approximately 40 to 60 percent energy levels) with no less than a 1-minute interval between each strike for a 5-minute period. The operation of the hammer at 40 to 60 percent energy level during the soft start of pile driving is expected to result in similar levels of noise reduction (40 to 60 percent) underwater.

- A biological monitor shall be on site to monitor effects on marine mammals. The biological monitor shall also note (surface scan only) whether marine mammals are present within 100 meters (333 ft) of the pile driving and, if any are observed, temporarily halt pile driving until the observed mammals move beyond this distance.

5.0 CONCLUSIONS

Water Column Communities (Plankton and Fish). With the implementation of water quality Best Management Practices, there will be no long-term effect on water column organisms. A reduction in the surface area of docks by 2,600 sq ft for the new marina layout will result in a beneficial impact to fisheries and plankton by increasing the amount of open water habitat.

Benthic, Piling, Dock, and Rip Rap Communities. The loss of hard and soft bottom benthic organisms as a consequence of construction is considered a short-term, less-than-significant loss of marine life. Upon the cessation of dredging, benthic organisms will begin to recolonized the sediments, with full recolonization expected to be successful over a period of one to three years. A reduction in the number of piles used for marina renovation will result in a net increase of 293.38 sq ft soft-bottom benthic habitat and an increase of benthic biomass. This is a long-term, beneficial impact. Piling organism biomass will be initially reduced with the removal of 808 piles. However, recolonization will begin immediately upon placement of 620 new piles, with full recovery expected within one to six years. Phasing of the work over a six-year period will assist in reducing the impact to piling organisms. The repair of 8,250 linear feet of seawall will result in temporary impacts to hardscape species that will fully recover following the completion of the repair work. Seawall repairs will not impact soft-bottom habitat. Other than eelgrass, there are no sensitive benthic species that will be affected by the project. There are no sensitive piling or rip rap associated species.

Eelgrass and Essential Fish Habitat. Dredging will result in the loss of 1,373.04 sq ft of eelgrass vegetation. This is an adverse, long-term but mitigatable impact. A mitigation program is proposed to reduce the level of impact to less-than-significant with the successful restoration of 1,647.65 sq ft of eelgrass vegetation.

Fisheries Management Plan Species. Based upon the known distribution and abundance of one Coastal Pelagics FMP species and three Pacific Groundfish FMP species present in Alamitos Bay, the Alamitos Bay Marina Renovation Project will not have a significant impact on FMP species during the renovation or long-term use of the marina.

Sea Turtles. The potential for the marina renovation project to have adverse impacts on the green sea turtle is relatively low given the low population numbers present in the project region. They are however, occasionally found within the bay and the likely impact that the project might have on a sea turtle in the near vicinity of marina renovations would be a behavioral modification to avoid the construction area or transiting work vessel. No mortality is anticipated. Mitigation measures

Marine Mammals. Impacts related to potential vessel collisions, and noise production from pile driving and dredging operations are expected to be less than significant with the implementation of identified mitigation measures.

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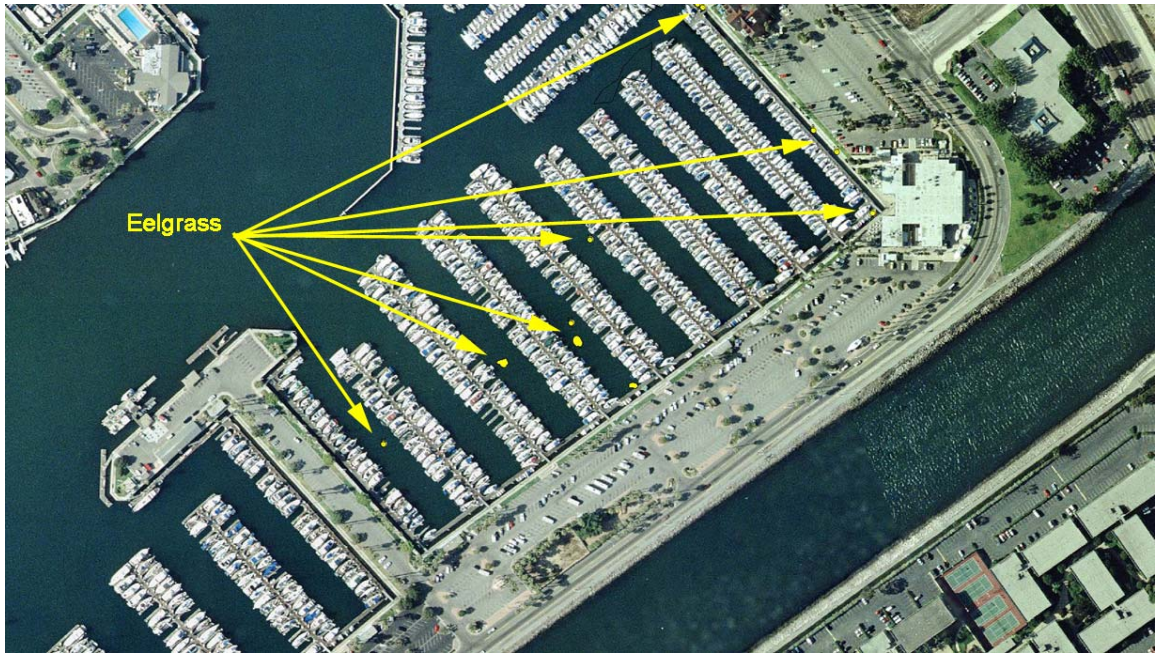
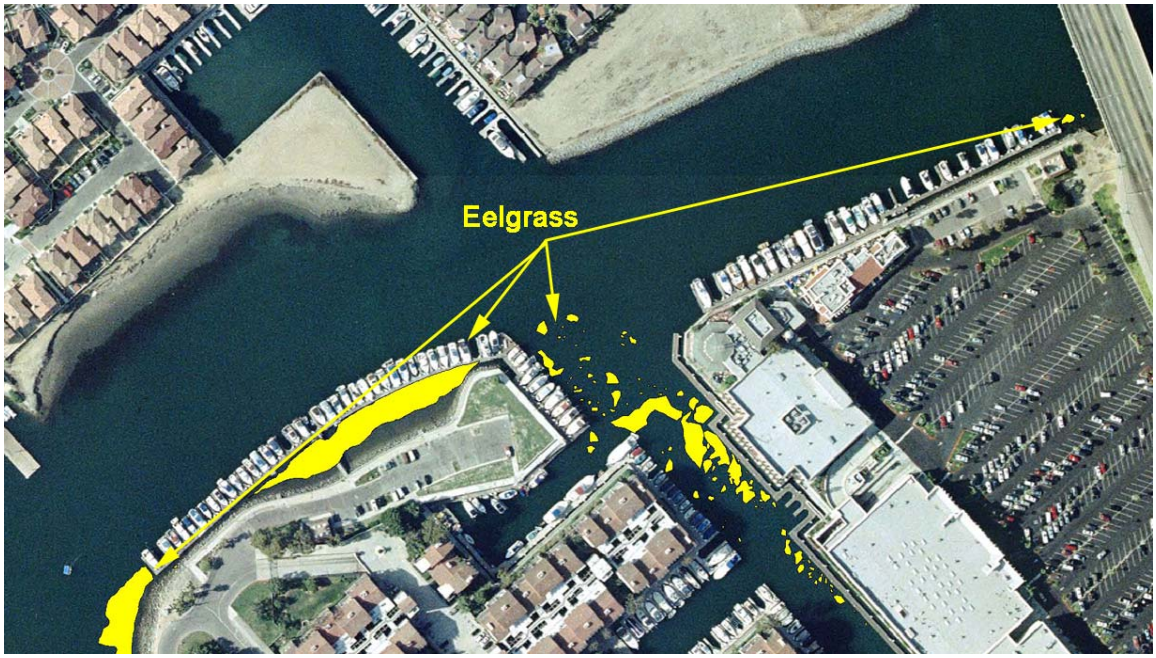
APPENDIX 1. EELGRASS HABITAT MAPS FOR AREAS SURVEYED IN ALAMITOS BAY SEPTEMBER AND OCTOBER, 2007

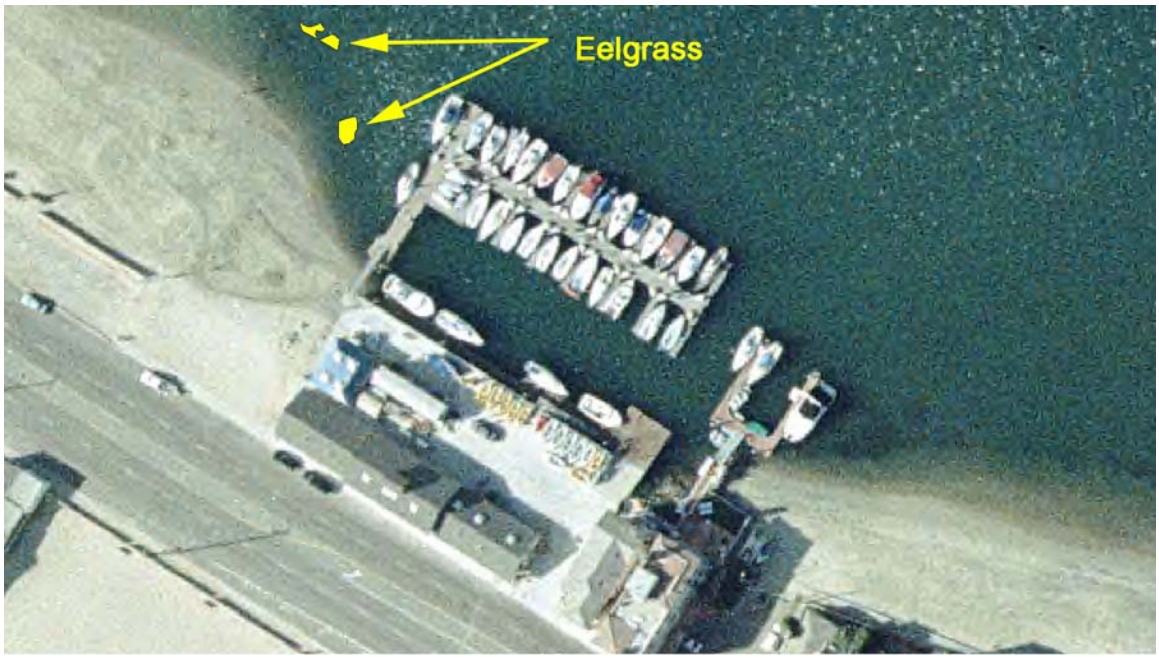


Basin 2 Eelgrass Habitat

Basin 4 Eelgrass Habitat



Basin 6 (South and North) and Marina Pacific Channel North Eelgrass Habitat



Basin 7 Eelgrass Habitat

Davies Bridge and Marina Pacifica Eelgrass Habitat

55th Place to 61st Place (Peninsula 1) Eelgrass Habitat

63rd Place to 71st Place (Peninsula 2) Eelgrass Habitat

Upper Cerritos Channel Eelgrass Habitat

APPENDIX 2
NATIONAL MARINE FISHERIES SERVICE LETTER TO THE CALIFORNIA ASSOCIATION OF HARBOR MASTERS AND PORT CAPTAINS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

JAN 26 2009

Mr. Jack Peveler
President
California Association of Harbor Masters and Port Captains
P.O. Box 510
Sonoma, California 95476

Dear Mr. Peveler:

NOAA's National Marine Fisheries Service (NMFS) has reviewed your letter dated December 9, 2008, regarding the application of the Southern California Eelgrass Mitigation Policy. We appreciate your interest and constructive criticism of our efforts to protect and conserve eelgrass habitat within California.

As a result of the recognized ecosystem functions, eelgrass beds and other submerged aquatic beds, are given special status under the Clean Water Act, 1972 (as amended), Section 404(b)(1), "Guidelines for Specification of Disposal Sites for Dredged or Fill Material," Subpart E, "Potential Impacts on Special Aquatic Sites." This special status and high resource value has led to more stringent regulatory protections of this habitat and requirements for avoidance, minimization, and mitigation of unavoidable impacts.

As a furtherance of efforts to curb losses and reduce the negative trends in seagrass habitat, resource and regulatory agencies around the nation have been working on development of resource management plans and resource protection policies addressing seagrass. In southern California, the Southern California Eelgrass Mitigation Policy (SCEMP) (1991, as revised) was developed by NMFS, U.S. Fish and Wildlife Service, and California Department of Fish and Game to provide further guidance on the necessary steps to compensate for unavoidable impacts to eelgrass resources through regulatory programs. NMFS recognizes that the SCEMP is not part of official NOAA regulations. Rather, it is a coordinated, multiple-agency approach that is intended to provide guidance and consistency for all entities that impact this sensitive resource.

NMFS also recognizes that, as currently written, the potential eelgrass habitat clause could be interpreted more broadly than intended. To date, we have only implemented this clause when clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence). We intend to clarify this aspect of the SCEMP in future revisions and will solicit your organization's input prior to doing so. Similarly, we also believe the SCEMP should be based upon the

best scientific information available and will incorporate such information in future revisions as it becomes available. We welcome any scientific information you can provide that could further refine the SCEMP.

Lastly, one of your last statements regarding shoaling of marinas implies that harbor/marina design depths are the appropriate baseline for environmental effect determinations. When evaluating effects to habitat, NMFS considers the current habitat condition. If NMFS' effects analysis indicates that there would be a reduction in quality and/or quantity of habitat, NMFS will provide conservation recommendations to avoid, minimize or offset such effects. If compensatory mitigation is recommended for a continuing operation (e.g. maintenance dredging), we believe it necessary to do so only once. For example, impacts to eelgrass habitat in Agua Hedionda Lagoon associated with maintenance dredging were mitigated according to the SCEMP, but, assuming future maintenance dredging remains in the same footprint, no additional compensation would be recommended if eelgrass recolonized the area at a later date.

Thank you for your interest in this matter. NMFS encourages your participation in future developments related to eelgrass conservation efforts and will keep you updated accordingly. If you have any questions about these comments or the application of SCEMP, please contact Bryant Chesney at Bryant.Chesney@noaa.gov or 562-980-4037.

Sincerely,

Rodney R McInnis

Rodney R. McInnis
Regional Administrator

APPENDIX 3.
SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

(Adopted July 31, 1991)

Eelgrass (Zostera marina) vegetated areas are recognized as important ecological communities in shallow bays and estuaries because of their multiple biological and physical values. Eelgrass habitat functions as an important structural environment for resident bay and estuarine species, offering both predation refuge and a food source. Eelgrass functions as a nursery area for many commercially and recreational important finfish and shellfish species, including those that are resident within bays and estuaries, as well as oceanic species that enter estuaries to breed or spawn. Eelgrass also provides a unique habitat that supports a high diversity of non-commercially important species whose ecological roles are less well understood.

Eelgrass is a major food source in nearshore marine systems, contributing to the system at multiple trophic levels. Eelgrass provides the greatest amount of primary production of any nearshore marine ecosystem, forming the base of detrital-based food webs and as well as providing a food source for organisms that feed directly on eelgrass leaves, such as migrating waterfowl. Eelgrass is also a source of secondary production, supporting epiphytic plants, animals, and microbial organisms that in turn are grazed upon by other invertebrates, larval and juvenile fish, and birds.

In addition to habitat and resource attributes, eelgrass serves beneficial physical roles in bays and estuaries. Eelgrass beds dampen wave and current action, trap suspended particulates, and reduce erosion by stabilizing the sediment. They also improve water clarity, cycle nutrients, and generate oxygen during daylight hours.

In order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources, the following policy has been developed by the Federal and State resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game). While the intent of this Policy is to provide a basis for consistent recommendations for projects that may impact existing eelgrass resources, there may be circumstances (e.g., climatic events) where flexibility in the application of this Policy is warranted. As a consequence, deviations from the stated Policy may be allowed on a case-by-case basis. This policy should be cited as the Southern California Eelgrass Mitigation Policy (revision 11).

For clarity, the following definitions apply. "Project" refers to work performed on-site to accomplish the applicant's purpose. "Mitigation" refers to work performed to compensate for any adverse impacts caused by the "project". "Resource agencies" refers to National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).

1. **Mitigation Need.** Eelgrass transplants shall be considered only after the normal provisions and policies regarding avoidance and minimization, as addressed in the Section 404 Mitigation Memorandum of Agreement between the Corps of Engineers and

Environmental Protection Agency, have been pursued to the fullest extent possible prior to the development of any mitigation program. Mitigation will be required for the loss of existing vegetated areas, loss of potential eelgrass habitat, and/or degradation of existing/potential eelgrass habitat. Mitigation for boat docks and/or related work is addressed in section 2.

2. **Boat Docks and Related Structures**. Boat docks, ramps, gangways and similar structures should avoid eelgrass vegetated or potential eelgrass vegetated areas to the maximum extent feasible. If avoidance of eelgrass or potential eelgrass areas is infeasible, impacts should be minimized by utilizing, to the maximum extent feasible, construction materials that allow for greater light penetration (e.g., grating, translucent panels, etc.). For projects where the impact cannot be determined until after project completion (i.e., vessel shading, vessel traffic) a determination regarding the amount of mitigation shall be made based upon two annual monitoring surveys conducted during the time period of August to October which document the changes in the bed (areal extent and density) in the vicinity of the footprint of the boat dock, moored vessel(s), and/or related structures. Any impacts determined by these monitoring surveys shall be mitigated per sections 3-12 of this policy. Projects subject to this section must include a statement from the applicant indicating their understanding of the potential mitigation obligation which may follow the initial two-year monitoring.

3. **Mitigation Map.** The project applicant shall map thoroughly the area, distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. This includes areas immediately adjacent to the project site which have the potential to be indirectly or inadvertently impacted as well as potential eelgrass habitat areas. Potential habitat is defined as areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc.

Protocol for mapping shall consist of the following format:

1) Bounding Coordinates

Horizontal datum - Universal Transverse Mercator (UTM), NAD 83, Zone 11 is the preferred projection and datum. If another projection or datum is used, the map and spatial data must include metadata that accurately defines the projection and datum.

Vertical datum - Mean Lower Low Water (MLLW), depth in feet.

2) Units

Transects and grids in meters.

Area measurements in square meters/hectares.

3) File format

A spatial data layer compatible with readily available geographic information system software must be sent to NMFS and any other interested resource agency when the area mapped has greater than 10 square meters of eelgrass. For those areas with less than 10 square meters, a table must be provided giving the bounding x,y coordinates of the eelgrass areas. In addition to a spatial layer or table, a hard-copy map should be included within the survey report. The projection and datum should be clearly defined in the metadata and/or an associated text file.

All mapping efforts must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 60 days with the exception of surveys completed in August - October. Surveys completed after unusual climatic events (i.e., high rainfall) may have modified requirements and surveyors should contact NMFS, CDFG, and USFWS to determine if any modifications to the standard survey procedures will be required. A survey completed in August - October shall be valid until the resumption of active growth (i.e., in most instances, March 1). After project construction, a post-project survey shall be completed within 30 days. The actual area of impact shall be determined from this survey.

4. **Mitigation Site.** The location of eelgrass transplant mitigation shall be in areas similar to those where the initial impact occurs. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that should be considered in evaluating potential sites.

5. **Mitigation Size.** In the case of transplant mitigation activities that occur concurrent to the project that results in damage to the existing eelgrass resource, a ratio of 1.2 to 1 shall apply. That is, for each square meter adversely impacted, 1.2 square meters of new suitable habitat, vegetated with eelgrass, must be created. The rationale for this ratio is based on, 1) the time (i.e., generally three years) necessary for a mitigation site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years. An exception to the 1.2 to 1 requirement shall be allowed when the impact is temporary and the total area of impact is less than 100 square meters. Mitigation on a one-for-one basis shall be acceptable for projects that meet these requirements (see section 11 for projects impacting less than 10 square meters).

Transplant mitigation completed three years in advance of the impact (i.e., mitigation banks) will not incur the additional 20 percent requirement and, therefore, can be constructed on a one-for-one basis. However, all other annual monitoring requirements (see sections 8-9) remain the same irrespective of when the transplant is completed.

Project applicants should consider increasing the size of the required mitigation area by 20-30 percent to provide greater assurance that the success criteria, as specified in Section 10, will be met. In addition, alternative contingent mitigation must be specified,

and included in any required permits, to address situation where performance standards (see section 10) are not likely to be met.

For potential eelgrass habitat, a ratio of 1 to 1 of equivalent habitat shall be created.

Degradation of existing eelgrass vegetated habitat that results in a reduction of density greater than 25 percent shall be mitigated on a one-for-one basis. For example, a 25 percent reduction in density of a 100 square meter (100 turions/meter) eelgrass bed to 75 turions/meter would require the establishment of 25 square meters of new eelgrass with a density at or greater than the pre-impact density. All other provisions of the Policy would apply.

6. **Mitigation Technique.** Techniques for the construction and planting of the eelgrass mitigation site shall be consistent with the best available technology at the time of the project. Donor material shall be taken from the area of direct impact whenever possible, but also should include a minimum of two additional distinct sites to better ensure genetic diversity of the donor plants. No more than 10 percent of an existing bed shall be harvested for transplanting purposes. Plants harvested shall be taken in a manner to thin an existing bed without leaving any noticeable bare areas. Written permission to harvest donor plants must be obtained from the California Department of Fish and Game.

Plantings should consist of bare-root bundles consisting of 8-12 individual turions. Specific spacing of transplant units shall be at the discretion of the project applicant. However, it is understood that whatever techniques are employed, they must comply with the stated requirements and criteria.

7. Mitigation Timing. For off-site mitigation, transplanting should be started prior to or concurrent with the initiation of in-water construction resulting in the impact to the eelgrass bed. Any off-site mitigation project which fails to initiate transplanting work within 135 days following the initiation of the in-water construction resulting in impact to the eelgrass bed will be subject to additional mitigation requirements as specified in section 8. For on-site mitigation, transplanting should be postponed when construction work is likely to impact the mitigation. However, transplanting of on-site mitigation should be started no later than 135 days after initiation of in-water construction activities. A construction schedule which includes specific starting and ending dates for all work including mitigation activities shall be provided to the resource agencies for approval at least 30 days prior to initiating in-water construction.

8. **Mitigation Delay.** If, according to the construction schedule or because of any delays, mitigation cannot be started within 135 days of initiating in-water construction, the eelgrass replacement mitigation obligation shall increase at a rate of seven percent for each month of delay. This increase is necessary to ensure that all productivity losses incurred during this period are sufficiently offset within five years.

9. **Mitigation Monitoring.** Monitoring the success of eelgrass mitigation shall be required for a period of five years for most projects. Monitoring activities shall

determine the area of eelgrass and density of plants at the transplant site and shall be conducted at initial planting, 6, 12, 24, 36, 48, and 60 months after completion of the transplant. All monitoring work must be conducted during the active vegetative growth period and shall avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 6 month surveys shall be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60 month period may be required in those instances where stability of the proposed transplant site is questionable or where other factors may influence the long-term success of transplant.

The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program.

A monitoring schedule that indicates when each of the required monitoring events will be completed shall be provided to the resource agencies prior to or concurrent with the initiation of the mitigation (see attached monitoring and compliance summary form).

Monitoring reports shall be provided to the resource agencies within 30 days after the completion of each required monitoring period and shall include the summary sheet included at the end of this policy.

10. **Mitigation Success.** Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the **adjusted project impact area** (i.e., original impact area multiplied by 1.2) and **mitigation site(s)**. Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed. Specific criteria are as follows:

a. the mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.

b. the mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.

c. the mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet any of the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.
A_t = transplant deficiency or excess in area of coverage criterion (%).
D_t = transplant deficiency in density criterion (%).
A_c = natural decline in area of control (%).
D_c = natural decline in density of control (%).

The STA formula shall be applied to actions that result in the degradation of habitat (i.e., either loss of areal extent or reduction in density).

Five conditions apply:

1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.
2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.
3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.
4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 8.
5) Annual monitoring will be required of the STA for five years following the implementation and all performance standards apply to the STA.

11. **Mitigation Bank.** Any mitigation transplant success that, after five years, exceeds the mitigation requirements, as defined in section 10, may be considered as credit in a "mitigation bank". Establishment of any "mitigation bank" and use of any credits accrued from such a bank must be with the approval of the resource agencies and be consistent with the provisions stated in this policy. Monitoring of any approved mitigation bank shall be conducted on an annual basis until all credits are exhausted.

12. **Exclusions.**

1) Placement of a single pipeline, cable, or other similar utility line across an existing eelgrass bed with an impact corridor of no more than 1 meter wide may be excluded from the provisions of this policy with concurrence of the resource agencies. After project construction, a post-project survey shall be completed within 30 days and the results shall be sent to the resource agencies. The actual area of impact shall be determined from this survey. An additional survey shall be completed after 12 months to insure that the project or impacts attributable to the project have not exceeded the allowed

1 meter corridor width. Should the post-project or 12 month survey demonstrate a loss of eelgrass greater than the 1 meter wide corridor, then mitigation pursuant to sections 1-11 of this policy shall be required.

2) Projects impacting less than 10 square meters. For these projects, an exemption may be requested by a project applicant from the mitigation requirements as stated in this policy, provided suitable out-of-kind mitigation is proposed. A case-by-case evaluation and determination regarding the applicability of the requested exemption shall be made by the resource agencies.

(last revised 08/30/05)

Southern California Eelgrass Mitigation Policy
Monitoring and Compliance Reporting Summary

PERMIT DATA:

Permit (Type, Number)	Issuance Date	Expiration Date	Agency Contact
ACOE:_____			
CDP:_____			
Other:_____			

EELGRASS IMPACT AND MITIGATION REQUIREMENTS SUMMARY:

Permitted Eelgrass Impact Estimate	(m^2)	
Actual Eelgrass Impact,	(m^2)	(post-const. survey date)
Eelgrass Mitigation Requirement	(m^2)	(mitigation plan ref.)
Impact Site Location	(location)	
Impact Site Center Coordinates	(define projection and datum)	
Mitigation Site Location	(location)	
Mitigation Site Center Coordinates	(define projection and datum)	

PERMITTEE CONTACT INFORMATION:

Project Name	(same as permit ref.)
Permittee Information	(permittee name)
	(mailing address)
	(city, state, zip)
	(permittee contact)
	(phone, fax., e-mail)
Mitigation Consultant	(consultant contact)
	(phone, fax., e-mail)

PROJECT ACTIVITY DATA:

Activity	Start Date	End Date	Reference Info.
Eelgrass Impact			
Installation of Eelgrass Mitigation			
Initiation of Mitigation Monitoring			

MITIGATION STATUS DATA:

Mitigation Milestone	Scheduled Survey	Survey Date	Area (m^2)	Density (turions/m^2)	Reference Info.
Requirement					
0-month					
6-month					
12-month					
24-month					
36-month					
48-month					
60-month					

FINAL ASSESSMENT:

Was mitigation met?	
Were mitigation and monitoring performed timely?	
Was delay penalty required or were supplemental mitigation programs necessary?	

EELGRASS (ZOSTERA MARINA) FIELD SURVEY, IMPACT ASSESSMENT, AND MITIGATION PLAN FOR THE ALAMITOS BAY MARINA RENOVATION PROJECT

Prepared for:
LSA ASSOCIATES, INC
20 Executive Park, Suite 200
Irvine, CA 92614
Contact: Rob Balen (949) 553-0666

Prepared by:

Coastal Resources Management, Inc.
PMB 327, 3334 E. Coast Highway Corona del Mar, CA 92625
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December 15th, 2007
Revised October 1st, 2009

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1.0 INTRODUCTION

1.1 PROJECT BACKGROUND AND PURPOSE

The City of Long Beach is preparing to renovate the Alamitos Bay Marina dock system and conduct dredging in the Alamitos Bay marina basins. The project will be conducted within several marina basins, and phased over a several year period. As part of the environmental review process required by the California Coastal Commission and the U.S. Army Corps of Engineers environmental permit review process, and as a requirement of the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service 1991 as amended), the City of Long Beach must identify the potential for the project to adversely affect sensitive marine habitats and the potential need to mitigate potentially significant adverse impacts to sensitive habitats.

Coastal Resources Management, Inc. (CRM) was retained by LSA Associates, Inc. and the City of Long Beach to conduct marine biological surveys in Alamitos Bay, Long Beach, California in September 2007. Nearshore Wetland Surveys, Inc. was retained by CRM to conduct side-scan sonar surveys for the project. The purposes of the investigation were to (1) to identify the location, distribution, and abundance of eelgrass (*Zostera marina*) habitat and other sensitive resources within areas proposed for marina renovation (2) identify potential eelgrass mitigation areas in Alamitos Bay; (3) determine the potential environmental effects of proposed marina improvements on eelgrass bed resources and (4) prepare a mitigation plan to avoid, compensate, and reduce potential adverse impacts to marine resources

The project plans include replacing the degraded dock systems within each basin and dredging to depths of between -13 and -15 ft MLLW within Marina Basin 1, and to depths of -10 ft MLLW in Basins 2, 3, 4, 5, and 7. General renovation plans are provided in Figure 2 (existing dock system) and Figure 3 (proposed dock system). An additional dock will be constructed along bulkhead southeast of the Long Beach Yacht Club. The dredge material collected from each marina basin will be transported by barge to a location designated for sediment disposal.

1.2 PROJECT LOCATION

Alamitos Bay is located within the southeast region of the City of Long Beach, California (Figure 1). It is bounded on the northwest by the community of Belmont Shore and the Colorado Lagoon, on the northeast by Pacific Coast Highway and the Cerritos Channel, on the southeast by the San Gabriel River, and on the southwest by the Alamitos Bay Peninsula (Figure 1). Initially the area around Alamitos Bay was a marsh, with the San Gabriel River and the bay sharing a common opening into the ocean (Reish, 1968). Naples Island was developed in 1908-1909, which was followed by the separation of the San Gabriel River

Figure 1.
Alamitos Bay Project Location

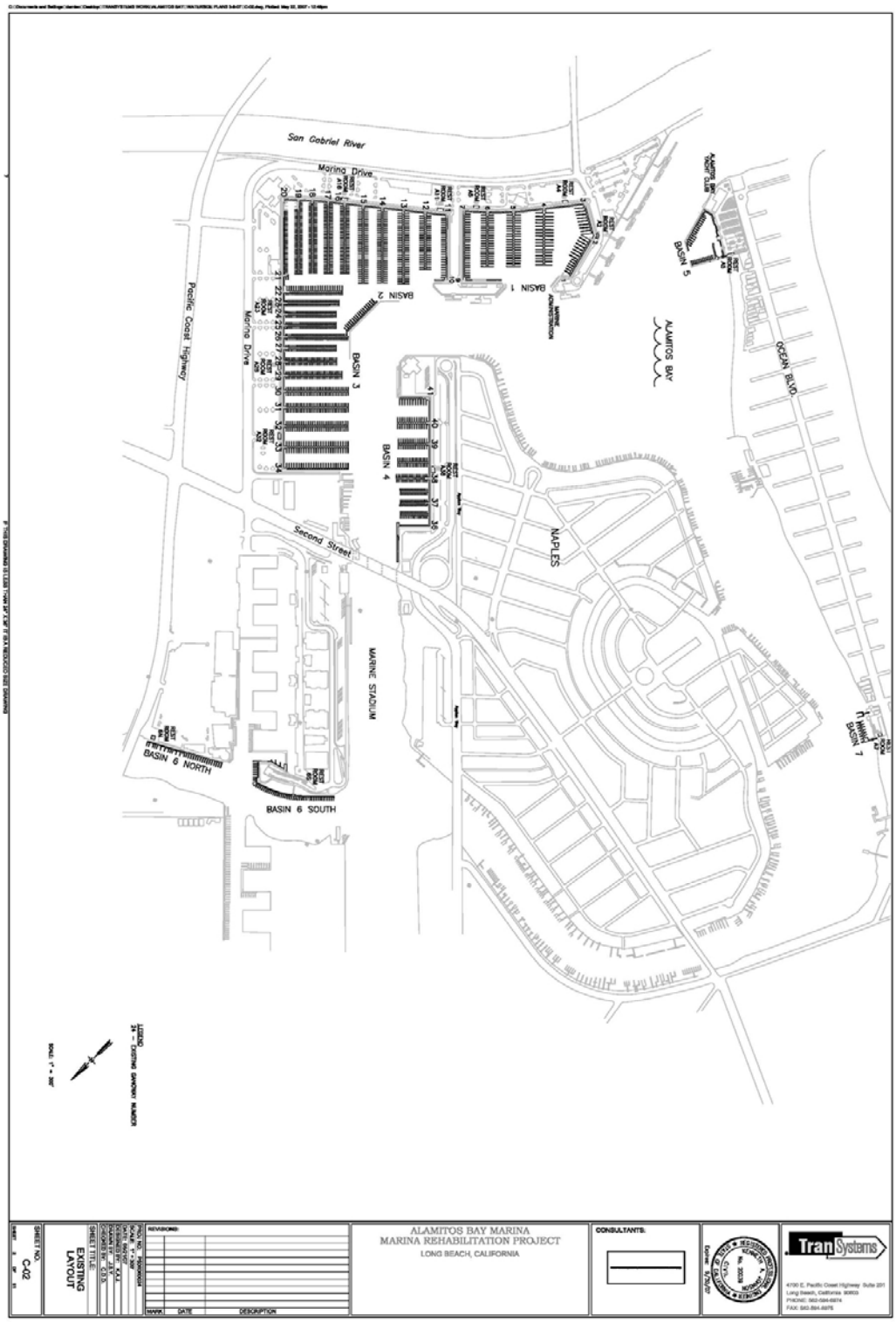


Figure 2. Existing Marina Basin Dock Configurations, Basins 1 through 7

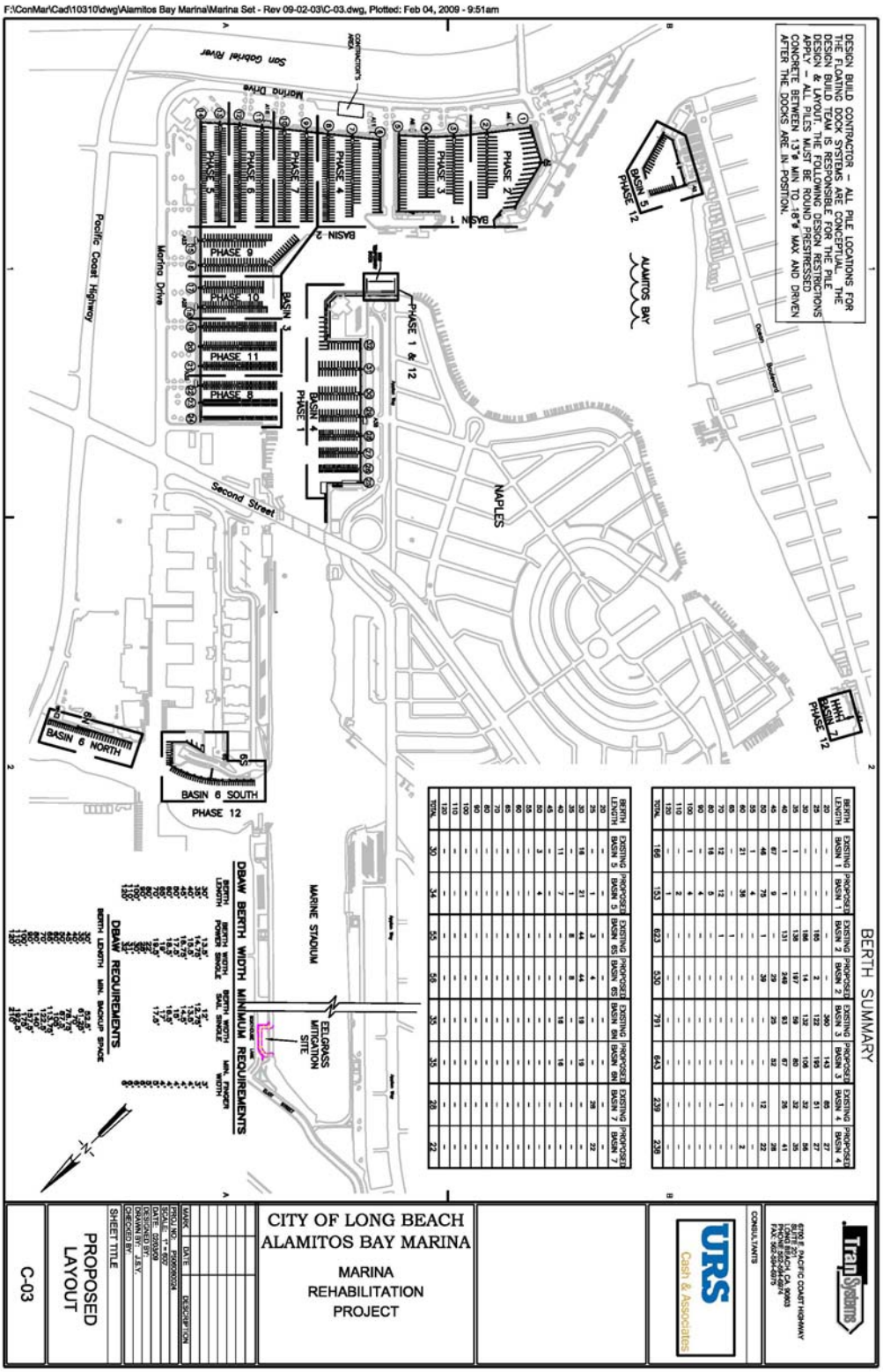


Figure 3. Proposed Marina Basin Dock Configurations, Basins 1 through 7

and the bay with the construction of a rock jetty (early 1920s), the dredging of the Marine Stadium in 1932 for the 1932 Olympics, the construction of the Alamitos Bay Marina Basins between the mid-1950s and the mid 1960s, and the more recent additions of the Marina Pacifica and Spinnaker Cove development. Currently, there are 1,967 slips located in Basins 1-7.

1.3 IMPORTANCE OF EELGRASS

Eelgrass is a marine flowering plant that grows in soft sediments in coastal bays and estuaries. An offshore form (*Zostera pacifica*) is found to depths of 50 feet (ft). In Alamitos Bay, it has been found growing on sand and mud sediments throughout the bay in the Alamitos Bay Jetty entrance channel (Coastal Resources Management, 1994) along Bayshore Ave. and Ocean Blvd (Coastal Resources Management, 1999, Wetlands Support and Coastal Research, 2003), in the Marine Stadium (Coastal Resources Management, 1998, 2002, 2005); Spinnaker Cove and the Cerritos Channel (Coastal Resources Management, 1994, 1996), in the Naples Island Canals (Coastal Resources Management, Inc. 2007, Wetlands Support and Coastal Research, 2003,) and the periphery of Naples and Treasure Islands (Wetlands Support and Coastal Research, 2003, Coastal Resources Management, 2003). Very small patches of eelgrass have also been found in the Colorado Lagoon (Chambers Group, Inc., 2004).

Eelgrass canopy (consisting of shoots and leaves approximately two to three feet long) attracts many marine invertebrates and fishes. The vertical relief of the vegetation enhances the abundance and the diversity of the marine life compared to areas where the sediments are barren. 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). A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) live within the soft sediments that cover the root and rhizome mass system. Eelgrass meadows are critical foraging centers for seabirds (such as the endangered California least tern) that seek out 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.

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 in Alamitos Bay and to mitigate any losses by avoiding or reducing, or compensating for any adverse effects on eelgrass habitats and communities.

Photograph 1. Eelgrass, *Zostera marina*

2.0 FIELD SURVEY METHODS

Eelgrass Habitat Surveys Within the Proposed Project Area. Marine biological surveys were conducted for the project September-October 2007, May 2008, July 2008, November 2008, and January 2009. Surveys in September and October 2007 were conducted to map the distribution of eelgrass in the marina basins and to identify potential mitigation sites in the Cerritos Channel and along the Alamitos Bay Peninsula (September 17-21st, September 24th-25tt, and October 2nd, 2007). In May, 2008, CRM conducted water quality and sediment grain size studies on the Alamitos Bay Peninsula to identify physical and chemical conditions within and nearby extensive, healthy eelgrass beds along the Peninsula and at potential mitigation sites. These were followed up by surveys along the Long Beach Coastline between Junipero Avenue and First Street near the Downtown Marina and within portions of the Rainbow Lagoon to assess possible eelgrass mitigation sites in July 2008. A potential mitigation site along the northeast side of the Marine Stadium was also assessed, based upon known eelgrass distribution in the Marine Stadium (CRM 2005).

In November, 2008, CRM conducted follow-up surveys within the marina basins to visually check on the location and relative condition of eelgrass compared to the September and October 2007 surveys, and to collect additional water quality information in each of the marina basins and at a reference site along the Alamitos Bay Peninsula. In January 2009, CRM conducted a reconnaissance survey of the rip rap habitat between Basin 1 and Basin 3 to identify the major macrofaunal species that were living in the rip rap protecting the bulkhead. Project personnel included Mr. Rick Ware (Senior Marine Biologist/Principal Investigator), Mr. Rick Hollar (Senior Oceanographer, Nearshore and Wetlands Surveys

(NWS), Mr. Stephen Whitaker (CRM Marine Biologist) Mr. Thomas Gerlinger (CRM Marine Biologist), and Ms. Robin Kohler (Marine Technician). The areas surveyed for the presence/absence of eelgrass and invasive algae are shown in Figure 4, and described in Table 1.

2.1 PHASE 1 FIELD OPERATIONS

Coastal Resources Management, Inc. (CRM) and Nearshore and Wetlands Surveys (NWS) conducted a combined side scan sonar/remote video survey and underwater mapping surveys using biologist divers to map the eelgrass bed resources within the project area. Survey areas are listed in Table 1 and Figure 4. The techniques developed by CRM and NWS overcome the limitations of using sidescan sonar in shallow water areas and in areas where maneuverability is restricted. The method is based on the use of an Imagenex 881 Sportscan sidescan sonar (Photograph 2). It is light weight and deployed and operated from a small vessel. The electronics are housed in the compact towfish, which is towed with a Kevlar signal cable. The system is powered from a 12-VDC power source. All of the functions of the side scan system are controlled from a computer.

Table 1. Location of Marine Biological Survey Areas*

Region Surveyed	Area (acres)	% Total
Basin 1 (B1)	7.91	17.99
Basin 2 (B2)	11.07	25.18
Basin 3 (B3)	6.15	13.99
Basin 4 (B4)	7.60	17.28
Basin 5 (B5)	1.30	2.96
Basin 6N (B6N)	0.71	1.61
Basin 6S (B6S)	1.49	3.39
Basin 7 (B7)	0.53	1.21
Marina Pacifica	3.73	8.48
Temporary Dock Area 1 (T1)	0.60	1.36
Temporary Dock Area 2 (T2)	2.88	6.55
Peninsula 1 (P1, Laguna to 61st Place)	4.20**	
Peninsula 2 (P2, 63rd to 71st Place)	3.70**	
Cerritos Channel east of PCH Bridge (south side)	1.62**	
Total Surveyed Area	**43.97**	**100**

*Open water areas included only and excludes dock surface areas

**Not included in project area totals; these were surveyed as potential eelgrass mitigation sites

Figure 4. Location of eelgrass surveys in Alamitos Bay. B1-B7 are marina basins; TD=proposed temporary dock during construction; MP=Marina Pacifica eelgrass survey area; DB=Davies Bridge eelgrass survey area

Photograph 2. Imagenex 881 Sportscan Side Scan Sonar

The equipment was installed on the Wetland Surveyor at the Davies Launch Ramp in Alamitos Bay. A Leica 12-channel marine Professional DGPS receiver and side scan sonar were connected to the data acquisition computer, which ran the Hypack Data Acquisition software. The Hypack 6.2b Hydrographic Data Acquisition and Processing Software is an integrated marine survey package. It allows for the collection and processing of data from a wide variety of instrumentation including GPS and side scan sonar. All input data are accurately time-tagged to provide precise correlation between the various instruments. The output signal from the GPS receiver was also output to the remote-video camera system so that the video was annotated with coordinates. The side scan sonar towfish was flown from the port bow of the survey vessel to avoid contamination of the signal with noise from the propeller wash.

The side scan sonar information was linked to a high-resolution underwater color video camera (Ocean Systems, Inc Deep Blue Professional Grade Color Underwater Video Camera) that integrates GPS data and time on the underwater video (Photograph 3). Field personnel viewed the bayfloor in real-time as the side scan sonar produced bottom-profile information. The real-time information was simultaneously recorded on a Digital Video Recorder (DVR) that was used in the office/laboratory to verify the sidescan sonar locations of eelgrass, and additional information of the types of fish and marine life present within the marina basins and potential eelgrass mitigation sites. After the equipment had been installed, integrated, and tested, the data collection began. Position, side scan, and video data were collected simultaneously while steering the survey vessel down each finger and fairway of each basin, channel, or temporary dock area. The video camera was lowered from a point immediately astern of the towfish.

Photograph 3. Ocean Systems Deep Blue High-resolution Underwater Video Camera

A minimum of two and typically three non co-linear passes where made down each area to maximize the video coverage. The coverage area of the side scan usually covered each finger in a single pass. However, data was recorded during each pass to assure the each area of interest was located. The data collection was completed in two days.

Many targets were positively identified by plotting video targets on the geo-referenced photo-mosaics. However, many areas of interested, apparent on the mosaics, were not visible in the video record because of the expanded coverage afforded by the side scan sonar system. An additional day in the field was scheduled to locate and identify the side scan sonar targets. The GPS and video camera system was remobilized on board the Nearshore Surveyor and the geo-referenced photo-mosaics were loaded into the Hypack software. Using the Hypack map display, the survey vessel was navigated to a target of interest visible on a mosaic. The video camera was lowered and the area was examined until the target was identified. Each target was located and identified in turn.

2.2 PHASE TWO FIELD OPERATIONS-DIVE SURVEYS

Underwater surveys were conducted by project biologists to (1) ground-truth areas mapped by side scan sonar methods (2) to map eelgrass vegetation in shallow water areas between docks and bulkheads where the side scan sonar was not able to obtain data, e-in Basin 6; and (3) to verify or eliminate selected underwater targets as eelgrass; and (4) determine the biological characteristics of eelgrass beds encountered including eelgrass turion density and characteristic marine flora and fauna.

Eelgrass Survey Protocols

Per National Marine Service Southern California Eelgrass Mitigation Policy (NMFS 1991 as amended, “all mapping efforts must be completed during the active growth phase

for the vegetation (typically March through October) and shall be valid for a period of 60 days with the exception of surveys completed in August - October. Surveys completed after unusual climatic events (i.e., high rainfall) may have modified requirements and surveyors should contact NMFS, CDFG, and USFWS to determine if any modifications to the standard survey procedures will be required. A survey completed in August - October shall be valid until the resumption of active growth (i.e., in most instances, March 1). After project construction, a post-project survey shall be completed within 30 days. The actual area of impact shall be determined from this survey".

Caulerpa taxifolia (Invasive Algae)

Invasive algae *Caulerpa taxifolia* 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. 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 present, and if so, to eradicate the species prior to conduct of the construction project, using standard agency-approved protocols and by National Marine Fisheries Service/California Department of Fish and Game Certified Field Surveyors, of which Mr. Rick Ware and Mr. Stephen Whitaker, have obtained.

Underwater Habitat Mapping Surveys

Directed underwater habitat mapping surveys were conducted in several areas to either map beds and patches that were unable to be mapped using side scan sonar in Marina Pacifica Channel, and Basins 1, 2, 4, 6N and 6S, and 7, where eelgrass was present in very small beds or patches. In addition, eelgrass between the Davies Bridge and the Cerritos Channel was mapped to compare results with data collected using side scan sonar mapping techniques.

Underwater mapping surveys were conducted by biologist-divers in conjunction with side scan sonar and underwater video methods using GPS (Global Positioning System) technology. A Thales Mobile Mapper Wide-Area Augmentation System (WAAS) GPS/GIS Unit was employed to map eelgrass areas and small eelgrass patches less than two square meters in size. The estimated GPS error of the Thales Mobile Mapper unit, with post-processing correction, is less than 1 meter.

The biologist-diver mapping survey was conducted by using a biologist in a kayak and a diver. The biologist in the kayak was equipped with the GPS and followed the SCUBA-diving biologist around the perimeter of the eelgrass vegetation. To assist in the mapping

process, an Ocean Technology Systems (OTS) surface-to-diver communications system was employed. Eelgrass depth ranges were recorded during this phase of the field operations as well as characteristic marine flora and fauna.

Additional dive surveys were conducted in each location where eelgrass was found to determine eelgrass turion density and the biological characteristics of each eelgrass bed. Turions (eelgrass units consisting of a single shoot with blades) counts were made by biologists within replicated, 0.07 square meter (sq m) quadrats.

In all basins, the narrow trip of bottom habitat between the bulkheads and the docks was observed by biologists walking the shoreline and the dock headwalk at low tide to determine if eelgrass was present. Where it was located, dive surveys were then used to calculate habitat area and turion density.

Mitigation Site Surveys. Figure 5 shows the areas investigated as potential mitigation sites for eelgrass losses as a consequence of the proposed project. Surveys within Alamitos Bay were conducted in October and November 2007 using divers, remote video, and side-scan sonar methodologies. Surveys outside Alamitos Bay were conducted on 21 July and 18 August, 2008 along the downtown shoreline beaches from Junipero Avenue to the Downtown Marina and secondly, within Rainbow Marina. CRM conducted a combination of remote video and diver surveys along the coastline west of Alamitos Bay between Junipero Avenue to First Street, and diver surveys along the east-to-west shoreline along the south border of Rainbow Marina. The purpose of these surveys was to assess the existing biological and physical conditions with these areas as possible eelgrass mitigation sites.

2.3 DATA PROCESSING

Side scan and Remote Video

The side scan sonar data were processing using the Hyscan Processing module of the Hypack software. Geo-referenced photo-mosaics basin, channel or temporary dock area was created by digitally overlaying data from overlapping sonar passes. The location of the video targets were plotted on the appropriate mosaic and compared.

All video data collected were reviewed by observing the recorded data on a laptop computer at 1/3 the speed at which the data were collected. This information was used to ground-truth the side scan sonar data, observed the condition of eelgrass, and obtain targets of interest along with the positions obtained from the GPS annotation on the video. The video surveys were also used to determine if invasive algae (*Caulerpa taxifolia*) was present within each of the survey areas.

Figure 5. Areas surveyed as potential eelgrass mitigation sites

Underwater Habitat Mapping Surveys

GPS data obtained from the biologist-diver underwater mapping surveys were initially entered into the Mobile Mapper Software and then transferred into GPS TRACKER and Arc View 3.2 GIS software. The amount of eelgrass habitat in the project area was calculated using Arc View 3.2 and Mobile Mapper Software. Habitat maps were then processed and produced using Arc View. Eelgrass turion data were reduced in the office, and standardized to 1 square meter counts. Field survey depth data were standardized to Mean Lower Low Water (MLLW) based upon data for the Long Beach Outer Harbor NOAA tide station.

3.0 RESULTS

3.1 UNDERWATER CONDITIONS

Water temperatures during the survey varied between 62 and 67 degrees Fahrenheit. Underwater visibility was generally poor (1-4 ft) within the marina basins, and moderate in the main channel between the Davies Bridge and the Cerritos Channel north of the PCH Bridge (3-6 ft). Sediments were uniformly fine silts in the marina basins, silts to sands along the Alamitos Bay Peninsula, and silts/shell/sand along the south bank of the Cerritos Channel. The range of depths that were surveyed varied between 0.0 and -12 ft MLLW.

3.2 AMOUNT OF HABITAT SURVEYED

The survey area for the project encompassed 43.97 acres of bayfloor. This entire area was covered by side scan sonar survey methods. Of this area, 17.79% (7.82 acres) of the bottom habitat was visually inspected using remote video camera surveys and by diving biologists.

3.3 EELGRASS AREAL COVER

Based on the combined mapping effort of the side-scan sonar and underwater diver-mapping surveys, a total of 2.9 acres (126,926 sq ft) of eelgrass was located in Basin 2, Basin 4, Basin 6N and 6S, Basin 7, the Marina Pacifica Channel, the Cerritos Channel extending east of Coast Highway Bridge, the main channel between the Davies Bridge and the Cerritos Channel, and along the Alamitos Bay Peninsula between 56th and 71st Places. It did not occur in Basin 1, Basin 3, Basin 5, and in the vicinity of the proposed temporary dock located on the southeast side of the Long Beach Yacht Club bulkhead at the end of Appian Way. A breakdown of the amount of eelgrass within each area is provided in Table 2, and maps for eelgrass areas are shown in Figures 6-13. The depth range of eelgrass during the study was between 0.0 and -8.5 ft (MLLW).

The areas within the marina basins (B1-B7) accounted for 10.7% (13,572.41 sq ft), of which most occurred behind the docks of Basin 6 South. In Basins 2, 4, 6 North, and 7, eelgrass was extremely patchy, scattered, and accounted for only a small portion of eelgrass within all of the marina basins. The Marina Pacifica Channel accounted for 9.09% (11,543.54 sq

ft); most of this was found at the confluence of the Cerritos Channel, with amounts decreasing with distance into the Marina Pacifica Channel.

The shallow subtidal habitat between the Davies Bridge Launch Ramp and the Cerritos Channel/Marine Stadium confluence accounted for the highest percentage of eelgrass within any one region, 36.25% or 46,007.6 sq ft. The combined total amount of eelgrass located along the Alamitos Bay Peninsula Beach contributed 27.31% to the total amount of eelgrass (34,060.05 sq ft) of which nearly all was located between 63rd and 71st Places. The Upper Cerritos Channel, east of the PCH Bridge was also vegetated with a moderate amount of eelgrass, accounting for 16.66% of the total (21,142.88 sq ft).

Table 2. Acreage of Eelgrass Within the Project Area

Location	Eelgrass Area (sq ft)	% Total
Basin 1	0.00	0.00
Basin 2	1,019.78	0.80
Basin 3	0.00	0.00
Basin 4	123.26	0.10
Basin 5	0.00	0.00
Basin 6 South	11,943.40	9.41
Basin 6 North	230.00	0.18
Basin 7	255.97	0.20
Marina Pacifica Channels	11,543.54	9.09
West of Davies Launch Ramp	46,007.60	36.25
LBYC Long Dock (Proposed Temporary Dock	0.00	0.00
(55th-61st Place)	1,977.64	1.56
Peninsula 2 (63rd-71st Place)	32,682.41	25.75
Upper Cerritos Channel	21,142.88	16.66
Table 2 (continued) SUMMARY	Total Area (sq ft)	% Total
Eelgrass Area (sq ft)	126,926.5	100.00
Eelgrass Area (sq m)	11,796.1	
Eelgrass Area (acres)	2.9	

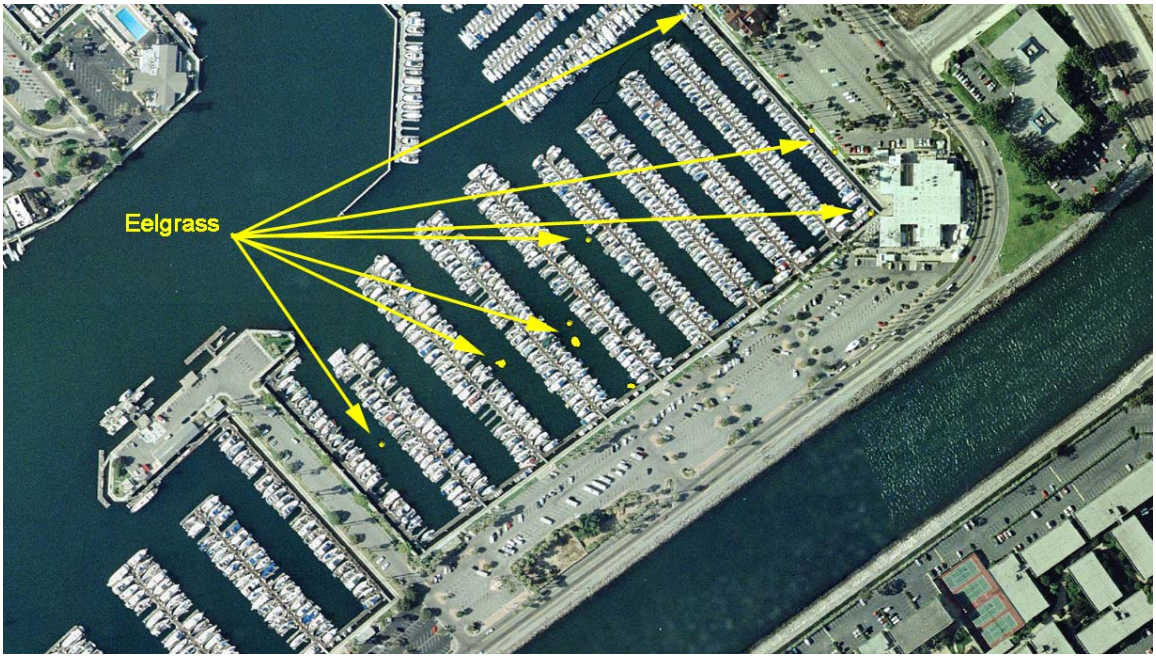


Figure 6. Basin 2 Eelgrass Habitat

Figure 7. Basin 4 Eelgrass Habitat

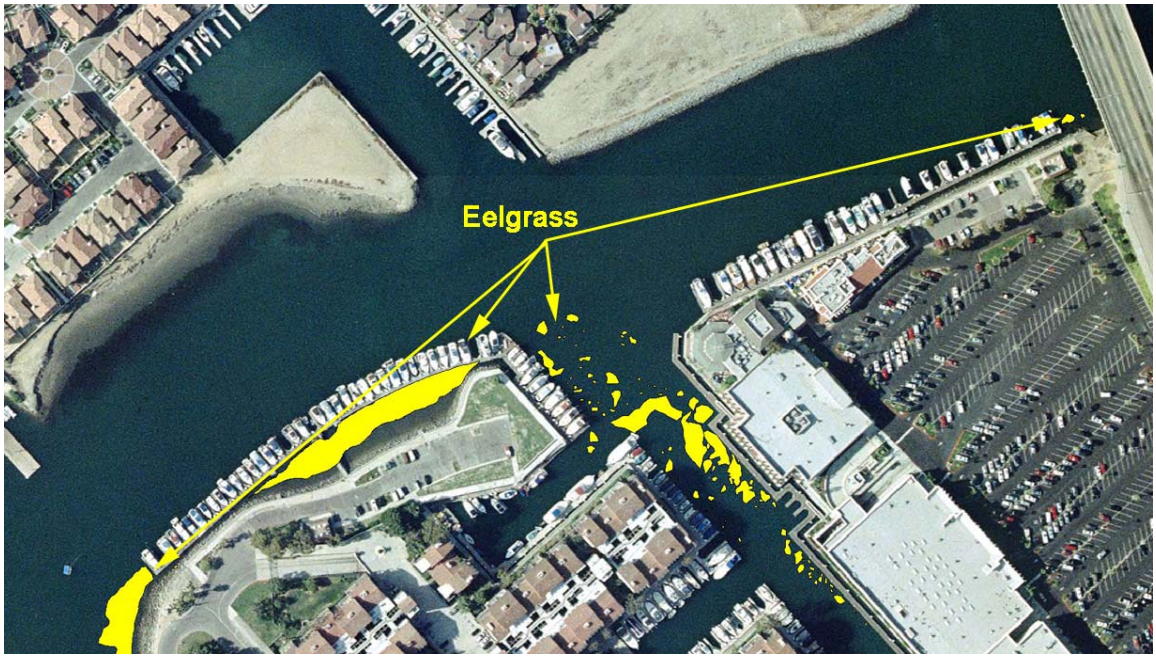


Figure 8. Basin 6 (South and North) and Marina Pacific Channel North Eelgrass Habitat

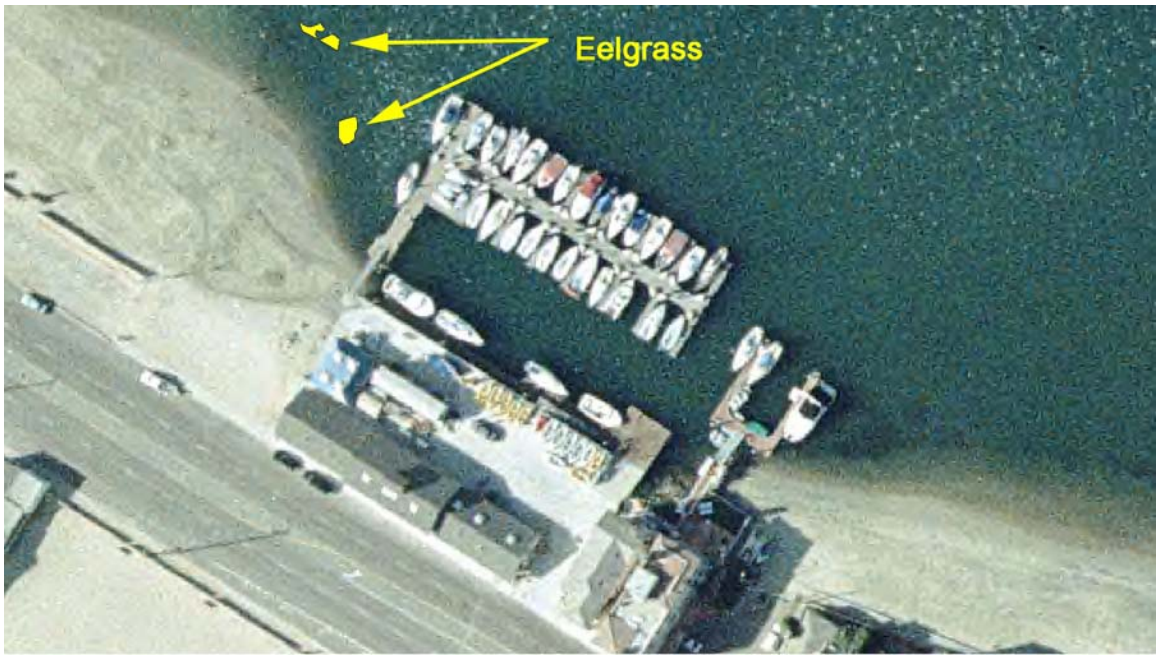


Figure 9. Basin 7 Eelgrass Habitat

Figure 10. Davies Bridge and Marina Pacifica Eelgrass Habitat

Figure 11. 55th Place to 61st Place (Peninsula 1) Eelgrass Habitat

Figure 12. 63rd Place to 71st Place (Peninsula 2) Eelgrass Habitat

Figure 13. Upper Cerritos Channel Eelgrass Habitat

CRM revisited each of the areas in the Marina in October 2008 using divers and remote video and determined that each of the areas mapped in 2007 was still vegetated with eelgrass, there was no observable increase in areal cover within these areas, and that eelgrass had not recolonized other areas of the Marina since the 2007 survey. CRM surveyed the fairways within Basin 3 where the marina docks have been abandoned (due to safety issues) to determine if a lack of vessel activity has resulted in any eelgrass colonization of the bayfloor since the Oct 2007 CRM eelgrass bed survey. The results

indicate that eelgrass has not colonized any of these areas, despite a range of depths (less than 8 ft) where eelgrass can grow, and no light-limiting features due to shading, or turbidity caused by vessel activities.

3.4 EELGRASS TURION DENSITY

Eelgrass turion density values for the survey are provided in Table 3, and historical turion density information for Alamitos Bay is provided in Table 4. Eelgrass turion density for the six sampling areas where eelgrass was located was 111.3 =/-62.2 turions/sq m (n=112 replicates). By area, the lowest density was observed within the Marina Pacifica Channel, 53.8 +/- 25.5 turions/sq m (n=49 replicates), and the highest density occurred in the inlet behind the Basin 6 Docks (194.7 +/- 76.9 turions/sq m (n=14 replicates). In general, moderate-to-high densities occurred in the mid-to-shallow sampling areas (0 to 6 ft depths), while either no eelgrass or eelgrass with very low turion counts was found at depths deeper than 6 ft. The range in mean eelgrass turion density during the October 2007 survey compares favorably with the results of studies conducted throughout Alamitos Bay between 1993 and 2007 which varied from 71 to 299 turions/sq m. Highest density during previous surveys occurred within the Alamitos Bay Entrance Channel during 1993; lowest densities were recorded in several areas along the periphery of Naples Island and/or within the Naples Canals.

Table 3. Eelgrass Density and Depth Range Within Each Survey Area, September 2007

Area	Mean Turion Density Per Sq Meter	Std Dev	N	Mean Depth (ft, MLLW)	Depth Range (ft, MLLW)
Basin 1	-	-	-	-	-
Basin 2	98.6	49.2	10	-6.5	-6.3 to -6.7
Basin 3	-	-	-	-	-
Basin 4	61.4	26.1	10	-7.9	-7.3 to -8.5
Basin 5	-	-	-	-	-
Basin 6 South (behind docks)	194.7	75.9	14	-3.3	-3.1 to -4.1
Basin 6 North PCH Bridge	104.8	41.9	12	-5.3	-1 to -5
Basin 7	-	-	-	-	-
Temp Dock 1 (Davies Bridge/Launch Ramp)	110.7	49.7	49	-3.7	0 to - 8
Temp Dock 2, (LBYC)	-	-	-	-	-
Maria Pacifica, East Channel	53.8	25.5	17	-6.3	-6.3
All Areas	**111.3**	**62.2**	**112.0**	**5.4**	**-0 to 8.5**

Table 4. Comparison of Eelgrass Shoot Density in Alamitos Bay 1993-2007

Location	Date of Survey	Mean Density*	Range*	# of replicates	Reference
5455,5609, 5645 Sorrento	October 2007	89.1	43-142	25	CRM in progress
64 Rivo Alto Canal	August 2007	75	45- 114	5	CRM 2007a
5609 Sorrento	March 2007	147	43-171	10	CRM 2007b
11 Sea Isle Lane	Oct 2005	130.7	71-114	135	CRM 2006
Marine Stadium	May 2005	133.9	29-400	39	CRM 2005
5635 Sorrento	May 2004	147	72-271	13	CRM 2004
2715 Corso di Napoli	Sept 2003	114	-	3	CRM 2003
5615 Sorrento	April 2002	104	86-129	10	CRM 2002a
End Beach Marine Stadium	July 2002	93	57-171	39	CRM 2002b
5474 The Toledo	Sept 2001	71	43-114	7	CRM 2001
Gondola Getaway	July 1999	199		9	CRM 1999
Basin 8 Cerrito Cerritos Channel	May 1996	134	74-288	7	CRM 1996
Mothers' Beach	Sept 1995	75	8-52	26	CRM 1995
Entrance Channel	June 1994	229	52-466	24	CRM 1994a
Jack Dunster Park (Fieldstone Park)	May 1994	162	104-272	24	CRM 1994b
Mother's Beach	June 1993	156	65-272	14	CRM 1993a
Bayshore Ave (between Appian Way and 2nd Street	Sept 1993	152		4	CRM 1993b

* number of shoots per square meter

3.5 INVASIVE ALGAE (*CAULERPA TAXIFOLIA)*

Caulerpa algae was not observed during the remote video or diver surveys within the project area. During the survey, 7.82 acres of bayfloor habitat were directly surveyed out of a possible 43.97 acres bayfloor habitat within the marina basins and the proposed temporary dock areas. This represents a total of 17.9 percent cover. It should be noted that the surveys were not conducted specifically to address pre-construction survey invasive algae conditions which are conducted using more stringent protocols related to areas of coverage. A 20% minimum covered is required in non-infected systems (including Alamitos Bay) when Caulerpa pre-and-post construction surveys are conducted.

3.6 OTHER MARINE LIFE OBSERVED DURING THE 2007 ALAMITOS BAY

A total of 53 taxa of plants, invertebrates, and fish were observed during surveys conducted between October 2007 and November 2008 (Table 5).

Table 5. List of Organisms Observed During Marine Biological Surveys in Alamitos Bay, September 2007-January 2009. Coastal Resources Management, Inc.

Common Name	Scientific Name	Eelgrass Beds and or/Soft Bottom Benthos	Marina Pilings and Bulkhead	All Areas
green algae	*Ulva intestinalis*			x
green algae	*Ulva californica*		x	x
brown algae	*Colpomenia perigrina*		x	x
brown algae	*Sargassum muticum*		x	x
red algae	*Caulacanthus sp.*		x	x
red algae	*Corallina spp.*		x	x
red algae	red turf algae (complex)		x	x
red algae	*Rhodymenia* sp.		x	x
sponge	*Haliclona* sp.	x	x	x
encrusting red algae	*Pseudolithopoma sp.*		x	x
green anemone	*Anthopleura sola*		x	x
hydroid	*Tubularia sp.*		x	x
stinging anemone	*Bunodeopsis sp*	x		x
burrowing anemone	*Pachycerianthus fimbriatus*	x		x
hydroid	*Corymorpha palma*	x		x
barnacle	*Balanus glandula*		x	x
barnacle	*Chthamalus fissus/dalli*		x	x
lined shore crab	*Pachygrapsus crassipes*		x	x
limpets	*MacClintokia (Collisella) spp*		x	x
giant keyhole limpet	*Megathura crenulata*		x	x
file limpet	*Lottia limatula*		x	x
slipper shell	*Crepidula onyx*		x	x
horn snail	*Cerithidea californica*	x		x
reverse chama	*Pseudochama exogyra*		x	x
ringed nudibranch	*Dialula sandiegensis*		x	x
lemon nudibranch	*Anisodoris nobilis*		x	x
sea slug	*Navanax inermis*	x		x
sea hare	*Aplysia vaccaria*	x	x	x
octopus	*Octopus bimaculoides*	x	x	x
carinate snail	*Alia carinata*	x		x
angled unicorn snail	*Acanthina spirata*		x	x
kellet's whelk	*Kelletia kelletii*		x	x
turban snail	*Tegula eiseni*		x	x
oyster	*Ostrea conchicola*		x	x

Table 5 (Continued)	Scientific Name	Eelgrass Beds and or/Soft Bottom Benthos	Marina Pilings and Bulkhead	All Areas
wavy top snail	*Lithopoma undosa*		x	x
Japanese littleneck	*Protothaca staminea*	x		x
wavy chione	*Chione undatella*	x		x
bay mussel	*Mytilus galloprovincialis*		x	x
soft ectoproct	*Zoobotryon verticillatum*	x	x	x
moss animal	*Thalamoporella californica*	x	x	x
ochre sea star	*Pisaster ochraceus*			x
bat star	*Asterina miniata*		x	x
sea cucumber	*Parastichopus parvimensis*		x	x
colonial tunicate	*Botrylloides spp.*			x
solitary tunicate	*Ciona intestinalis*		x	x
solitary tunicate	*Styela plicata*		x	x
round sting ray	*Urolophus halleri*	x		x
topsmelt	*Atherinops affinis*	x	x	x
black surfperch	*Embiotoca jacksoni*	x	x	x
opaleye perch	*Girella nigricans*		x	x
speckled sand dab	*Citharichthys stigmaeus*	x		x
California halibut	*Paralichthys californicus*	x		x
flatfish	unid. flatfish	x		x
	Total Taxa	**18**	**38**	**53**

Epibenthic, Soft-Bottom Benthic Organisms. Eighteen were observed on or in eelgrass-vegetation or uncolonized mud substrates. The most common species observed during diver and remote video surveys of the marina basins and channels included large colonies of the ectoproct *Zoobotryon verticillatum*-a large, tree-like mass colonial species that is commonly found in high abundances during warm winter months attached to boat docks (Coastal Resources Management, Inc. 2007a). However, when it breaks loose, it settles on the bayfloor to form a "bolus' of biofouling debris.

Other species that were observed, but were not abundant during the dive surveys included burrowing anemones (*Pachycerianthus fimbriatus*), octopus (*Octopus bimaculatus*), California horn snail (*Cerithidea californica),* Gould's bubble snails (*Bulla gouldiana*), predatory sea slugs (*Navanax inermis*), and tunicates. Of these, only the ectoproct *Zoobotryon* and burrowing anemones were present to common in the marina basins. A species-poor community of benthic epibiota is not uncommon in unvegetated environments compared to vegetated bayfloors (i.e., eelgrass) where the added structure of eelgrass above and beneath the sediment surface provides habitat and a food sources for many invertebrates.

Hardscape. Man-made substrates (bulkheads, seawalls, docks, pilings, jetties) in Alamitos Bay are not particularly biologically sensitive habitats. However, hard substrate provides surface area for sessile marine animals and plants and mobile macro

invertebrates that would not be present in the absence of these structures. The hardscape of these structures support mussels, barnacles, sponges, and other types of invertebrates and plants that constitute the "biofouling community". The undersides of boat floats and docks are commonly colonized by green algae, barnacles, mussels, limpets, polychaete worms, moss animals (ectoprocts), and sea squirts (tunicates). Bay fishes are attracted to the biofouling habitat because it a constant source of food.

A total of 38 species were identified during dive and remote video surveys and included green algae (*Ulva intestinalis*, and *U. californica)*; brown algae (*Colpomenia perigrinus* and *Sargassum muticum*) *and red algae* (*Corallina* spp., *Caulacanthus* sp, *Rhodymenia* sp. and turf red algae complex); sponges (*Haliclona* sp.); green anemones (*Anthopleura sola*) angled unicorn whelk (*Acanthina spirata),* mussels (*Mytilus galloprovincialis*); barnacles (*Balanus glandula, Chthamalus fissus/dalli*); ectoprocts (*Zoobotryon verticillatum*); sea stars (*Pisaster ochraceus*); and tunicates (*Botryllus/Botrylloides* complex, *Ciona intestinalis*, and *Styela plicata*). The rip rap in the vicinity of Basin 1 and Basin 2 also included numerous, larger macroinvertebrates, such as the nudibranchs *Dialula sandiegensis, Anisodoris nobilis;* sea hares *(Aplysia vaccaria),* octopus *(Octopus bimaculatus),* kellet's whelk *(Kelletia kelletii),* wavy top snails *(Lithopoma undosa*) sea stars *(Pisaster ochraceus), oysters* (*Ostrea conchilcola*); bat stars *(Asterina miniata*), and purple sea urchins *(Strongylocentrotus purpuratus).*

Fishes. The types of fishes which commonly occur in protected marinas and harbors of southern California such as Alamitos Bay are a combination of species that are associated with soft-bottom habitat, hardscape of pilings, docks, cement bulkheads, and jetties. And open water (water column) species. While 46 species are known from Alamitos Bay (Valle et al. 1999), six species were observed during the focused CRM surveys and included topsmelt (*Atherinops affinis*), black perch (*Embiotoca jacksoni*), opaleye perch (*Girella nigricans*), unidentified flatfish, California halibut (Paralichthys californicus), sand dabs (*Citharichthys stigmaeus*), and round sting ray (*Urolophus halleri*).

4.0 IMPACT ASSESSMENT

4.1 CONSTRUCTION DETAILS (Source: LSA Associates, Inc.)

The proposed project would renovate the existing Marina facilities and enhance the existing recreational boating facilities within the harbor. The project encourages boating use by providing upgraded ADA-compliant facilities, upgraded restrooms, and dredged basins to ensure safe navigation. The project will be completed over a sequence of 12 phases. Table 6 summarizes the project components.

Table 6. Alamitos Bay Marina Renovation

Component	Existing Conditions	Proposed Project Improvements
Dock System (Basins 1-7)	Floating docks supported by 808 concrete steel reinforced pipes	Replace existing piles with 620 piles (loss of 188 piles). Average pile diameter 15”
	1,967 boat slips provided by timber floating docks	1,646 boat slips provided by floating concrete docks. Loss of 321 slips.
	Approximately 476,839 square feet of area covered by floating docks	Approximately 474,239 square feet of area covered by floating docks. Loss of 2,600 square feet.
Temporary/Long Dock	N/A	One 565’ x 10’ long dock to be located adjacent to Long Beach Yacht Club (Basin 4). Approx 200’ of this dock is temporary. Approx. 3,150 sq ft. of water area covered permanently and 2,000 sq ft. covered temporarily during construction.
Access	47 ADA gangways (none ADA)	46 gangways (including 9 ADA)
Dredging	N/A	Basin 1 – 53,700 cy Basin 2 – 89,900 cy Basin 3 – 55,900 cy Basin 4 – 65,300 cy Basins 5, 6S, 6N, 7 – 22,320 cy Total: 287,120 cy (with 2 ft over-dredge) Target dredging depth is -13 to -15 MLLW in Basin 1; -10 MLLW in Basins 2-7
Sea Wall Repairs	N/A	Approx. 8,250 lf of repair required
Habitat Mitigation Area	N/A	Site in north east Marine Stadium to be excavated to a depth of -2 to -3 MLLW. Approximately 10,500 sq ft.
Dry Boat Storage	None	23 new spaces for boats under 30’ in Basin 4 parking lot. Loss of 16 spaces at habitat mitigation site. Total gain of 7 dry storage spaces.
Restroom Facilities	13 restroom buildings	Refurbish 3 restroom buildings in place; demolish and rebuild 10 restroom buildings. Total of 13 restroom buildings.
Parking Lots	2,515 parking spaces	2,524 parking spaces provided including ADA spaces. 930,622 sq ft of parking lot areas to be repaved

The Marina Rehabilitation Project would accommodate changes in the boating needs of the public by providing longer average slip lengths. The dock and slip facilities were developed 50+ years ago, when the average length of recreational boating slips was shorter than current boater demand. However, providing longer slips will reduce the total number of slips within the Marinas. There are currently 1,967 existing slips in Marina Basins 1 through 7; the proposed project includes installation of 1,646 slips, resulting in the loss of 321 slips. As of the date of this notice, there are 1,430 customers in the Marina, so there would be a slip for every existing customer once the renovations are complete.

The proposed project consists of a number of improvements to the existing Marina and includes the following: (1) dredging the Marina basins down to original design depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) complete dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project includes two construction staging areas: one located in a parking lot on Marina Drive near Basin 2; and a second staging area located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard.

Based on preliminary analysis, dredging activities would require mitigation for potential impacts to eelgrass. The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an open space/habitat mitigation site. This mitigation habitat area will therefore be analyzed in the Environmental Impact Report (EIR) as a part of the project. Each of these project components is described in greater detail below.

Dredging. As part of the proposed project, the Marina basins would be dredged to the original design depths. The purpose of this dredging is to remove accumulated materials that prevent safe navigation throughout the Marina basins. The total dredge quantity is approximately 262,000 cy of sediment. The proposed disposal site for dredge materials from Basins 2 through 7 is the United States Environmental Protection Agency (EPA) designated offshore disposal site, known as LA-2, with material discharged via a dump barge. Preliminary testing indicates that a portion of dredge materials from Basin 1 contain elevated levels of metals and would not be acceptable at LA-2. Therefore, approximately 25, 504 cy of material from Basin 1 would be trucked off-site and disposed of at an appropriate landfill, with the remainder being disposed of at LA-2. The dredging work would be phased by basin along with the dock and piling replacement work. Dredge depths for Basins 2,3,4,5, 6 North, 6 South, and 7 will be -10 ff MLLW, and Basin 1 dredge depths will be -13 to -15 ft MLLW.

Restrooms. There are a total of 13 restrooms located throughout the Marina basins that are included as part of this project. Three (3) restroom structures, located in Basin 6-South, Basin 6-North, and Basin 7, respectively, would be remodeled and renovated in place. The remaining 10 restroom buildings would be demolished and replaced with similar structures that contain toilet, shower, and laundry facilities. Six of the 10 structures to be demolished would be relocated to accommodate ADA ramps and

gangways. However, each basin would continue to have the same number of restroom buildings that currently exist, in the same approximate locations.

The restrooms would be constructed in compliance with the ADA guidelines. This portion of the project includes replacement of the existing water and sewer lines with 6-inch (in) lines from all restrooms to the existing water and sewer mains.

Sea Wall Repairs. It is anticipated that 8,250 linear feet (lf) of sea wall repair would be required as part of the proposed project. The repairs are primarily focused on restoring the eroded bearing surface and reestablishing the rock revetment along the slope to the basin floor. Sea wall repairs would be done in phases that correspond with each basin's dock and piling replacement work.

Dock and Piling Replacement. There are 1,967 existing slips in Marina basins 1 through 7 that total approximately 476,839 sf of dock surface area. The proposed project includes installation of 1,646 slips that total approximately 474,239 of new dock surface area. Therefore, the proposed project would result in the loss of approximately 321 slips and a reduction of approximately 2,600 sf of dock surface area. In addition, the proposed project would result in the removal of approximately 808 existing piles and installation of 620 new piles to support the new dock system. The new docks, accessory gangways, and ramps would meet ADA requirements. Upgraded water, electricity, and phone utilities would be provided to the new slip facilities.

Temporary/Long Dock. The project includes one temporary dock that would accommodate displaced boats during each phase of the rehabilitation process. The temporary dock would be located adjacent to the parking lot of the Long Beach Yacht Club. It is anticipated that a portion of the temporary dock would remain in place as a permanent dock at the completion of the Marina rehabilitation.

Parking Lot Replacement. The project includes the replacement of the paved parking lot surfaces adjacent to the Marina slips in Basins 1, 2, 3, 4, 6-North, and 6-South. New asphalt paving would be installed and the lots would be restriped (repaving areas total 930,622 sf). No landscaped islands within the parking lots areas would be removed. In addition, new utility connections including electricity, water, wastewater, and storm drain facilities would be installed in conjunction with the repaving of the parking areas. Concrete ramps meeting ADA requirements and concrete sidewalks and curbs are also included in the parking lot or landside improvement portion of the project.

Open Space/Habitat Mitigation Site. The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an open space/habitat mitigation site. The open space/habitat mitigation site is located within a City-owned storage area. The fenced storage area is currently used, in part, to store impounded items. The project includes abandoning a portion of the storage yard to create an open space habitat. An area of 218 feet by 105 feet would be excavated to a depth of 2 to 3 feet below MLLW. The rock revetment would be relocated to the eastern boundary of the site to allow the area to fill with water from the adjacent channel. [Alternatively, culverts would be placed in the

rock revetment to allow water to circulate into the planting area. Design is still underway] The new open space area would be planted with eelgrass to mitigate for the project's potential impacts to marine biological resources.

Project Timing. Implementation of the project is anticipated to be accomplished in a 12-phase program, extending over approximately six years. Each basin will be dredged after removal of the docks and slips within that respective basin. Seawall repair will occur as necessary within each phase. Rehabilitation of the restroom facilities and the parking lot replacement will be completed after installation of all dock facilities and related utilities.

The phases and proposed number of slips in each basin are summarized in Table 6.

The limits of eelgrass vegetation within the Marina Basins and temporary dock area are shown in Figures 6-13. Each of these areas will be potentially affected by construction-related impacts due to pile removal and placement, dredging, and the presence of work vessels and barges.

4.2 IMPACTS TO WATER QUALITY

Potential Water Quality Impacts on Marine Habitats. During dredging and pile removal and placement, water turbidity will increase when the piles are removed or driven into the sediments. Turbidity may also increase if vessel propellers impact the bay floor or prop wash stirs up bottom sediments.

To prevent the spread of any turbidity plume out of the area, Best Management Practices (BMPs) should be implemented, when feasible, by installing a siltation curtain around the work zone. Implemented BMPs that will eliminate any disposal of trash and debris at the project site will assist in preventing water quality and eelgrass habitat degradation.

4.3 IMPACTS TO EELGRASS HABITAT

Potential Vessel-Related Impacts on Eelgrass Habitat. Barges, scows, and support vessels have a potential to impact eelgrass through (1) deployment of anchors and anchor chain within eelgrass habitat (2) grounding of the vessels over eelgrass habitat and (3) propeller scarring and prop wash. These activities would create furrows and scars within the eelgrass vegetation and would result in additional, adverse losses of eelgrass habitat.

Eelgrass Vegetation. Areas that will be affected by the proposed project's dredging activities potentially include Basin 2, Basin 4, and Basin 6N. Dredging will be conducted to depths of -10 ft within these basins, removing all eelgrass and deepening the basins to depths beyond the normal depth ranges for eelgrass survival. Losses of eelgrass vegetation are summarized in Table 7. Project-related dredging impacts will result in the loss of 1,373.04 sq ft (0.03 acres) of eelgrass vegetation. Mitigation for these losses will be required per requirements of the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service, [SCEMP] 1991 as amended).

Table 7. Project Habitat Impacts. Losses of Eelgrass Vegetation

Location	Soft Bottom Habitat-All Marina Basins	Soft Bottom Habitat in Basin Fairways With Eelgrass	Existing Eelgrass Vegetation	Amount of Eelgrass Within Dredging Footprint	Mitigation Requirement: Eelgrass Vegetation: 1.2 to 1
Basin 1	0.0	0.0	0.0	0.0	none
Basin 2	70,956.2	61,181.0	1,019.8	1,019.8	1,223.7
Basin 3	27,274.0		0.0	0.0	none
Basin 4	19,210.4	2,083.0	123.6	123.6	148.3
Basin 5	2,233.0		0.0	0.0	none
Basin 6-S	1,456.0		23,457.0	0.0	none
Basin 6-N	512.0	742.0	230.0	230.0	276.0
Basin 7	1,400.0		0.0	0.0	none
Total (ft)	123,041.6	64,006.0	24,830.4	1,373.4	1,648.0
Total (ac)	2.82	1.47	0.57	0.03	0.04

Potential Eelgrass Habitat. The Southern California Eelgrass Mitigation Policy [SCEMP] (National Marine Fisheries Service, 1991 as amended) defines potential eelgrass habitat as "areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc." It should be noted that there is no conclusive scientific basis for why eelgrass grows in some locations and not in others. It can be attributed to a combination of any of the environmental conditions listed above.

Further, in response to recent concerns regarding the interpretation of the SCEMP, correspondence between Rodney R. McInnis, Regional Administrator for the NMFS and Mr. Jack Peveler, President of the California Association of Harbor Masters and Port Captains, (Appendix 2) clarified that the potential eelgrass clause has been implemented only where "clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence)."

Abiotic Features of the Project Area. This section summarizes physical and chemical factors of the project area relative to the determination of potential eelgrass habitat. Water circulation within Alamitos Bay, and particularly within the Alamitos Bay Marina is modified by the presence of cooling water intake structures in the Marina (Basin 2) that draws ocean water into Alamitos Bay, and then to the Haynes Generating Station. This creates an artificial net inflow of ocean water into Alamitos Bay, and benefits water quality in the Marina, as well as marine life that lives in the marina. This net inflow of ocean water likely contributes to higher levels of dissolved oxygen, lower levels of organics and suspended sediments in the Bay, and subsequent higher submarine irradiance levels. It also likely enhances the ability for eelgrass to colonize deeper areas of the marina, that in the absence of the net inflow of ocean waters, might not be able colonize.

Abiotic features such as water salinity, temperature, and underwater light levels are within normal ranges for eelgrass in the Alamitos Bay Marina at depths where eelgrass is known to occur (-0.0 to -8.5 ft MLLW). While the marina's initial design depths were below the depth limits known for eelgrass, shoaling in the marina has resulted in depths that will support eelgrass, and where light levels are sufficient to support eelgrass.

The original and/or design depths of the Marina basins ranged from -12 to -15 ft MLLW. Because the current shallower depths within the Marina Basins are a result of shoaling over the past 50 years, and because no maintenance dredging has occurred, there are now depths within the basins which are less than 8 ft deep, or "depth suitable" for eelgrass. Eelgrass vegetation would not normally be expected to occur in these areas as the site has historically and consistently been used as a marina and the basins should have maintained as close as possible to the original and/or design depths (-12 to -15 MLLW). However, over time, shoaling has decreased water depths in 3.39 acres of shaded and unshaded habitat to depths less than 8.0 ft deep (Source: TranSystems, Inc. Alamitos Bay Marina Bathymetric Maps, August 2008). Of these 3.39 acres, 2.82 acres are unshaded, but depth-suitable habitat. However, there is "clear and convincing evidence" that eelgrass has been found in only seven of the of 38 marina fairway channels (Figures 14-16), and the total amount of depth-suitable habitat within these seven marina fairway channels is 1.47 acres (Table 8).

While 1.47 acres of soft bottom habitat within these areas can be classified as "depth-suitable" eelgrass habitat within the seven fairways, the results of CRM's remote video surveys in October 2008 indicated that each of the areas mapped in 2007 was still vegetated with eelgrass, but that there was no observable increase in areal cover, and eelgrass had not colonized in any other areas in the Marina.

Therefore, based on these two (and only available) surveys indicating that eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging. Therefore, impacts to potential eelgrass habitat are considered less than significant and no mitigation is required.

Table 8. Determination of Eelgrass Habitat Vegetation Losses

Location	TranSystems Initial Amount Calculated: (sq ft)	Depth-Suitable Unshaded Eelgrass Habitat-All Marina Basins (sq ft)	Depth Suitable, Unshaded Base Minus Fairways or Basins Without Eelgrass (sq ft)	Existing Eelgrass (sq ft)	Impacted Amount of Eelgrass (sq ft)	Amount of Potential Eelgrass Habitat (sq ft)	Mitigation Requirement: Eelgrass Vegetation: 1.2 to 1
Basin 1	0.0	0.0	0.0	0.0	0.0	0.0	none
Basin 2	71,976.0	70,956.2	61,181.0	1,019.78	1,019.78	0.0	1,223.73
Basin 3	27,274.0	27,274.0		0.0	0.0	0.0	none
Basin 4	19,334.0	19,210.4	2,083.0	123.26	123.26	0.0	147.91
Basin 5	2,233.0	2,233.0		0.0	0.0	0.0	none
Basin 6 South	24,913.0	1,456.0		23,457.0	0.0	0.0	none
Basin 6 North	742.0	512.0	742.0	230.0	230.0	0.0	276
Basin 7	1,400.0	1,400.0		0.0	0.0	0.0	none
						0.0	
Total (ft)	147,872.0	123,041.6	64,006.0	24,830.4	1,373.04	0.0	1,647.65
Total (Acres)	3.39	2.82	1.47	0.57	0.03	0..0	0.04

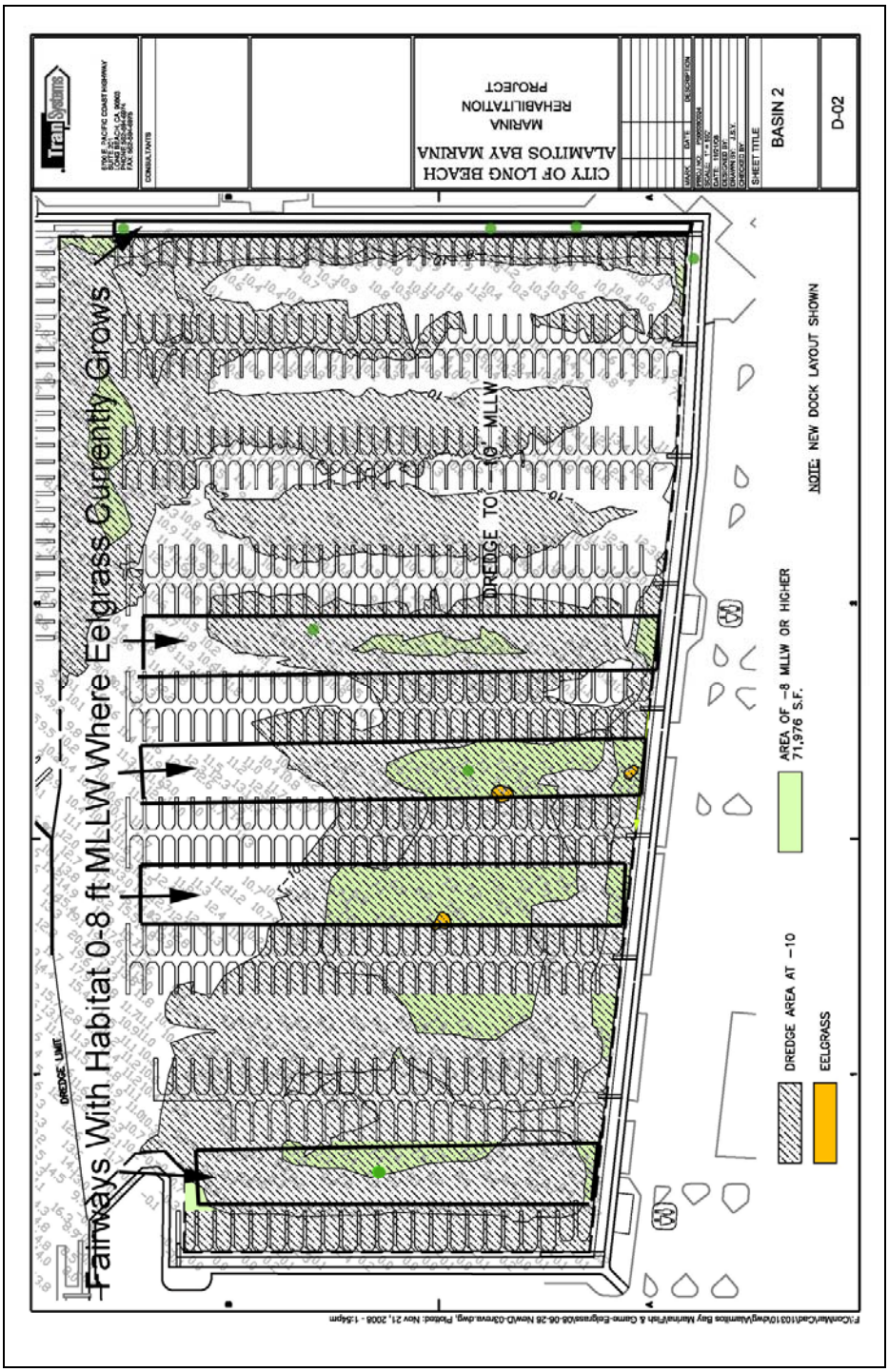


Figure 14. Depth-Suitable Eelgrass Habitat in Basin 2. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

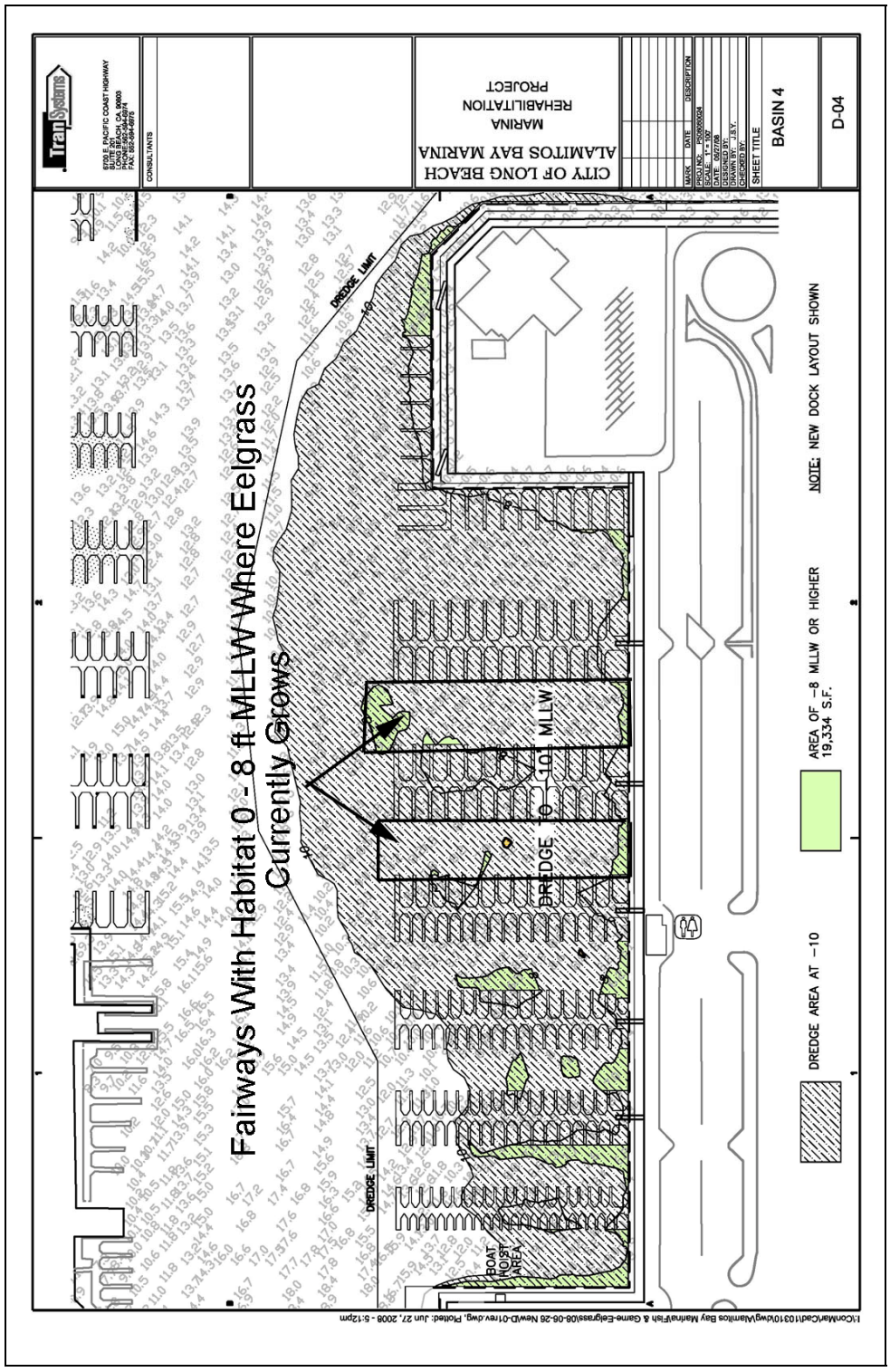


Figure 15. Depth-Suitable Eelgrass Habitat in Basin 4. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

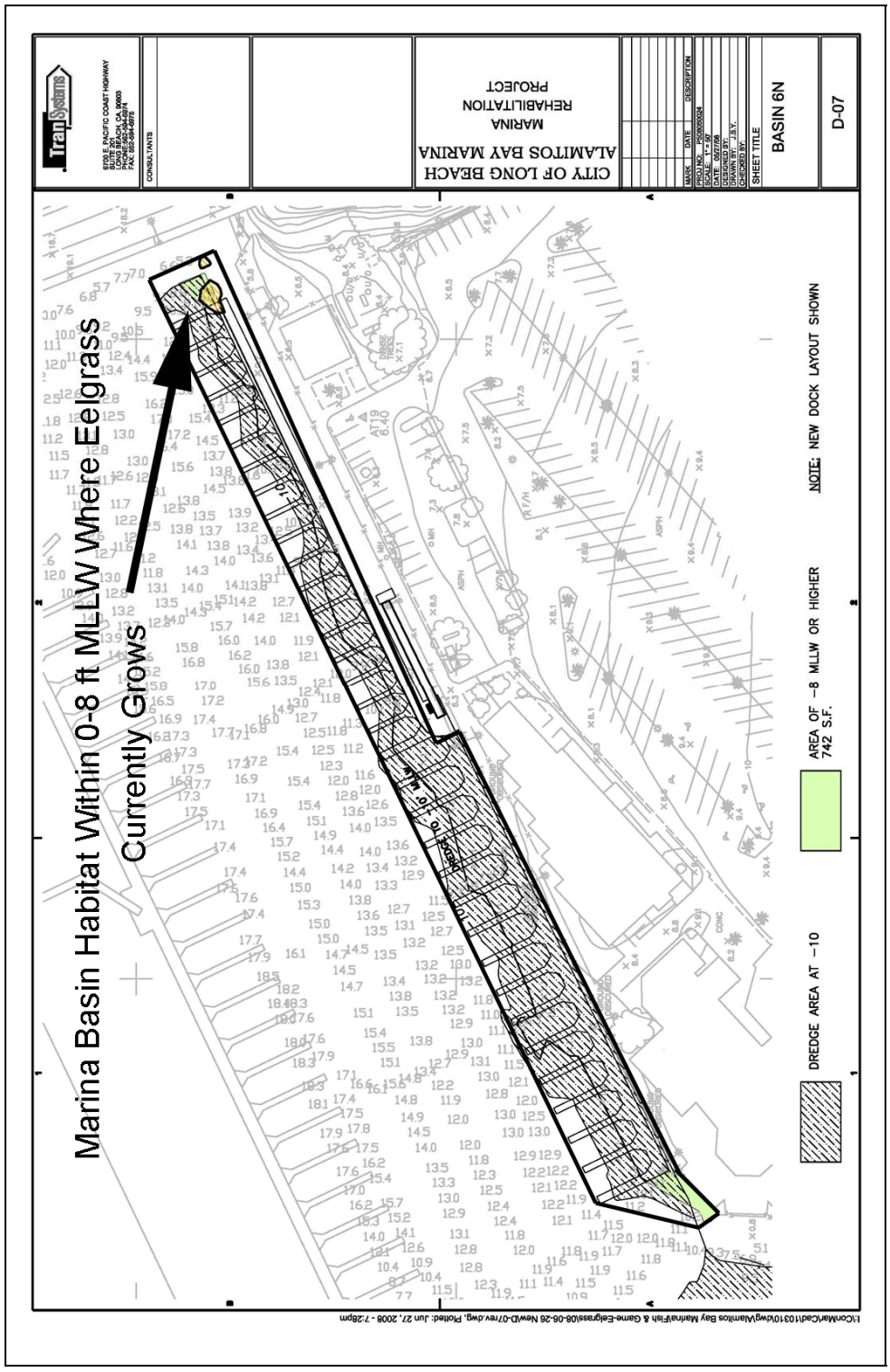


Figure 16. Depth-Suitable Eelgrass Habitat in Basin 6. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

5.0 MITIGATION MEASURES

5.1 WATER QUALITY

During construction, the following mitigation measures and Best Management Practices (BMPs) are recommended to prevent water quality degradation in Alamitos Bay to reduce potential adverse impacts to eelgrass beds on the periphery of the project area.

- 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 Alamitos Bay will be prohibited; and
- Silt curtains will be deployed around work barges and scows, and around the pile removal and placement zones where feasible to minimize the spread of turbid waters outside the project area.

5.2 EELGRASS PROTECTION PLAN FOR CONSTRUCTION IMPACTS

The following mitigation measures will be implemented during prior to and during construction to avoid and reduce additional adverse impacts to eelgrass.

- The project marine biologist shall provide the project engineer with the coordinates of eelgrass beds within each project construction zone (California Zone V, NAD 83, feet). prior to the initiation of any dredging to avoid unnecessary damage to eelgrass beds outside the construction zones;
- The project marine biologist shall meet with the dredging crew project manager prior to dredging to review areas of eelgrass to avoid.
- Support vessels and barges operators will not maneuver or work over eelgrass beds outside the project area to prevent grounding within eelgrass beds, damage to eelgrass from propellers, and to limit water turbidity; and
- Workers shall avoid placing anchor chain or anchors in eelgrass beds.

5.3 MITIGATION FOR EELGRASS HABITAT LOSSES

Eelgrass Mitigation Requirements

- Eelgrass vegetation losses shall be mitigated at a 1.2 to 1 ratio (mitigation to impact ratio) such that the loss of 1,373.04 sq ft of eelgrass will be mitigated with the successful transplant of 1,647.65 sq ft of eelgrass vegetation, according to the *Southern California Eelgrass Mitigation Policy* (National Marine Fisheries Service, 1991 as amended).

Mitigation Site Siting Alternatives. Agencies require that mitigation be conducted "in kind" (i.e., mitigation of eelgrass), and "on site" (i.e., within the same system- Alamitos Bay). If this cannot be achieved, than offsite mitigation areas can be evaluated. However, off-site mitigation is extremely difficult to achieve because agencies prefer that mitigation is conducted in the system that was affected by the project impacts. The following sites were evaluated between November 2007 and July 2008 as potential eelgrass mitigation sites. The preferred project alternative is **#6 (Marine Stadium, Northeast Corner Tidal Basin).**

1. **Alamitos Bay Peninsula Between Balboa and 56th Place-Rejected Site**
    - Eelgrass grows in small patches along this section of bay shoreline, but there are open areas of bare sediments that potentially could serve as a mitigation site.
    - Water quality is not limiting; good tidal current flushing. Water quality (temperature, salinity, pH, underwater light-levels) and depth are not limiting to eelgrass growth.
    - However, beach and subtidal profiles indicate a steep slope and a narrow intertidal to shallow subtidal bench to depths of -5 feet Mean Lower Low Water (MLLW) is likely limiting eelgrass distribution. It is extremely abundant between 64th Place and 71st Place where the beach and subtidal profiles indicate a wide, gradual slope into the eelgrass zone.
    - Public use (swimming, and sports fishing activity along shoreline and fishing from kayak/inter tube fishermen may also be limiting to eelgrass growth along this side of beach (according to the California Department of Fish and Game).
    - California Department of Fish and Game does not approve of this site as an eelgrass mitigation site because of high public use.

2. **Cerritos Channel (north of Pacific Coast Highway)-Rejected Site**
    - Eelgrass is abundant along the south bank east of PCH Bridge, leading to the Cerritos Wetlands. No opportunity along this bank.
    - Potential, long-term opportunity to include eelgrass mitigation for future restoration of the Cerritos Wetlands, but these plans are not far enough along, nor is funding currently available for implementing any eelgrass mitigation for the resource agencies and regulatory agencies to approve this site as a mitigation area.

3. **Basin 6-Cerritos Channel (south of Pacific Coast Highway-Rejected Site**
    - Initial eelgrass mitigation potential site evaluation was feasible from a biological standpoint. Preliminary designs for the mitigation site were prepared by Coastal Resources Management, Inc. However, the site was rejected by the Marine Bureau due to a substantial reduction in the number of boat slips and future income for the marina.

4. **Long Beach Shoreline between Junipero Ave to 1st Street (Downtown Marina)-<u>Rejected Site</u>**
    - This site was investigated because eelgrass is known to occur immediately offshore of the surf zone along this stretch of protected beach. The specific site investigated was the shallow water shoal that has been formed at the junction of the Downtown Marina and the shoreline, and the shallow waters immediately outside the surf zone. Sediments tend to consist of silty sand, and water depths are between -2 and -8 ft MLLW. It actively competes with the red algae *Gracilariopsis* for light and space throughout this stretch of nearshore shallow water habitat.
    - However, based on CRM diver surveys of the site in May 2008, eelgrass has colonized this shoal and grows extensively throughout the area which precludes this as a mitigation site.

5. **Rainbow Marina, Along the South Jetty/Breakwall)-<u>Rejected Site</u>**
    - Dive surveys were conducted by CRM in May 2008 at depths between 0.0 and -15 ft MLLW. The area investigated was a narrow sandy beach/quarry rock shoreline. The quarry rock shoreline extends subtidally to a depth of -15 ft Mean Lower Low Water in front of the Long Beach Aquarium dock facilities and other commercial vessels in the marina. In order for this area to be used as an eelgrass mitigation site, the waterway would have to be narrowed and filled in with appropriate sandy sediments to depths of -2 to -5 ft MLLW between the end of the docks at the western end of the site, east to the entrance to the marina. Biologically, the subtidal rip rap is highly productive, and it would be unlikely from an agency standpoint that the loss of the subtidal, "artificial structure" and associated marine life would be approved by the resource and regulatory agencies. From a navigable waterway standpoint the narrowing of the channel could be a navigational hazard.

6. **Marine Stadium, Northeast Corner Tidal Basin-<u>High Potential Eelgrass Mitigation Site</u>**
    - The Marine Stadium supports one of the most productive eelgrass beds in Alamitos Bay based on detailed eelgrass mapping of the Bay (Coastal Resources Management, 2005).
    - Modification of the Marine Stadium boundary to include an "eelgrass mitigation basin" at the northeast end near End Beach has a high potential for eelgrass mitigation success if site conditions mimic those of the Marine Stadium (tidal influence and circulation, sediment types, water depth, temperature, salinity, and pH).
    - This can be accomplished by constructing a tidal basin at the site which is currently a parking lot and City boat storage area. Direct connection to the Marine Stadium is required to achieve the water quality objectives needed to support eelgrass.
    - A tidal hydraulic analysis was conducted to provide water circulation information needed to evaluate existing hydrodynamic conditions, project-

related differences in hydrodynamic conditions, and sedimentation rate differences within the mitigation site. (Everest International Consultants, Inc. 2009). The results of the study indicated that conditions within the proposed tidal basin would be similar to conditions within the Marine Stadium. Therefore, water quality objectives based upon tidal hydraulics can be met with the open tidal basin alternative. Secondly, the results of sediment borings and sediment chemistry analyses (Terra Costa Consulting Group 2009; Positive Lab Service, 2009) indicate alluvial deposits at depths of -2 to -3 ft MLLW (depths to which mitigation area sediments will be exposed) consist of clays, silts, and sands, and they are not toxic according to EPA standards for pesticides, PCBS, and metals. This will promote eelgrass transplant success. Tidal flushing rates and current velocities within the proposed site will be similar to those found within the Marine Stadium. Therefore, this is the preferred alternative for the project.

7. **Marine Stadium, Northeast Corner-Muted Tidal Basin-<u>Low Potential for Eelgrass Mitigation Site Success. Rejected</u>**
    - This alternative assumes that the shoreline quarry rock rip rap must remain in place to comply with the historic design of the Marine Stadium. It should be noted however, that the historic design of the Marine Stadium has been modified for at least one City mitigation project. The End Beach Mitigation Project (construction of a sandy beach and extension of the shoreline to create the Marine Reserve) was implemented in 1995-1996 by the City Public Works Department to mitigate for the loss of sandy beach habitat associated with the construction of the Alamitos Bay Sailing Center on the Alamitos Bay Peninsula.
    - The muted-tidal basin alternative would require that a tidal basin be constructed behind the existing shoreline, and one-or-more tidal culverts be installed along the length of the tidal basin to allow for tidal exchange. This would in itself, modify the existing historic shoreline because the entire shoreline would have to be first removed, and then put back in once the tidal culverts are installed.
    - This process would likely result in the loss of a significant amount of eelgrass at the base of rip rap during construction due to the footprint of the tidal culverts, which would increase the need for mitigation of vegetation and "potential" eelgrass habitat.
    - Long tidal residence times and poor water quality for eelgrass growth within the muted tidal basin are likely to be limiting factors for a successful eelgrass mitigation project.
    - This alternative would not achieve eelgrass mitigation goals for eelgrass vegetation and due to (1) long tidal residence periods that would elevate water temperatures and decrease dissolved oxygen levels (2) an accretion of fine sediments within the muted tidal basin that would remain in suspension, and (3) lower underwater light levels that would inhibit eelgrass growth.

- Computer modeling of this is currently being conducted to determine how many culverts would be required and if this alternative is actually feasible from an engineering standpoint. Based upon the issues associated with biofouling of the Colorado Lagoon tidal culvert, it is likely that long-term maintenance of the tidal culverts would be required.
- The costs associated with this alternative are considerably greater than the preferred alternative, due to the requirement that the shoreline be restored to its initial line, and the need for long-term and constant maintenance of tidal culverts.

8. **Off Site Mitigation-Huntington Beach Wetlands Restoration Project, Huntington Beach, California. –Rejected**
    - The Huntington Beach Wetlands Conservancy, with local and state funding has renovated wetland habitat along Pacific Coast Highway for fishery habitat, and is planning to do additional work set aside for specific wetland mitigation projects. The Conservancy has indicated willingness to accommodate the City's need for eelgrass habitat mitigation through the direct compensation of the costs required to create subtidal channel habitat to depths of -4 ft MLLW. The City however, has rejected this due to the off-site nature of the project, and believes the mitigation should be accomplished within the city's sphere of influence and not in Orange County.

The presence of large eelgrass beds in the Cerritos Channel east of the PCH Bridge, between 63rd and 71st Places along the Alamitos Bay Peninsula, and along the shoreline between Junipero Avenue and the Downtown Marina preclude these sites as project area mitigation sites. The presence of small, scattered eelgrass beds between Balboa Place to 61st Place along the Peninsula indicate that these areas, while they support limited amounts of eelgrass, are also not candidate sites for eelgrass transplants because the intertidal to shallow subtidal bottom slopes are steep and cannot support extensive amounts of eelgrass between their depth limits. In addition, public use of this part of the shoreline is high and recreational fishing in the area may be contributing to reduced eelgrass abundance (California Department of Fish and Game, pers. com, May 2008) which reduces their functional value as fishery habitat.

5.4 TRANSPLANT ELEMENTS

5.4.1 Permission to transplant within tideland areas.

Permission will be required to transplant within tidelands that are under the City of Long jurisdiction. The appropriate agency will be contacted and permission to transplant obtained once the transplant site is selected. Contacts to obtain permission include Mr. Mark Sandoval, City of Long Beach Marine Bureau.

5.4.2 Permission to collect eelgrass donor material

State of California Scientific Collecting Permits will be required for staff involved with the actual collecting of donor material for the transplant. In addition, special permission will be required from the California Department of Fish and Game to collect eelgrass donor material. The CDF&G contact is Bill Paznokas (wpaznokas@dfg.gov.ca)

5.4.3 Responsible Parties

The Applicant, The City of Long Beach will be the responsible party for this project. The California Department of Fish and Game, National Marine Fisheries Service, the California Coastal Commission, and the U.S Army Corps of Engineers will be responsible for reviewing the project's monitoring program results and for determining if the project meets or does not meet criteria as a successful eelgrass mitigation project.

5.4.4 Selection and Construction of a Transplant (Receiver) Mitigation Area

Based upon site surveys of where eelgrass occurs and does not occur in Alamitos Bay and on historical eelgrass survey information for Alamitos Bay, the preferred eelgrass mitigation site is the northeast corner of the Marine Stadium (Figure 17). The site, currently a parking lot and boat storage area will be demolished. Proposed site plans are provided in Figure 18 and include (1) a rock revetment along three sides of the site (2) removal of all surficial material to expose pre-site fill sediments to a depth of -2 to -3 ft MLLW, an approximate 70 wide by 218 ft-long area for eelgrass transplants, and a wave attenuator to reduce the effects of wind waves within the transplant site. The approximately 10,500 sq will be used as an eelgrass mitigation site for City of Long Beach use that will include the transplant of 1,647.65 sq ft of eelgrass vegetation for the Alamitos Bay Marina Project.

5.4.5 Eelgrass Transplant

The following program will be implemented to mitigate the loss of eelgrass associated with the Alamitos Bay Marina Renovation Project following the construction of the Marine Stadium eelgrass mitigation area (MSEMA). The eelgrass transplant will involve several steps; collecting stock material from the donor site(s), preparing the material for transplanting, replanting the eelgrass in the mitigation area receiver site, following up the transplant with monitoring surveys, and evaluating the success of the transplant.

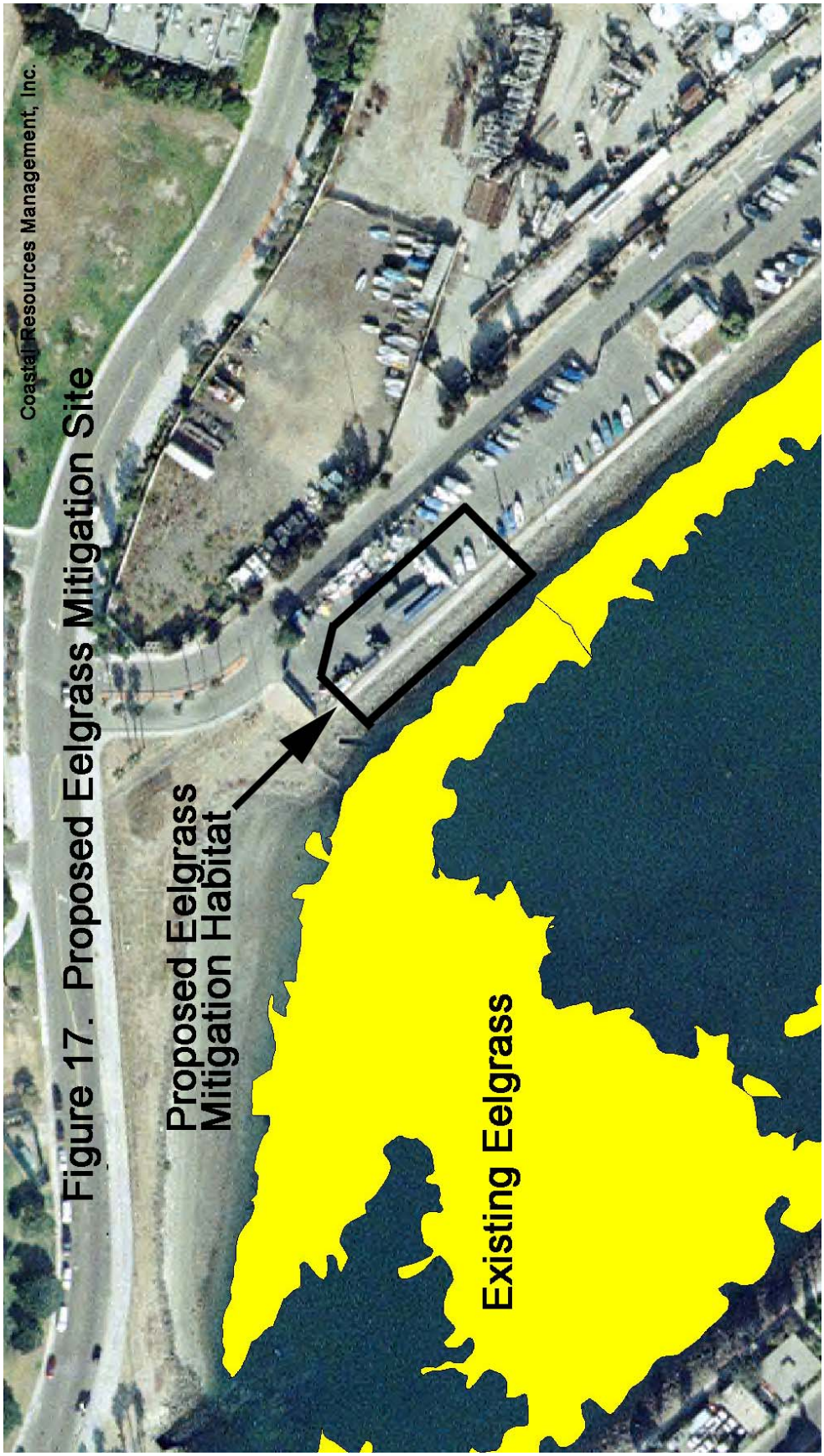
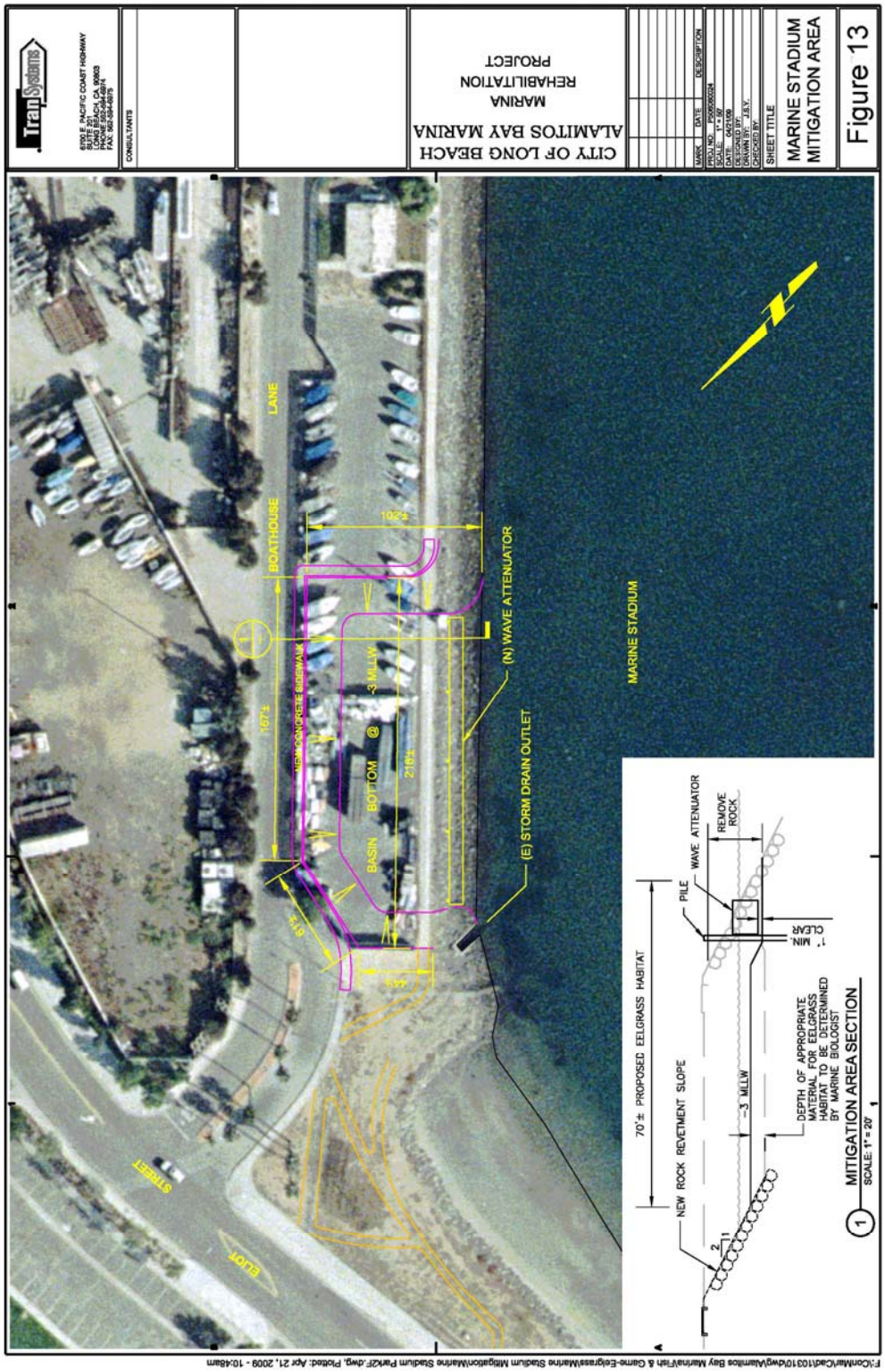


Figure 17. Proposed Eelgrass Mitigation Site


CITY OF LONG BEACH
ALAMITOS BAY MARINA
MARINA
REHABILITATION
PROJECT
MARINE STADIUM
MITIGATION AREA
Figure 13
(N) WAVE ATTENUATOR
(E) STORM DRAIN OUTLET
MARINE STADIUM
BOATHOUSE
LANE
BASIN
BOTTOM @ -3 MLLW
MITIGATION AREA SECTION
70'± PROPOSED EELGRASS HABITAT
NEW ROCK REVETMENT SLOPE
WAVE ATTENUATOR
REMOVE ROCK
PILE
-3 MLLW
DEPTH OF APPROPRIATE MATERIAL FOR EELGRASS HABITAT TO BE DETERMINED BY MARINE BIOLOGIST

Collection and Preparation of Donor Eelgrass Material. Material will be harvested by diver-biologists from the shallow subtidal at a minimum of three sites in Alamitos Bay to increase genetic diversity in the transplanted material and to minimize disturbances within donor beds. Proposed donor sites include (1) Cerritos Channel eelgrass beds, Marine Stadium eelgrass Beds, and eelgrass in the vicinity of the Davies Launch Ramp north of the Davies Bridge. The preferred transplant method is the bundle method (Fonseca et al. 1982) in which eelgrass is collected by divers from the donor site, transferred to shore, separated into planting units, and replanted by divers along a pre-determined grid. The donor material from each area will be mixed together and then integrated into planting units consisting of about 10 shoots and associated substrate and root mass. Shoots will be bundled and tied together with biodegradable line and a sediment anchoring device.

The bundles will be transferred to the divers who will then replant the eelgrass bundles in spacing units of 1 unit per 1 sq meter. The preliminary number of eelgrass bundles and eelgrass shoots required for the transplant is calculated in Table 9.

Table 9. Estimated Amount of Eelgrass Vegetation Required for the Alamitos Bay Marina Renovation Project

MINIMUM TOTAL NUMBER OF PLANTING UNITS (P.U.)

Total eelgrass surface area/(P.U. Density)^2

$\frac{153\ m^2}{1\ m^{(2)}}$ (1,647.65 sq ft)

= 153 P.U.

Estimated Additional Material Required (20%)
=30 P.U.
Total Planting Units
= **183**

TOTAL NUMBER OF SHOOTS

Total number of P.U. x 12 shoots/P.U.
12 shoots/P.U. x 183 P.U.
= 2,196 shoots

Transplant timing. The transplants will occur during the early active growing period for eelgrass (March-June). It is anticipated that the transplants will be conducted over a three-day period. Mitigation will be conducted for losses associated with all marina renovations at the same time, regardless of marina renovation phase.

5.5 FIELD MONITORING

5.5.1 Pre-Construction Survey

An updated pre-construction eelgrass habitat mapping survey for this project will be completed within 120 days of the each of the proposed start dates of each project phase in accordance with the Southern California Eelgrass Mitigation Policy (NMFS 1991 as amended) to amend, if required, the amount of eelgrass that will likely be affected by dredging activity. The results of this survey will be integrated into a Final Eelgrass Mitigation Plan and used to calculate the amount of eelgrass to be mitigated.

5.5.2 Post-Construction Survey

A post-dredging project eelgrass survey will be completed within 30 days of the completion of dredging within each project phase in accordance with the Southern California Eelgrass Mitigation Policy (NMFS 1991 as amended). Each report will be presented to the resource agencies and the Executive Director of the California Coastal Commission within 30 days after the completion of each of the surveys. If any eelgrass has been impacted in excess of that determined in the pre-dredge survey, then any additional impacted eelgrass will be mitigated at a ratio of 1.2:1 (mitigation to impact).

5.5.3 Transplant Monitoring Surveys

A series of seven monitoring surveys will be required to evaluate transplant success over a period of five years. Furthermore, if the initial transplant fails to conform with required performance standards, a supplemental transplant area and monitoring program in conformance with the *Southern California Eelgrass Mitigation Policy* will be required (See Section 5.7).

Post-transplant monitoring surveys will be conducted during the active vegetative growth periods of eelgrass (March through October) at intervals of 3 months, 6 months, 1 year, 2 years, 3 years, 4 years, and 5 years after the transplant to determine the health of the transplanted vegetation and to evaluate transplant success based on established criteria (NMFS 1991 as amended). Eelgrass areal cover, percent cover and shoot density of eelgrass will be determined during each monitoring survey. Undisturbed areas of the eelgrass meadows in the vicinity of the transplant site will be used a control area when assessing the results of the transplant. If yearly criteria are not met, then a replant will be conducted. The amount to be replanted is based upon a formula that takes into account area and/or density deficiencies (NMFS 1991 as amended).

5.6 REPORTING

Transplant survey monitoring reports will be submitted to the resource agencies and the Executive Director of the California Coastal Commission in report format within 30 days of the pre-and post-project monitoring surveys, and seven post-transplant monitoring surveys. The reports will present eelgrass area and density data, an assessment of the functional

quality of the area, a qualitative assessment of invertebrate and fish use of the area, determination if mitigation success criteria have been met, and recommended remedial measures if the transplant is not meeting mitigation success criteria. Reporting summaries will also be included per NMFS 1991 Eelgrass Mitigation Policy Guidelines (NMFS 1991, as amended, see Appendix 2).

5.6.1 Mitigation Success Criteria (NMFS 1991 as amended, Revision 11)

Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the project adjusted impact area (i.e., original impact area multiplied by 1.2, or the amount of eelgrass habitat to be successfully mitigated at the end of five years) and mitigation site(s). Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed.

Specific criteria are as follows:

a. the mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.

b. the mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.

c. the mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet any of the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.
A_t = transplant deficiency or excess in area of coverage criterion (%).
D_t = transplant deficiency in density criterion (%).
A_c = natural decline in area of control (%).
D_c = natural decline in density of control (%).

The STA formula shall be applied to actions that result in the degradation of habitat (i.e., either loss of areal extent or reduction in density).

Five conditions apply:

1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.
2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.
3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.
4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 8 of the Southern California Eelgrass Mitigation Policy.
5) Annual monitoring will be required of the STA for five years following the implementation and all performance standards apply to the STA.

5.7 REMEDIATION AND CONTINGENCY PLANS FOR UNSUCCESSFUL EELGRASS MITIGATION

If the initial transplant is unsuccessful, then one additional replanting at the primary on-site mitigation area will occur. The amount to be transplanted will be based upon the guidelines in the *Southern California Eelgrass Mitigation Policy* (NMFS 1991 as amended). If remedial transplants at the project site are unsuccessful, then eelgrass mitigation should be pursued at the secondary eelgrass transplant location on the Alamitos Bay Peninsula.

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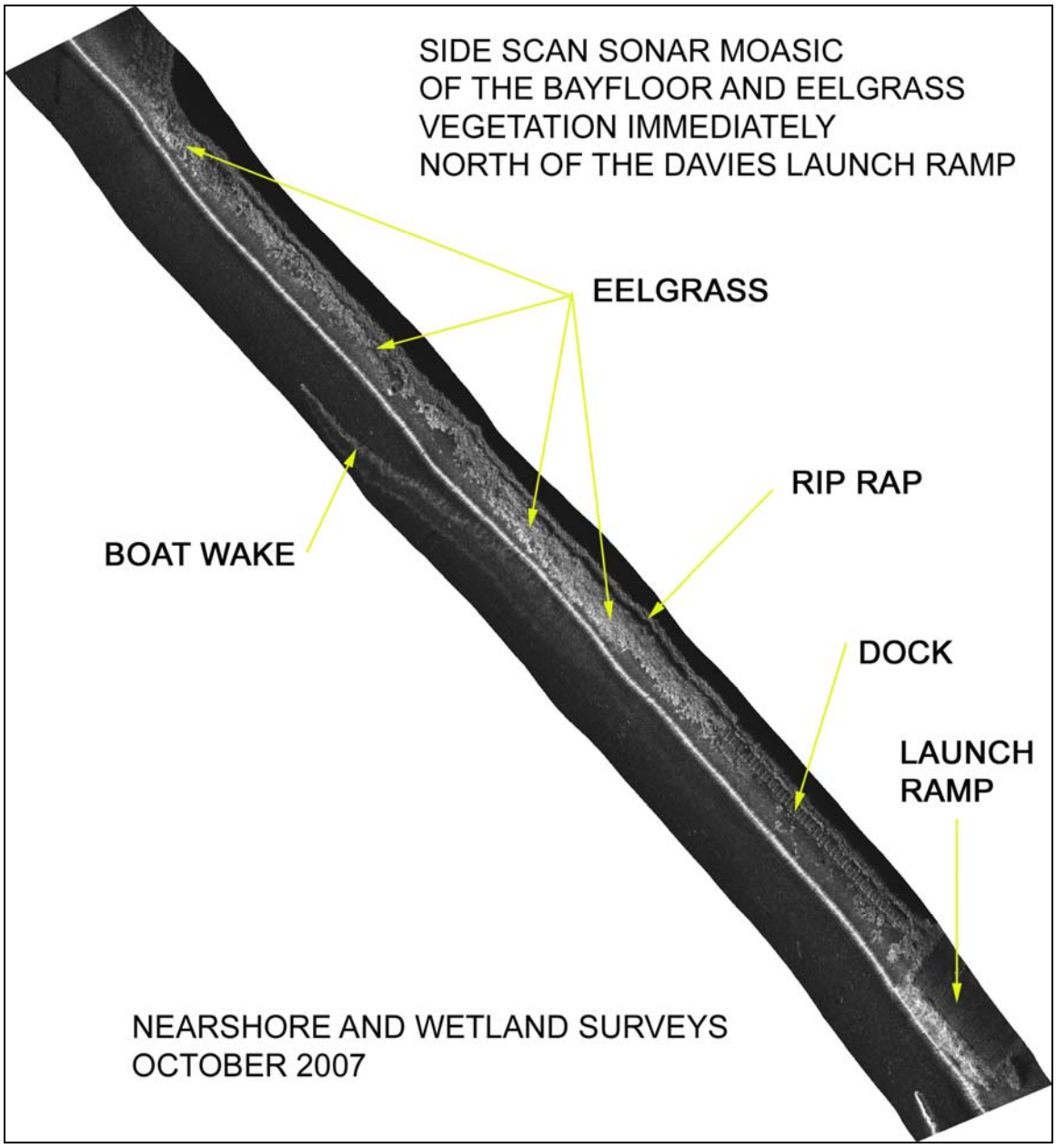
APPENDIX 1. EXAMPLE OF SIDE SCAN SONAR RECORDS FOR THE AREA NEAR THE DAVIES LAUNCH RAMP

COASTAL RESOURCES MANAGEMENT, IN.C AND NEARSHORE AND WETLAND SURVEYS, INC.


SIDE SCAN SONAR MOASIC
OF THE BAYFLOOR AND EELGRASS
VEGETATION IMMEDIATELY
NORTH OF THE DAVIES LAUNCH RAMP
EELGRASS
RIP RAP
BOAT WAKE
DOCK
LAUNCH
RAMP
NEARSHORE AND WETLAND SURVEYS
OCTOBER 2007

APPENDIX 2
NATIONAL MARINE FISHERIES SERVICE LETTER TO THE CALIFORNIA ASSOCIATION OF HARBOR MASTERS AND PORT CAPTAINS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

JAN 26 2009

Mr. Jack Peveler
President
California Association of Harbor Masters and Port Captains
P.O. Box 510
Sonoma, California 95476

Dear Mr. Peveler:

NOAA's National Marine Fisheries Service (NMFS) has reviewed your letter dated December 9, 2008, regarding the application of the Southern California Eelgrass Mitigation Policy. We appreciate your interest and constructive criticism of our efforts to protect and conserve eelgrass habitat within California.

As a result of the recognized ecosystem functions, eelgrass beds and other submerged aquatic beds, are given special status under the Clean Water Act, 1972 (as amended), Section 404(b)(1), "Guidelines for Specification of Disposal Sites for Dredged or Fill Material," Subpart E, "Potential Impacts on Special Aquatic Sites." This special status and high resource value has led to more stringent regulatory protections of this habitat and requirements for avoidance, minimization, and mitigation of unavoidable impacts.

As a furtherance of efforts to curb losses and reduce the negative trends in seagrass habitat, resource and regulatory agencies around the nation have been working on development of resource management plans and resource protection policies addressing seagrass. In southern California, the Southern California Eelgrass Mitigation Policy (SCEMP) (1991, as revised) was developed by NMFS, U.S. Fish and Wildlife Service, and California Department of Fish and Game to provide further guidance on the necessary steps to compensate for unavoidable impacts to eelgrass resources through regulatory programs. NMFS recognizes that the SCEMP is not part of official NOAA regulations. Rather, it is a coordinated, multiple-agency approach that is intended to provide guidance and consistency for all entities that impact this sensitive resource.

NMFS also recognizes that, as currently written, the potential eelgrass habitat clause could be interpreted more broadly than intended. To date, we have only implemented this clause when clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence). We intend to clarify this aspect of the SCEMP in future revisions and will solicit your organization's input prior to doing so. Similarly, we also believe the SCEMP should be based upon the

best scientific information available and will incorporate such information in future revisions as it becomes available. We welcome any scientific information you can provide that could further refine the SCEMP.

Lastly, one of your last statements regarding shoaling of marinas implies that harbor/marina design depths are the appropriate baseline for environmental effect determinations. When evaluating effects to habitat, NMFS considers the current habitat condition. If NMFS' effects analysis indicates that there would be a reduction in quality and/or quantity of habitat, NMFS will provide conservation recommendations to avoid, minimize or offset such effects. If compensatory mitigation is recommended for a continuing operation (e.g. maintenance dredging), we believe it necessary to do so only once. For example, impacts to eelgrass habitat in Agua Hedionda Lagoon associated with maintenance dredging were mitigated according to the SCEMP, but, assuming future maintenance dredging remains in the same footprint, no additional compensation would be recommended if eelgrass recolonized the area at a later date.

Thank you for your interest in this matter. NMFS encourages your participation in future developments related to eelgrass conservation efforts and will keep you updated accordingly. If you have any questions about these comments or the application of SCEMP, please contact Bryant Chesney at Bryant.Chesney@noaa.gov or 562-980-4037.

Sincerely,

Rodney R McInnis

Rodney R. McInnis
Regional Administrator

APPENDIX 3.
SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

(Adopted July 31, 1991)

Eelgrass (Zostera marina) vegetated areas are recognized as important ecological communities in shallow bays and estuaries because of their multiple biological and physical values. Eelgrass habitat functions as an important structural environment for resident bay and estuarine species, offering both predation refuge and a food source. Eelgrass functions as a nursery area for many commercially and recreational important finfish and shellfish species, including those that are resident within bays and estuaries, as well as oceanic species that enter estuaries to breed or spawn. Eelgrass also provides a unique habitat that supports a high diversity of non-commercially important species whose ecological roles are less well understood.

Eelgrass is a major food source in nearshore marine systems, contributing to the system at multiple trophic levels. Eelgrass provides the greatest amount of primary production of any nearshore marine ecosystem, forming the base of detrital-based food webs and as well as providing a food source for organisms that feed directly on eelgrass leaves, such as migrating waterfowl. Eelgrass is also a source of secondary production, supporting epiphytic plants, animals, and microbial organisms that in turn are grazed upon by other invertebrates, larval and juvenile fish, and birds.

In addition to habitat and resource attributes, eelgrass serves beneficial physical roles in bays and estuaries. Eelgrass beds dampen wave and current action, trap suspended particulates, and reduce erosion by stabilizing the sediment. They also improve water clarity, cycle nutrients, and generate oxygen during daylight hours.

In order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources, the following policy has been developed by the Federal and State resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game). While the intent of this Policy is to provide a basis for consistent recommendations for projects that may impact existing eelgrass resources, there may be circumstances (e.g., climatic events) where flexibility in the application of this Policy is warranted. As a consequence, deviations from the stated Policy may be allowed on a case-by-case basis. This policy should be cited as the Southern California Eelgrass Mitigation Policy (revision 11).

For clarity, the following definitions apply. "Project" refers to work performed on-site to accomplish the applicant's purpose. "Mitigation" refers to work performed to compensate for any adverse impacts caused by the "project". "Resource agencies" refers to National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG).

1. **Mitigation Need.** Eelgrass transplants shall be considered only after the normal provisions and policies regarding avoidance and minimization, as addressed in the Section 404 Mitigation Memorandum of Agreement between the Corps of Engineers and

Environmental Protection Agency, have been pursued to the fullest extent possible prior to the development of any mitigation program. Mitigation will be required for the loss of existing vegetated areas, loss of potential eelgrass habitat, and/or degradation of existing/potential eelgrass habitat. Mitigation for boat docks and/or related work is addressed in section 2.

2. **Boat Docks and Related Structures**. Boat docks, ramps, gangways and similar structures should avoid eelgrass vegetated or potential eelgrass vegetated areas to the maximum extent feasible. If avoidance of eelgrass or potential eelgrass areas is infeasible, impacts should be minimized by utilizing, to the maximum extent feasible, construction materials that allow for greater light penetration (e.g., grating, translucent panels, etc.). For projects where the impact cannot be determined until after project completion (i.e., vessel shading, vessel traffic) a determination regarding the amount of mitigation shall be made based upon two annual monitoring surveys conducted during the time period of August to October which document the changes in the bed (areal extent and density) in the vicinity of the footprint of the boat dock, moored vessel(s), and/or related structures. Any impacts determined by these monitoring surveys shall be mitigated per sections 3-12 of this policy. Projects subject to this section must include a statement from the applicant indicating their understanding of the potential mitigation obligation which may follow the initial two-year monitoring.

3. **Mitigation Map.** The project applicant shall map thoroughly the area, distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. This includes areas immediately adjacent to the project site which have the potential to be indirectly or inadvertently impacted as well as potential eelgrass habitat areas. Potential habitat is defined as areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc.

Protocol for mapping shall consist of the following format:

1) Bounding Coordinates

Horizontal datum - Universal Transverse Mercator (UTM), NAD 83, Zone 11 is the preferred projection and datum. If another projection or datum is used, the map and spatial data must include metadata that accurately defines the projection and datum.

Vertical datum - Mean Lower Low Water (MLLW), depth in feet.

2) Units

Transects and grids in meters.

Area measurements in square meters/hectares.

3) File format

A spatial data layer compatible with readily available geographic information system software must be sent to NMFS and any other interested resource agency when the area mapped has greater than 10 square meters of eelgrass. For those areas with less than 10 square meters, a table must be provided giving the bounding x,y coordinates of the eelgrass areas. In addition to a spatial layer or table, a hard-copy map should be included within the survey report. The projection and datum should be clearly defined in the metadata and/or an associated text file.

All mapping efforts must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 60 days with the exception of surveys completed in August - October. Surveys completed after unusual climatic events (i.e., high rainfall) may have modified requirements and surveyors should contact NMFS, CDFG, and USFWS to determine if any modifications to the standard survey procedures will be required. A survey completed in August - October shall be valid until the resumption of active growth (i.e., in most instances, March 1). After project construction, a post-project survey shall be completed within 30 days. The actual area of impact shall be determined from this survey.

4. **Mitigation Site.** The location of eelgrass transplant mitigation shall be in areas similar to those where the initial impact occurs. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that should be considered in evaluating potential sites.

5. **Mitigation Size.** In the case of transplant mitigation activities that occur concurrent to the project that results in damage to the existing eelgrass resource, a ratio of 1.2 to 1 shall apply. That is, for each square meter adversely impacted, 1.2 square meters of new suitable habitat, vegetated with eelgrass, must be created. The rationale for this ratio is based on, 1) the time (i.e., generally three years) necessary for a mitigation site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years. An exception to the 1.2 to 1 requirement shall be allowed when the impact is temporary and the total area of impact is less than 100 square meters. Mitigation on a one-for-one basis shall be acceptable for projects that meet these requirements (see section 11 for projects impacting less than 10 square meters).

Transplant mitigation completed three years in advance of the impact (i.e., mitigation banks) will not incur the additional 20 percent requirement and, therefore, can be constructed on a one-for-one basis. However, all other annual monitoring requirements (see sections 8-9) remain the same irrespective of when the transplant is completed.

Project applicants should consider increasing the size of the required mitigation area by 20-30 percent to provide greater assurance that the success criteria, as specified in Section 10, will be met. In addition, alternative contingent mitigation must be specified,

and included in any required permits, to address situation where performance standards (see section 10) are not likely to be met.

For potential eelgrass habitat, a ratio of 1 to 1 of equivalent habitat shall be created.

Degradation of existing eelgrass vegetated habitat that results in a reduction of density greater than 25 percent shall be mitigated on a one-for-one basis. For example, a 25 percent reduction in density of a 100 square meter (100 turions/meter) eelgrass bed to 75 turions/meter would require the establishment of 25 square meters of new eelgrass with a density at or greater than the pre-impact density. All other provisions of the Policy would apply.

6. **Mitigation Technique.** Techniques for the construction and planting of the eelgrass mitigation site shall be consistent with the best available technology at the time of the project. Donor material shall be taken from the area of direct impact whenever possible, but also should include a minimum of two additional distinct sites to better ensure genetic diversity of the donor plants. No more than 10 percent of an existing bed shall be harvested for transplanting purposes. Plants harvested shall be taken in a manner to thin an existing bed without leaving any noticeable bare areas. Written permission to harvest donor plants must be obtained from the California Department of Fish and Game.

Plantings should consist of bare-root bundles consisting of 8-12 individual turions. Specific spacing of transplant units shall be at the discretion of the project applicant. However, it is understood that whatever techniques are employed, they must comply with the stated requirements and criteria.

7. Mitigation Timing. For off-site mitigation, transplanting should be started prior to or concurrent with the initiation of in-water construction resulting in the impact to the eelgrass bed. Any off-site mitigation project which fails to initiate transplanting work within 135 days following the initiation of the in-water construction resulting in impact to the eelgrass bed will be subject to additional mitigation requirements as specified in section 8. For on-site mitigation, transplanting should be postponed when construction work is likely to impact the mitigation. However, transplanting of on-site mitigation should be started no later than 135 days after initiation of in-water construction activities. A construction schedule which includes specific starting and ending dates for all work including mitigation activities shall be provided to the resource agencies for approval at least 30 days prior to initiating in-water construction.

8. **Mitigation Delay.** If, according to the construction schedule or because of any delays, mitigation cannot be started within 135 days of initiating in-water construction, the eelgrass replacement mitigation obligation shall increase at a rate of seven percent for each month of delay. This increase is necessary to ensure that all productivity losses incurred during this period are sufficiently offset within five years.

9. **Mitigation Monitoring.** Monitoring the success of eelgrass mitigation shall be required for a period of five years for most projects. Monitoring activities shall

determine the area of eelgrass and density of plants at the transplant site and shall be conducted at initial planting, 6, 12, 24, 36, 48, and 60 months after completion of the transplant. All monitoring work must be conducted during the active vegetative growth period and shall avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 6 month surveys shall be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60 month period may be required in those instances where stability of the proposed transplant site is questionable or where other factors may influence the long-term success of transplant.

The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program.

A monitoring schedule that indicates when each of the required monitoring events will be completed shall be provided to the resource agencies prior to or concurrent with the initiation of the mitigation (see attached monitoring and compliance summary form).

Monitoring reports shall be provided to the resource agencies within 30 days after the completion of each required monitoring period and shall include the summary sheet included at the end of this policy.

10. **Mitigation Success.** Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the **adjusted project impact area** (i.e., original impact area multiplied by 1.2) and **mitigation site(s)**. Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the original impact area, control or transplant bed. Specific criteria are as follows:

a. the mitigation site shall achieve a minimum of 70 percent area of eelgrass and 30 percent density as compared to the adjusted project impact area after the first year.

b. the mitigation site shall achieve a minimum of 85 percent area of eelgrass and 70 percent density as compared to the adjusted project impact area after the second year.

c. the mitigation site shall achieve a sustained 100 percent area of eelgrass bed and at least 85 percent density as compared to the adjusted project impact area for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet any of the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.
A_t = transplant deficiency or excess in area of coverage criterion (%).
D_t = transplant deficiency in density criterion (%).
A_c = natural decline in area of control (%).
D_c = natural decline in density of control (%).

The STA formula shall be applied to actions that result in the degradation of habitat (i.e., either loss of areal extent or reduction in density).

Five conditions apply:

1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.
2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.
3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.
4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 8.
5) Annual monitoring will be required of the STA for five years following the implementation and all performance standards apply to the STA.

11. **Mitigation Bank.** Any mitigation transplant success that, after five years, exceeds the mitigation requirements, as defined in section 10, may be considered as credit in a "mitigation bank". Establishment of any "mitigation bank" and use of any credits accrued from such a bank must be with the approval of the resource agencies and be consistent with the provisions stated in this policy. Monitoring of any approved mitigation bank shall be conducted on an annual basis until all credits are exhausted.

12. **Exclusions.**

1) Placement of a single pipeline, cable, or other similar utility line across an existing eelgrass bed with an impact corridor of no more than 1 meter wide may be excluded from the provisions of this policy with concurrence of the resource agencies. After project construction, a post-project survey shall be completed within 30 days and the results shall be sent to the resource agencies. The actual area of impact shall be determined from this survey. An additional survey shall be completed after 12 months to insure that the project or impacts attributable to the project have not exceeded the allowed

1 meter corridor width. Should the post-project or 12 month survey demonstrate a loss of eelgrass greater than the 1 meter wide corridor, then mitigation pursuant to sections 1-11 of this policy shall be required.

2) Projects impacting less than 10 square meters. For these projects, an exemption may be requested by a project applicant from the mitigation requirements as stated in this policy, provided suitable out-of-kind mitigation is proposed. A case-by-case evaluation and determination regarding the applicability of the requested exemption shall be made by the resource agencies.

(last revised 08/30/05)

Southern California Eelgrass Mitigation Policy
Monitoring and Compliance Reporting Summary

PERMIT DATA:

Permit (Type, Number)	Issuance Date	Expiration Date	Agency Contact
ACOE:_____			
CDP:_____			
Other:_____			

EELGRASS IMPACT AND MITIGATION REQUIREMENTS SUMMARY:

Permitted Eelgrass Impact Estimate	(m^2)	
Actual Eelgrass Impact,	(m^2)	(post-const. survey date)
Eelgrass Mitigation Requirement	(m^2)	(mitigation plan ref.)
Impact Site Location	(location)	
Impact Site Center Coordinates	(define projection and datum)	
Mitigation Site Location	(location)	
Mitigation Site Center Coordinates	(define projection and datum)	

PERMITTEE CONTACT INFORMATION:

Project Name	(same as permit ref.)
Permittee Information	(permittee name)
	(mailing address)
	(city, state, zip)
	(permittee contact)
	(phone, fax., e-mail)
Mitigation Consultant	(consultant contact)
	(phone, fax., e-mail)

PROJECT ACTIVITY DATA:

Activity	Start Date	End Date	Reference Info.
Eelgrass Impact			
Installation of Eelgrass Mitigation			
Initiation of Mitigation Monitoring			

MITIGATION STATUS DATA:

Mitigation Milestone	Scheduled Survey	Survey Date	Area (m^2)	Density (turions/m^2)	Reference Info.
Requirement					
0-month					
6-month					
12-month					
24-month					
36-month					
48-month					
60-month					

FINAL ASSESSMENT:

Was mitigation met?	
Were mitigation and monitoring performed timely?	
Was delay penalty required or were supplemental mitigation programs necessary?	

ANALYSIS OF POTENTIAL EELGRASS HABITAT BIOTIC AND ABIOTIC CHARACTERISTICS IN ALAMITOS BAY MARINA, LONG BEACH, CALIFORNIA

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October 1st, 2009

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1.0 INTRODUCTION

The purpose of this analysis is to identify the biotic and abiotic characteristics of potential eelgrass habitat as defined by the Southern California Eelgrass Mitigation Policy (NMFS, 1991 (revision 11) which states "potential eelgrass habitat" is defined as "areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc." This document identifies both the existing amount of eelgrass identified in the project area, the amount of existing eelgrass potentially affected by project-related dredging, and the amount of potential eelgrass habitat within the project area, relative to both biological and abiological features of the Marina's environment.

For the purpose of this analysis, "potential eelgrass habitat" is defined as unshaded, unvegetated soft bottom sediments within Marina Basins 2, 4, and 6 within the depth range known to support eelgrass in Alamitos Bay Marina, associated abiotic factors (i.e., water temperature, light, salinity) within Marina Basins 2, 4, and 6 are conducive to supporting eelgrass, and there is clear and convincing evidence that past surveys have documented the presence of eelgrass.

1.1 Marina Development. In 1946, the Long Beach City Council directed the City Planning Commission to undertake and report on the development of a proposed Alamitos Bay Marina (Intersea Research Corporation, 1981). Their 1947 report recommend extension of the existing rock jetties at the ocean entrance channel to Alamitos Bay, dredging the entrance channel to -15 ft Mean Lower Low Water, dredging an undeveloped land area bounded by the San Gabriel River Flood Control Channel, the exiting bay, an old San Gabriel River channel, and developing areas for berthing and repair of privately owned small craft. A comprehensive study of various marina configurations was made in 1954 by Moffatt & Nichol and collaborators (Moffatt & Nichol, Inc. et al, 1954). A design recommended in their report (Plan D) was implemented and marina construction was completed in 1960. When the marina was initially dredged, the as-built depth was -10 ft MLLW (Intersea Research Corporation field investigations (Intersea Research Corporation, 1981, Plate A, "Alamitos Bay Bathymetry"). although Basin 1 depths were as deep as -15 ft "during 1978 Intersea Research Corporation field investigations (Intersea Research Corporation, 1981, Plate A, "Alamitos Bay Bathymetry").

2.0 HISTORY OF EELGRASS COVERAGE IN THE PROJECT AREA

While eelgrass is known to occur throughout many regions of Alamitos Bay and has been surveyed in many areas (i.e., CRM 1993, 1994 a and b, and 2005), Wetland Support and Coastal Resources Management, Inc., 2002) eelgrass surveys were not conducted within the City of Long Beach Alamitos Bay Marina Basins 1-7 until Coastal Resources Management, Inc (2007) mapped the distribution of eelgrass for the Alamitos Bay Marina Rehabilitation Project.

Locations of eelgrass mapped during the CRM 2007 are shown in Figures 1-8. The amount of eelgrass within the marina basins, eelgrass density, and the depth range of eelgrass for each area surveyed is shown in Tables 1 to 3. A total of 2.9 acres of eelgrass was mapped in Alamitos Bay for the project. Of this, of 0.57 acres of eelgrass was located in the general vicinity of the Alamitos Bay Marina, of which 1,373.04 sq ft (0.03 sq ft) of eelgrass vegetation will be impacted by the marina renovation project associated with channel dredging.

Within the Alamitos Bay Marina project area, these areas include small patches in seven marina fairways within Basin 2, 4, and 6. Eelgrass grows within the fairways between -6.3 to -8.5 ft, and between 0.0 to -2 ft MLLW along the southeast bulkhead of Basin 2. Most eelgrass within the marina basins (Basins 2, 4, and 6) grows on slowly-evolving shoals at or near the maximum depth limit for eelgrass where submarine light levels are low, and near their limiting levels. The amount of eelgrass growing in these basins range from < 1 sq ft to 1,019 sq ft; these areas occur as a low density patches. Biologically, the value of these beds is very low. There is inadequate cover for cryptic species and invertebrates and very limited cover, or food items for fishes that may utilize the eelgrass patches. There are no known species of Fisheries Management Plan species of fish present within these marina basins that would utilize either the vegetated or unvegetated sections of the marina basins seafloor.

The least-dense and lowest amount of eelgrass in Alamitos Bay grows within Basins 2, 4, and 6 which are side-basins to the main channels of Alamitos Bay.

Eelgrass also grows nearby the marina along the shoreline of the Davies Launch Ramp, the Marina Pacifica Side Channel, the west side of the Cerritos Channel south of PCH Bridge, and in the Cerritos Channel north of PCH Bridge. Other region in Alamitos Bay that exhibit greater eelgrass cover and density than the marina basins in Alamitos Bay include the Marina Stadium, Mothers Beach, and along the Alamitos Bay Peninsula. Eelgrass also grows along the seaward side of the Alamitos Bay Peninsula, between Cherry Avenue and the Downtown Marina (R. Ware, pers. obs, May 2008).

Tables 2 and 3 compare eelgrass turion density within the marina and between the marina and other areas of Alamitos Bay. The mean turion density within the various marina basins ranged from 52.8 to 105 turions per sq meter at depths between -1 and -8.5 ft MLLW. Comparatively, these values are for the most part, at the low-end of the density range compared to other areas of Alamitos Bay. The patchy, low density nature of the vegetation is likely related to the presence of eelgrass near its maximum depth range.

Highest eelgrass turion density in Alamitos Bay is found in the main channels of the bay along the Alamitos Bay Peninsula sandy beach. Moderate turion density is found in the Marine Stadium and the Cerritos Channel. Vegetated habitats in these areas are characterized by wide, lush, and dense eelgrass vegetation.

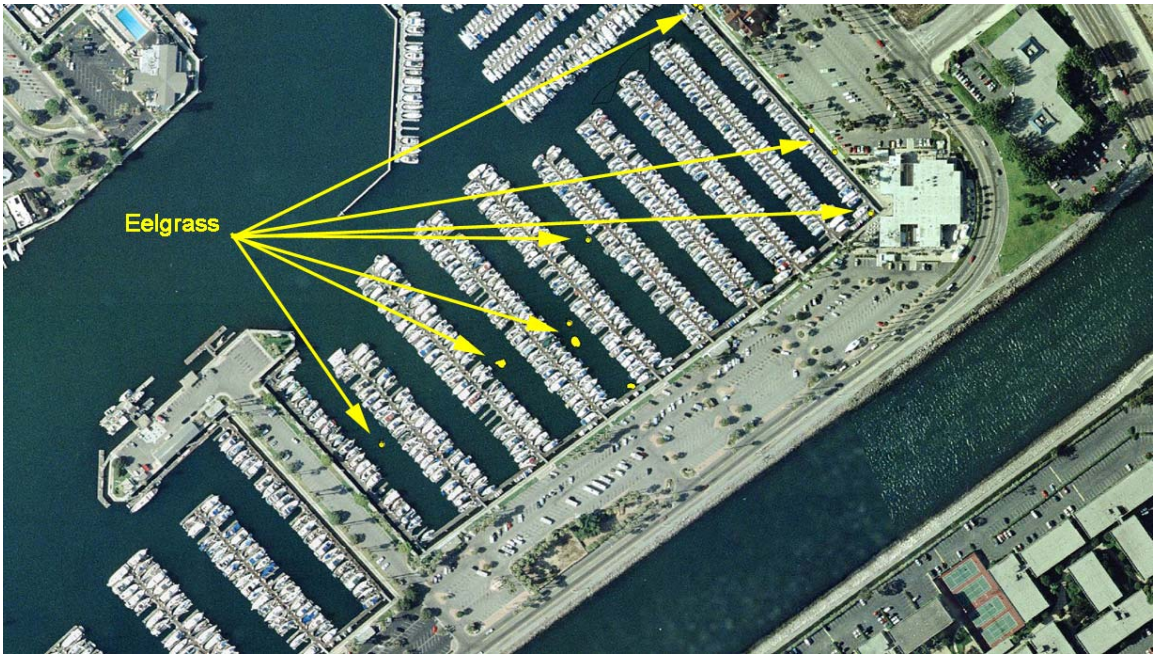

Figure 1. Basin 2 Eelgrass Habitat

Figure 2. Basin 4 Eelgrass Habitat

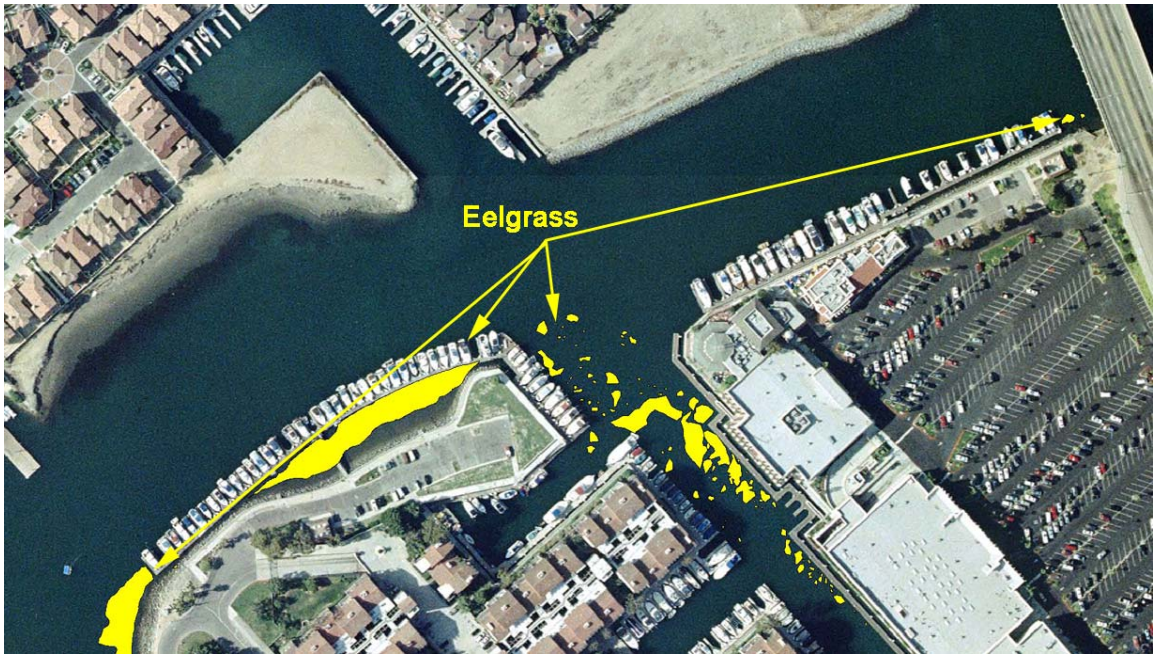

Figure 3. Basin 6 (South and North) and Marina Pacific Channel North Eelgrass Habitat

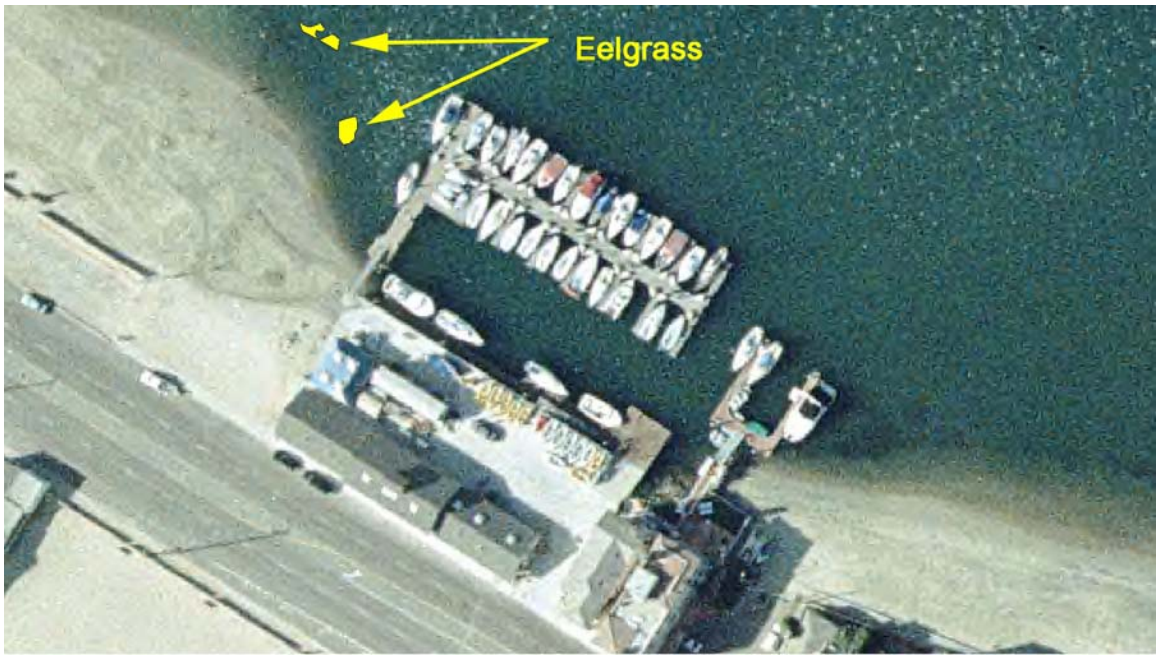

Figure 4. Basin 7 Eelgrass Habitat

Figure 5 Davies Bridge and Marina Pacifica Eelgrass Habitat

Figure 6. 55th Place to 61st Place (Peninsula 1) Eelgrass Habitat

Figure 7. 63rd Place to 71st Place (Peninsula 2) Eelgrass Habitat

Figure 8. Upper Cerritos Channel Eelgrass Habitat

Table 1. Eelgrass Habitat Surveyed, September-October 2007.
Source: CRM, Inc. 2007

Area Surveyed	Amount of Eelgrass (sq ft)	Mean Turion Density (sq m)	Std Dev	N	Mean Depth (ft, MLLW)	Depth Range (ft, MLLW)
Basin 1*	0.00	-	-	-	-	-
Basin 2*	1,019.78	98.6	49.2	10	-6.5	-6.3 to -6.7 in fairways; 0.0 to -2 near bulkheads
Basin 3*	0.00	-	-	-	-	-
Basin 4*	123.26	61.4	26.1	10	-7.9	-7.3 to -8.5
Basin 5*	0.00	-	-	-	-	-
Basin 6 South	11,943.40	194.7	75.9	14	-3.3	-3.1 to -4.1
Basin 6-Marina Pacifica	11,543.54	53.8	25.5	17	-6.3	-6.3
Basin 6 North*	230.00	104.8	41.9	12	-5.3	-1 to -5
Basin 7*	55.97					-3 to -7.3
Main Channel, North of Davies Launch Ramp	46,007.60	110.7	49.7	49	-3.7	0 to - 8
Temporary Dock Area, LBYC	0 -					
Peninsula 1 (55th-61st Place)	1,977.64	ND				
Peninsula 2 (63rd-71st Place)	32,682.41	ND				
Upper Cerritos Channel	21,142.88	ND				
Eelgrass Area (sq ft)	126,926.5				5.4	-0 to 8.5
Eelgrass Area (sq m)	11,796.1	111.3	62.2	112.0		
Eelgrass Area (acres)	2.9					

* Areas to be dredged

Table 2. Turion Density, Alamitos Bay. Oct 2007

Area	Mean Turion Density Per Sq Meter	Std Dev	N	Mean Depth (ft, MLLW)	Depth Range (ft, MLLW)
Basin 1	-	-	-	-	-
Basin 2	98.6	49.2	10	-6.5	-6.3 to -6.7
Basin 3	no eelgrass	-	-	-	-
Basin 4	61.4	26.1	10	-7.9	-7.3 to -8.5
Basin 5	-	-	-	-	-
Basin 6 Marine Reserve (Behind Docks)	194.7	75.9	14	-3.3	-3.1 to -4.1
Basin 6 North PCH Bridge	104.8	41.9	12	-5.3	-1 to -5
Basin 7	-	-	-	-	-
Davies Bridge/Launch Ramp)	110.7	49.7	49	-3.7	0 to - 8
Temp Dock (LBYC)	-	-	-	-	-
Maria Pacifica, East Channel	53.8	25.5	17	-6.3	-6.3
All Areas	**111.3**	**62.2**	**112.0**	**5.4**	**-0 to 8.5**

Table 3. Comparison of Eelgrass Shoot Density in Alamitos Bay 1993-2007

Location	Date of Survey	Mean Density*	Range*	# of replicates	Reference
5455,5609, 5645 Sorrento	October 2007	89.1	43-142	25	CRM in progress
64 Rivo Alto Canal	August 2007	75	45- 114	5	CRM 2007a
5609 Sorrento	March 2007	147	43-171	10	CRM 2007b
11 Sea Isle Lane	Oct 2005	130.7	71-114	135	CRM 2006
Marine Stadium	May 2005	133.9	29-400	39	CRM 2005
5635 Sorrento	May 2004	147	72-271	13	CRM 2004
2715 Corso di Napoli	Sept 2003	114	-	3	CRM 2003
5615 Sorrento	April 2002	104	86-129	10	CRM 2002a
End Beach Marine Stadium	July 2002	93	57-171	39	CRM 2002b
5474 The Toledo	Sept 2001	71	43-114	7	CRM 2001
Gondola Getaway	July 1999	199		9	CRM 1999
Basin 8 Cerrito Cerritos Channel	May 1996	134	74-288	7	CRM 1996
Mothers' Beach	Sept 1995	75	8-52	26	CRM 1995
Alamitos Bay Entrance Channel	June 1994	229	52-466	24	CRM 1994a
Jack Dunster Park (Fieldstone Park)	May 1994	162	104-272	24	CRM 1994b
Mother's Beach	June 1993	156	65-272	14	CRM 1993a
Bayshore Ave (between Appian Way and 2nd Street	Sept 1993	152		4	CRM 1993b

* number of shoots per square meter

CRM revisited each of the areas in the Marina in October 2008 using remote video and determined that each of the areas mapped in 2007 was still vegetated with eelgrass but there was no observable increase in areal cover, nor other areas in the Marina where eelgrass had colonized. In addition, CRM surveyed the fairways within Basin 3 where the marina docks have been abandoned (due to safety issues) to determine if a lack of vessel activity has resulted in any eelgrass colonization of the bayfloor since the Oct 2007 CRM eelgrass bed survey. The results indicate that eelgrass has not colonized any of these areas, despite a range of depths (less than 8 ft) where eelgrass can grow, no limitations of light due to shading, or turbidity caused by vessel activities.

3.0 ABIOTIC FEATURES OF THE PROJECT AREA

3.1 Water Circulation. There are no creeks or rivers that drain to Alamitos Bay, although the San Gabriel River mouth discharges into San Pedro Bay immediately east of the Alamitos Bay Entrance Channel. Tidal flows enter the Bay through the Alamitos Bay Entrance Channel. However, water circulation patterns within the bay are modified as consequent of the entrainment of ocean water through Alamitos Bay for use as cooling waters for the Haynes Generation Station (Intersea Research Corporation, 1981). This creates a constant influx of ocean water into Alamitos Bay, and the net inflow currents

are stronger than outflow currents as would be the case in normal estuarine tidal action (Intersea Research Corporation, 1981).

This process of drawing water into Alamitos Bay contributes to better water circulation in the Marina than would be expected in the absence of the cooling water drawn into the Haynes facilities. The cooling water intakes for the Haynes Generating Station are located at the southeast corner of the Alamitos Bay Marina, in Basin 2. Rather than forming a tidal current eddy within the Basin 2 Marina, the constant influx of ocean water suppresses the formation of an eddy gyre, resulting in better water quality in the Marina. This process removes organic and inorganic wastes, and the constant inflow current ventilates the bay with a consistent draw of dissolved oxygen (Intersea Research Corporation, 1981). This consistent inflow of ocean water also results in the establishment of an intertidal community of marine invertebrates in the Marina not often associated with inner-sections of marinas. Observed species in Basin 1 and Basin 2 included numerous, larger macro-invertebrates, such as sea hares *(Aplysia vaccaria),* octopus *(Octopus bimaculatus),* kellet's whelk *(Kelletia kelletii),* wavy top snails *(Lithopoma undosa*) sea stars *(Pisaster ochraceus),* bat stars *(Asterina miniata*), and purple sea urchins *(Strongylocentrotus purpuratus*) not commonly found within the inland-portions of other embayments outside the entrance channels (Coastal Resources Management Inc., 2009).

Mean daily-averaged currents velocities within the Bay in 1978 ranged from a low 3.3 cm/sec (Basin 2) within the Long Beach Marina to 32.9 cm/sec in narrow constrictions at the PCH Bridge (Intersea Research Corporation, 1981). Within Basin 2, the mean daily-averaged current velocities ranged between 3.3 to 4.2 cm/sec. At the Long Beach Yacht Club (Basin 4), the current velocity was 4.1cm/sec.

3.2 Sediment Types. Sediments within the marina fairways are silts, easily disturbed by vessel-related bottom disturbances (R. Ware, pers. obs). However, eelgrass is capable of colonizing a range of sediment types and grain sizes. Studies along the Alamitos Bay Peninsula, conducted by CRM in May 2008 indicate that intertidal and shallow subtidal eelgrass (0.0 to -5 ft MLLW) grows primarily in sediments with between 69 to 95% fine sands and from 5 to 31% silts. (Figures 9 and 10). Comparatively, in Sunset Bay (Huntington Harbour) eelgrass grows in sediments ranging from fine silts to extremely coarse sand/shell hash in high current areas (R. Ware, pers. obs). The presence of eelgrass will also alter sediment characteristics and enhance the settlement of finer sediments by interrupting and altering water current flow and velocities.

3.3 Bottom Slopes. There is no observable bottom slope within the Marina except along the edges of the bulkhead and rip rap, that grade down from the intertidal to depths of approximately -7 ft MLLW. The fairways exhibit some change in local topography due to sediment accretion, but the seafloor is generally featureless without steep slopes.

3.4 Salinity. Salinity in Alamitos Bay is stable and within values normally observed for coastal embayments, between 30-33 parts per thousand. Measured salinity in Alamitos Bay in May 2008 ranged from 32.4 to 32.6 parts per thousand (CRM, unpublished data).

During winter, surface salinity may decrease to below 30 parts per thousand, depending on the duration and intensity of storms and runoff into the Bay. There are no creeks or rivers that drain to Alamitos Bay, although the San Gabriel River mouth discharges into San Pedro Bay immediately east of the Alamitos Bay Entrance Channel. During winter runoff periods, and during incoming tides, lower-salinity water may be entrained into Alamitos Bay.

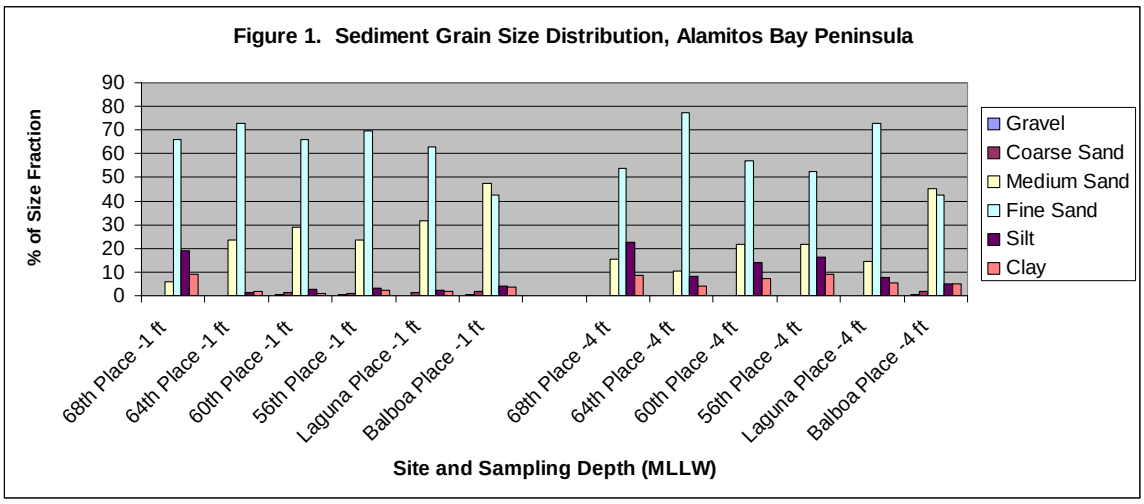

Figure 9. Sediment Grain Size Analysis in Eelgrass Beds along the Alamitos Bay Peninsula. May 2008.

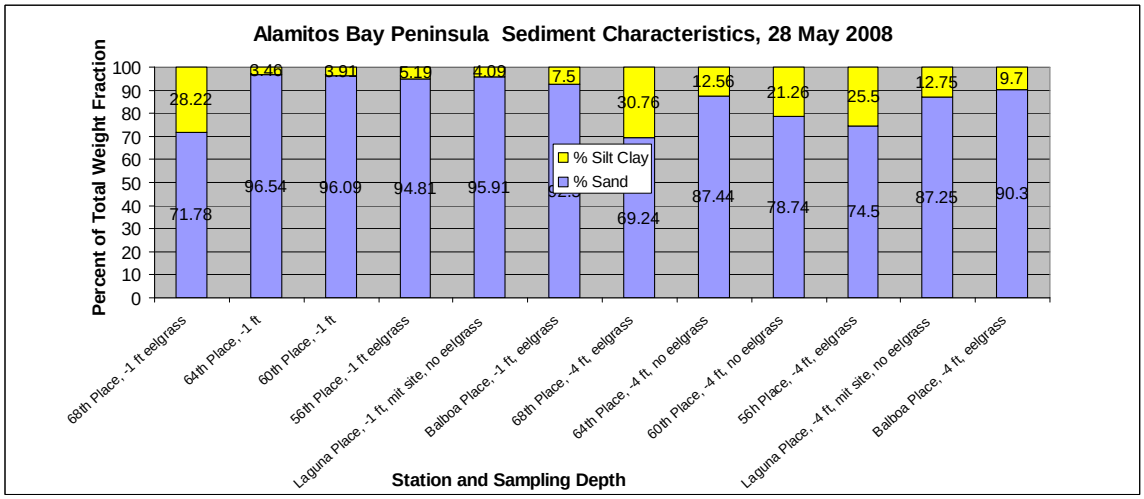

Figure 10. Sand and Silt Proportions in Eelgrass Beds Along the Alamitos Bay Peninsula, May 2008

3.5 Water Temperature. Natural surface water temperatures in the waters immediately offshore of Alamitos Bay in San Pedro Bay range from 12.5 to 25.3 degrees C (54.5 to 77.5 degrees F) (MBC 2006). Temperatures in the bay will exceed these minima and maxima values, although temperature changes may be muted because of the net inflow of

ocean waters. On May 28th, 2008, water temperatures varied between 66.1 to 69.9 degrees F in the Bay, along the Alamitos Bay Peninsula (CRM, unpublished data).

3.6 Dissolved Oxygen. Dissolved oxygen concentrations in San Pedro Bay range from approximately 5 to 14 milligrams/liter (mg) (MBC, 2006). Measured dissolved oxygen concentrations in Alamitos Bay on 28th May 2008 varied from 7.6 to 10.2 mg/l along the Alamitos Bay Peninsula (CRM, unpublished data). Concentrations of 8 mg/l are not uncommon in many parts of the bay, due to the effects of the constant inflow of ocean water for the Haynes cooling system (Intersea Research Corporation, 1981). Concentrations of 5 mg/l and below are considered "low", and below the State's Water Quality Criteria for bays and estuaries.

3.7 Light Penetration and Irradiance Levels. Light is the factor which often controls the depth, distribution, density, and productivity of seagrass meadows (Backman and Barilotti, 1976; Zimmerman et al., 1991, Duarte, 1991). Light penetration is affected by parameters such as time of day and year, tidal condition, suspended organics and sediment input from dry-season runoff, winter storms, plankton blooms, shading from docks and boats, and in-bay activities such as dredging and boating.

Light penetration is better during the incoming tides compared to outgoing tides. Zimmerman et al. (1991) estimated that eelgrass in San Francisco Bay required between three and five hours a day of irradiance to maintain carbon balance and growth, and suggested that eelgrass is adapted to extremely low light availability. Eelgrass requires a minimum of 10-20% of ambient light levels (Duarte 1991, Dennison et al., 1993) or daytime light levels above 300 micromol/m^2/s (Thom and Shreffler, 1996) to saturate photosynthesis. The amount of light required to support eelgrass is about twice that to support macroalgae growth (Lobban et al., 1985).

Underwater irradiance was measured by CRM in November 2008 in the fairways of Alamitos Bay Marina Basins 1, 2, 4, and 6 in the presence and absence of eelgrass and at an eelgrass reference site along the Alamitos Bay Peninsula. An Apogee Quantum Meter was used to measure the amount of light available for photosynthesis (photosynthetic photon flux [PPF]) at wavelengths between 500-700 nannometers. Table 4 summarizes the results of the one-day survey. Data graphics are presented in Appendix 1.

The results indicate at depths of 4.3-6.3 feet (ft) Mean Lower Low Water (MLLW), measured light levels (250-700 micromol/m^2/s) were mostly above the minimum levels required to saturate photosynthesis (Note: cloudy conditions at Basin B4 and B6 were noted during the early afternoon survey and reduced underwater light levels compared to the other stations surveyed earlier, under clear skies). However, mid-depth to ambient air light ratios (34.5-51.4%) exceeded minimum levels (11%) required for eelgrass survival. These depths represent bottom depths at many sites in Alamitos Bay where eelgrass can be found.

Measurements were also made at bottom depths between -7 and -12.7 ft MLLW. In Alamitos Bay, the maximum depth limit of eelgrass is about -8.0 ft MLLW except in the

entrance channel where its depth range exceeds 8 ft. Bottom-water irradiance values at these depths (221-463 micromol/m^2/s) mostly exceeded minimum levels to saturate photosynthesis, but all ratios of bottom-to ambient air values (11-34%) exceeded the observed minimum required 10-20% ambient light levels.

At depths below 8.5 feet where eelgrass was not found (-9 to -12.8 ft MLLW) light levels (179-223 micromol/m^2/s) were below the 300 lower threshold limit, although the ambient air light ratios (11-16.7%) were still at the lower end of the minimum ratio (11-20%).

Light extinction (secchi disk) readings were also recorded for each station. Extinction depth values varied between 7 ft to 12.7 feet. In several instances within the marina, the secchi disk extinction depth value was also the bottom depth, indicative of good water clarity.

Long-term light data are required to provide a better indication of minimum light requirements for eelgrass in Alamitos Bay Marina. However, initial data analyses indicate that light is not a limiting factor for eelgrass growth at depths at which eelgrass is known to occur (-1 to -8.5 ft MLLW) in the Alamitos Bay Marina. However, light levels below these depths in the Marina are at or below minimum light limits for eelgrass growth. Since shoaling has occurred to create eelgrass habitat at -8.5 ft MLLW, it has allowed levels of light to be within ranges required to support photosynthesis, and the growth, and establishment of eelgrass.

3.8 Summary. Water quality and sediment data within the project area are not limiting to support eelgrass at the depth ranges where it occurs. Depth is the over-riding influence on the distribution of eelgrass within the marina. Shoaling activity is responsible for the advancement of eelgrass into the marina system.

Table 4. Irradiance Measurements, Alamitos Bay. November 8th, 2008.
Coastal Resources Management, Inc.

	Ambient In-Air Irradiance (micro mol/m^2/s)	**Mid Depth (ft, MLLW)**	Irradiance (micro mol/m^2/s	Percent of Air Values	**Bottom Depth (ft)**	Irradiance (micro mol/m^2/s	Percent of Air Value
68th Place Eelgrass Reference	1355	**5.5**	457	33.7	**11 (offshore of eelgrass bed**	293	21.6
Basin 1 FW 1	1342	**5**	420	31.3	**10**	149	11.1
Basin 2 FW 1 **Eelgrass**	1335	**4.3**	460	34.5	**8.5**	229	17.2
Basin 2 FW 2	1336	**4.25**	450	33.7	**8.5**	345	25.8
Basin 2 FW 3 **Eelgrass**	1362	**3.5**	700	51.4	**7**	463	34.0
Basin 2 FW 4 Eelgrass	1240	**3.9**	548	44.2	**7.7**	346	27.9
Basin 2 FW 5 **Eelgrass**	1333	**4.3**	671	50.3	**8.5**	268	20.1
Basin 2 FW 6	1254	**5**	521	41.5	**10**	210	16.7
Basin 2 FW 7	1288	**5**	502	39.0	**10**	213	16.5
Basin 2 FW 8	1287	**5.5**	552	42.9	**11**	223	17.3
Basin 2 FW 9	1290	**6.4**	478	37.1	**12.7**	179	13.9
*Basin 4 FW 4 EG ***Eelgrass**	562	**4.5**	250	44.5	**9**	133	23.7
*Basin 4 FW 3 EG **Eelgrass**	701	**4.3**	261	37.2	**8.5**	140	20.0
*Basin 6 N **Eelgrass**	830	**4.3**	354	42.7	**8.5**	91	11.0

* measurements under overcast conditions; other measurements were mid-day, clear skies.

4.0 AMOUNT OF POTENTIAL EELGRASS HABITAT AFFECTED BY THE PROJECT

The Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service, 1991 as amended) defines potential eelgrass habitat as "areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc." It should be noted that there is no conclusive scientific basis for why eelgrass grows in some locations and not in others. It can be attributed to a combination of any of the environmental conditions listed above.

Further, in response to recent concerns regarding the interpretation of the SCEMP, correspondence between Rodney R. McInnis, Regional Administrator for the NMFS and Mr. Jack Peveler, President of the California Association of Harbor Masters and Port Captains, (Appendix 2) clarified that the potential eelgrass clause has been implemented only where "clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence)."

The original and/or design depths of the Marina basins ranged from -12 to -15 ft MLLW. Because the current shallower depths within the Marina Basins are a result of shoaling over the past 50 years, and because no maintenance dredging has occurred, there are now depths within the basins which are less than 8 ft deep. Eelgrass vegetation would not normally be expected to occur in these areas as the site has historically and consistently been used as a marina and the basins should have maintained as close as possible to the original and/or design depths (-12 to -15 MLLW). However, over time, shoaling has decreased water depths in 3.39 acres of shaded and unshaded habitat to depths less than 8.0 ft deep (Source: TranSystems, Inc. Alamitos Bay Marina Bathymetric Maps, August 2008). Of these 3.39 acres, 2.82 acres are unshaded, but depth-suitable habitat. However, there is "clear and convincing evidence" that eelgrass has been found in only seven of the of 38 marina fairway channels (Figures 9, 10, and 11), and the total amount of depth-suitable habitat within these seven marina fairway channels is 1.47 acres (Table 5).

While 1.47 acres of soft bottom habitat within these areas can be classified as "depth-suitable" eelgrass habitat within the seven fairways, the results of CRM's remote video surveys in October 2008 indicate that each of the areas mapped in 2007 was still vegetated with eelgrass, but that there was no observable increase in areal cover, and eelgrass had not colonized in any other areas in the Marina.

Therefore, based on these two (and only available) surveys indicating that eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging. Therefore, impacts to potential eelgrass habitat are considered less than significant and no mitigation is required.

Table 5. Determination of Eelgrass Habitat Vegetation Losses

Location	TranSystems Initial Amount Calculated: (sq ft)	Depth-Suitable Unshaded Eelgrass Habitat-All Marina Basins (sq ft)	Depth Suitable, Unshaded Base Minus Fairways or Basins Without Eelgrass (sq ft)	Existing Eelgrass (sq ft)	Impacted Amount of Eelgrass (sq ft)	Amount of Potential Eelgrass Habitat (sq ft)	Mitigation Requirement: Eelgrass Vegetation: 1.2 to 1
Basin 1	0.0	0.0	0.0	0.0	0.0	0.0	none
Basin 2	71,976.0	70,956.2	61,181.0	1,019.78	1,019.78	0.0	1,223.73
Basin 3	27,274.0	27,274.0		0.0	0.0	0.0	none
Basin 4	19,334.0	19,210.4	2,083.0	123.26	123.26	0.0	147.91
Basin 5	2,233.0	2,233.0		0.0	0.0	0.0	none
Basin 6 South	24,913.0	1,456.0		23,457.0	0.0	0.0	none
Basin 6 North	742.0	512.0	742.0	230.0	230.0	0.0	276
Basin 7	1,400.0	1,400.0		0.0	0.0	0.0	none
						0.0	
Total (ft)	147,872.0	123,041.6	64,006.0	24,830.4	1,373.04	0.0	1,647.65
Total (Acres)	3.39	2.82	1.47	0.57	0.03	0..0	0.04

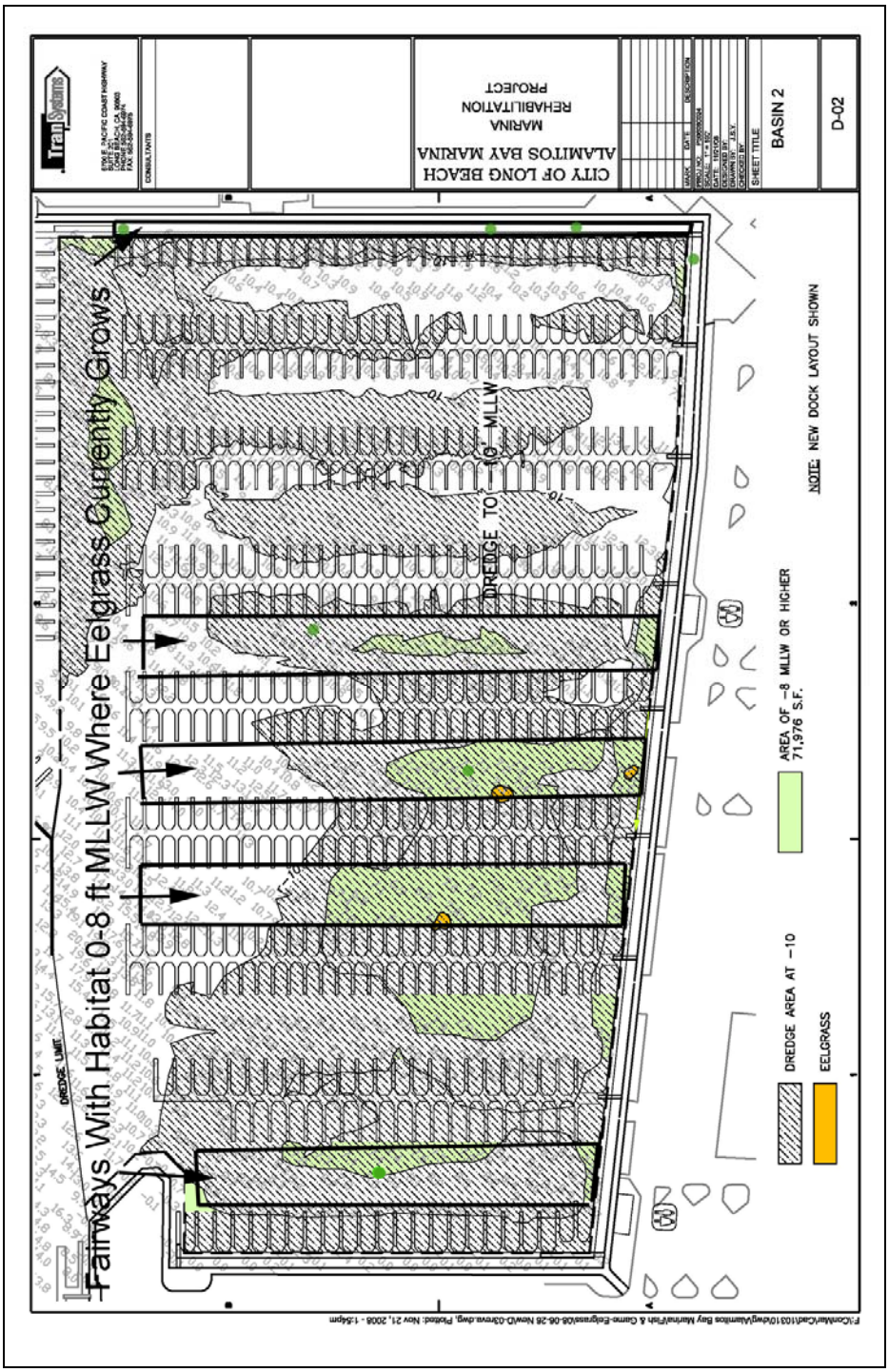

Figure 11. Depth-Suitable Eelgrass Habitat in Basin 2. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

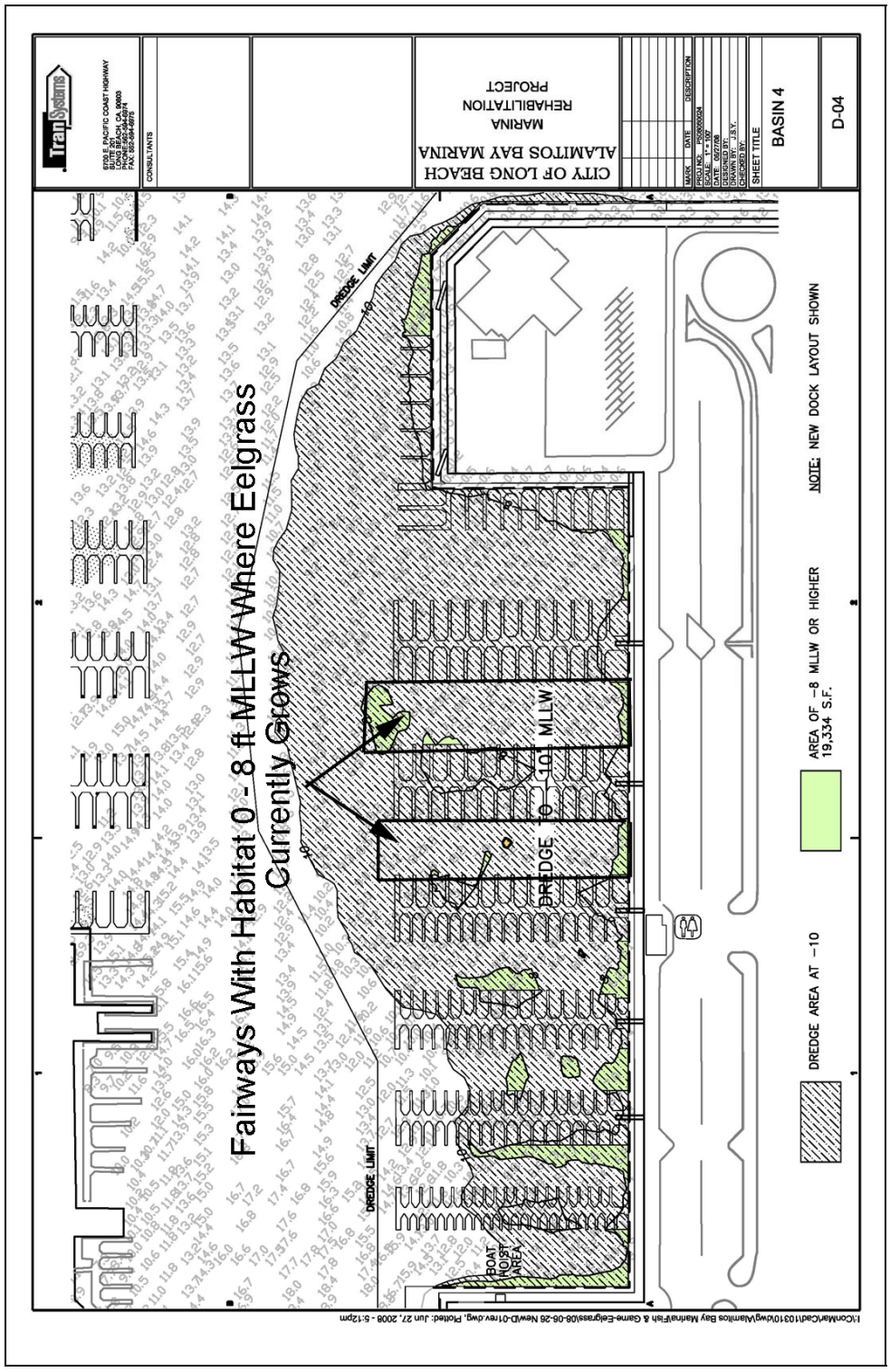

Figure 12. Depth-Suitable Eelgrass Habitat in Basin 4. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

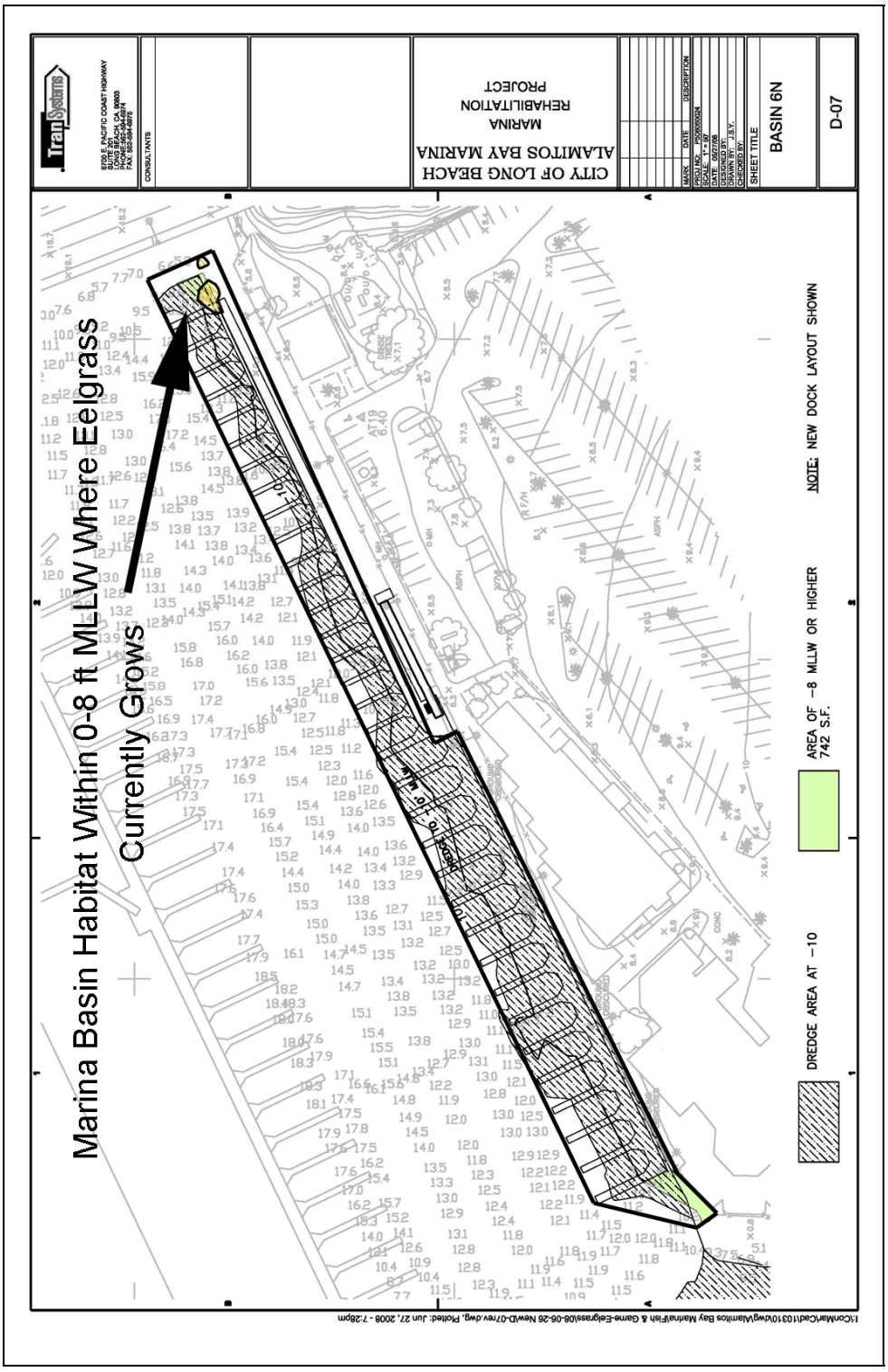

Figure 13. Depth-Suitable Eelgrass Habitat in Basin 6. Note: Area of -8 ft MLLW include both shaded and unshaded habitat. Table 4 includes only the habitat that is unshaded and potentially capable of supporting eelgrass

5.0 CONCLUSIONS

The Southern California Eelgrass Mitigation Policy [SCEMP] (National Marine Fisheries Service, 1991 as amended) defines potential eelgrass habitat as "areas where eelgrass would normally be expected to occur but where no vegetation currently exists. Factors to be considered in delineating potential habitat areas include appropriate circulation, light, sediment, slope, salinity, temperature, dissolved oxygen, depth, proximity to eelgrass, history of eelgrass coverage, etc."

1. Eelgrass is found within seven marina fairways within Basins 2, 4, and 6. The amount of vegetation within these basins is 0.03 acre (1,373.04 sq ft).

2. Eelgrass grows within the marina fairways near its maximum depth limit. Consequently, it is found in scattered, small, low density patches that provide minimal ecological value to marine fishes.

3. Water circulation within Alamitos Bay, and particularly within the Alamitos Bay Marina is modified by the presence of cooling water intake structures in the Marina (Basin 2) that draws ocean water into Alamitos Bay, and then to the Haynes Generating Station. This creates an artificial net inflow of ocean water into Alamitos Bay, and benefits water quality in the Marina, as well as marine life that lives in the marina.

4. This net inflow of ocean water likely contributes to higher levels of dissolved oxygen, lower levels of organics and suspended sediments in the Bay, and subsequent higher submarine irradiance levels. It also likely enhances the ability for eelgrass to colonize deeper areas of the marina, that in the absence of the net inflow of ocean waters, might not be able colonize.

5. Abiotic features such as water salinity, temperature, and underwater light levels are within normal ranges for eelgrass in the Alamitos Bay Marina at depths where eelgrass is known to occur (0.0 feet to -8.5 feet Mean Lower Low Water).

6. While the marina's initial design depths were below the depth limits known for eelgrass, shoaling in the marina has resulted in depths that will support eelgrass, and where light levels are sufficient to support eelgrass. There is no conclusive scientific basis for why eelgrass grows in some locations and not in others. It can be attributed to a combination of any of the environmental conditions listed above.

7. "Depth-suitable" eelgrass habitat less than 8 ft MLLW is limited to seven marina fairways within three marina basins (2, 4, and 6) where eelgrass is currently growing on evolving shoals. This encompasses 1.47 acres of soft bottom habitat.

8. While 1.47 acres of soft bottom habitat within these areas can be classified as "depth-suitable" eelgrass habitat within the seven fairways, the results of CRM's

remote video surveys in October 2008 indicated that each of the areas mapped in 2007 was still vegetated with eelgrass, but that there was no observable increase in areal cover, and eelgrass had not colonized in any other areas in the Marina.

9. Therefore, based on these two (and only available) surveys indicating that eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging.

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APPENDIX 1
NATIONAL MARINE FISHERIES SERVICE LETTER TO THE CALIFORNIA ASSOCIATIONS OF HARBOR MASTERS AND PORT CAPTAINS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

JAN 26 2009

Mr. Jack Peveler
President
California Association of Harbor Masters and Port Captains
P.O. Box 510
Sonoma, California 95476

Dear Mr. Peveler:

NOAA's National Marine Fisheries Service (NMFS) has reviewed your letter dated December 9, 2008, regarding the application of the Southern California Eelgrass Mitigation Policy. We appreciate your interest and constructive criticism of our efforts to protect and conserve eelgrass habitat within California.

As a result of the recognized ecosystem functions, eelgrass beds and other submerged aquatic beds, are given special status under the Clean Water Act, 1972 (as amended), Section 404(b)(1), "Guidelines for Specification of Disposal Sites for Dredged or Fill Material," Subpart E, "Potential Impacts on Special Aquatic Sites." This special status and high resource value has led to more stringent regulatory protections of this habitat and requirements for avoidance, minimization, and mitigation of unavoidable impacts.

As a furtherance of efforts to curb losses and reduce the negative trends in seagrass habitat, resource and regulatory agencies around the nation have been working on development of resource management plans and resource protection policies addressing seagrass. In southern California, the Southern California Eelgrass Mitigation Policy (SCEMP) (1991, as revised) was developed by NMFS, U.S. Fish and Wildlife Service, and California Department of Fish and Game to provide further guidance on the necessary steps to compensate for unavoidable impacts to eelgrass resources through regulatory programs. NMFS recognizes that the SCEMP is not part of official NOAA regulations. Rather, it is a coordinated, multiple-agency approach that is intended to provide guidance and consistency for all entities that impact this sensitive resource.

NMFS also recognizes that, as currently written, the potential eelgrass habitat clause could be interpreted more broadly than intended. To date, we have only implemented this clause when clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence). We intend to clarify this aspect of the SCEMP in future revisions and will solicit your organization's input prior to doing so. Similarly, we also believe the SCEMP should be based upon the

best scientific information available and will incorporate such information in future revisions as it becomes available. We welcome any scientific information you can provide that could further refine the SCEMP.

Lastly, one of your last statements regarding shoaling of marinas implies that harbor/marina design depths are the appropriate baseline for environmental effect determinations. When evaluating effects to habitat, NMFS considers the current habitat condition. If NMFS' effects analysis indicates that there would be a reduction in quality and/or quantity of habitat, NMFS will provide conservation recommendations to avoid, minimize or offset such effects. If compensatory mitigation is recommended for a continuing operation (e.g. maintenance dredging), we believe it necessary to do so only once. For example, impacts to eelgrass habitat in Agua Hedionda Lagoon associated with maintenance dredging were mitigated according to the SCEMP, but, assuming future maintenance dredging remains in the same footprint, no additional compensation would be recommended if eelgrass recolonized the area at a later date.

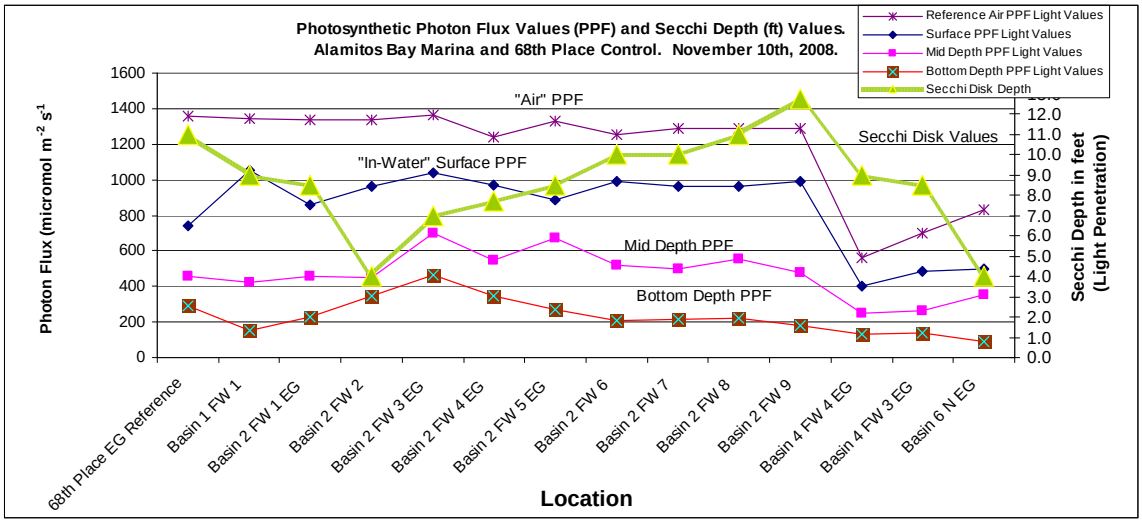
Thank you for your interest in this matter. NMFS encourages your participation in future developments related to eelgrass conservation efforts and will keep you updated accordingly. If you have any questions about these comments or the application of SCEMP, please contact Bryant Chesney at Bryant.Chesney@noaa.gov or 562-980-4037.

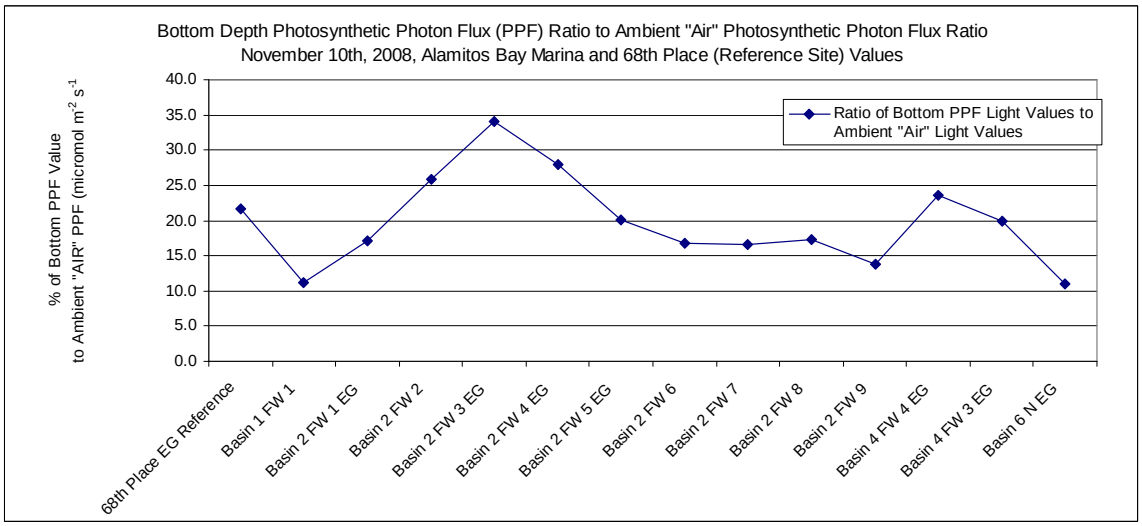
Sincerely,

Rodney R McInnis

Rodney R. McInnis
Regional Administrator

APPENDIX 2
UNDERWATER LIGHT LEVELS AND LIGHT TRANSMITTANCE (SECCHI DISK) DATA NOVEMBER, 2008





BIRD SURVEY MEMOS

LSA

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BERKELEY
CARLSBAD
FORT COLLINS

FRESNO
PALM SPRINGS
POINT RICHMOND

RIVERSIDE
ROCKLIN
SAN LUIS OBISPO
S. SAN FRANCISCO

MEMORANDUM

DATE: August 12, 2009

TO: Ashley Davis

FROM: Richard Erickson

SUBJECT: Waterbird Foraging and Roosting at the Alamitos Bay Marina

The great blue heron (*Ardea herodias*) is the only water bird known to nest at the Alamitos Bay Marina. Other species are unlikely to do so, with the possible exception of the great egret (*Ardea alba*), snowy egret (*Egretta thula*), and black-crowned night-heron (*Nycticorax nycticorax*), all of which occasionally nest in association with great blue herons. Were those species to nest at the marina, potential impacts and mitigation measures would likely be similar to those for the great blue heron.

In contrast, many species of waterbirds forage and roost at the marina, including some classified as endangered, of special concern, or special animals (see http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf). For most of these species, special status is conferred only at nesting sites or communal roost sites. This is true of the two endangered waterbirds know to frequent the marina, the California brown pelican (*Pelecanus occidentalis californicus*) and Califoria least tern (*Sternula antillarum browni*). The least tern and several other special status species nest within the Seal Beach Naval Weapons Station and probably forage regularly in marina waters and may form small roosting associations on occasion, e.g., on the basin seawalls. The brown pelican does not nest locally, but does forage and roost in the area. Sizable concentrations of foraging birds of various species may develop in response to bait conditions in the marina. To be safe, it may be best to have a qualified biologist assess the roosting (and foraging) behavior of waterbirds at the marina immediately prior to any major disturbance.

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ROCKLIN
SAN LUIS OBISPO

M E M O R A N D U M

DATE: March 11, 2009

TO: Ashley Davis

FROM: Richard Erickson

SUBJECT: Nesting Bird Survey for the Alamitos Bay Marina

On March 7, 2009 I visited the Alamitos Bay Marina to search for potentially nesting birds. As on June 29, 2007, I surveyed areas scheduled for various construction activities under the Alamitos Bay Marina Improvement Project. My previous findings were summarized in a memo to you dated July 9, 2007.

I drove or walked through most of the project area from 8:50 a.m. to 2:35 p.m. Some areas were visible only from a distance. Conditions were conducive for observations the entire time with partly cloudy skies, temperatures ranging from cool to mild, and light to moderate winds.

The project area now comprises seven Basins and a proposed eelgrass mitigation site. Basins 5 and 7 and the proposed eelgrass mitigation site have essentially no vegetation and appear to offer limited nesting opportunities for birds. The other five Basins have a scattering of ornamental trees and shrubs that may be used by a number of species as small as hummingbirds and as large as the great blue heron. A complete list of vertebrate species observed is shown below, including scientific names. California Special Animals (see http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf) are denoted with bold type. "Special" status for all of these species is restricted to nesting colonies/sites, communal roosts, and rookery sites.

The first week of March is early in the nesting season for most bird species in Southern California. I found one pair of house finches carrying nesting material to a building in Basin 1 and one pair of American crows carrying nesting material to an unseen location northwest of Basin 6 South. Another pair of crows was acting suspiciously–as if near a nest site–in Basin 2. Within Basins 1 and 2, 17 potential great blue heron nests (i.e., obvious concentrations of sticks) were found in the tops of ornamental fan palms (Figure 1). At least nine nests were occupied, including one where a heron appeared to be incubating. Two pairs were still engaged in nest building. This species is considered a California Special Animal at colonial nesting sites such as this.

Among the native species most likely to nest in vegetation within the project area (in addition to the great blue heron) are the mourning dove, Anna's hummingbird, American crow, northern mockingbird, hooded oriole, and house finch. The hooded oriole is especially prone to nesting in fan palms and may nest in numbers on site. Non-native species likely nesting in the marina's vegetation include the feral pigeon, European starling, and house sparrow. Two native species potentially nesting in the marina, the black phoebe and barn swallow, usually build their nests on structures (including docks and piers), and the pigeon often does so as well.

The improvement project calls for the removal of several trees in the vicinity of restroom buildings, including some trees used by nesting herons. Although the great blue heron is not a State or federally protected species, the following mitigation measure has been recommended to reduce any potential impacts to that species to a less than significant level.

Mitigation Measure

The City shall adhere to the following provisions during construction for the purpose of protecting nesting birds within the study area:

> Tree and vegetation removal shall be restricted to outside the likely active nesting season (January 1–September 1) for those bird species present or potentially occurring within the project area. That time period is inclusive of most other local birds' nesting periods, thus maximizing avoidance of impacts to any nesting birds. If construction must be completed during the season listed above, surveys for nesting birds shall be conducted at least 15 days prior to construction. Should an occupied nest be detected, the City will consult with the California Department of Fish and Game (CDFG) and California Coastal Commission (CCC) to determine an appropriate means for reducing impacts to nesting birds prior to tree removal activities. If nesting birds are observed within the vicinity, a buffer from the nest shall be established. The size of the buffer is dependent on the species and shall be determined by a qualified biologist. The buffer shall be delineated by roping the boundaries of construction and shall remain in place until the nest is abandoned or the young have fledged**.**

* Species not native to the study area
[ ] Species in brackets were observed only in 2007

AVES	BIRDS
Anatidae	**Ducks, Geese, and Swans**
Anas platyrhynchos	Mallard
Melanitta perspicillata	Surf scoter
Mergus serrator	Red-breasted merganser
Podicipedidae	**Grebes**
Podilymbus podiceps	Pied-billed grebe
Podiceps nigricollis	Eared grebe
Aechmophorus occidentalis	Western grebe
Pelecanidae	**Pelicans**
Pelecanus occidentalis	**Brown pelican**
Phalacrocoracidae	**Cormorants**
Phalacrocorax auritus	**Double-crested cormorant**
Ardeidae	**Herons, Bitterns, and Allies**
Ardea herodias	**Great blue heron**
Egretta thula	**Snowy egret**
[*Butorides striatus*	Green heron]
Nycticorax nycticorax	**Black-crowned night-heron**
Accipitridae	**Hawks, Kites, Eagles, and Allies**
Buteo jamaicensis	Red-tailed hawk
Rallidae	**Rails, Gallinules, and Coots**
Fulica americana	American coot
Charadriidae	**Plovers and Lapwings**
[*Charadrius vociferus*	Killdeer]
Scolopacidae	**Sandpipers, Phalaropes, and Allies**
Tringa semipalmata	Willet
[***Numenius americanus***	**Long-billed curlew]**
Limosa fedoa	Marbled godwit
Laridae	**Gulls, Terns, and Skimmers**
Larus heermanni	Heermann's gull
Larus delawarensis	Ring-billed gull
Larus occidentalis	Western gull
Larus californicus	California gull
Larus glaucescens	Glaucous-winged gull
Hydroprogne caspia	**Caspian tern**

[	***Sterna forsteri***	**Forster's tern**	**]**
[	***Thalasseus elegans***	**Elegant tern**	**]**
Columbidae		**Pigeons and Doves**	
*	*Columba livia*	Rock (Feral) pigeon	
[*	*Streptopelia decaocto*	Eurasian collared-dove	]
	Zenaida macroura	Mourning dove	
Trochilidae		**Hummingbirds**	
[	*Calypte anna*	Anna's hummingbird	]
[	***Selasphorus sasin***	**Allen's hummingbird**	**]**
Tyrannidae		**Tyrant Flycatchers**	
	Sayornis nigricans	Black phoebe	
Corvidae		**Crows and Jays**	
	Corvus brachyrhynchos	American crow	
	Corvus corax	Common raven	
Hirundinidae		**Swallows**	
	Stelgidopteryx serripennis	Northern rough-winged swallow	
[	*Petrochelidon pyrrhonota*	Cliff swallow	]
	Hirundo rustica	Barn swallow	
Mimidae		**Mockingbirds and Thrashers**	
	Mimus polyglottos	Northern mockingbird	
Sturnidae		**Starlings**	
*	*Sturnus vulgaris*	European starling	
Parulidae		**Wood Warblers**	
	Dendroica coronata	Yellow-rumped warbler	
Icteridae		**Blackbirds**	
[	*Icterus cucullatus*	Hooded oriole	]
Fringillidae		**Fringilline and Cardueline Finches and Allies**	
	Carpodacus mexicanus	House finch	
	Carduelis tristis	American goldfinch	
Passeridae		**Old World Sparrows**	
*	*Passer domesticus*	House sparrow	
MAMMALIA		**MAMMALS**	
Sciuridae		**Squirrels, Chipmunks, and Marmots**	

*	cf. *Sciurus niger*	Eastern fox squirrel
Phocidae		**Hair Seals**
[	*Phoca vitulina*	Harbor seal]
Otariidae		**Eared Seals**
	Zalophus californianus	California sea lion

LSA ASSOCIATES, INC.
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949.553.8076 FAX

BERKELEY
CARLSBAD
COLMA
FORT COLLINS
PALM SPRINGS
POINT RICHMOND
RIVERSIDE
ROCKLIN
SAN LUIS OBISPO

M E M O R A N D U M

DATE: July 9, 2007

TO: Ashley Davis, Renee Escario

FROM: Richard Erickson

SUBJECT: Nesting Bird Survey for the Alamitos Bay Marina

On June 29, 2007 I visited the Alamitos Bay Marina to search for potentially nesting birds. I surveyed areas scheduled for various construction activities under the Alamitos Bay Marina Improvement Project. I drove or walked through most of the project area from 7:00 a.m. to 11:15 a.m. Some areas were visible only from a distance. Conditions were conducive for observations the entire time with a complete marine layer initially present giving way to clear skies. Temperatures ranged from mild to warm and it was calm the entire morning.

The project area comprises seven Basins, all but two of which have a scattering of ornamental trees and shrubs present. The exceptions were Basins 5 and 7, where no vegetation appeared to offer nesting opportunities for birds. Elsewhere, trees and shrubs may be used by a number of species as small as hummingbirds and as large as the American crow. A complete list of vertebrate species observed is shown below, including scientific names. California Special Animals (see http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf) are denoted with bold type. "Special" status for all of these species is restricted to nesting colonies/sites, communal roosts, and rookery sites.

The end of June is late in the nesting season for most bird species in Southern California and I found no evidence of active nesting by any species except the great blue heron. Ten active nests of this species in the tops of ornamental fan palms were mapped within Basins 1 and 2. All nests contained large young not yet capable of flight. This species is considered a California Special Animal at colonial nesting sites such as this.

A used nest that had fallen from a tree on the northwest side of Basin 3 appeared to have been built by house finches, and what may have been a used nest built by crows was located high in a eucalyptus on the west end of Basin 6 (south). Among the native species most likely to nest in vegetation within the project area (in addition to the great blue heron) are the mourning dove, Anna's hummingbird, American crow, northern mockingbird, hooded oriole, and house finch. The hooded oriole is especially prone to nesting in fan palms and may nest in numbers on site. Non-native species likely nesting in the marina's vegetation include the feral pigeon, European starling, and house sparrow. Two native species potentially nesting in the marina, the black phoebe and barn swallow, usually build their nests on structures, and the pigeon often does so as well.

The improvement project calls for the removal of several trees in the vicinity of restroom buildings, including some trees used by nesting herons. Although the great blue heron is not a State or federally protected species, the following mitigation measure has been recommended to reduce any potential impacts to that species to a less than significant level.

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Fringillidae		**Fringilline and Cardueline Finches and Allies**
	Carpodacus mexicanus	House finch
	Carduelis tristis	American goldfinch
Passeridae		**Old World Sparrows**
*	*Passer domesticus*	House sparrow
MAMMALIA		**MAMMALS**
Phocidae		**Hair Seals**
	Phoca vitulina	Harbor seal

APPENDIX D

CULTURAL/HISTORIC RESOURCES REPORT

CULTURAL RESOURCES ASSESSMENT FOR THE

ALAMITOS BAY MARINA REHABILITATION PROJECT

CITY OF LONG BEACH, LOS ANGELES COUNTY, CALIFORNIA

LSA

October 2009

CULTURAL RESOURCES ASSESSMENT
FOR THE

ALAMITOS BAY MARINA REHABILITATION PROJECT

CITY OF LONG BEACH, LOS ANGELES COUNTY, CALIFORNIA

Prepared for:
Jill Griffiths
Advance Planning Officer
City of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802
(562) 570-6191

Prepared by:

Terri Fulton
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

LSA Project No. TSY0701B

National Archaeological Data Base (NADB)

Type of Study: Site recordation and research
Sites Recorded: None
Sites Updated: 19-186115, Marine Stadium
USGS Quadrangle: Long Beach, California, Los Alamitos, California, Seal Beach, California 7.5'
Acreage: 97.2 acres
Level of Investigation: CEQA
Key Words: CEQA, Marine Stadium

LSA

Repository: South Central Coasta Information Center, California State University Fullerton

October 2009

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ABSTRACT

A cultural resources assessment of the Alamitos Bay Marina Rehabilitation Project was conducted by LSA Associates, Inc. (LSA). This assessment included a review of previous studies, additional research, and the updated recordation of Marine Stadium, which is a California Historical Landmark (CHL No. 1014) that was designed and built for use as the rowing venue during the 1932 Olympic Games. A pedestrian survey of the project was not performed because all areas to be impacted consist of a water body, or when on land, areas that are paved and developed. No native soil is visible. This was confirmed by research that included an examination and comparison of historic and modern aerial photographs of the project area, as well as a cursory survey conducted by vehicle. All work was completed between October 2008 and July 2009.

Based on the results of this study, LSA finds that the project will not significantly impact cultural resources. Ground disturbance necessitated by improvements to the parking and bathroom areas will occur in previously disturbed or artificially filled areas where no cultural resources have been recorded. Because no intact native soil will be disturbed, the potential to impact unknown intact cultural resources is unlikely.

As it is defined in the City's Municipal Code (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West), Marine Stadium proper extends north of the Second Street Bridge. As such, it will not be affected by the project's Marina improvements, all of which are outside of the stadium body in Basins 1–7. An eelgrass mitigation area that is proposed in the northeast corner of Marine Stadium will directly affect the perimeter of Marine Stadium as it exists today in that area only. However, this area is outside of the original Marine Stadium boundaries as they existed at the time of the 1932 Olympic Games. Therefore, no characteristics of Marine Stadium that contribute to its significance as being associated with the 1932 Olympic Games will be impacted. The proposed improvements in Basins 1–7 and the eelgrass mitigation area will not alter the size or character of the stadium as it currently exists. Therefore, no significant direct or indirect impacts to cultural resources are anticipated, and no additional cultural resources studies or archaeological monitoring is recommended.

In the unlikely event that previously undocumented cultural resources are identified during any ground-disturbing activities, a qualified professional archaeologist should be contacted to assess the nature and significance of the newly discovered resources, and recommend treatment per guidelines established by the California Environmental Quality Act (CEQA). If human remains are encountered at any time during construction or routine maintenance in the reserve, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code (PRC) Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend

scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

Copies of this report are on file at the South Central Coastal Information Center (SCCIC) and at the LSA Irvine Corporate Headquarters.

INTRODUCTION

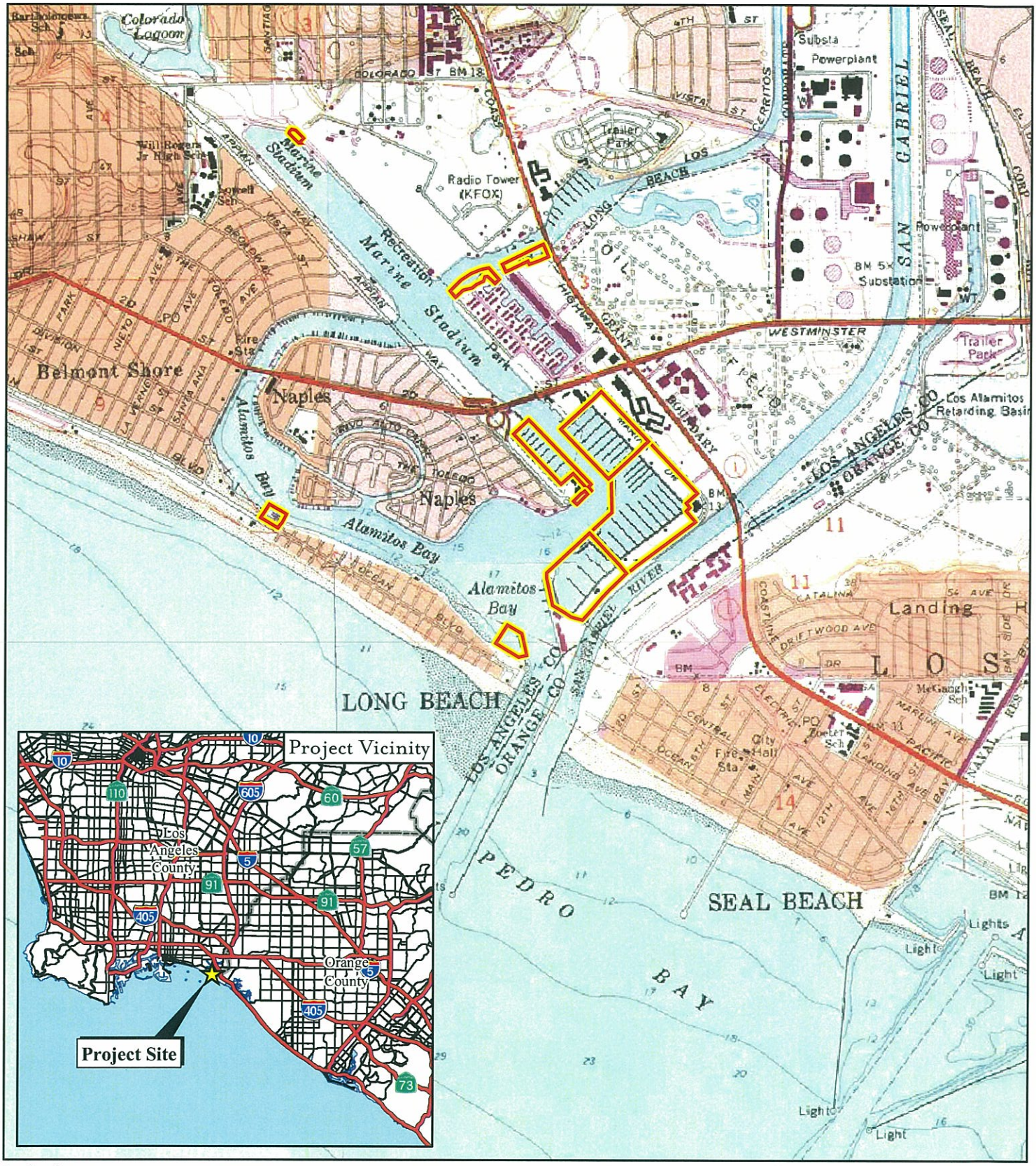
LSA has been contracted by the City of Long Beach to perform a cultural resources assessment for the Alamitos Bay Marina Rehabilitation project, located in the City of Long Beach (City), Los Angeles County, California. The purpose of this assessment was to identify any cultural resources that may be impacted by the project. This assessment will address the requirements of the California Environmental Quality Act (CEQA) (as amended January 1, 2009); Public Resources Code (PRC) Division 13 (Environmental Quality), Chapter 2.6 Section 21083.2 (Archaeological Resources) and Section 21084.1 (Historical Resources); and the Guidelines for CEQA (as amended October 2008), California Code of Regulations (CCR) Title 14, Chapter 3, Article 5 Section 15064.5 (Determining the Significance of Impacts on Historical and Unique Archaeological Resources).

The project area consists of the Alamitos Bay water body itself, and paved and developed areas on dry land. Because of the nature of the project area, a pedestrian survey was not conducted. However, additional identification efforts for the purposes of this assessment consisted of reviews of previous studies, supplemental research, and updating the Department of Parks and Recreation (DPR) Forms for Marine Stadium (CHL No. 1014), which is immediately adjacent to the project area.

Thirty-seven studies have been conducted within a 0.25-mile (mi) radius of the project area; however, none of these studies included any portion of the project area, and the project area has never been surveyed for cultural resources. Seven resources have been identified within the 0.25 mi radius of the project area, including six archaeological sites and one historical resource. None of the archaeological sites are located within the project area. The historical resource is Marine Stadium (CA-LAN-056). As discussed above, the stadium is registered as CHL No. 1014 and therefore automatically listed in the California Register of Historical Resources (California Register). Marine Stadium is immediately adjacent to the project area.

The Alamitos Bay Marina is located in the southeastern portion of Los Angeles County within the City of Long Beach (City). The Alamitos Bay Marina lies adjacent to and northwest (upshore) of the mouth of the San Gabriel River. The Marina facilities are operated by the City of Long Beach Marine Bureau and are primarily accessible from Pacific Coast Highway (PCH) and Second Street. The project area is depicted on the United States Geological Survey (USGS) *Long Beach, Los Alamitos,* and *Seal Beach, California* 7.5-minute quadrangle maps at mean sea level (Figure 1).

As Principal in Charge, Deborah McLean, M.A., RPA, oversaw all aspects of the Cultural Resources Assessment as it was completed. Tasks associated with this assessment were conducted by LSA archaeologists Terri Fulton and Phil Fulton.



LSA

LEGEND

Project Locations

FIGURE 1

N

0 1000 2000

FEET

SOURCE: USGS 7.5' QUAD - LONG BEACH ('81), LOS ALAMITOS ('81), SEAL BEACH ('81); CALIF.

I:\tsy0701\GIS\Fig1.mxd (7/7/2009)

Alamitos Bay Marina Rehabilitation Project

Project Location Map

PROJECT DESCRIPTION

The proposed Alamitos Bay Marina Rehabilitation project would renovate the existing Marina facilities in Basins 1–7 by providing upgraded Americans with Disabilities Act (ADA)-compliant facilities and the following: (1) maintenance dredging of the Marina basins to original design depths and/or original basin depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the seawall where necessary; (4) replacing dock and pilings; and (5) replacing the pavement in the Marina parking lots. The project also includes the construction of an approximately 600-foot (ft) long dock located adjacent to Basin 4 at the southeast corner of the Long Beach Yacht Club. The long dock includes a 200 ft temporary section that would accommodate boaters during the renovations and would be removed upon project completion.

Based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. The City has identified a site adjacent to the northeast shore of Marine Stadium to convert to an open space/habitat mitigation site. This mitigation habitat area will therefore be analyzed in the Environmental Impact Report (EIR) as a part of the project.

There are currently 1,967 existing slips in Marina Basins 1–7; the proposed project includes installation of approximately 1,646 slips, resulting in the loss of approximately 321 slips. As of the date of this notice, there are 1,430 customers in the Marina, so there would be a slip for every existing customer once the renovations are complete.

The project is anticipated to be completed in 12 phases over approximately 5 years and includes two construction staging areas: one located in the parking lot on Marina Drive near Basin 2; and one located in the parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard. Please refer to Figure 2 for a map showing the proposed improvements.

LSA

LEGEND

- Project Locations
- Current Marine Stadium Boundary

0 400 800
FEET

SOURCE: DigitalGlobe (4/08); TBM (2008); City of Long Beach (2008, 1/09)

I:\tsy0701\GIS\BasinLocations.mxd (7/22/2009)

FIGURE 2

Alamitos Bay Marina Rehabilitation Project

Alamitos Bay Marina Basin Locations

NATURAL SETTING

The natural setting of the project vicinity is presented based on the underlying theoretical assumption that humans and human societies are in continual interaction with their physical environment. Being an integral and major part of the ecological system, humans respond to the limits imposed by the environment by technological and behavioral adaptation and by altering the environment to produce more favorable conditions. Locations of archaeological sites are based on the constraints of these interactions, whether it is proximity to a particular resource, topographical restrictions, or shelter and protection. Sites will also contain an assemblage of artifacts and ecofacts consistent with the particular interaction.

GEOLOGY

The proposed project is located at the northern end of the Peninsular Range geomorphic province, a 900 mi long northwest-southeast-trending structural block that extends from the tip of Baja California to the Transverse Ranges and includes the Los Angeles Basin (Norris and Webb 1976). The total width of the province is approximately 225 mi, with a maximum landbound width of 65 mi (Sharp 1976). It contains extensive pre-Cretaceous (> 65 million years ago) igneous and metamorphic rocks covered by limited exposures of post-Cretaceous sedimentary deposits.

Specifically, the project is located within the Los Angeles Basin (Basin) adjacent to and northwest of the current channel of the San Gabriel River where it meets the Pacific Ocean. The Basin is a broad, gently sloping alluvial plain (gradient of 0.5 to 1 percent). It is bound on the north and northwest by hills and mountains of the Northern Peninsular and Transverse Ranges and on the south and west by the Pacific Ocean. The current sediment source for the Basin is several rivers that flow into it. These include the Los Angeles, the San Gabriel, and the Santa Ana Rivers. As the gradient of the Basin is quite shallow, these rivers have not always flowed in their current channels; rather, they have flowed across the entire Basin, depositing sediment evenly across the plain. Approximately 20 million years ago the Basin was an undersea basin that collected mud and sand from the land, as well as plankton from the sea. Over the 20-million-year period, the Basin was filled with approximately 20,000 ft of sediment. This sediment is the source for much of the rich oil reserves in the area.

Pointi and Lajoie (1992) report that beneath the Long Beach area there is an almost continuous sequence of sediments (mostly marine) from the late Miocene through the late Pleistocene. This sequence records several sea level changes and a shallowing of the water beginning in the Pliocene. Pointi and Lajoie (1992) report that due to movement along faults, Signal Hill, located approximately 3 mi to the northwest, rose to its current height of 360 ft in a span of 220,000 years, an average uplift rate of approximately 0.56 millimeters (mm) per year, a rate much faster than the uplift rate of 0.35 mm per year for the Palos Verdes Hills, located 6 mi to the west. Signal Hill is part of a northwest-trending alignment of low hills and mesas that extends across the Los Angeles Coastal Plain between Newport Beach and Beverly Hills. This alignment of local highlands is the topographic expression of uplift, deformation, and faulting that has occurred along the Newport-Inglewood

structural/fault zone (Barrow 1974). The Newport-Inglewood structural/fault zone is immediately adjacent to the project area.

Within the project area, Saucedo et al. (2003) have mapped the project and surrounding area as being entirely within middle to late Pleistocene (300,000 to 10,000 years before the present [ybp]). Old paralic deposits are those deposits located in the transition area between the sea and the land and can include a mixture of deposits from the subtidal to beach deposits to colluvium and alluvium from the land. Paralic deposits, as described by Saucedo et al. (2003), are mostly poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine, and colluvial deposits that locally may include older alluvium. These deposits can be composed of siltstone, sandstone, and conglomerate; however, within the project area, they are mapped as being primarily silty. These deposits rest on the now-emergent wave-cut abrasion platforms preserved by regional uplift. Paralic deposits can essentially be thought of as an interfingering of Pleistocene marine terrace deposits and older alluvium. Saucedo et al. (2003) maps Marine Stadium as artificial fill and the nearby Colorado Lagoon as Holocene alluvium.

PALEOENVIRONMENT

Although the Holocene climate has in general been considerably more stable than the Late Pleistocene climate (Ditlevsen et al. 1996; GRIP 1993), California has experienced relatively rapid changes in climatic and environmental conditions over the past 10,000 years. The economic and settlement history of Southern California can largely be understood as a response to the challenges and opportunities posed by this environment. For example, many archaeologists have linked periods of poor environmental conditions to the emergence of complex social organization among some Southern Californian hunter-gatherer societies. Two variables, sea levels and the incidence of drought and flooding, played significant roles in determining the distribution and abundance of important coastal and inland resources.

The sequence of changes in coastlines and habitats has been well-documented for the Southern California coast (Gallegos 1987; Inman 1983; Masters and Gallegos 1997; Nardin et al. 1981). Sea levels rose rapidly following the end of the Ice Age. Along the southern coast during the Early Holocene, sea level rise created many lagoons and cobble beaches. Rising sea levels produced rich estuarine habitats and rich nearshore habitats, including rocky reefs and kelp beds. After 5000 before the present (BP), the rate at which sea levels rose slowed considerably. The stabilization of sea levels may have initially increased the diversity of lagoon habitats, providing niches for both rocky shore species and sandy beach species. By 3500 BP, however, sediments may have filled in most of the lagoons and led to the transport of sand along the outer coast (Masters and Gallegos 1997). Only a few lagoons, such as San Diego Bay and Peñasquitos Lagoon, persisted. These changes transformed the productivity of the coast, but they occurred gradually compared to the rapid fluctuations in rainfall that Southern California has experienced.

Before the rivers were channelized, periodic drought and flooding may have been a common but unpredictable feature of life. For example, the Los Angeles and Santa Ana Rivers have captured the flow of the San Gabriel River at times in the recent past, causing extensive floods. Such floods would disrupt ordinary riparian flora and fauna.

The climate has generally become drier since the last Ice Age (Axelrod 1981; Heusser and Sirocko 1997). High resolution data sets attest to considerable environmental variability during the Late Holocene (e.g., deMenocal 2001; Jones and Kennett 1999; Kennett and Kennett 2000). Alternations between wetter and drier periods occurred during the last 750 years, with intervals lasting approximately 40–160 years on average (Ingram et al. 1996). The climate was generally dry between AD 500 and 800, between AD 980 and 1300, and between AD 1650 and 1750 (Boxt et al. 1999; Stine 1994). Severe droughts probably afflicted Southern California around AD 1000 to 1100 and AD 1250 to 1300 (deMenocal 2001; Stine 1994).

CURRENT LAND USE

The project is located in the Alamitos Bay Marina. The land uses surrounding the Marina are primarily residential, but also include areas of commercial development, marine-related commercial uses, restaurants, a shipyard, yacht and sailing clubs, and public beaches.

CULTURAL SETTING

PREHISTORIC CHRONOLOGIES

The development of a regional chronology marking the major stages of cultural evolution in the Southern California area has been an important topic of archaeological research. In general, cultural developments in Southern California have occurred gradually and have shown long-term stability; thus, developing chronologies and applying them to specific locales has often been problematic. Southern California researchers have used changing artifact assemblages and evolving ecological adaptations to divide regional prehistory into four stages. Wallace (1955; 1978) and Warren (1968) have developed the two chronologies most commonly cited. Wallace (1955) uses major cultural developments to divide area prehistory into four time periods, or "cultural horizons:" the Early Period, the Milling Stone Period, the Intermediate Period, and the Late Period (Figure 3). The following overview is based primarily on Wallace's chronology, which has been revised slightly by Koerper (1981) and Koerper and Drover (1983).

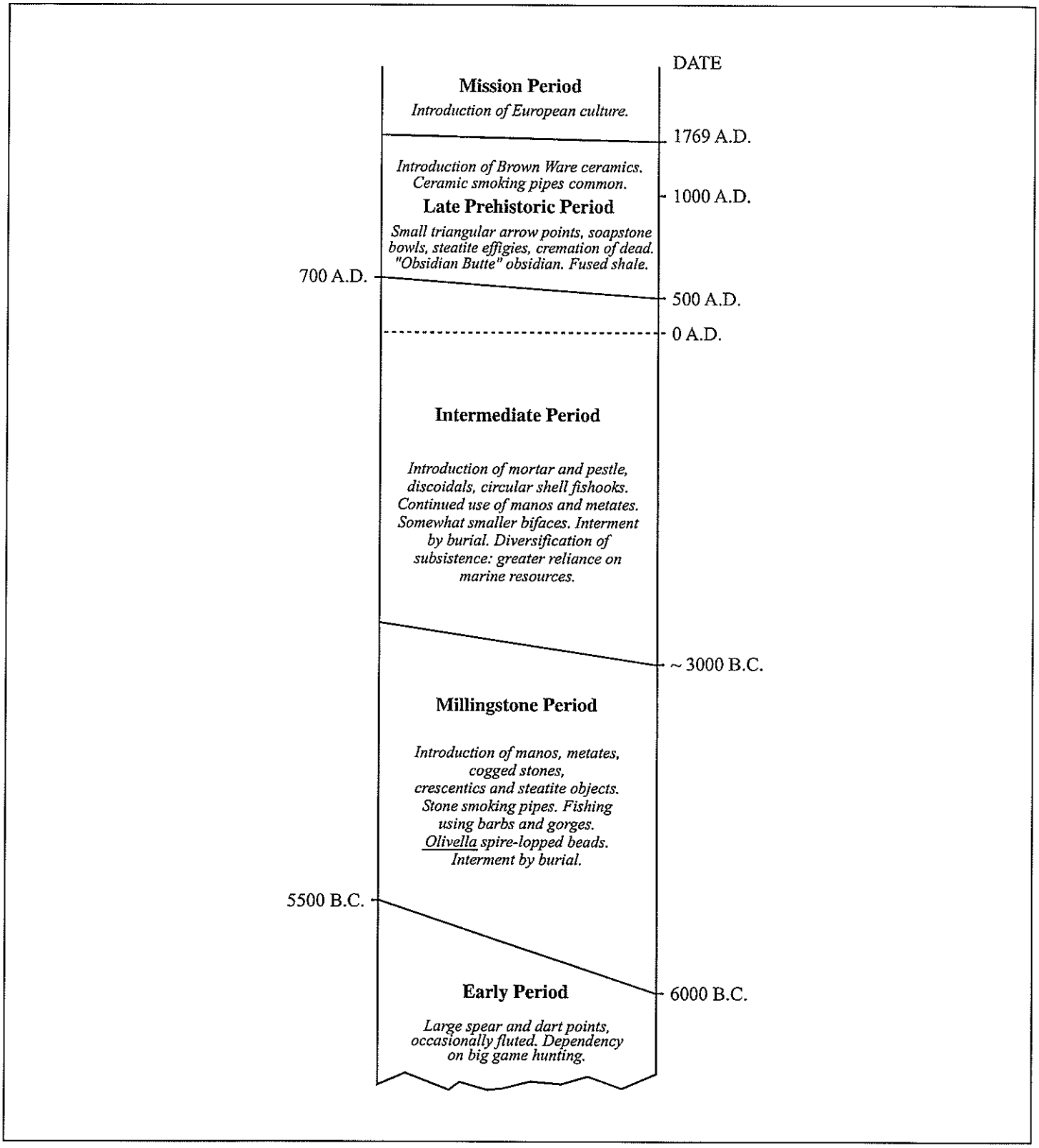
Neither of the chronologies cited begin prior to the terminal Pleistocene ca. 12,000 Before Present (BP). While more sites in North and South America are beginning to be accepted as dating to earlier times, none earlier than 12,000 BP have been documented within the project region.

The Early Period (Prior to 6000 BC)

The Early Period (also known as the Hunting Period) covers the interval from the first presence of humans in Southern California until postglacial times (5500 to 6000 BC). Artifacts and cultural activities from this period represent a predominantly hunting culture; diagnostic artifacts include extremely large, often fluted bifaces associated with use of the spear and the atlatl. In Southern California, important Early Period sites have been found near prehistoric Lake Mohave and along the San Dieguito River (Wallace 1955, 1978:27; Moratto 1984:81, 93–99). Early sites dating to ca. 10,000 years ago and older have also been documented in Santa Barbara County and the northern Channel Islands (Erlandson et al. 1996; Lebow et al. 2007; Rockwell and Stafford 2003). Evidence at sites dating to the Terminal Pleistocene and Early Holocene increasingly suggests that the early inhabitants of coastal California relied on marine resources and seeds, possessing an adaptation quite distinct from the big-game hunters of the Great Plains (Rick et al. 2001).

The Milling Stone Period (6000 BC–3000 BC)

The transition from the Early Period to the Milling Stone Period is marked by an increased emphasis on the processing of seeds and edible plants and is estimated to have occurred between 6000 BC and 3000 BC. According to Wallace (1978:28), wild seeds and edible plants formed the primary food source during this period, with only limited use of shellfish and faunal resources; plant resources were processed using deep-basined mills and handstones, hence the term Milling Stone Period. Milling Stone Period settlements were larger and were occupied for longer periods of time than those of the Early Period, and mortuary practices included both flexed and extended burials, as well as reburials.



LSA

FIGURE 3

Alamitos Bay Marina Rehabilitation Project
Generalized Cultural Chronology
of Southern California

I:\TSY0701\G\Cultural Chronology.cdr (7/8/09)

Grave offerings were few, although rock cairns were sometimes placed over the bodies (Wallace 1955:192, Table 1; 1978:28).

Diagnostic artifacts recovered from Milling Stone Period archaeological sites include metates, manos, and large projectile points, indicating the continued use of darts and atlatls. Among the more enigmatic artifacts from this period are discoidals and cogged stones. Discoidals are round to ovoid groundstones with flat or slightly convex faces and edges, while cogged stones are discoidals with serrated edges resembling the teeth on gears. Both types of artifacts appear sometime around 4000 BC and are dated to the Milling Stone Period; their use remains unclear, and they may have had a ceremonial function (Moratto 1984:149–150).

Wallace (1978:28) offers two possible scenarios to explain the cultural changes that occurred during the Milling Stone Period; quite possibly, both processes occurred simultaneously in different geographical areas. In some regions (such as western San Diego County), Milling Stone cultures may have evolved gradually as the earlier hunting peoples learned to exploit a wider variety of food resources; in other areas, people migrating from interior regions may have introduced the technology for processing seeds and plant foods to coastal areas. Evidence for such migrations may be found in climatic data. The onset of the Milling Stone Period corresponds to an interval of warm, dry weather known as the Altithermal; during the Altithermal, many of the inland lakes disappeared, and the region became less habitable, perhaps triggering the coastal migrations believed to have occurred at this time (Wallace 1978:28).

The Intermediate Period (3000 BC–AD 500)

By approximately 3000 BC, the inhabitants of Southern California were exploiting a diverse array of food resources, including seeds and edible plants, shellfish, fish, and mammals. Along the coast, a greater reliance was placed on marine food resources as evidenced by the recovery of near-shore and pelagic (deep-water) fish remains from archaeological sites. In the interior regions such as the Mojave Desert, the return of cooler, moister conditions led to increased populations along streams and lakes. Hunting appears to have been the primary food-gathering activity in these interior areas; the best-known sites in this region are located at Pinto Basin in northeastern Riverside County (Moratto 1984:153; Wallace 1978:30–31).

Intermediate Period sites are characterized by the appearance of the mortar and pestle (although the mano and metate continued in use). In inland and desert sites the projectile points are generally still large (dart point sized), but small Rose Spring projectile points appear late in this period. The use of the mortar and pestle may indicate an increased reliance on acorns as a food source, while the small projectile points suggest that the bow and arrow was in limited use (Elsasser 1978:55; Wallace 1978:30–31). Intermediate Period burials were generally by interment in a flexed position, face down, although a site at Big Tujunga Wash in the San Fernando Valley contained both reburials under stone cairns and cremations (Elsasser 1978:55; Wallace 1955:193–195).

The Late Period (AD 500–1769)

The Late Period, which began in approximately AD 500, witnessed a number of important cultural developments in Southern California, including the concentration of larger populations in settlements

and communities, greater utilization of the available food resources, and development of regional subcultures. Cremation was the preferred method of burial during the Late Period, and elaborate mortuary customs with abundant grave goods were common. Other cultural traits diagnostic of the Late Period include increased use of the bow and arrow, steatite containers, circular shell fishhooks, asphaltum (as an adhesive), bone tools, and personal ornaments of bone, shell, and stone (Bean and Smith 1978; Elsasser 1978:56; Moratto 1984:159; Wallace 1955:195). Because many of these artifacts are also recovered from earlier periods, other indicators must sometimes be used to distinguish Late Period sites. Among the most useful of these indicators are lithic artifacts manufactured from obsidian. Obsidian from Obsidian Buttes near the Salton Sea was used sporadically in the manufacture of lithic artifacts until sometime after AD 1000, when its use in the Basin became much more common (Hall 1988).

A number of the cultural elements found in Southern California during the Late Period have been linked to the migration of Uto-Aztecan speaking peoples from the Great Basin; these traits include the manufacture of ceramics, the use of small triangular arrow points, and interment by cremation. The date of the Uto-Aztecan migration (which probably occurred in several successive waves over an extended period of time) remains uncertain; it has been dated as early as 2000 BC and as late as AD 700. Linguistic evidence suggests a date of AD 1–500 (Kroeber 1976:574–580; Moratto 1984:161). The latter part of the Late Period (AD 1200–1769) is often given its own period, the Protohistoric Period (Moratto 1984).

THE GABRIELINO

The Gabrielino Indians were the first inhabitants to the area known today as the Los Angeles Basin. The name *Gabrielino* refers to the Uto-Aztecan (Takic) speaking Native Americans who lived throughout the present Los Angeles and Orange County areas and who were historically affiliated with Mission San Gabriel Archangel. Today, some of the Gabrielino prefer to call themselves by their traditional name, *Tongva* (McCawley 1996). Gabrielino territory included the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers; several smaller intermittent streams in the Santa Monica and Santa Ana Mountains; all of the Basin; the coast from Aliso Creek north to a point between Topanga and Malibu Creeks; and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber 1976:620–621; Bean and Smith 1978:538; McCawley 1996:3).

The Gabrielino Indians practiced a hunter-gatherer lifestyle and lived in permanent communities near the convergence of two or more environmental zones or habitats (Bean and Smith 1978). Commonly chosen sites included areas near rivers, streams, and inland watercourses; sheltered coastal bays and estuaries; and the transition zone delineating prairies and foothills. Important considerations influencing the location of habitation sites included the presence of a stable food supply and some measure of protection from flooding. Community populations generally ranged from 50–100 inhabitants, although larger settlements may have existed. Gabrielino communities located in the interior regions maintained permanent geographical territories or use areas that may have averaged 30 square miles. However, it is unclear whether this pattern was similar for coastal settlements, where food resources may have been more plentiful. In addition to these permanent settlements, the Gabrielino occupied temporary campsites that were used on a seasonal basis for hunting, fishing, gathering, and processing of wild plant foods and shellfish (McCawley 1996:25).

In addition to permanent settlements, the Gabrielino occupied temporary campsites used seasonally for hunting, fishing, and gathering plant foods and shellfish (McCawley 1996:25). Hunting was primarily for rabbit and deer, while collecting included plant foods such as acorns, buckwheat, chia, berries, and fruits. They also established seasonal camps along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971)

Politically, each Gabrielino community comprised one or more kinship groups (known as lineages), which were united under the leadership of a tomyaar or chief. Each lineage comprised several related nuclear families; membership in a lineage was traced through the father, and allowed an individual to claim use rights over the territory owned by that group. The tomyaar was the focus of the religious and secular life of the community and served as chief administrator, fiscal officer, war leader, legal arbitrator and religious leader (Bean and Smith 1978; Harrington 1942:32, item 1263; 1986:R102 F642). The tomyaar was aided in his duties by a Council of Elders, which consisted of the leaders of the lineages residing in the community as well as other wealthy and influential individuals. Council positions were hereditary, and descended from father to son. Shamans also played an important role in Gabrielino society, serving as the principal doctors, psychotherapists, philosophers and intellectuals; often, the tomyaar himself was an important and influential shaman (Bean 1974:25–26).

The Gabrielino culture was characterized by an active and elaborate system of rituals and ceremonies. Rituals included individual rites of passage, village rites, seasonal ceremonies and participation in the widespread Chengiichngech cult. The cult of the culture hero, Chengiichngech, was observed and recorded by Franciscan Friar Gerónimo Boscana during his residences at Missions San Juan Capistrano and San Luis Rey (Harrington 1933; Boscana 1933). The Chengiichngech cult is believed to have originated at the village of Povuu'nga located in the vicinity of California State University at Long Beach (CSULB).

HISTORY

European Contact

The first recorded contact between the Gabrielino and Europeans occurred in 1542, when the Cabrillo Expedition arrived at Santa Catalina Island (Wagner 1941). On the mainland, the first documented contact between the Gabrielino and Europeans occurred in 1769, when an expedition led by Gaspar de Portolá crossed present-day Los Angeles and Orange Counties (Bean 1968:36–38; Bolton 1927). The following paragraphs are adapted primarily from Hoover et al. (1962:11) except where referenced.

On June 14, 1769, Gaspar de Portolá left San Diego as the leader of an overland expedition to find a trail to the known port of Monterey in order to establish the second of Alta California's missions (Cleland 1962:xi). The trail the expedition used was originally a series of paths used by natives in various regions. Today, this trail, running between missions of Alta California, is known as El Camino Real, the "Kings Road."

Portolá entered what is now Los Angeles County on July 30, 1769, camping along the Los Angeles River near the site of Bassett. The following day, the expedition crossed the Lexington Wash near El Monte, camping in an open space south of the original location of Mission San Gabriel. On August 2, the small expedition reached the spot on the Los Angeles River occupied by the inhabitants of the

Gabrieleno village of Yang-na. The encampment is believed to have been near North Broadway and its junction with the Los Angeles River northeast of downtown Los Angeles. The hill, around which the Los Angeles River bends to the south at Elysian Park, is a principal landmark noted by the diarists on the journey. Because the day was the Franciscan feast day of Our Lady of the Angels, the river was named Rio de Nuestra Senora la Reina de los Angeles de Porciuncula (The River of Our Lady the Queen of the Angels of Porciuncula [Porciuncula was a church where St. Francis of Assisi prayed; Chapman 1967:210]).

Upon leaving the Elysian Park area, the Portolá expedition passed the La Brea tar pits and camped near two springs, where they were joined by friendly native Gabrielinos. This location was likely near Sawtelle. From here the expedition went as far west as the beach west of Santa Monica before returning to its encampment and then proceeding north through a pass in the mountains and into the San Fernando Valley. McCawley (1996:56–57) adds that several other Gabrielino communities existed in this area. The native community of Ma awnga was also located in the area, on Rancho de los Feliz, near what is now Griffith Park. Geveronga is listed in the San Gabriel baptismal records as adjoining the Pueblo of Los Angeles. The community of 'Ochuunga (wild rose) was also located approximately 3 mi from San Gabriel, on the road from San Gabriel to Los Angeles.

Within two years Mission San Gabriel Archangel was founded (September 8, 1771) and was the fourth of the missions (Hoover et al. 1962:12; McCawley 1996:189). It was originally planned that the mission be constructed on the banks of the Santa Ana River, but it was relocated to a bluff overlooking the Rio Hondo. This original location of the mission, which is now known as Mission Vieja, is also thought to be near to or on the site of the Gabrielino village of Isanthacag-na (also spelled Isankangna, Isantcangna, and Isantka-nga), The village has been mentioned in several accounts; however, its location has never been positively identified. Because it is not mentioned as a Rancheria of origin in any of the Mission baptismal books, it has been postulated that it is a location place name rather than a village (Greenwood et al 1989, Appendix A).

The original buildings of Mission Vieja dating to the Franciscan occupation were constructed of wood and bundled tule similar to the dwellings of the native Gabrielino. The padres may have envisioned this first location of the Mission San Gabriel as temporary, since the mission system was still in an exploratory phase (Greenwood et al 1989). In 1776, four years and eight months after its founding, Mission Vieja was abandoned due to flooding. A new mission was built on higher land in the City of San Gabriel, approximately 5 mi north of the original site (Greenwood and Foster 1989). The present church was erected following the earthquake of 1812, which demolished Mission San Juan Capistrano. Mission San Gabriel has survived secularization as well as the influx of American immigrants and stands today as a symbol of early missionary activity and life. It was also in 1776 that Mission San Juan Capistrano was established (Engelhardt 1922). Although this mission lay outside the Gabrielino territory, many of its converts were drawn from the Gabrielino community of Povuu'nga, which was partially located on the present-day property of California State University, Long Beach. The last baptism at the village of Povuu'nga was recorded in 1805 (Merriam 1968:134–135). In 1797, Mission San Fernando became the second mission to be founded within the territory traditionally assigned to the Gabrielino (Engelhardt 1927a, 1927b).

The Franciscans' goal in founding the missions was to convert the Indians to the Spanish Catholic faith and incorporate them into the lower strata of Spanish society. However, the final result of missionization was the destruction of the Gabrielino culture and society. Two important factors

contributed to this decline: first, many of the youngest, healthiest, and most productive Gabrielino were removed from the Gabrielino economy when they entered the Mission System; second, the introduction of highly infectious European diseases, for which the Gabrielino had no immunities, led to epidemics and reduced birth rates, which further disrupted traditional Gabrielino political, social, and economic institutions. As a result, most of the traditional Gabrielino communities were depopulated, and the survivors became assimilated into the Mexican-American communities of Los Angeles and Orange Counties. During the 1920s, anthropologist A.L. Kroeber was unable to locate a group claiming Gabrielino heritage, although he did interview several individuals of Gabrielino ancestry. Currently, the Gabrielino are not a federally recognized tribe, although there are individual spokespeople of Gabrielino descent (Rosenthal et al. 1991; Weinroth 1994), and five separate groups that claim Gabrielino descent. At least two of these groups are currently in the process of seeking federal recognition.

Ranchos Los Nietos and Los Alamitos

In addition to the missions, the Spanish also established a town within the Gabrielino territory, El Pueblo de la Reina de Los Angeles De Porciúncula, and a number of private ranchos; these included San Pedro, San Rafael, Portezuelo and Los Coyotes. Los Coyotes was granted in 1790 to Manuel Pérez Nieto and originally encompassed 300,000 acres (ac) (including the entire APE), although the grant was later reduced to approximately one-half that size. The headquarters for the rancho were located at "Los Nietos," approximately 13 mi north of the project area near present-day Downey. Nieto cultivated only about 160 ac of this land, probably as a vineyard; the remainder he used as grazing land for his herds of horses and cattle, which reportedly numbered 15,000 to 20,000 head (Cleland 1941:8,283, note 16; Seager 1996).

Manuel Perez Nieto died in 1804; however, the Los Coyotes grant (which at that time included 167,000 ac) was not formally divided among his heirs until 1833. In that year the rancho was divided into six smaller grants; the following year (1834) one of these, Los Alamitos, was sold to Governor Figueroa (Cleland 1941:190). Following Figueroa's death (in 1835) his brother and heir, Francisco, took over as administrator of the estate and manager of Los Alamitos (Cleland 1941:190–193). Mounting debts eventually forced Figueroa to sell Los Alamitos, and in 1842 the rancho was acquired by Abel Stearns. A few years later, cattle prices soared when the massive influx of American immigrants during the Gold Rush led to an increased demand for beef. Cattle ranching remained a profitable business until the mid-1850s, when declining prices and a series of disastrous droughts destroyed the cattle barons of southern California (Cleland 1941:134–135). In addition to cattle raising, agriculture was also pursued at Rancho Los Alamitos on a very limited basis; historical records indicate that barley, potatoes and corn were cultivated near present Seal Beach (Stearns MS) in the vicinity of the project.

The decline of the cattle industry caused enormous financial problems for Stearns, and in 1866 he lost Rancho Los Alamitos through foreclosure. For the following 15 years, the rancho was leased out to various individuals who used it for grazing cattle, horses and sheep; the buildings were apparently allowed to deteriorate (Smith 1931:59–60). In 1878, John Bixby began leasing the rancho; when the lease expired three years later, a partnership comprising John Bixby, I. W. Hellman (a Los Angeles banker) and Jotham Bixby and Company purchased the land. John Bixby maintained Los Alamitos as a sheep and cattle ranch until his death in 1887, after which the rancho was subdivided equally among the original partners. The portion of the rancho inherited by John Bixby's family was further

subdivided among his widow Susan (50 percent), his daughter Susanna (25 percent) and his son Fred (25 percent) (Smith 1931:59,60; Seager 1996).

John's son, Fred Bixby, began managing Rancho Los Alamitos in 1898. Following Susan Bixby's death in 1906, Fred and his sister Susanna inherited Los Alamitos jointly. For a time, they shared management responsibilities for Rancho Los Alamitos and Rancho Santa Ana (another Bixby landholding); the combined operation was known as Dos Ranchos. However, the arrangement was short-lived. In 1911, Fred and Susanna partitioned the family land holdings; Fred took most of Rancho Los Alamitos, while Susanna took Rancho Santa Ana and a small portion of Los Alamitos (Seager 1996).

Fred Bixby continued to run Rancho Los Alamitos as a cattle ranch until his death in 1952. Recognizing the historical importance of Rancho Los Alamitos, in 1968 the heirs of Fred and Florence Bixby deeded the hilltop site (including the ranch house, barns and other surviving buildings) to the City of Long Beach as a public historic place. Since 1986, the Rancho Los Alamitos Foundation has operated the site on behalf of the city as a public/private cooperative effort (Seager 1996).

Early Oil Exploration in California

The commercial use of oil in California dates to the 1850s. Initially, California's oil resources were used primarily in the preparation of caulking (for ships), roofing tar or axle grease; in 1856, Andreas Pico was distilling oil obtained from a natural seep in northern Los Angeles County and using it to light lamps at Mission San Fernando. A significant commercial development took place in 1860 when George H. Gilbert, a former whale-oil refiner, acquired an interest in the "Tar Lake Lot" near Westlake in Los Angeles. After acquiring three additional lots in the area, Gilbert built a 400 gallon retort (a vessel or container that is heated) to distill liquid asphalt; the liquid asphalt was then shipped to San Francisco, where it was refined and sold as kerosene at $1.75 per gallon (Franks and Lambert 1985:4–5).

The first commercial sale of refined oil taken from a well drilled in California took place in 1865. In that year, the Union Mattole Oil Company began drilling for oil on the north fork of the Mattole River in Humboldt County. On June 7, 1865, the first load of "coal oil" from the well arrived in Humboldt for shipment to San Francisco. In San Francisco, the oil was distilled and sold under the name "Comet Illuminating Oil." By August, 1865, regular shipments of petroleum were making the hazardous journey to the seaport in Eureka. The lack of good roads posed a serious problem; for the first part of the trip, the petroleum was loaded into small containers and carried by pack mule to Centerville. Following this, the oil was shipped by road to Eureka to be loaded on steamships (Franks and Lambert 1985:6).

Despite these early developments, the California oil industry grew slowly due to the lack of local markets and the high cost of shipping oil to the east. The situation improved with the introduction of the railroads. For the first time, it was possible to transport both crude and refined petroleum products in large quantities at a low cost. Nonetheless, progress in the industry was slow. Although more than 3,000 wells were drilled in the State during the first 35 years of California's commercial oil industry (1865–1900), these were largely shallow holes drilled near well-known surface seeps. No large, important pools of oil were discovered in the state prior to 1897 (Franks and Lambert 1985:7).

The Commercial Oil Industry in the Los Angeles Basin

Some of the earliest commercial oil development in the Basin took place within the limits of the City of Los Angeles in 1892. In that year, Edward L. Doheny and Charles A. Canfield spent $400 to purchase a piece of property near West Second Street and Glendale Boulevard in Westlake Park. The men became interested in the land when they noticed local residents removing asphaltum and using it as fuel. Using picks, shovels and a windlass (a device for raising or lowering objects; for example, the crank used to raise a bucket from a well), the men excavated a shaft to the depth of 155 ft before fumes forced them to stop digging. Despite the setback, the men were undeterred. They constructed a crude, wooden drilling rig and continued the shaft, and after drilling for 40 days they struck oil and natural gas.

The discovery became known as the Los Angeles City Field, and by mid-1894 it was producing 3,500 barrels of oil each month. In the eight years between 1892 and 1900 almost 1,000 wells were drilled in the Los Angeles Field; most of these struck oil at a relatively shallow depth, around 1,000 to 1,500 ft. At first, the oil was used to pave the streets of Los Angeles; however, during the summer the oil turned soft and sticky and adhered to anything it touched. In 1902, the City permitted one of the local buildings to be heated using crude oil; the venture was successful, and oil quickly replaced coal as the community's primarily fuel source (Franks and Lambert 1985:73).

The Los Angeles City Field's success created new financial problems for oil men as the tremendous production of the field glutted the petroleum market and depressed oil prices. The railroads provided the solution by switching their engines from coal, which was relatively expensive at $7–$10 per ton, to the lower-priced oil. By 1903, the Southern Pacific Railroad was purchasing $4,000,000 of crude oil per year and prices had stabilized (Franks and Lambert 1985:74).

The success of the Los Angeles City Field spurred exploration in other nearby areas, and soon additional fields were opening in the Basin. The Whittier Field opened in 1897, and the Salt Lake Oil Field (located in west Los Angeles) was discovered in 1903. In 1908, the Beverly Hills Field was discovered, and in 1909 the Greater Coyote Hills Field was opened in northwest Orange County. The Greater Coyote Hills Field marked the first time that oil was not discovered as a result of a surface seep; oil men became interested in the site when oil was found contaminating a local water well (Franks and Lambert 1985:75–76).

During the 1920s, Los Angeles witnessed the discovery of six of the greatest American oil fields brought into production during the first half of the 20th century: Huntington Beach (1920), Long Beach (also known as Signal Hill, 1921), Torrance (1922), Inglewood (1924), and Seal Beach (1926). Oil men began exploring the Newport Beach region (south of Huntington Beach) in 1903; however, the first producing wells in this area were not opened until 1922 and 1923. Although the Newport Field did not prove to be a major find, it focused attention on the region and ultimately led to Standard Oil's discovery of the immensely rich Huntington Beach Field in May 1920.

Growth of the Oil Industry in the Long Beach Region

In the Long Beach area, oil men first began exploring Signal Hill in 1916 when Union Oil Company completed its "Bixby No. 1" well southeast of the intersection of Wardlow Road and American Avenue (now Long Beach Boulevard). Bixby No. 1 was not a commercial success, and some geologists became discouraged; in 1918, Shell Oil's head geologist rejected a recommendation that the company lease land in the area. However, two years later in 1920 a new head geologist convinced Shell to lease 240 ac at Signal Hill for $60,000. The following year on June 23, 1921, the discovery well "Alamitos No. 1," drilled near the northeast corner of Hill and Temple Streets, blew in and sent crude oil spewing 114 ft into the air (Franks and Lambert 1985:101–103).

"Alamitos No. 1" was so-named because of its location on a lease acquired from the Alamitos Land Company. The Alamitos Land Company was held in shares by the families of the same three partners who originally purchased Rancho Los Alamitos in 1881; Rancho Los Alamitos included much of the land that later became the Seal Beach Oil Field. According to one source, the Shell geologist who recommended oil explorations at Signal Hill was Dwight Thornburg; Thornburg had grown up on Signal Hill and his father, Charles Thornburg, had worked as a foreman at Rancho Los Alamitos. Dwight Thornburg had studied the topography of the region and was convinced that oil existed under Signal Hill (Seager 1996; Franks and Lambert 1985:103).

The discovery of oil on Signal Hill transformed Long Beach and the surrounding region. By July, 1923, 270 wells were being drilled on Signal Hill. The demand for labor swelled the population of Long Beach and the small, quiet, seaside community surrounded by farming land became a boom town. Housing was scarce and traffic was dense. The local culture, too, underwent a transformation. According to one source:

> Prostitutes abounded, and gamblers found ready marks. Although Prohibition was in effect, liquor was plentiful. The standard method of conducting business with local bootleggers was for a customer to leave his money in a certain eucalyptus tree at night and then return for his whiskey later. . . .
>
> The gamblers designed their own type of building, made out "of one-by-twelve boards with bolts," according to one participant in the Signal Hill boom. These structures had a front and a back room, with a "quick escape back door." "In the front" he continued, "would be pool tables and a tobacco counter; in the back, card tables, and of course, slot machines—five cents, ten cents, twenty-five cents and a dollar. . . . The pool tables were . . . used . . . mostly to bank dice on."
>
> The Old Baker Winery Barn was the best-known gambling den in the Signal Hill-Santa Fe Springs region. One local resident recalled that the only safe way to visit the establishment after dark was for the "whole crew" to go together. "The girls were as bare as the walls. . . . It was like going to a carnival. . . . Once you got in you could see the girls shimmy for nothing . . . [or] shoot craps or play the blackjack table or draw poker or roulette wheels" (Franks and Lambert 1985:107).

The discovery and production of oil in the area left the original Rancho Los Alamitos lands near Signal Hill and Seal Beach littered with oil derricks. Today this area, once inhabited by a substantial

native population and later by vaqueros watching over herds of cattle and horses, is a major urban center, which still produces large amounts of crude oil and natural gas.

Marine Stadium (CHL No. 1014)

Alamitos Bay, Colorado Lagoon, and Marine Stadium are tidal water bodies located in the southwestern portion of the City and northwest of the mouth of the San Gabriel River. In 1923 the low-lying tidelands of Alamitos Bay were dredged to form Colorado Lagoon and Marine Stadium, which were used for recreational rowing. Marine Stadium was officially engineered and constructed beginning in 1930 for use in the 1932 Olympic Games. During those games, the United States rowing team won the gold medal in Marine Stadium. Construction of the Second Street bridge (also referred to as the Davies Bridge) over the boating channel in 1955, however, changed the original dimensions of Marine Stadium, effectively eliminating it as a venue for the 1984 Olympic Games.

In 1968 the City remolded Marine Stadium for the Olympic rowing and canoeing team trials. The boathouse that was used during the 1932 Olympic Games still remains (located on the southeast corner of East Colorado and Nieto Avenue). This building is noteworthy due to the Olympic history; however, it has been extensively remodeled and is not listed as a historical landmark. Also, in the late 1960s the area between what is now the north end of Marine Stadium and the south end of Colorado Lagoon was filled, and the existing underground box culvert was constructed. This was part of the construction for the then-proposed Pacific Coast Freeway and further separated Colorado Lagoon from Marine Stadium. This "filled" area is now Marina Vista Park.

Despite the fill, which relocated the Olympic course's finish line, Marine Stadium still provides 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing. Marine Stadium is the only rowing venue specifically built for the sport in the United States and it continues to be a center for training United States Olympic Rowing Teams. In 1984, the Women's Olympic Sculling Trials were held in Marine Stadium. Marine Stadium is also the location from which aviators Clyde Schlieper and Wes Carroll set off when they set a world record for longest sustained flight (30 days) in 1939. In addition, Marine Stadium is distinctive because it and the Los Angeles Coliseum are the only two surviving 1932 Olympic structures. For these reasons, Marine Stadium was designated as CHL No. 1014 on April 29, 1995, and is listed in the California Register.

METHODS

RECORDS SEARCH AND RESEARCH

Records searches were conducted for this project, and also for the adjacent Colorado Lagoon project on October 30, 2008, and October 17, 2007, respectively. These two records searches encompass the entire Alamitos Bay Marina Rehabilitation Project area and a 0.25 mi radius around it. Both records searches took place at the SCCIC of the California Historical Resources Information System, located at California State University, Fullerton. The records searches included a review of all recorded cultural resources located within the 0.25 mi radius as well as a review of known cultural resource survey and excavation reports. In addition, the California Points of Historical Interest (PHI), CHL, California Register, National Register of Historic Places (National Register), and California State Historic Resources Inventory (HRI) listings were reviewed

Based on preliminary research and the information provided by Jan Ostashay, former City Historic Preservation Officer, it was determined that there was a discrepancy between the boundaries of Marine Stadium as shown on file at the SCCIC and those defined by the City in its Municipal Code and elsewhere in City documents. Because a map of Marine Stadium was not included when the nomination form was submitted for consideration as a CHL, the SCCIC had arbitrarily plotted the boundaries based on the limited information provided in the nomination form. The City and SCCIC requested that the boundaries be reviewed and corrected to be consistent with the City's local designation.

In an attempt to resolve this issue, LSA contacted Jay Correia, Supervisor of the Registration Division at the California Office of Historic Preservation (OHP) by telephone on April 7, 2009, regarding the boundaries of Marine Stadium. Mr. Correia reviewed the nomination form on file at the OHP and confirmed that it does not contain any definite boundaries for Marine Stadium. Regarding the discrepancy between City boundaries and OHP/SCCIC boundaries, he stated that the he does not believe that OHP has the "force of law" to determine CHL boundaries when they are not clearly defined in the OHP files. His recommendation was that the City's definition of the resource be used, and pertinent documentation be submitted to the SCCIC so that all information on file is consistent.

Additional research regarding this matter was conducted by LSA at the City offices under the direction of Ms. Ostashay on February 19, 2009.

FIELD SURVEY

A pedestrian field survey was not conducted because the areas to be impacted are entirely paved and previously disturbed, or consist of the water bodies that are Alamitos Bay and Marine Stadium. No undisturbed native soil is visible. This was confirmed by examination of historic and modern aerial photos and a cursory inspection of the project area by vehicle.

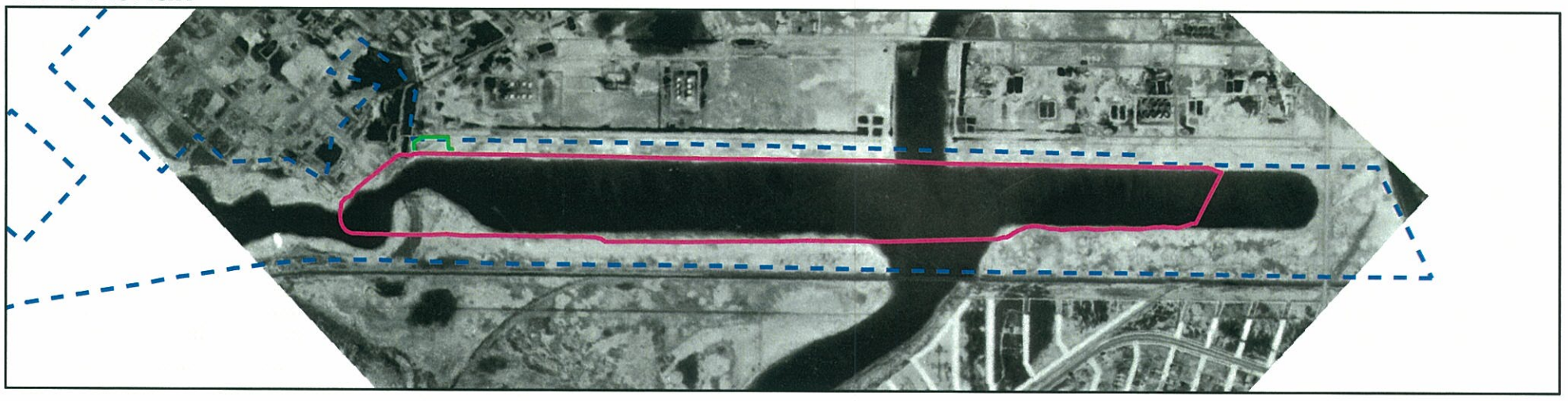
REPORT OF FINDINGS

RECORDS SEARCH AND RESEARCH

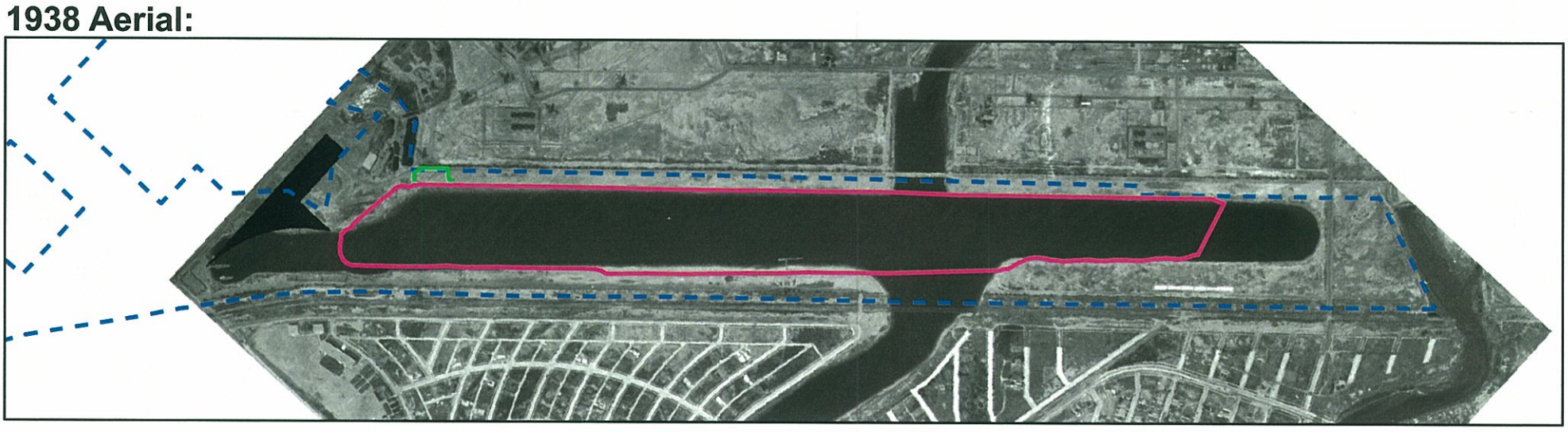
Thirty-seven studies have been conducted within a 0.25 mi radius of the project area; however, none of these studies included any portion of the project area, and the project area has never been surveyed for cultural resources. Seven resources have been identified within the 0.25 mi radius of the project area, including six archaeological sites and one historical resource. None of the archaeological sites are located within the project area; however, one historical resource is located immediately adjacent to the project area. This resource is Marine Stadium (CA-LAN-056). As discussed above, the stadium is CHL No. 1014, and it is also listed on the California Register. In 1993 Marine Stadium was evaluated for historic significance and determined to be a California Point of Historical Interest (PHI No. 19-186115, Appendix B). However, due to its lack of integrity, it was found to be ineligible for the National Register by the United States Army Corps of Engineers in 1990 (Appendix C).

Research indicated that the boundary for Marine Stadium had been plotted inaccurately at the SCCIC due to the limited information provided in the CHL nomination form when it was submitted to the OHP in 1993 (Appendix B). Based on conversations with SCCIC personnel, the City Historic Preservation Officer, and the OHP, the boundaries have been revised to reflect those defined by the City in its Municipal Code (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West) and other documents (Figure 4). A revised DPR has been submitted to the SCCIC so that the boundary definition between the State repository and the City will be consistent (Appendix A).

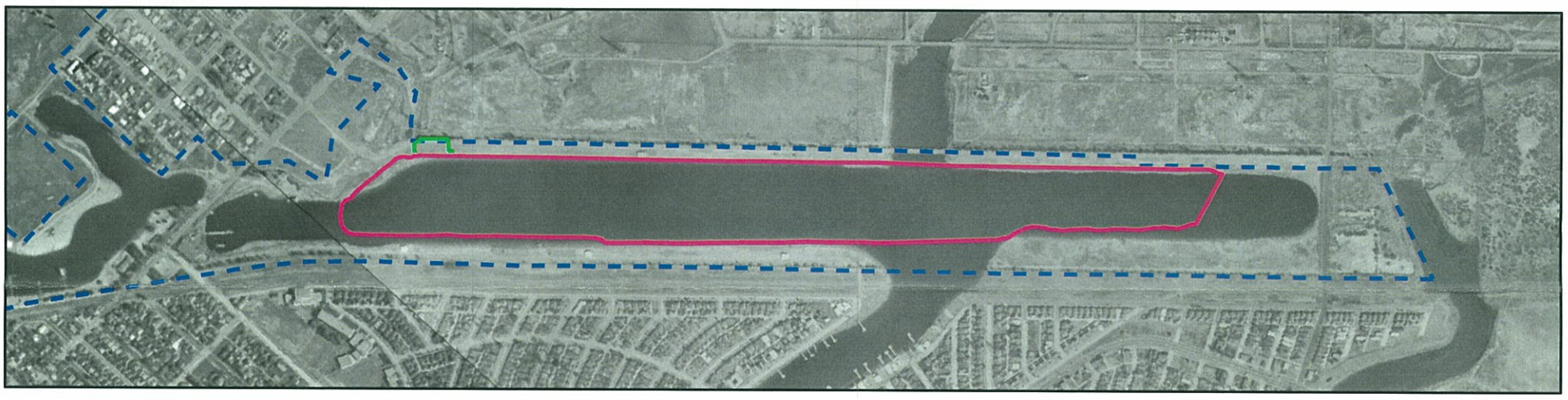
1928 Aerial:



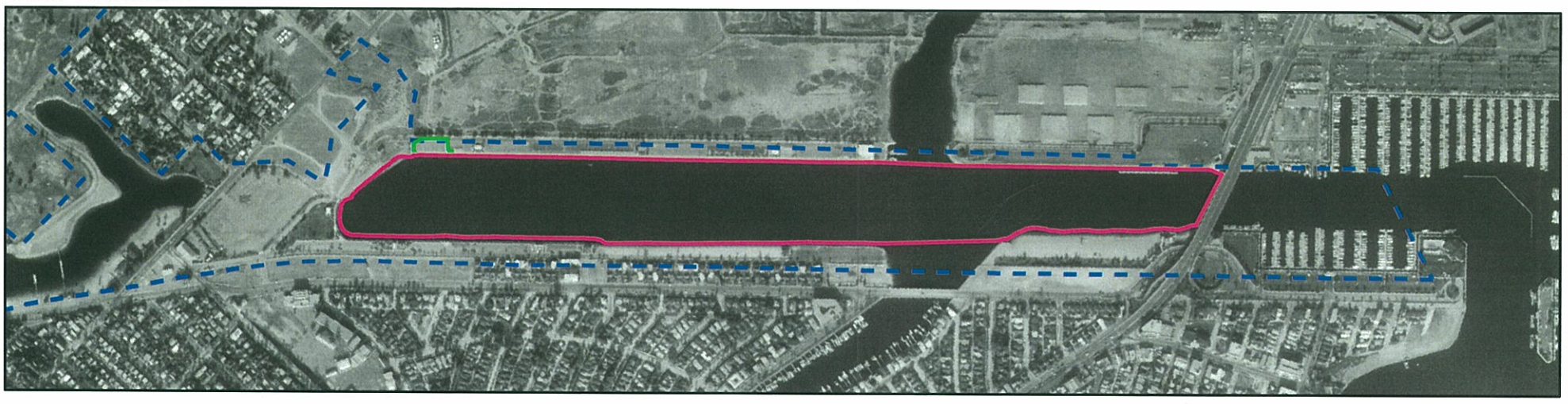
1938 Aerial:



1952 Aerial:



1972 Aerial:



2008 Aerial:

LSA

LEGEND

- 1932 Recreational Park Boundary from USGS
- Current Marine Stadium Boundary
- Eel Grass Mitigation Area

0 500 1000
FEET

SOURCE: Fairchild (1928); ASCS (5/1938); HistoricAerials.com (1952, 1972); (MSVE (2008)

I:\tsy0701\GIS\Historic_Aerials.mxd (7/7/2009)

FIGURE 4

Alamitos Bay Marina Rehabilitation Project
Aerial Comparison of Marine Stadium Boundary
1928 to Present

MANAGEMENT CONSIDERATIONS

EVALUATION OF CULTURAL RESOURCES UNDER CEQA

The criteria for listing resources on the California Register are based on those developed by the National Park Service for listing in the National Register of Historic Places. The federal criteria have been modified in order to include a broader range of resources that better reflect the history of California. A property must be significant at the local, State, or national level under one or more of the following four criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.
2. It is associated with the lives of persons important to the nation or to California's past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important to the prehistory or history of the State and the nation.

Integrity

Integrity is the authenticity of a property's physical identity, evidenced by the survival of characteristics that existed during the property's period of significance. Properties eligible for listing in the California Register must retain enough of their historic character or appearance to be recognizable as historic properties and convey the reasons for their significance.

Integrity is judged in relation to location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a property is thought to be eligible. Alterations to a property, or changes in use, may themselves have historical, cultural, or architectural significance.

It is possible that such properties may not retain sufficient integrity to meet National Register standards, yet they may still be eligible for listing in the California Register. Properties that have lost their historic character of appearance may still have integrity if they maintain a potential to yield significant scientific or historical information, if the archaeological resources retain integrity, or if the resource retains substantial cultural value even though some major constituents have been removed or disturbed.

EVALUATION OF CULTURAL RESOURCES IN THE PROJECT AREA

Marine Stadium, CHL No. 1014 (CA-LAN-056)

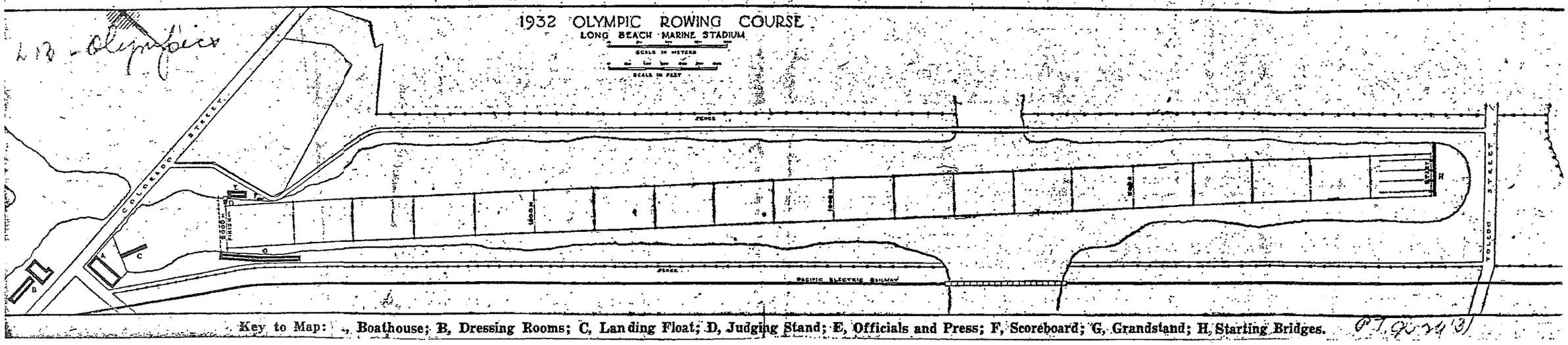
One resource has been identified that is within the project area. That resource is Marine Stadium. Marine Stadium is designated CHL No. 1014, and was therefore automatically listed in the California Register at the time its nomination was accepted in 1995. The basis for this designation is the stadium's history as the official rowing site of the 1932 Olympic Games. It was also the location of several other Olympic trials in the years following the 1932 event. It can therefore be considered eligible under Criterion 1. Because it was built for the 1932 Olympic Games and is the only water body constructed specifically for rowing events, it can also be considered eligible under Criterion 3.

Subsequent to the 1932 Olympic Games, Marine Stadium underwent a series of changes. Figure 4 illustrates this by comparing aerial photos of the stadium from 1928, 1938, 1952, 1972, and 2008. The most significant of these was construction of the Second Street Bridge in 1955. Construction of the bridge changed the dimensions of the stadium, effectively eliminating it from consideration as a rowing venue for the 1984 Olympic Games. The northern end of the stadium has also been reconfigured since the 1932 Olympic Games. Figure 4 illustrates how that area was filled for the formation of Marina Vista Park, in comparison to where the finish line that was used in 1932 was located (Figure 5). The area surrounding Marine Stadium no longer retains integrity of setting; nothing remains of the environment that existed at the time of the 1932 Olympic Games for which the resource is significant.

Marine Stadium retains little integrity because the physical characteristics that existed during the 1932 Olympic Games, which is the property's period of significance, have been compromised. Due to this lack of integrity, Marine Stadium was determined to be ineligible for the National Register by the United States Army Corps of Engineers during its evaluation of the property in 1990 (Appendix C).

Olympics-1932 L. B. COLL

LB. # MAP SHOWS LAYOUT OF OLYMPIC GAMES STRUCTURES LB.



LSA

FIGURE 5

Alamitos Bay Marina Rehabilitation Project

Layout of 1932 Olympic Rowing Course

I:\TSY0701\G\Rowing Course-1932.cdr (7/9/09)

SUMMARY AND RECOMMENDATIONS

Based on the results of the record search, LSA finds that there will be no significant impacts to cultural resources as a result of the Alamitos Bay Marina Rehabilitation Project. Improvements to the restrooms and parking lot will occur in previously disturbed or artificially filled areas where no cultural resources have been recorded. Because no native soil will be disturbed, the potential to impact unknown intact cultural resources is unlikely. As it is defined in the City's Municipal Code (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West), Marine Stadium proper extends northwest from the centerline of the Second Street Bridge, and therefore will not be affected by the project's proposed Marina improvements. Improvements to the boat slips are proposed for those slips southeast of the bridge. All other improvements will be on dry land outside of the body of water that defines Marine Stadium and will not alter its size or character as it currently exists. Although the eelgrass mitigation area will affect the current configuration of Marine Stadium, it is located outside of the boundaries of Marine Stadium as it existed during the 1932 Olympic Games (Figure 4). The boundaries at the time of the Olympics are the contributing factor to the stadium's eligibility as a California Point of Historical Interest and therefore automatic listing in the California Register. The area to be impacted did not exist at that time, but has been dredged in modern times to its current dimensions. It retains no original integrity and does not contribute to the eligibility of Marine stadium. Therefore, direct impacts to Marine Stadium will be less than significant.

No indirect impacts to Marine Stadium are anticipated. The area surrounding Marine Stadium no longer retains integrity of setting; nothing remains of the environment that existed at the time of the 1932 Olympic Games for which the resource is considered significant. The proposed project will not alter the character of the current surrounding area. Therefore, there will be no indirect impacts to Marine Stadium.

For the reasons stated above LSA does not recommend that any additional cultural resources studies or archaeological monitoring be performed. However, in the unlikely event that archaeological resources are encountered during construction-related ground-disturbing activities, a qualified archaeologist should be contacted to assess the find and determine appropriate mitigation measures.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner will notify the NAHC, which will determine and notify an MLD. With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

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APPENDIX A

DEPARTMENT OF PARKS AND RECREATION (DPR) FORMS

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary # P-19-186115
HRI #
Trinomial CA-LAN-056
NRHP Status Code 5S1
Other Listings
Review Code _____ Reviewer _____ Date _____

 *Resource Name or #: (Assigned by recorder) Marine Stadium

P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted** **a. County** Los Angeles
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
b. USGS 7.5' Quad *Los Alamitos* **Date** 1964 (1981) **and** *Long Beach* **Date** 1964 **T** 5S; **R** 12W; unsectioned; SB **B.M.**
c. Address _____ **City** _____ **Zip** _____
d. UTM: (Give more than one for large and/or linear resources) **Zone** __; _____**mE** /_____**mN (NAD27)**
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Marine Stadium is located in the northern portion of Alamitos Bay northwest of the mouth of the San Gabriel River.

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries) Marine Stadium is an engineered and constructed tidal water body built for use in the 1932 Olympics. Alamitos Bay, Colorado Lagoon, and Marine Stadium are tidal water bodies located in the southwestern portion of Long Beach and northwest of the mouth of the San Gabriel River. In 1923 the low-lying tidelands of Alamitos Bay were dredged to form Colorado Lagoon and Marine Stadium, which were used for recreational rowing. In 1930 construction of Marine Stadium began for use of the facility for rowing events in the 1932 Olympics.

***P3b. Resource Attributes:** (List attributes and codes) (HP42) Stadium/Sports arena
***P4. Resources Present:** ☐ Building ☒ Structure ☐ Object ☐Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

***P5.**

***P6. Date Constructed/Age and Sources:**
☒Historic ☐ Prehistoric ☐ Both
1930

***P7. Owner and Address:**
City of Long Beach
333 West Ocean Blvd., 5th Floor
Long Beach, CA 90802

***P8. Recorded by:** (Name, affiliation, and address):
Terri Fulton and Phil Fulton
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, CA 92614

***P9. Date recorded:**
April 30, 2009

***P10. Survey Type:** (Describe)
Phase I Reconnaissance Survey

* P11. Report citation: (Cite survey report and other sources or enter "none.") Cultural Resources Assessment for the Alamitos Bay Marina Rehabilitation Project, City of Long Beach, California, 2009. By: Terri Fulton

Attachments: ☐None ☒Location Map ☐Sketch Map ☐Continuation Sheet ☒Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Records ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐Other (List)_____

DPR 523A (1/95) ***Required Information**

BUILDING, STRUCTURE, AND OBJECT RECORD

*NRHP Status Code 5S1

*Resource Name or # Marine Stadium

B1. Historic Name: Marine Stadium
B2. Common Name: Same
B3. Original Use: 1932 Olympics rowing venue
B4. Present Use: Recreational and competitive rowing venue
***B5. Architectural Style:** Not Applicable (N/A)
***B6. Construction History:** (Construction date, alterations, and date of alterations) Alamitos Bay, Colorado Lagoon, and Marine Stadium are tidal water bodies located northwest of the mouth of the San Gabriel River. In 1923 the low-lying tidelands of Alamitos Bay were dredged to form Colorado Lagoon and Marine Stadium, which were used for recreational rowing. Marine Stadium was officially engineered and constructed beginning in 1930 for use in the 1932 Olympics. Construction of the Second Street bridge (also referred to as the Davies Bridge) over the boating channel in 1955, however, changed the original dimensions of Marine Stadium and cost the facility a chance to be used for the 1984 Olympics.

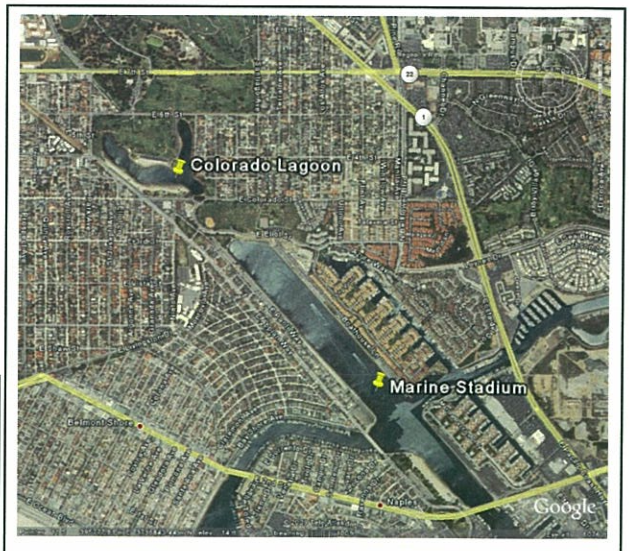
In 1968 the City of Long Beach remolded Marine Stadium for the Olympic rowing and canoeing team trials. The boathouse that was used during the 1932 Olympics still remains; however, it has been extensively remodeled and is not listed as a historical landmark. Also, in the late 1960s the area between what is now the north end of Marine Stadium and the south end of Colorado Lagoon was filled, and the existing underground box culvert was constructed. This was part of the construction for the then-proposed Pacific Coast Freeway and further separated Colorado Lagoon from Marine Stadium. This "filled" area is now Marina Vista Park.

***B7. Moved?** ☒No ☐Yes ☐Unknown **Date: Original Location:**
***B8. Related Features:**
B9a. Architect: N/A
b. Builder: Unknown
***B10. Significance: Theme:** 1932 Olympics
Area: Los Angeles and vicinity
Period of Significance: 1932
Property Type: Rowing venue
Applicable Criteria: N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

Marine Stadium was used for rowing competitions during the 1932 Olympics. During those games, the United States rowing team won the gold medal in Marine Stadium. Marine Stadium is the only rowing venue specifically built for the sport in the United States and it continues to be a center for training United States Olympic Rowing Teams. In 1984, the Women's Olympic Sculling trials were held in Marine Stadium. Marine Stadium is also the location from which aviators Clyde Schlieper and Wes Carroll set off when they set a world record for longest sustained flight (30 days) in 1939. In addition, Marine Stadium is significant because it and the Los Angeles Coliseum are the only two surviving 1932 Olympic structures. For these reasons, Marine Stadium was designated a California Historical Landmark (CHL #1014) on April 29, 1995 and therefore automatically listed in the California Register of Historical Resources. Despite the infilling of the area between Colorado Lagoon and Marine Stadium, which relocated the Olympic course's finish line, Marine Stadium still provides 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing.

The integrity of Marine Stadium has been compromised by the numerous alterations that have taken place over the years. These include construction of the 2nd Street Bridge in 1955, the remolding of Marine Stadium in 1968, and the infilling of the area separating Marine Stadium from Colorado Lagoon. In addition, the original boathaouse has been extensively remodeled over the years. Due to this lack of integrity, Marine Stadium was determined to be ineligible for the National Register of Historic Places by the U.S. Army Corps of Engineers during its evaluation of the property in 1960.

B11. Additional Resource Attributes: (List attributes and codes)
***B12. References:**
B13. Remarks:



(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***B14. Evaluator:** Terri Fulton and Deborah McLean, LSA Associates Inc. 20 Executive Park, Irvine, California 92614

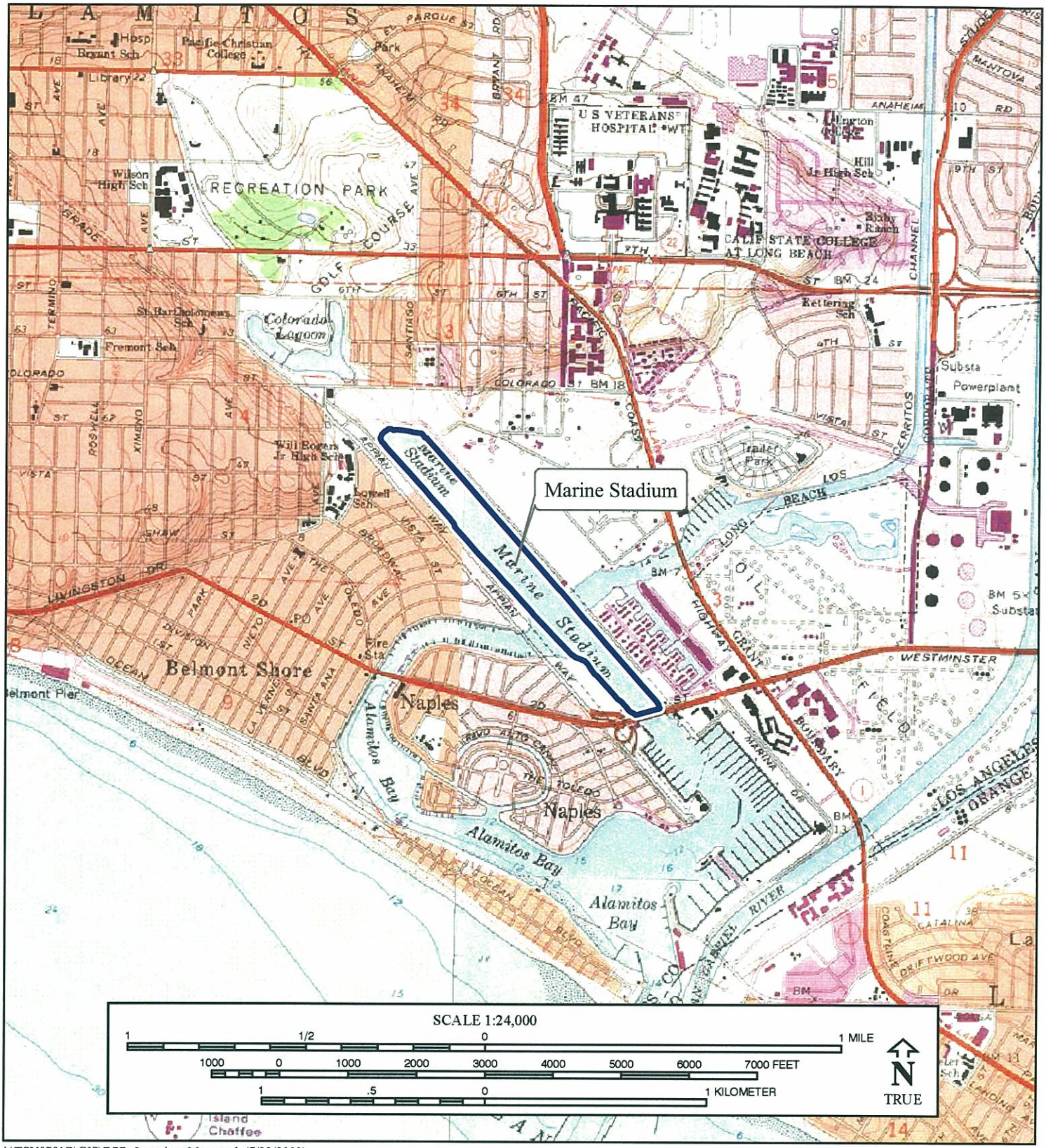
***Date of Evaluation:** April 30, 2009

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
LOCATION MAP

Primary # P-19-186115
HRI #
Trinomial CA-LAN-056

*Resource Name or # (Assigned by recorder) Marine Stadium

*Map Name: USGS 7.5' Quad, *LOS ALAMITOS*, CA; *LONG BEACH*, CA *Scale: 1:24,000 *Date of Map: 1981;1981



i:\TSY0701B\GIS\DPR_Location_Map.mxd (7/22/2009)

* Required Information

DPR 523J (1/95)

APPENDIX B

NOMINATION FORMS AND ASSOCIATED DOCUMENTATION FOR MARINE STADIUM

DEPARTMENT OF PARKS AND RECREATION

POINT OF HISTORICAL INTEREST

Reg. No. [illegible]
Date 2-26-93
By SJE

County: LOS ANGELES

Name: MARINE STADIUM

Location: LONG BEACH, CALIFORNIA — Appian Way/Nieto/Eliot/Boathouse Lane

Historical Significance (Summary Paragraph Only):

THE LONG BEACH MARINE STADIUM IS SIGNIFICANT. IT WAS:

1. A ROWING VENUE FOR THE XTH OLYMPIAD 1932 GAMES; and
2. THE FIRST MAN-MADE ROWING COURSE IN THE UNITED STATES.

The Long Beach Marine Stadium is historically significant because it was t site of the rowing games of the XTH Olympiad (1932 Olympics). It was furt selected as the site for the 1968, 1976, and 1984 United States Olympic Ro Trials and six times selected as an official United States Olympic Trainin Center to train candidates for the U.S. National and Olympic Rowing Teams.

Over the past 60 years it has been used as a training facility for the cre of C.S.U.L.B. and the Long Beach Rowing Association. It was the first hom for the crews of U.S.C. Since 1932 it has served as an important recreati site for the people of Long Beach and the surrounding region.

THIS POINT OF HISTORICAL INTEREST IS NOT A STATE REGISTERED HISTORICAL LANDMARK.

RECOMMENDED: Deane Dana
Signature—Chairman, County Board of Supervisors

Date: November 4, 1992

APPROVED: John D Henderson
Signature—Chairman, State Historical Resources Commission

Date: FEBRUARY 5, 1993

DPR-147 (REV. 10/87)

87 8

19-186115

mapped

NAME LONG BEACH MARINE STADIUM

COUNTY LOS ANGELES COUNTY

STATE HISTORICAL RESOURCES COMMISSION:

DR. PATRICIA C. MARTZ, CHAIRPERSON

DR. ROBERT L. HOOVER, VICE CHAIRPERSON

MS. PAULA BOGHOSIAN

MR. HERBERT H. BRIN

MR. DAVID G. CAMERON

MR. JOHN D. HENDERSON, FAIA

MR. RICHARD M. MILANOVICH

MRS SUE F. SCHECHTER

AUGUST 5, 1994

DATE OF STATE HISTORICAL RESOURCES COMMISSION ACTION

Donald W Murphy

DIRECTOR, DEPARTMENT OF PARKS AND RECREATION

CALIFORNIA REGISTERED HISTORICAL LANDMARK

NUMBER 1014

DATE AUGUST 23, 1994

Revised
January 1986

APPLICATION FOR REGISTRATION OF HISTORICAL LANDMARK

Name of Proposed Landmark: Long Beach Marine Stadium

Location: Appian Way and Nieto — Appian Way and Nieto
Long Beach, California

County: Los Angeles

Name and Address of Landowner upon Whose Property Landmark is Proposed: City of Long Beach
APN 7242-5-900

Name and Address of Applicant: Ralph S. Cryder, Director Phone No. (310) 421-9431
City of Long Beach, Department of Parks, Recreation and Marine
2760 Studebaker Road Long Beach, CA Bus. Phone No. same
90815

Is this landmark of statewide significance as described in the Statement of Policy? Yes

Explain (use extra sheet if necessary):

Marine Stadium, constructed by the City of Long Beach to host the X Olympiad rowing competition in 1932, was the first manmade watercourse ever constructed for the Olympic Games. Along with the Los Angeles Coliseum, it is one of the few remaining sites constructed for the 1932 Olympic Games that remain in existence today. The Games took place in Los Angeles July 30 - August 14, with the rowing events in Long Beach held from August 9 - 11.

article in the Long Beach Press-Telegram, reporting on the opening ceremonies, quoted Zach Farmer, manager of the Olympic Games, as follows:

"The (Marine) Stadium will mark the first time in the history of the world that a Marine Stadium has been erected. That is because your course, unexcelled anywhere in the world, is the only course where spectators can see both the beginning and the finish of the events...Your stadium and rowing course will mean that a constant series of events will be underway...your course offers the best ever found." (Long Beach Independent Press Telegram "Long Beach Envisioned as U.S. Rowing Capitol," July 24, 1932).

The City of Long Beach allocated $77,000 in oil money to pay for the widening and straightening of a portion of Alamitos Bay, and erecting accessory facilities. One of the advantages of this rowing venue was its width, which permitted four teams to race abreast, eliminating additional heats and allowing oarsmen to enter the finals at the peak of their form. The 1932 Olympic gold medal for the rowing event was a close race between the Italian and American teams, with the Americans winning by a few feet.

continued

Is bibliography complete? (To enable verification of statements and claims made herein.) Yes

Is permission of property owner for registration attached? Yes

Is approval of property owner to place a plaque attached? Yes

Is proof of reasonable protection for requested landmark attached? Yes

Are photographs, prints, or drawings (two views) attached? Yes

Policy.)

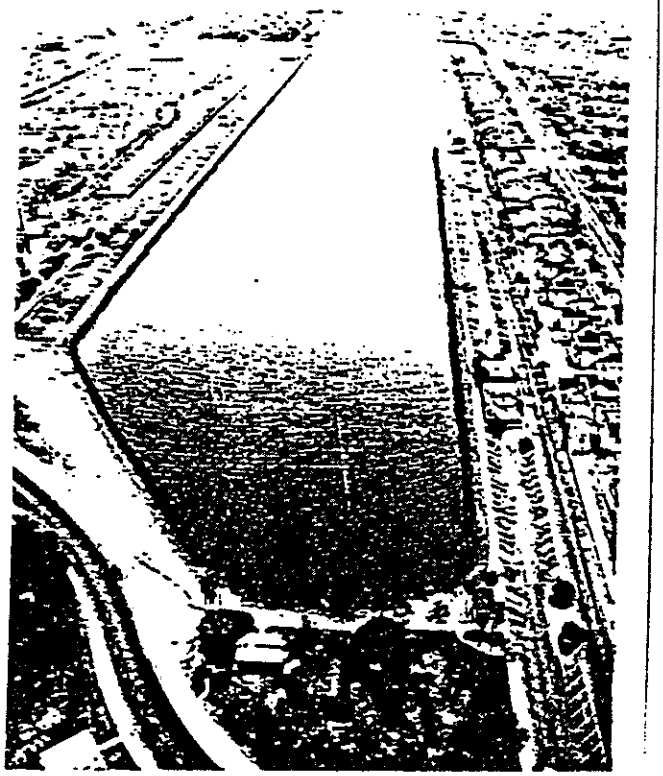
The Long Beach Marine Stadium is a body of water 2000 meters long and approximately 100 yards wide, oriented north/northwest. It was constructed by widening and dredging a section of Alamitos Bay in the eastern portion of Long Beach, to create a rowing venue for the 1932 Olympics held in Los Angeles (X Olympiad). The northern shore is lined with quarry rock, and the southern shore a combination of quarry rock and sandy beach.

Later construction of the Second Street 1965 bridge over the boating channel cost the facility its chance at a 1984 rerun. There have been some modifications to the exterior boundaries of the course, with a portion filled in to create a park and support facilities.

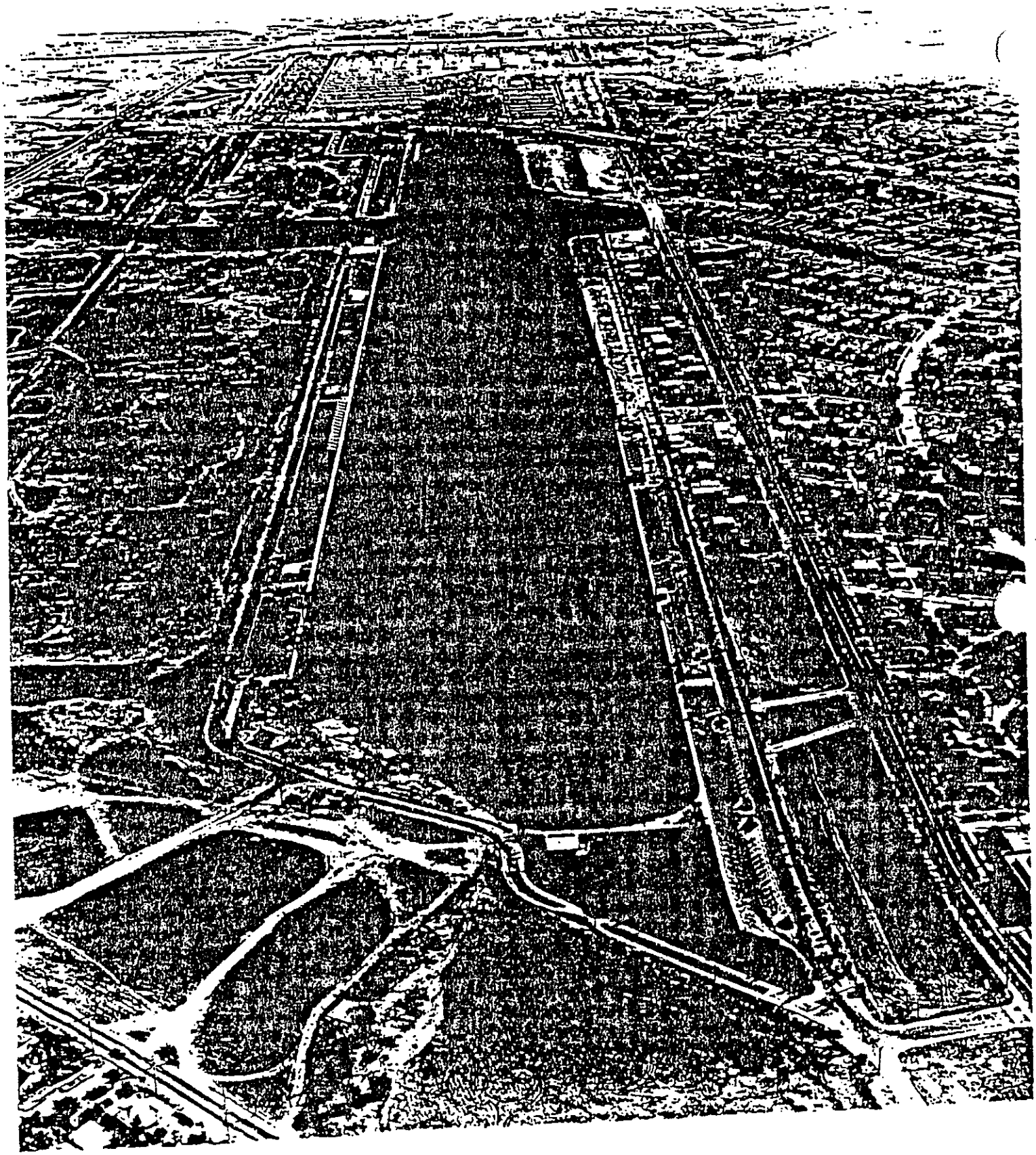
Marine Stadium has been in continuous use for water competitions and expositions since 1932. It has been used for Olympic trials, collegiate rowing competitions, and diverse acquatic and boating events. The Long Beach Rowing Association was formed in 1932 and has hosted many events from all over the world. Marine Stadium was selected as the site for the 1976 Women's National Rowing Championships and the 1976 Women's Olympic Sculling Trials; and it was twice designated as an Olympic Development Center.

When constructed in 1932, the surrounding land was vacant except for oil wells visible in the distance. Bleachers and a boathouse were constructed for the games. Today, houses and condominiums line have been constructed around the stadium. However, the water stadium itself and its uses have remained constant over the years.

PHOTOGRAPHS, PRINTS, AND/OR DRAWINGS (Both recent and historic, if available.)



May, 1992



BIBLIOGRAPHY: CITE THE BOOKS, RECORDS, AND OTHER AUTHORITIES SUSTAINING THESE FACTS.

Long Beach Independant Press-Telegram

Long Beach Library, Clipping File Marine Stadium

Long Beach Rowing Association, Archives

Signature Ruthann Lehrer

Date 12-16-93

This form and all related correspondence is to be sent to the State Historical Resources Commission, Post Office Box 942896, Sacramento, California 94296-0001.

An application must be considered solely on its historic or architectural merits and not for commercial gain, political benefits, or other non-historical reasons.

An individual commission member can advise and counsel an applicant, but all applications must be considered by the full commission meeting in regular session.

REASONABLE PROTECTION FOR MARINE STADIUM:

The Department of Parks, Recreation and Marine has completed a Master Plan for Marine Stadium, which is predicated upon the future use and ejoyment of the watercourse for the public.

Marine Stadium is designated by the City as a Long Beach Historical Site, assuring that Marine Stadium will continue to exist as a watercourse in substantially the form and use it has today.

Marine Stadium has been designated by the California Historic Resources Commission as a Point of Historical Interest.

Ruthann Lehrer

Ruthann Lehrer
Neighborhood and Historic Preservation Officer
City of Long Beach

APPLICATION FOR REGISTRATION OF HISTORICAL LANDMARK

Page one, continued.....

Marine Stadium has been in constant use since the X Olympiad. The Long Beach Rowing Association was organized on July 28, 1932, four days after opening ceremonies for the Stadium. The 1968 Olympic rowing trials were held there in 1968; in 1976, the Women's National Rowing Championships and the Women's Olympic Sculling Camp and Trials took place there; and in 1984 it was the location of the Olympic Women's Sculling Camps and Trials. It has been used for a variety of other water sport events and exhibitions, and continues in use today.

RESOLUTION NO. C-25635

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LONG BEACH SUPPORTING THE DESIGNATION OF THE MARINE STADIUM IN THE CITY OF LONG BEACH AS A CALIFORNIA HISTORICAL LANDMARK

WHEREAS, the Long Beach Marine Stadium is a cultural resource of statewide significance, having been constructed as the rowing venue for the 1932 Olympic Games in Los Angeles, and appears to meet the criteria of a California Historical Landmark; and

WHEREAS, the City's Director of Parks, Recreation & Marine, the Marine Advisory Commission and the Neighborhood and Historic Preservation Officer concur in that suggestion and h[illegible] recommended support of this nomination; and

WHEREAS, the City Council wishes to support such designation;

NOW, THEREFORE, the City Council of the City of Long Beach resolves as follows:

Section 1. Pursuant to Section 5029 of the Public Resources Code of the State of California, the Marine Stadium of Long Beach is designated an Historic Resource, with specific information included as follows:

A. Name of Current Property Owner: City of Long Beach.

B. Designating Entity: California Historic Resources Commission.

C. Specific Historical Resources Designation: Califo[illegible] Historical Landmark.

John R. Calhoun
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
(310) 570-2200

D. Legal Description of the Property: That portion of that certain area marked "not a part of this tract" and partially surrounded by Lot 3 of Tract No. 1779, in the City of Long Beach, County of Los Angeles, State of California, as per map recorded in Book 22 pages 26 and 27 of Maps, described as follows:

Beginning at a point in that certain exterior line of said Lot 3 having a bearing of South 61°32′ West and a length of 706.20 feet as shown on the map of said Tract No. 1779, which point is 800 feet Northeasterly measured at right angles from the Northeasterly line of the right of way of Pacific Electric Railway Company, as shown on the map of said Tract 1779, thence from said point of beginning following the exterior lines of said Lot 3, North 61° 32′ East to an angle in the exterior line of said Lot 3; thence North 48° 17′ East 528 feet; thence North 28° 17′ East 396 feet; thence South 41° 58′ East 178.20 feet; thence South 26° 17′ West 448.80 feet; thence South 47° 32′ West 501.60 feet; thence South 66° 17′ West to a line parallel with and distant Northeasterly 800 feet, measured at right angles from the Northeasterly line of said right of way of Pacific Electric Railway Company; thence Northwesterly along said parallel line to the point of beginning.

Excepting therefrom any portion thereof included within the lines of the land described in the tide-land patent from the State of California to Alamitos Land Company, recorded in Book 9 Page 107 of Patents.

Sec. 2. The City Clerk shall cause a certified copy of this resolution to be submitted for recordation to the County Recorder of the City of Los Angeles pursuant to Section 5029, supra.

Sec. 3. This resolution shall take effect immediately

John [illegible] Calhoun
City Attor Long Beach
333 Wes[illegible] Boulevard
Long Beach, Co[illegible]nia 90802-4664
(310) 570-2200

upon its adoption by the City Council, and the City Clerk shall certify to the vote adopting this resolution.

I certify that this resolution was adopted by the City Council of the City of Long Beach at its meeting of May 24 1994, by the following vote:

Ayes: Councilmembers: Lowenthal, Drummond, Clark, Robbins, Grabinski, Harwood.

Noes: Councilmembers: None.

Absent: Councilmembers: Braude, Topsy-Elvord, Kellogg.

Michelle Powell
City Clerk

John R. Calhoun
City Attorney of Long Beach
333 West Ocean Boulevard
Long Beach, California 90802-4664
(310) 570-2200

WHK/amp
6/23/93
2/18/94 REVISED
4/1/94 REVISED
5/24/94 REVISED
5/26/94 REVISED
R5MARINE

PH 1 10

COUNTY OF LOS ANGELES

HISTORICAL LANDMARKS and RECORDS COMMISSION

383 Hall of Administration • 500 W. Temple Street • Los Angeles, CA 90012 • 974-1431

October 8, 1992

Honorable Board of Supervisors
383 Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

REGISTRATION OF THE LONG BEACH MARINE STADIUM (4TH SUPERVISORIAL DISTRICT) AS A CALIFORNIA STATE POINT OF HISTORICAL INTEREST

At its regular meeting, the Los Angeles County Historical Landmarks and Records Commission voted to request that your Board recommend to the State Historical Resources Commission the registration of the Long Beach Marine Stadium as a California State Point of Historical Interest. The Commission has determined that the site meets the established criteria set forth in its ordinance and is appropriate for registration as a Point of Historical Interest.

The site of the Long Beach Marine Stadium is historically significant because it was the site of the rowing games for the 1932 Olympics. It was further selected as the site for the 1968, 1976 and 1984 United States Olympic Rowing Trials and six times selected as an official United States Olympic Training Center to train candidates for the U.S. National and Olympic Rowing Teams.

Over the past 60 years it has been used as a training facility for the crews of California State University at Long Beach and the Long Beach Rowing Association. It was the first home for the crews of the University of Southern California. Since 1932 it has served as an important recreational site for the people of Long Beach and the surrounding region.

THE LOS ANGELES COUNTY HISTORICAL LANDMARKS AND RECORDS COMMISSION THEREFORE REQUESTS THAT YOUR HONORABLE BOARD:

1. Approve the application and recommend the registration of the Long Beach Marine Stadium as a California State Point of Historical Interest;

2. Instruct the Chairman of the Board of Supervisors to sign the application; and

3. Instruct the Executive Officer of the Board to forward the application to the State Historical Resources Commission with an approved copy of this Board letter.

Very truly yours,

David G. Cameron
W.P.

DAVID G. CAMERON
Chairperson

DCG:WP:lm

Enclosure
L:Point4

COUNTY OF LOS ANGELES

HISTORICAL LANDMARKS and RECORDS COMMISSION

383 Hall of Administration • 500 W. Temple Street • Los Angeles, CA 90012 • 974-1431

MINUTES

The regular meeting of the Los Angeles County Historical Landmarks and Records Commission was held on June 19, 1992 at 9:30 a.m. in Room 739 Hall of Administration, 500 West Temple Street, Los Angeles.

The meeting was called to order at 9:41 a.m.

The names of those in attendance are listed on the last page.

APPROVE MINUTES OF MARCH 9 AND APRIL 14, 1992

By unanimous consent, the Commission requested staff to make several changes to the March 9 and April 14, 1992 minutes, including Commissioners' comments at the March 9 meeting on the absence of the Bob's Big Boy owner from that meeting, and to resubmit them for approval at the next Commission meeting.

REVIEW AND RECOMMEND BOARD OF SUPERVISORS' ACTION ON POINT OF HISTORICAL INTEREST APPLICATION:

Long Beach Marine Stadium

The Commission reviewed a Point of Historical Interest application for the Long Beach Marine Stadium. The applicant Larry Goodhue spoke on its historical significance, noting its use in Olympic rowing competitions.

Following review, the Commission requested the applicant to make the following changes and additions to the application:

- include copy of 1923 deed from City of Long Beach.
- include actions and/or documentation that demonstrates the positions of the Long Beach City Council, the Long Beach Cultural Heritage Commission and the Long Beach Marine Advisory Commission towards the application.
- submit a historic map of the Marine Stadium, with a second overlay showing changes that have occured.
- proofread "Continuum of support" page for spelling and grammatical errors.
- cite dates that newspaper articles are found.
- index and label exhibits.
- revise the geographical survey map so that it shows the

The Commission agreed to continue discussion on revising its information sheet until the next meeting.

DISCUSSION ON TASK FORCE ON HISTORICAL RECORDS PRESERVATION

Staff spoke on the previous work of the Task Force on Historical Record Preservation to establish a historical records preservation program in L.A. County.

Chairman Cameron requested staff to arrange for a Chief Administrative Office representative to attend the next meeting to speak on the archives project.

DISCUSSION ON WILLIAM DAVIES BUILDING LOCATED AT FARNSWORTH PARK IN ALTADENA

Mr. Tim Gregory, Altadena Heritage, said that potential alterations to the William Davies Building's roof may affect a National Register application being prepared for that building. He spoke on community interest in preserving it in its present state as well as the history of its usage and its architectural significance.

Commissioner Skelton suggested that Mr. Gregory investigate the possibility of obtaining private support to help maintain the building.

The Commission suggested that Mr. Gregory contact the Parks and Recreation Department to address the issue of preserving the building.

Mr. Gregory also requested that the Commission review the Report On The Architectural And Historic Resources Survey Of Altadena, California, at the next Commission meeting.

PUBLIC COMMENTS

Mr. Gregory spoke of his meeting with Supervisor Mike Antonovich and members of Altadena Heritage in which they discussed the development of a special historical preservation ordinance for Altadena.

Chairperson Cameron announced that the City of La Mirada is organizing a meeting on the evening of Wednesday, July 15, 1992 for historical commissions in L.A. County.

ADJOURNMENT

There being no further business before the Commission, the meeting was adjourned at 11:12 a.m.

CA.PT.HIST.INTEREST LOG 11/20/92 CO.: LOS ANGELES

Serial Number: 19- 84 Date last changed: 11/20/92 Assigned to: ML
Appl. Name: MARINE STADIUM Category:

********** Info from HIST.PROP.INV. **********
There is 1 computerized Hist.Prop. record for this application:
Property Number: 79355 Inventory Number:

MARINE STADIUM
Address:
0
LONG BEACH 0

Category: S
Owner Type: M
Other Recognition:
Dates of Construction: 1932 -
Architect:

County: LAN
X-Street: APPIAN WAY ET AL
Vicinity:
Parcel #:
#ofProps:
Pres.Use: P
CHL Numb:

Builder:

Historic Attributes:

Eth:

Previous Determinations on this Property:

Program	Prog.Ref.Number	Evl	Crit	Evl-date	Evaluator
ST.PT.INT.	19- 84		7J	11/10/92	MARYLN LORTIE

********** Application Prepared By: **********
Name/Title: LAURENCE B. GOODHUE
Organization:
Street & Number: 2601 E OCEAN BLVD phone: (310) 438-5142
City or Town: LONG BEACH State: CA Zip: 90803

********** Activity Log **********
Application Received: 11/10/92 Application Acknowledged:
Comment:
Status:
# of Requests for Info: Date of Last Request:
Type of Req. (Ph,Lt,Ret): Date Info Received:

Date of Public Hearing: SHRC Action (A,D,P,T):
Date Signed by State:
# of Times sent to NPS: Date last sent to NPS:
NPS Action (R,L,E,D): Date:

********** Owners **********
Owner:
Organization: CITY OF LONG BEACH Number: 19- 84- 1
Street & number: 333 W OCEAN BLVD phone:
City, town: LONG BEACH state: CA zip: 90802

PH1 50

Long Beach Marine Stadium
Point of Historical Interest application
Staff Evaluation

The Long Beach Marine Stadium is an engineered body of water one and a quarter miles long and six hundred feet wide. Enclosed on three sides, it is lined in quarry rock with some sandy beach areas. The course was constructed beginning in 1930, and was completed in time for the 1932 Olympics.

The stadium is used for rowing, and it was the first such structure to be built for competitive rowing events. It has been used in Olympic trials and training, and by the crews of CSU, Long Beach and the Long Beach Rowing Association. The stadium appears to be significant on the local level, and would thus qualify for Point designation. Its use in the Olympics would also appear to lend it a higher level of importance in the history of recreation, and it would likely qualify as a state landmark. It is staff's recommendation to designate the stadium as a Point, and to encourage the applicant to apply for landmark status.

Maryln Bourne Lortie
January 12, 1993

LONG BEACH MARINE STADIUM

COUNTY OF LOS ANGELES

APPLICATION FOR

CALIFORNIA POINT OF HISTORICAL INTEREST

PREPARED BY:

LAURENCE B. GOODHUE
2601 EAST OCEAN BLVD
LONG BEACH
CALIFORNIA
90803
310 438 5142

STATE SENATE DISTRICT:
29 :SENATOR BEVERLY

STATE ASSEMBLY DISTRICT:
#58 ASSEMBLYMAN MAYS

'99-55
12-94

THIS FORM IS ON NCR (NO CARBON REQUIRED) PAPER. PLEASE USE TYPEWRITER, SIGN ALL 3 COPIES; REMOVE AND RETAIN PINK COPY. TRANSMIT ORIGINAL AND TRIPLICATE TO: STATE HISTORICAL RESOURCES COMMISSION, DEPARTMENT OF PARKS AND RECREATION, P.O. BOX 942896, SACRAMENTO, CALIFORNIA 94296-0001. DO NOT FOLD.

STATE OF CALIFORNIA—THE RESOURCES AGENCY
DEPARTMENT OF PARKS AND RECREATION

POINT OF HISTORICAL INTEREST

DO NOT WRITE IN THIS BLOCK
Reg. No.
Date
By

County: LOS ANGELES

Name: MARINE STADIUM

Location: LONG BEACH, CALIFORNIA -- Appian Way/Nieto/Eliot/Boathouse Lane

Historical Significance (Summary Paragraph Only):

THE LONG BEACH MARINE STADIUM IS SIGNIFICANT. IT WAS:

1. A ROWING VENUE FOR THE XTH OLYMPIAD 1932 GAMES; and
2. THE FIRST MAN-MADE ROWING COURSE IN THE UNITED STATES.

The Long Beach Marine Stadium is historically significant because it was the site of the rowing games of the XTH Olympiad (1932 Olympics). It was further selected as the site for the 1968, 1976, and 1984 United States Olympic Rowing Trials and six times selected as an official United States Olympic Training Center to train candidates for the U.S. National and Olympic Rowing Teams. Over the past 60 years it has been used as a training facility for the crews of C.S.U.L.B. and the Long Beach Rowing Association. It was the first home for the crews of U.S.C. Since 1932 it has served as an important recreational site for the people of Long Beach and the surrounding region.

THIS POINT OF HISTORICAL INTEREST IS NOT A STATE REGISTERED HISTORICAL LANDMARK.

RECOMMENDED:

Signature—Chairman, County Board of Supervisors

Date: November 4, 1992

APPROVED:

Signature—Chairman, State Historical Resources Commission

Date

DPR-147 (REV. 10/87)

LONG BEACH MARINE STADIUM - HISTORIC TIMELINE

1920 -- Antwerp, Belgium
Representatives from Los Angeles County and City athletic, civic and government organizations petition the International Olympic Committee (IOC) for rights to host the 1932 Olympic Games.

1923 -- Rome, Italy
Petition to host the 1932 10th Olympiad granted by the IOC to the United States, the State of California and Los Angeles.

1923 -- Long Beach, California
San Gabriel River Land Improvements, Co. grants land to the City of Long Beach for Marine Stadium.

1929 -- Sacramento, California
California State Legislature supports the 1932 Olympic Games; state voters, by an overwhelming majority, endorse the Legislature's action.

1931-32 -- Long Beach, California
Long Beach builds Marine Stadium, the first man-made course in the U.S. designed specifically for rowing.

1932 -- Los Angeles, California
Tenth Olympic Games take place.

1968, 1976, 1984 -- Long Beach, California
Site selected for U.S. Olympic rowing trials. City of Long Beach spends $2 million on site improvements.

1985 -- Long Beach, California
City of Long Beach petitions Los Angeles Olympic Commission for 1984 surplus funds grant to expand upon rowing programs, following the tradition of the 1920 petition presented in Antwerp.

May, 1992 -- Long Beach, California
Sub-committee of Long Beach Cultural Heritage Commission recommends nomination of Marine Stadium as Long Beach historic site.

June, 1992 -- Long Beach California
Long Beach Cultural Heritage Commission unanimously approves nomination of Marine Stadium as historic site.

August 6, 1992 -- Long Beach, California
Commemoration ceremony recognizing Marine Stadium as a historic site, held on the 60th anniversary of the 1932 Olympic Rowing Games.

###

City of Long Beach
California

PROCLAMATION

LONG BEACH MARINE STADIUM
60th Anniversary

WHEREAS, Long Beach Marine Stadium was built in 1932 for the 10th Olympic Rowing Games and will be dedicated as a Long Beach historic site during a special commemorative ceremony on August 6, 1992; and

WHEREAS, Long Beach Marine Stadium, now used for rowing, water-skiing, powerboat racing and a national and Olympic rowing training center, was also the site of the United States rowing trials during the 1968, 1976, and the 1984 Olympics; and

WHEREAS, Long Beach Marine Stadium, designed specifically for rowing and boating, was the first man-made rowing course in the United States and the first in the world; and

WHEREAS, Long Beach Marine Stadium has been in constant use for collegiate rowing competitions and inter-club events. It was selected as the site for the 1976 Woman's National Rowing Championships, and the 1976 Woman's Olympic Sculling Trials; and

WHEREAS, in 1984 Long Beach Marine Stadium was the site of the Olympic Woman's Sculling Camp and Trials, and has been host to international competitors from all over the world including Canada, Mexico, West Germany, Finland and Argentina;

NOW, THEREFORE, I, ERNIE KELL, Mayor of the City of Long Beach, proclaim the LONG BEACH MARINE STADIUM to be an historical site, and commend and congratulate all those whose efforts led to this dedication.

Ernie Kell

ERNIE KELL
M A Y O R

Dated: August 6, 1992

8. Significance

Period	Areas of Significance—Check and justify below				
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion	
___ 1400–1499	___ archeology-historic	___ conservation	___ law	___ science	
___ 1500–1599	___ agriculture	___ economics	___ literature	___ sculpture	
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian	
___ 1700–1799	___ art	___ engineering	___ music	___ theater	
___ 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ transportation	
X 1900–	___ communications	___ industry	___ politics/government	X other (specify) athletics, recreation	
		___ invention			

Specific dates 1932 **Builder/Architect** Gould, Moffit and Nichol

Statement of Significance (in one paragraph)

The Long Beach Marine Stadium (rowing facility), is significant as the first man-made site for rowing built in the country. It was constructed to serve as a venue for the X Olympiad, held in Los Angeles in 1932. The facility has been used continuously for rowing and other recreational purposes since that time, and has served as a training ground for champion rowers since 1932. When the Marine Stadium was constructed it was envisioned that Long Beach would become the rowing capitol of the nation.

The channel for the Long Beach Marine Stadium was dredged in 1930. The City Council pledged $77,000 to fix up the course for the Olympics.[1] Improvements included straightening the course, erecting a fence, and comfort station. The Olympic Committee agreed to pay for the cost of erecting a boathouse, and lining the course with bleachers. Due to the quality, amount and type of the improvements made to the course, the City Council insured that a part of the X Olympiad would be held in Long Beach.

One article in the Long Beach Press Telegram which reported on the opening ceremonies quoted Zach Farmer, manager of the Olympic Games as follows;

> The (Marine) Stadium will mark the first time in the history of the world that a Marine Stadium has been erected. That is because your course, unexcelled anywhere in the world, is the only course where spectators can see both the beginning and the finish of the events . . . Your stadium and rowing course will mean that a constant series of events will be underway . . . your course offers the best ever found.[2]

One of the advantages of a man-made site for rowing was touched on in the Olympic publication for the events. It said; "The width of the course permits four teams to race abreast, eliminating unneccessary heats, with the result that the oarsmen entered the finals at the peak of their form." The book goes on to note the highlights of the competition, which was dominated by the Americans. The Americans had done quite well in Olympic competition rowing since 1920, when they began a winning streak that did not end until 1948. The race at Long Beach was very exciting, the American team winning by less than one-half length.

After the conclusion of the X Olympiad, the Long Beach Marine Stadium continued to be used by the Long Beach Rowing Association. The Long Beach Rowing Association announced their organization on July 28, 1932, just four days after the opening ceremonies for the Stadium. The association was formed

to place the city of Long Beach on the map as an important aquatic center. The Rowing Association was open to all, but was primarily composed of former varsity rowers from the Los Angeles club.[3] Henry Penn Burke, president of the American Rowing Association of Philadelphia, where all rowing takes place on the Schulkill River said to the new association:

> You have the greatest, finest and most perfect rowing course in the world. You can go far toward capitalizing on this asset and help the cause of rowing on the Pacific Coast with the organization of your club.[4]

In addition to the use of the facility as a rowing center, it was also used for other water oriented sporting events. Even during the opening ceremonies, the Marine Staduim was used for an exhibition of racing runabouts,[5] Class A and C outboard hydroplanes and exhibition races of various motor boats. These uses have continued into present times.

An article from 1939 stated:

> Long Beach in the matter of marine sports is making use of a set-up equaled by few other centers in the world. Speed[6] boating on the noted Marine Stadium has led the way . . .

Proof of the Stadium's continued popularity was found in a 1969 article[7] which stated that 33 events were scheduled for 1969 at the Marine Stadium.[8] In 1976, the Stadium was the site of National Drag Boat Championships. Most recently, the site was used for the newest of aquatic sports; the U.S. Series Triathalon, which had the largest entry group to date.

the Long Beach Rowing Association's history of the Marine Stadium sums up the continued significance best;

> From 1968 to the present, the facility has been in constatn use as a site for collegiate rowing competition and inter-club events. It further was selected as the site for the 1976 Woman's National Rowing Championships, and the 1976 Womans Olympic Sculling Trials, and was twice designated as an Olympic Development Center. In 1984 it was the location of the Olympic Woman's Sculling Camp and Trials. The Long Beach Rowing Center has been host to international competitors from all over the world, including Canada, Mexico, West Germany, Finland and Argentina.

line of said Pacific Electric Railway Company's private right-of-way as shown on said map of said Tract No. 1077.

Subject to the following conditions and restrictions:

That the above described property, and the [illegible] shall, at all times, be kept and maintained by [illegible] of the second part, and its successors, as and for a public park, and used only and solely for public park purposes, which said public park purposes shall include, among other things, the acquisition, construction and completion, and the maintenance, operation and use, of golf, bowling on the green and other game courses; horseback riding trails; baseball, football, basketball, townball, handball, volleyball, aviation, polo, hockey, shinny, athletic, playground and other game and sport fields; tennis, roque, croquet, quoit, horseshoe and other game and sport courts; lakes, lagoons, channels, pools and other water courses for swimming, boating, hydro-plaining and all kinds of acquatic sports, games and athletics; checkers, card game, ping-pong, gymnasium, skating rink, swimming pool, dancing and other indoor game and athletic quarters; botanical gardens; aquariums; museums; stadiums; fairgrounds; exposition grounds; outdoor theaters; amusement zones; cafes; cafeterias; customary public park stores and concessions; including the construction, erection and maintenance of all buildings and other structures necessary or convenient therefor; nor shall any part, or parcel, thereof ever be used for any other purposes; provided, further, that no building more than one story in [illegible] or maintained in the Northeast [illegible] waterway to be dredged through said premises; and provided, further, that every building constructed, erected or maintained within one hundred and fifty feet of the northeast line of said described

DEED 753

THIS INDENTURE Made this 12th day of June, 1923, between SAN GABRIEL RIVER IMPROVEMENT COMPANY, a corporation duly organized and existing under the laws of the State of California, party of the first part, and the CITY OF LONG BEACH, a municipal corporation of the State of California, party of the second part;

WITNESSETH:

That the party of the first part, for and in consideration of the sum of ten dollars, in lawful money of the United States, to it in hand paid, receipt of which is hereby acknowledged, does, by these presents, grant, bargain, sell, convey and confirm unto the said party of the second part, and to its successors and assigns, forever, all that certain parcel of land situate in the County of Los Angeles, State of California, and bounded and described as follows, to-wit:

All that portion of Tract 1779 as shown on a map recorded in Map Book 22, Pages 26 [illegible] Records of Los Angeles County, described as follows:

All of Lot 1 of said Tract No. 1779, also all of Lot 2 of said Tract No. 1779;

All that portion of Lot 3 of said Tract No. 1779 lying southwesterly of a line drawn parallel with and eight hundred (800) feet northeasterly of the northeasterly line of the Pacific Electric Railway Company's private right-of-way as shown on said map of said Tract No. 1779;

All that portion of Lot 4 of said Tract No. 1779 lying southwesterly of a line drawn parallel with and eight hundred (800) feet [illegible]

All that portion of Lot 1, Tract No. 1077 as shown on a map recorded in Map Book 18, Page 195, Records of said County, lying southwesterly of a line drawn parallel with and seven hundred (700) feet northeasterly of said northeasterly

Long Beach Lot Marine Stadium: Page 3 #3=Venue for boating: DEED ON FILE WITH LONG BEACH CITY CLERK

property shall face said northeast driveway and shall be of an attractive design and well and substantially built.

2. The party of the second part agrees to commence forthwith and to prosecute diligently the necessary application to the Department of the United States of America for permission to [illegible] or alter certain channels now existing on and over a portion of the above described property so as to substitute therefor the channel to be constructed, as hereinafter provided, and further agrees within ninety days from the date of receiving such permit from the War Department of the United States of America to actually begin the dredging and filling hereinafter referred to and to prosecute the same with due diligence until completed and to complete the same within two and one-half years from the date of this agreement; provided that the time of all delays in issuing such permit, not caused by the party of the second part, shall be added to the time of two and one-half years within which to complete the same.

3. The party of the second part agrees to improve said parcel of land as a public park and, as a part of said improvement, to provide a lake in said park for boating purposes by dredging a canal near the southwesterly boundary of the strip or parcel of land above described running for at least three-fourths of the length of said strip and of sufficient depth and width to provide material to fill the park land not embraced in said channel so as to render the same usable for ordinary park purposes and to provide [illegible] the improvements agreed to hereinafter in [illegible] the party of the second part agrees to prov[illegible] and to fill an adjoining parcel of land belonging to the party of the first part described in Exhibit B, hereto attached, to a level as high as the retaining wall of the Rivo Alto Canal in Tract No.

and described premises, together with the appurtenances, unto the said grantee, its successors and assigns, forever.

IN WITNESS WHEREOF, the said party of the first p[illegible] its corporate name and its corporate seal, by its [illegible] thereunto duly authorized the day and year first hereinabove [illegible].

SAN GABRIEL RIVER IMPROVEMENT COMPANY

By F. Griffith
Vice President

By A. G. Walker
Secretary

STATE OF CALIFORNIA, } SS.
COUNTY OF LOS ANGELES,

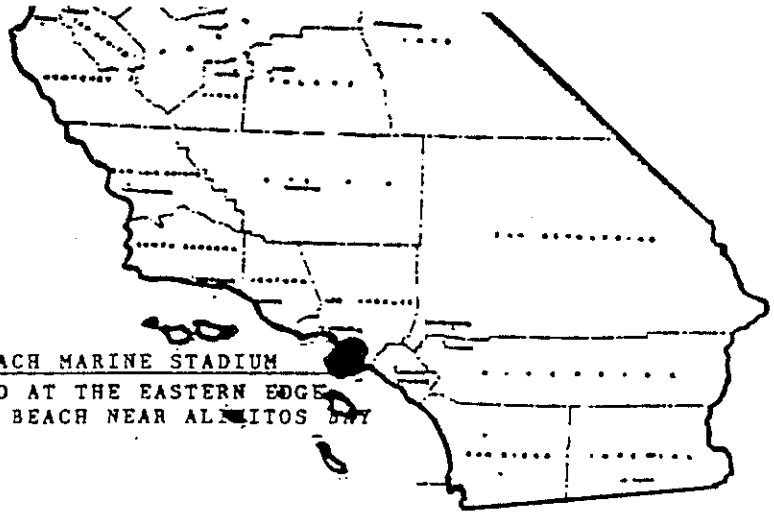
On this 13th day of June in the year one thousand nine hundred and twenty-three before me, J. E. BROWN, a Notary Public in and for said County of Los Angeles, State of California, residing therein, duly commissioned and sworn, personally appeared F. Griffith known to me to be the Vice President, and A. G. Walker known to me to be the Secretary of the San Gabriel River Improvement Co. the Corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal in said County, the day and year in this certificate first above written.

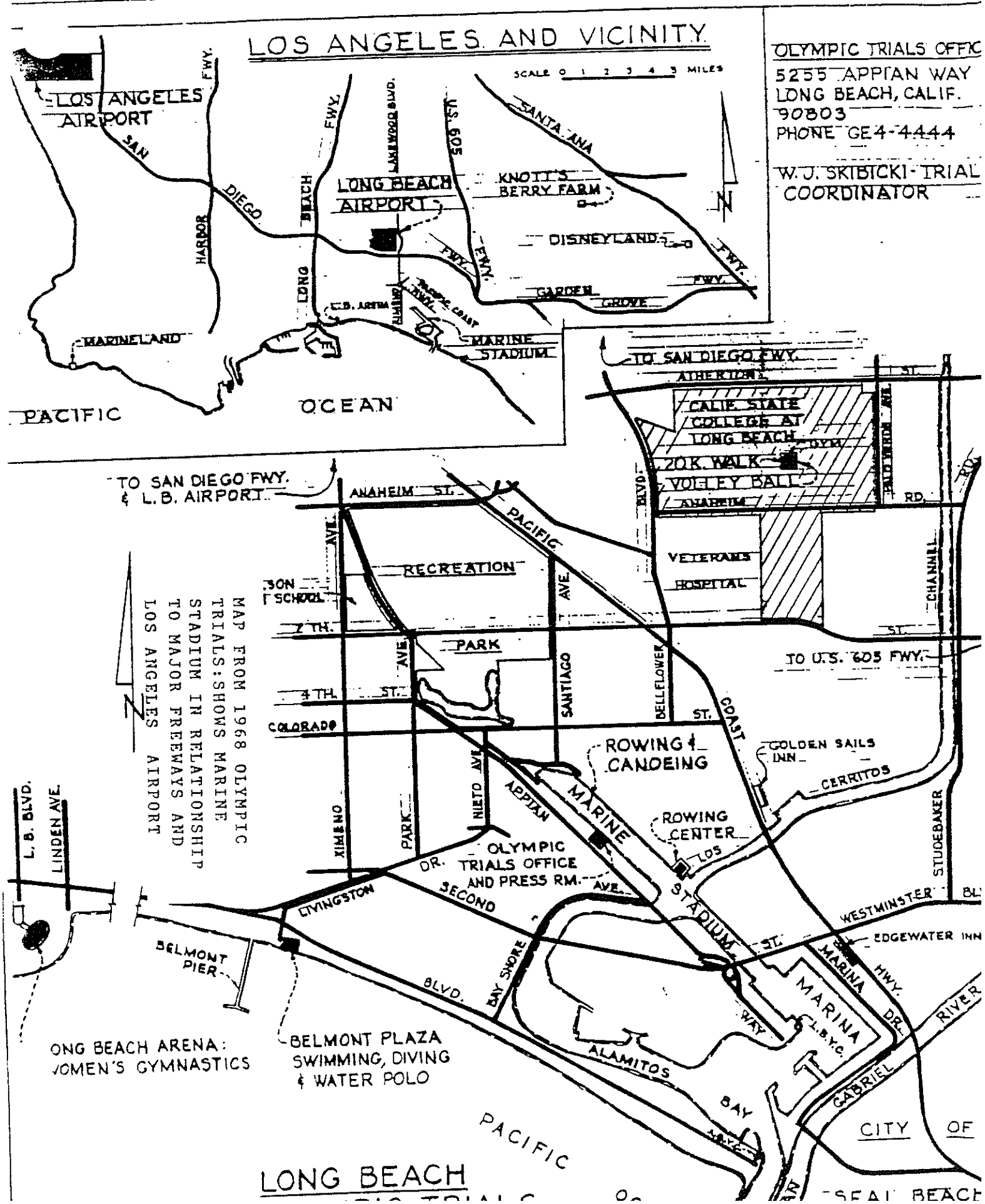
J. E. Brown
Notary Public in and for Los Angeles County, State of California.

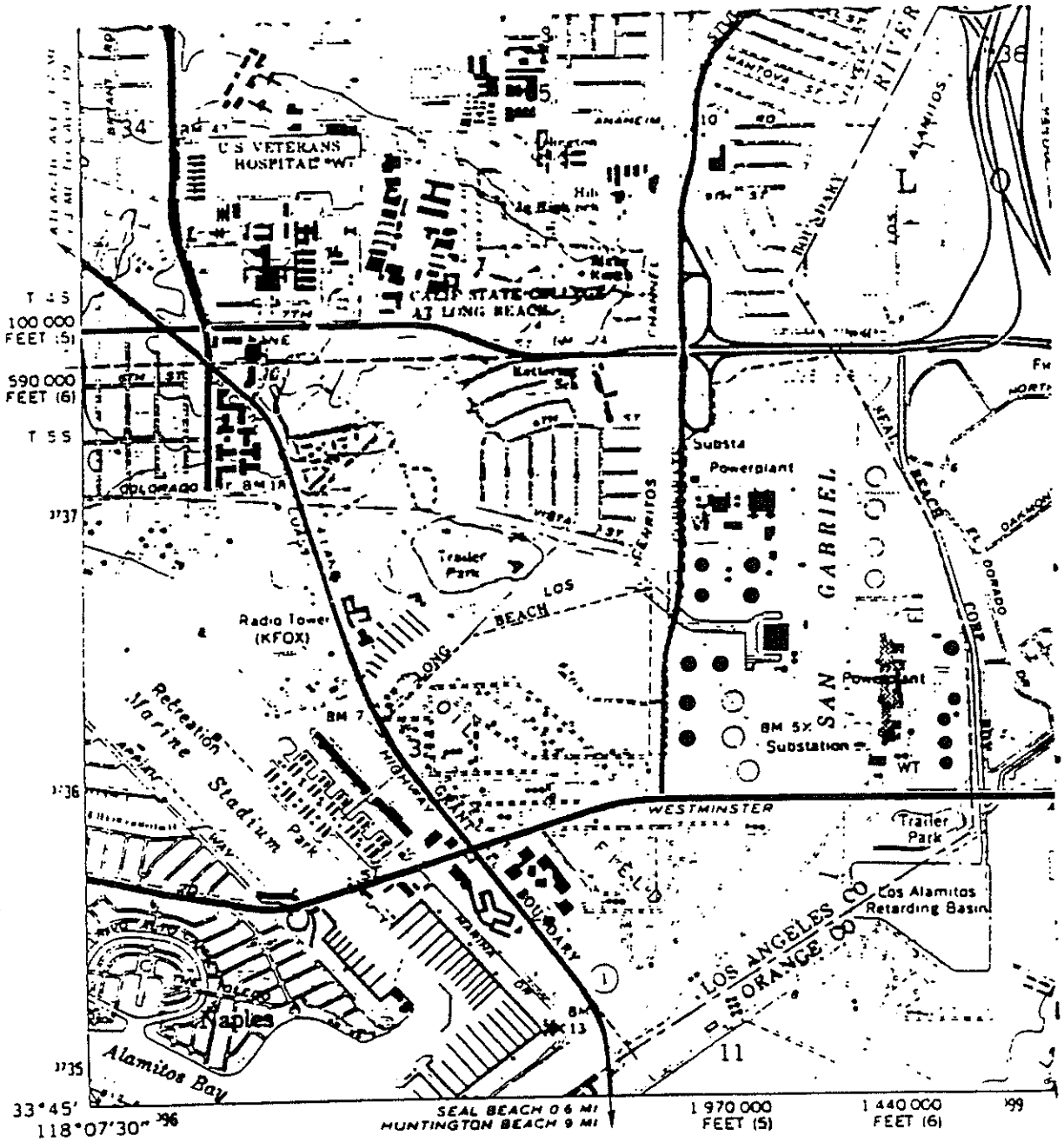
[Corporation]

-5-



LONG BEACH MARINE STADIUM
LOACATED AT THE EASTERN EDGE
OF LONG BEACH NEAR ALAMITOS BAY


LOS ANGELES AND VICINITY
SCALE 0 1 2 3 4 5 MILES
LOS ANGELES AIRPORT
SAN DIEGO FWY.
HARBOR FWY.
LONG BEACH FWY.
LAKEWOOD BLVD.
U.S. 605 FWY.
SANTA ANA FWY.
LONG BEACH AIRPORT
KNOTT'S BERRY FARM
DISNEYLAND
GARDEN GROVE FWY.
PACIFIC COAST HWY.
L.B. ARENA
MARINELAND
MARINE STADIUM
PACIFIC OCEAN
OLYMPIC TRIALS OFFIC
5255 APPIAN WAY
LONG BEACH, CALIF.
90803
PHONE GE4-4444
W. J. SKIBICKI - TRIAL
COORDINATOR
TO SAN DIEGO FWY.
ATHERTON
CALIF. STATE COLLEGE AT LONG BEACH
GYM
20 K. WALK
VOLLEY BALL
ANAHEIM
POLYTECHNIC RD.
TO SAN DIEGO FWY. & L.B. AIRPORT
ANAHEIM ST.
PACIFIC AVE.
VETERANS HOSPITAL
CHANNEL
RECREATION
SON SCHOOL
7TH. ST.
PARK
4TH. ST.
COLORADO
SANTIAGO
BELLFLOWER BLVD.
TO U.S. 605 FWY.
COAST
ROWING & CANOEING
GOLDEN SAILS INN
CERRITOS
STUDEBAKER
MAP FROM 1968 OLYMPIC TRIALS: SHOWS MARINE STADIUM IN RELATIONSHIP TO MAJOR FREEWAYS AND LOS ANGELES AIRPORT
L.B. BLVD.
LINDEN AVE.
XIMENO
PARK
NIETO AVE.
APPIAN
MARINE
ROWING CENTER
OLYMPIC TRIALS OFFICE AND PRESS RM.
DR.
LIVINGSTON
SECOND
STADIUM
WESTMINSTER
EDGEWATER INN
BELMONT PIER
BAY SHORE
MARINA
HWY.
MARINA L.B.Y.C.
RIVER
BLVD.
ALAMITOS
BAY
GABRIEL
CITY OF
ONG BEACH ARENA: OMEN'S GYMNASTICS
BELMONT PLAZA SWIMMING, DIVING & WATER POLO
PACIFIC
LONG BEACH
SEAL BEACH



Mapped, edited, and published by the Geological Survey

Control by USGS, NOS/NOAA, and Los Angeles County and Orange County

Planimetry by photogrammetric methods from aerial photographs taken 1963. Topography by planetable surveys 1964

Selected hydrographic data compiled from NOS chart 5148 (1965)
This information is not intended for navigational purposes

Polyconic projection. 10,000-foot grid ticks based on California coordinate system, zones 6, 7, and 5. 1000-meter Universal Transverse Mercator grid ticks, zone 11, shown in blue
1927 North American Datum. To place on the predicted North American Datum 1983 move the projection lines 1 meter north and 85 meters east as shown by dashed corner ticks

Dotted land lines established by private surveys

This map lies within a subsidence area
Vertical control based on latest available adjustment

There may be private inholdings within the boundaries of the National or State reservations shown on this map

Revisions shown in purple and woodland compiled from

(LONG BEACH)
2331 I SW

GN

0°35
10 MILS

UTM GRID AND 1981 MA
DECLINATION AT CENTER

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION

HISTORIC RESOURCES INVENTORY

IDENTIFICATION AND LOCATION

1. Historic name Long Beach Marine Stadium
2. Common or current name same
3. Number & street Appian Way at Nieto Cross-corridor
   City Long Beach, California Vicinity only Zip 90814 County Los Angeles
4. UTM zone A B C D
5. Quad map No. Parcel No. Other

Ser No.
National Register status
Local designation

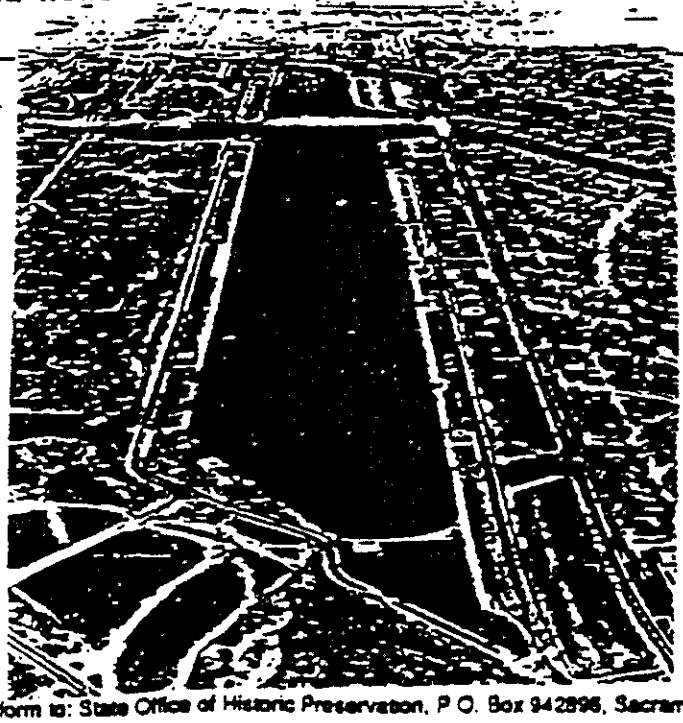
DESCRIPTION

6. Property category Historic Site If district, number of documented resources
7. Briefly describe the present physical appearance of the property, including condition, boundaries, related features, surroundings, and (if appropriate) architectural style:

Long Beach Marine Staduim: The rowing course (venue) for the 1932 Olympics (X Olympiad) 2000 meters long and approximately 100 yards wide.

Located on the eastern edge of Long Beach, near Alamitos Bay, the course runs north/northwest. Its northern shore is lined with quarry rock (with the exception of a few hundred feet of a boat launch ramp) and its southern shore a combination of quarry rock and sandy beach.

When updating the venue for the subsequent Olympic Trials, there was a modification in the site which shifted the starting line from what is now the second street bridge to its present position, near the Long Beach Yacht Club. With the course thus shifted, approximately 280 meters of the original course were filled in, creating a park and support facilities. In so doing, the original boathouse was no longer situated near the water; a new boathouse was constructed midway down the course.



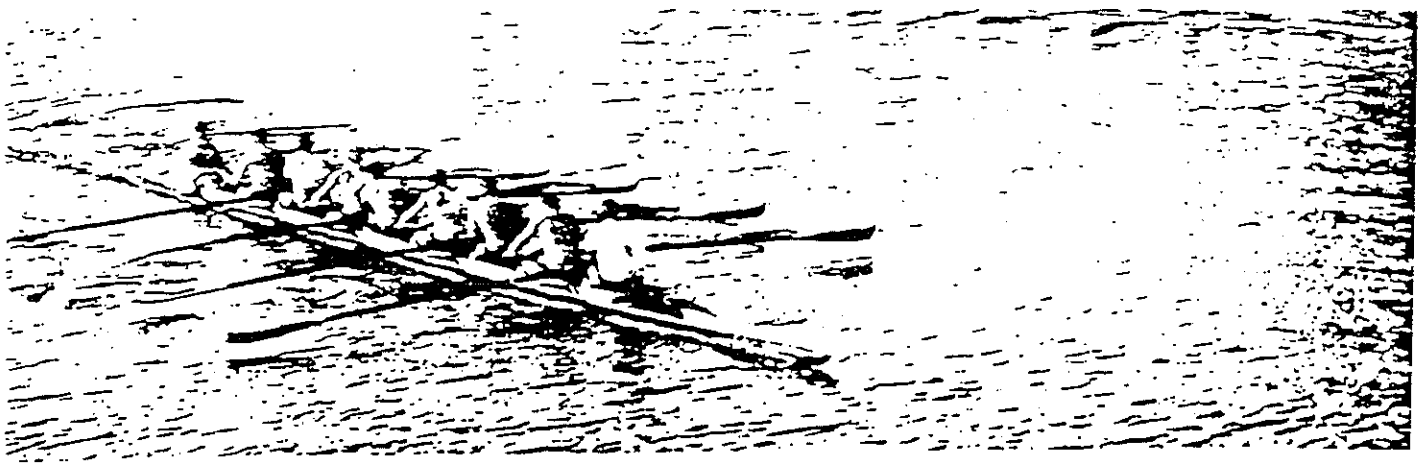
8. Planning agency

9. Owner & address
   City of Long Beach
   333 W. Ocean Blvd.
   Long Beach, CA 90802

10. Type of ownership Public
11. Present use Recreation
12. Zoning
13. Threats

Send a copy of this form to: State Office of Historic Preservation, P.O. Box 942896, Sacramento, CA 94296-0001

* Complete these items for historic preservation compliance projects under Section 106 (36 CFR 800). All items must be completed for historical resources survey information.



LONG BEACH MARINE STADIUM

Stretching for a mile and a quarter in a straight line, and measuring 600 feet in width, the rowing course of this splendid marine stadium is declared by international experts to be the finest ever provided for the Olympic rowing events. Excellent boat houses, dressing rooms and club facilities were provided for the contestants, while Alamitos Bay, of which the stadium is a part, was available for practice purposes. The City of Long Beach has cooperated with the Organizing Committee by enclosing the entire rowing course with a fence and trees, thus making it the only stadium in the world devoted exclusively to rowing and boating. It will remain, after the Games of the Xth Olympiad, as a splendid addition to the many recreational facilities which Long Beach has provided for its residents and the many tourists who visit it annually.

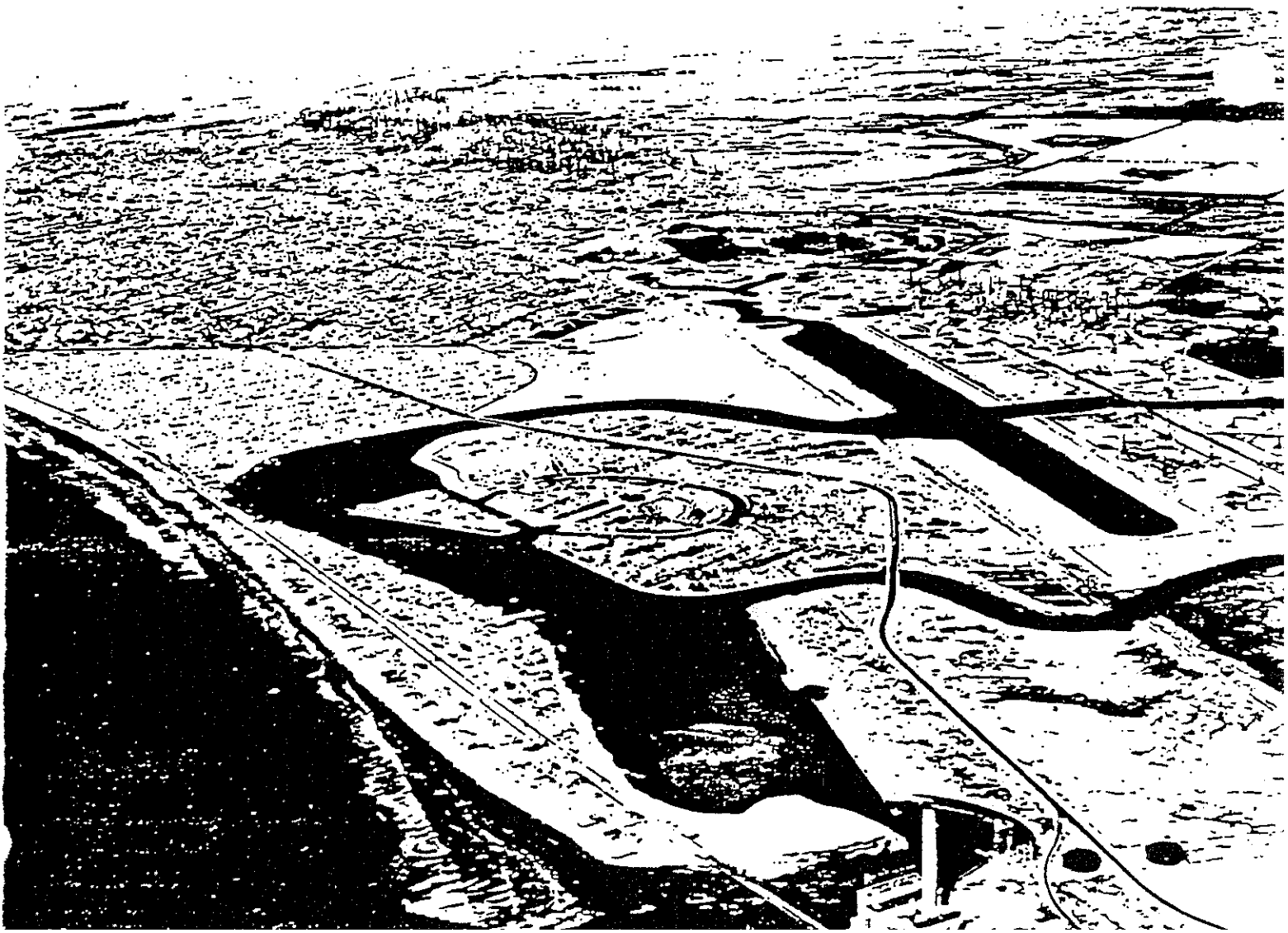
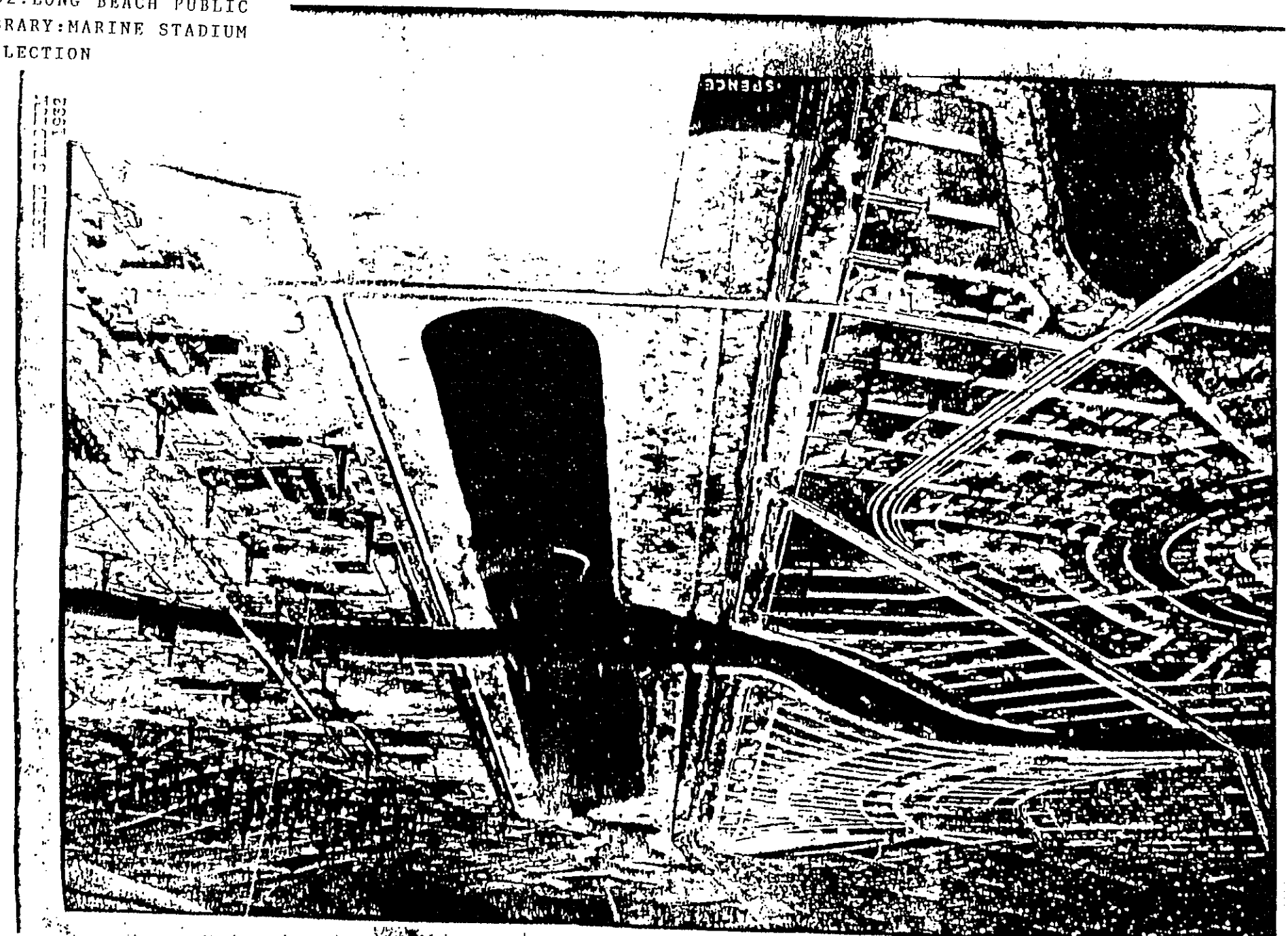


PHOTO OF MARINE STADIUM
1932:LONG BEACH PUBLIC
LIBRARY:MARINE STADIUM
COLLECTION



The Marine Stadium continues to be an important sporting resource to the City of Long Beach, a place where aquatic history continues to be made.

1.Long Beach Independant Press Telegram,"Oil Money to Finance Bay Stadium", January 24, 1931.

2. Long Beach Independant Press Telegram, "Long Beach Envisioned as U.S. Rowing Capitol", July 24, 1932.

3. Long Beach Sun, "Long Beach Rowing Club Organization Perfected", July 28, 1932.

4. Loc. cit.

5. Long Beach Sun, "Gala program to Dedicate New Stadium", July 8, 1932.

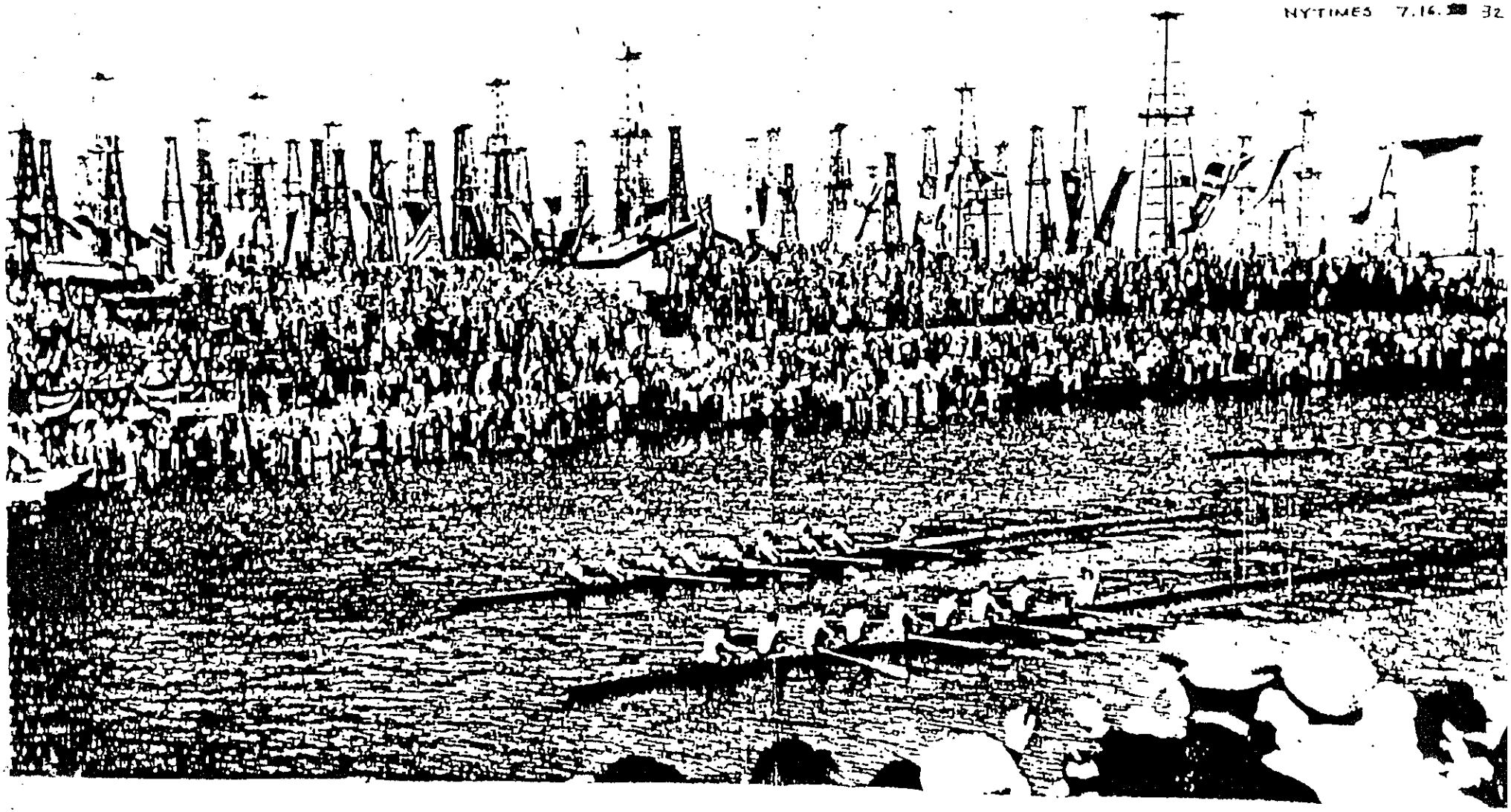
6. Long Beach Press Telegram, "Alamitos Bay Marine Stadium Scene of Major Regattas", January 2, 1939.

7. Long Beach Independant Press Telegram , Marine Stadium Schedule Announced", February 9, 1969.

8. Independant Press Telegram, "Big Daddies of Drag Boats Roar at Marine Stadium", August 5, 1976.

Marine Park Stadium, scene of the Olympic Games rowing regatta August 9-13, inclusive, in 1932, is shown in the excellent airplane photo. On this course, straight as an arrow more than 2000 meters long with an average depth of seven meters, champion oarsmen from at least twenty nations will gather for the quadrennial classic. Permanent improvements on the course, estimated at $100,000, will be started by the Olympic Committee immediately after January 1.

OLYMPICS - 1932



Olympics-1932 L. B. COLL

303 Olympic Stars Feted in This City

Report to Chamber Directors Reveals Value of Games to Long Beach.

Long Beach entertained 303 visiting athletes from sixteen nations and housed 145 of them from ten nations for the Olympic Games, according to a report to the board of directors of the Chamber of Commerce today by Acting Secretary Ray O. Baldwin. The report was prepared by Burritt S. Mills, Secretary of the Olympic Reception Committee.

Appreciation for the work of Captain Robert Henderson, chairman of the committee, and Secretary Mills was orally expressed by the board. Letters to those who co-operated in the reception were ordered sent by the directors in the name of the Chamber.

Stress was laid in the report and in the comment by directors on the value to the harbor of the work of Secretary Mills, who made it a point to show the city's water facilities to the visiting officials with whom it would count the most.

Further publicity for Long Beach was assured by the entertainment visiting journalists, it was said.

Olympics-1932 L. B. COLL

Leaders Named To Aid Olympic Fund Campaign

Appointment of a Long Beach committee to assist in financing American athletic teams which will compete in the Olympic Games at Los Angeles and Long Beach next Summer was announced today by Lon E. Peek, Long Beach representative of the American Olympic finance committee, George W. Graves, Detroit, is chairman of the national body.

The list of committeemen in Long Beach includes Paul C. Graham, N. H. Bennett, J. B. Hines, A. L. Olliger, C. C. Lewis, C. P. Hale, E. C. Denio, Dr; Henry Kendall Booth, Rev. George P. Taubman, Otto Bayler, Fire Chief William S. Minter, Chief of Police J. S. Yancy, Police Captain William H. Dovey, J. C. Coulter, Assistant Chief of Police C. F. Robberson, W. P. Nestle, Edward M. Bryant, Oscar J. Seiler, John H. Chamness, George Craig II, Charles H. Tucker, Lieut. Governor Frank F. Merriam, J. E. Hatch, W. F. Prisk, Senator Ralph H. Clock, A. T. Jergins, C. A. Buffum, Sam Belover, Thomas R. Merrell, Charles H. Hunt, Dr. R. A. Terry, J. W. V. Steele, James W. Hanbery, Bruce Mason, Dr. J. E. Walker, Harry L. Cohn, John Schinner, Sam K. Rindge, Will J. Reid, Major E. S. Dobbin, Captain Robert Henderson, George Rochester, Howard Deems, C. J. Walker, L. E. Barker, Dr. Walter B. Hill, L. D. Frey, Rex G. Sands, J. S. Holton, Harvey C. Fremming, Harry H. Slaugh, Hugh A. Martl, H. S. Beckman, Graydon Hoffman, Norman Able and Franklin W. Robinson.

It is planned to open the Olympic financing campaign about October 1, Mr. Peek announced today.

L. B. COLL

LONG BEACH PUBLIC LIBRARY

Olympics-1932 L. B. COLL

Rough row

A recent article about the 1932 Olympics said the rowing teams stayed in a Long Beach hotel. At that time, I lived on 11th Street near Bennett Avenue and several houses displayed flags from various countries. I recall that the rowing teams stayed in the houses on Bennett. Is that true? W.R., Long Beach.

Some athletes may have stayed with friends in private homes, but we couldn't find a reference to any official lodging arrangements on Bennett in the numerous books and newspaper clippings we checked.

Most male athletes stayed at the Olympic Village, a Baldwin Hills bungalow complex built for the games and the female competitors were housed in a Los Angeles hotel. But the U.S. rowing team complained that the daily bus ride from the village to Long Beach Marine Stadium was too tiring, and they were moved to the Lafayette Hotel; 144 Linden Ave., said Norris Graham, a former Long Beach resident who was the coxswain on the UC Berkeley crew that won a gold medal in 1932.

Long Beach advertising executive Don Davis, who was the assistant manager of the Lafayette Hotel in 1932, told Action Line he recalls that some of the foreign rowing teams were housed in other Long Beach hotels, but he doesn't believe any private homes were used. Davis and Graham said that during the games, many Long Beach homes, especially in the area where you lived, displayed flags from various countries as a welcome sign for the athletes.

The city developed an existing salt-water lagoon into the marine stadium for the games, and the five-day rowing competition attracted 120,000 spectators. The eight-oar final event in which Graham's team came from behind to beat the Italian crew by only three seconds was called by race officials "the greatest rowing spectacle America had ever seen."

Jul 1-278
INDEPENDENT

Olympics-1932 L. B. COLL

OFFICES OF GAMES ARE OPEN HERE

Offices of the Olympic Games Committee for Rowing were opened today in the Chamber of Commerce building. W. W. Monahan, who has charge of the rowing events at the Marine Stadium, will be in charge of this office for the sale of tickets and the official Olympic buttons.

Miss Marjorie Geer will be in charge of the desk, where official Olympic information can be obtained. Long Beach has a quota of $750 for the expenses of the contestants in the rowing games. This will be made up by the sale of membership tickets and official buttons.

Miss Geer, formerly with Procter & Gamble, also was secretary to Henry King with the official regatta at the Pacific Southwest Exposition. All tickets for the Olympic Games will be sold here and reservations made. The tickets can be obtained after May 15. The offices in the Chamber of Commerce will remain until the buildings now under construction at the Marine Stadium are ready for occupancy. This probably will be some time late in June. Monahan then will move this office to the Marine Stadium, but the ticket office will remain at the Chamber of Commerce.

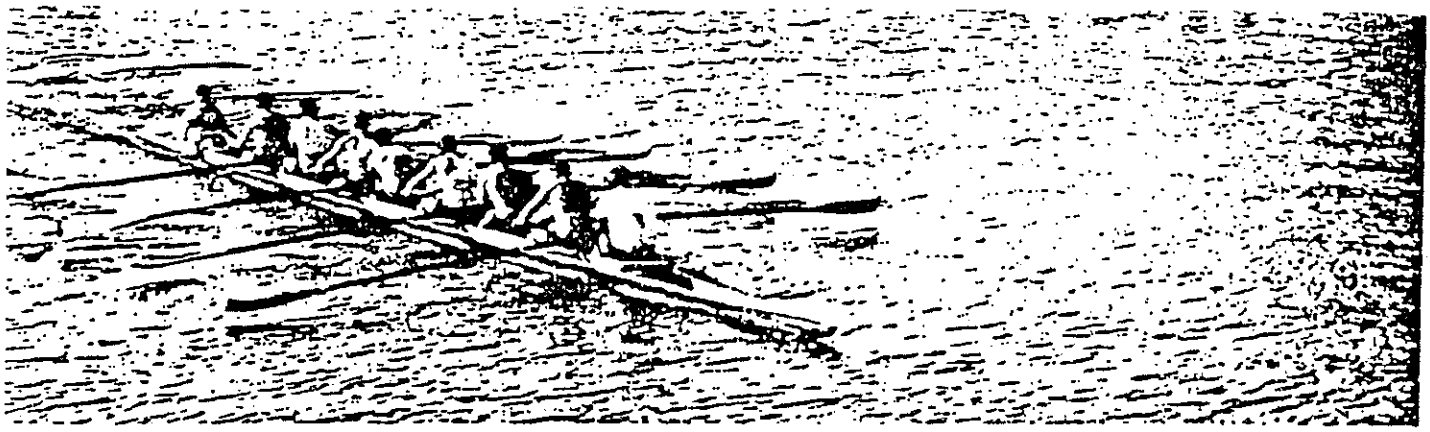
Olympics-1932 L. B. COLL

'Olympic Rose' Now Being Sold in Long Beach

Even nature has been drafted to answer the demand for special Olympiad recognition. The newest creation to embody the spirit of the coming Games is the Olympic Rose, a patented garden bush developed by a Los Angeles grower and sold exclusively in Long Beach by Newcomb's.

The blooms, which duplicate in formation the hot house rose, carry out the Olympiad colors, red and yellow. Yellow at the base, the flowers shade gradually into a rich red at the edge of the rose petal.

Under a new law, a flower developed and patented by a certain grower can be raised by him alone. This particular rose was created especially for the Olympiad as being particularly in keeping with the beautification plans being featured in Long Beach and other cities where the games are to be staged. One florist in each city is selected to retail the rose.



LONG BEACH MARINE STADIUM

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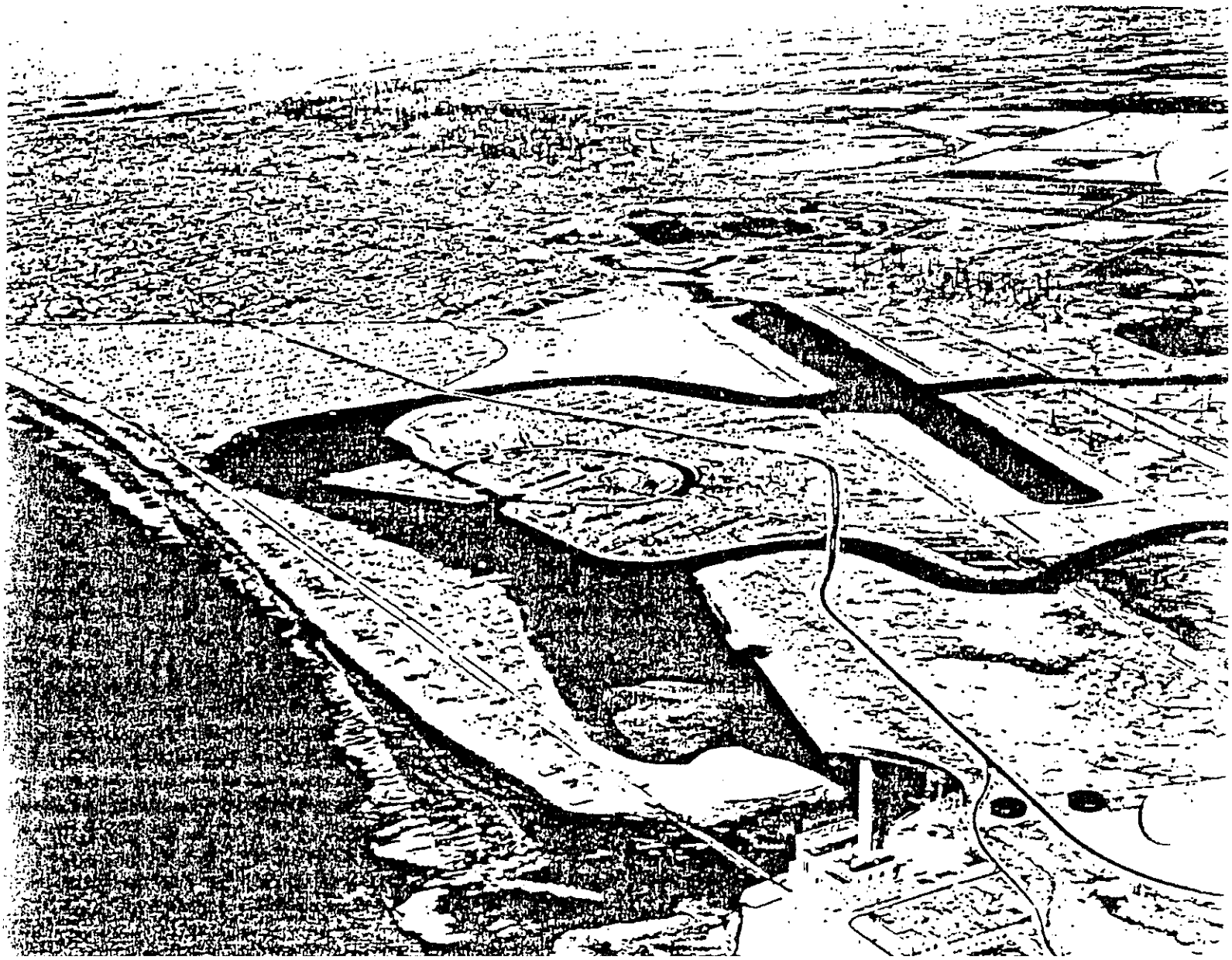


Marine Stadium Praised by Visiting Olympic Officials

By the fact that the coming Olym James are greater than any ... in which various sections of the international competitions are to be held, Long Beach can feel pardonable pride in its Olympic Marine Stadium. This was the opinion expressed yesterday by William W. Monahan, graduate manager of the University of California, who will manage the rowing races of the Olympiad on the local course, August 5 to 12, inclusive. Monahan, in company with several Olympiad officials, inspected the stadium and buildings under construction there.

The manager of the rowing races will return to his home in Berkeley a day or two and expects to return to Long Beach with his family about May 15 and remain until after the races. He may establish headquarters at the Chamber of Commerce, temporarily, and then move to one of the buildings, now under construction at the stadium later.

Monahan is a native of Shasta County. Mr. and Mrs. Monahan have a girl, Peggy, 5; and son, William W. Monahan Jr., 3. He was president of the student body at the University of California, where he attended school from 1919 to 1924, when he was graduated. Mrs. Monahan is a native of California, and graduated the University of California.

Asked what he thought of the possibility of bringing the University of California and University of Washington crews here for a race, he replied that would be easily possible if either or both the University of Southern California and the University of California at Los Angeles should take up crew racing, as has been rumored recently. The Long Beach course would be the ideal site for the two schools to practice, and equally ideal for conference regattas, in Monahan's opinion. Eastern crews could be induced to compete on the Long Beach course, he added.

Accompanying him were Gwynn Wilson, former manager of the Associated Student Body of U. S. C., and Associate Manager of the Olympic Games; J. F. Mackenzie, in charge of the sale of tickets to the Games, and former manager of student athletic activities at U. S. C.; and William M. Henry, sports technical director of the Olympic Games, and former sports editor of a Los Angeles newspaper.

Henry praised the local stadium course, describing it as the best in the country. There is only one comparable to it in the United States, he said. It is that of the United States Naval Academy at Annapolis, which includes many buildings for motor boat equipment.

The tenth Olympic Games will get under way July 30 and will be concluded on August 14, one day after the last of the rowing events in Long Beach. The races here are scheduled for mornings and afternoons of the first four days and the afternoon of the final day.

Henry expressed the opinion that the United States' supremacy in athletics will be challenged this year as never before, adding that while he is naturally patriotic he will be secretly pleased if the other nations should carry off the bulk of the honors. It would create a wholesome condition, in his opinion.

Germany and Japan have been engaged for several years in a systematic development of all forms of athletics, according to Henry. As a result of their scientific development of athletes, he said, they have brought many individual performers to the state where they are "flirting" with the records and may be expected to set a new time or distance in any meet.

Each of the visitors were highly gratified at their reception in Long Beach and predicted that the crew races here will result in a new interest in athletics locally and that the splendid local water course, which will permit a greater number of spectators than any other similar course in the country, will give Long Beach national and international advertising of a very favorable nature.

TO DEDICATE NEW STADIU

July 23 Chosen as Da for Fete at Marine Rowing Course.

The dedication of the Mar Stadium, in which the Olym rowing races will be held Aug 9-13, promises to attract a rec crowd. It will be held Saturd July 23, from 1 to 4:30 P. M., cording to Captain Robert Hand som, Second Vice President of t Chamber of Commerce. Congr sional candidate and chairman the committee in charge of t event.

A feature will be the flag-raisi and official dedication at 3:30 Olympic officials, city and Chamb of Commerce representatives.

Dick Loynes, program chairma announced that the event staged ships when they cross the equa will be presented at the dedicatio Father Neptune will emerge fro his watery realm to extend gree ing. Other traditional figures w be represented.

1 to 2—Exhibition of racing ru abouts. Racing 25 miles unc auspices of the Long Beach Sp Boat Club.

2—Exhibition race Class A and outboard hydroplanes, fifteen mi under the auspices of Southern C lifornia Outboard Association.

2:20—Exhibition hydroplane ri ing by two experts.

2:30—Flag raising and offici dedication by Olympic and Lo Beach city officials.

3:00—Parade and exhibition various types of rowing shells e tered in the Olympic Games. Co testants in native costumes will ta part. Description of various typ of shells to be made by Willis "Bill" Monahan.

3:15—Exhibition race betwe crews from the U. S. Navy.

3:30—Presentation of Father Ne tune.

4—Speed tests over one-m course by Blue Streak piloted Marty Martin, Sunkist Kid pilot by Loretta Turnbull and Miss Ca lifornia by Dick Loynes.

4:30—Exhibition race, Class outboard hydroplanes, fifteen mil under auspices of the Southern Ca lifornia Outboard Association.

Members of the Dedication Com mittee who attended the meeti were Burritt S. Mills, R. B. Tapli David Ray Arnold, Byron Thorpe, Otto T. Bayer, Peter Mohr backer, J. T. Cush, C. G. Hayne Ward Smith, W. E. Feistner, Lor D. Middough, J. Swan, Verne Wic ham, Lloyd C. Loedom, J. W. Stacia, Dick Loynes, Fred Petry, L E. Peck, Edward M. Bryant, Cly Doyle, Charles H. Hunt and Capta Charles Henderson.

Verne Wickham will announce th event over the newly installed publ address system.

Several motion picture stars ha been invited to take part in t Neptune stunt, and the event w be covered by various sound ne reel organizations.

TATE OF CALIFORNIA — THE RESOURCES AGENCY

PETE WILSON, Governor

TATE HISTORICAL RESOURCES COMMISSION
EPARTMENT OF PARKS AND RECREATION
O. BOX 942896
ACRAMENTO 94296-0001
16) 653-6624
AX (916) 653-9824

March 15, 1993

Mr. Larry J. Monteilh, Executive Officer
Los Angeles County Board of Supervisors
383 Hall of Administration
Los Angeles, CA 90012

STATE OF CALIFORNIA—THE RESOURCES AGENCY
DEPARTMENT OF PARKS AND RECREATION

POINT OF HISTORICAL INTEREST

DO NOT WRITE IN THIS BLOCK
Reg. No. LAN-056
Date 2-26-93
By SJE

County: LOS ANGELES

Name: MARINE STADIUM

Location: LONG BEACH, CALIFORNIA -- Appian Way/Nieto/Eliot/Boathouse Lane

Historical Significance (Summary Paragraph Only):

THE LONG BEACH MARINE STADIUM IS SIGNIFICANT. IT WAS:

1. A ROWING VENUE FOR THE XTE OLYMPIAD 1932 GAMES; and
2. THE FIRST MAN-MADE ROWING COURSE IN THE UNITED STATES.

The Long Beach Marine Stadium is historically significant because it was the site of the rowing games of the XTH Olympiad (1932 Olympics). It was furthe selected as the site for the 1968, 1976, and 1984 United States Olympic Rowi Trials and six times selected as an official United States Olympic Training Center to train candidates for the U.S. National and Olympic Rowing Teams. Over the past 60 years it has been used as a training facility for the crew: of C.S.U.L.B. and the Long Beach Rowing Association. It was the first home for the crews of U.S.C. Since 1932 it has served as an important recreatio site for the people of Long Beach and the surrounding region.

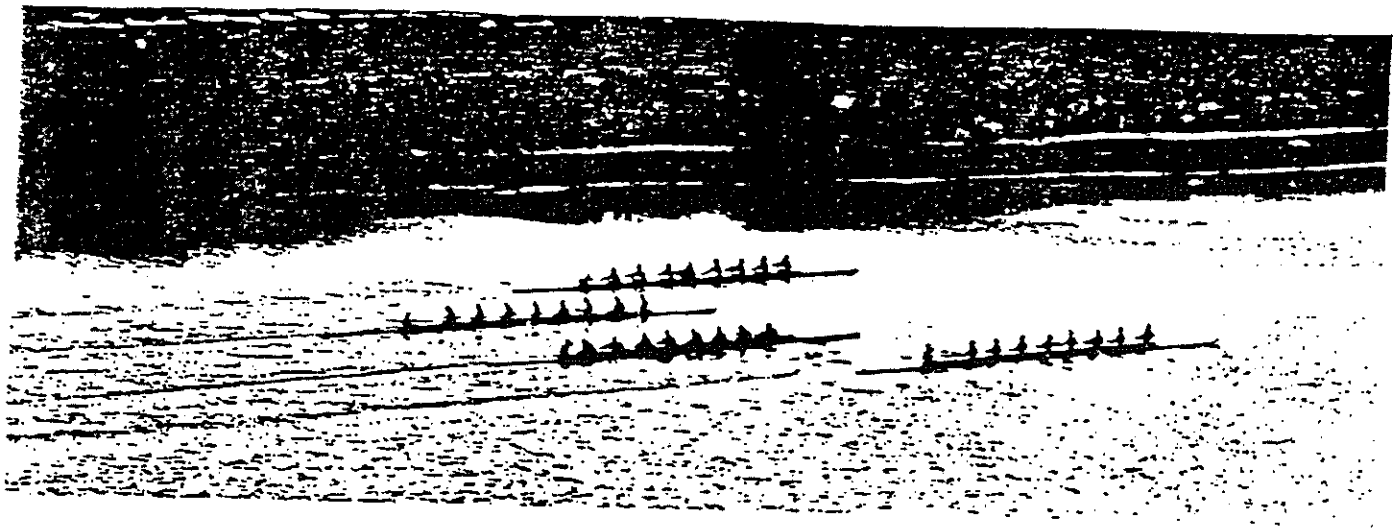
THIS POINT OF HISTORICAL INTEREST IS NOT A STATE REGISTERED HISTORICAL LANDMARK.

RECOMMENDED: Signature—Chairman, County Board of Supervisors
Date November 4, 1992

APPROVED: John D Henderson
Signature—Chairman, State Historical Resources Commission
Date FEBRUARY 5, 1993

DPR-147 (REV. 10/87)

Mr. Laurence B. Goodhue
2601 East Ocean Blvd.
Long Beach, CA 90803



ROWING

THE Rowing events of the Games of the Xth Olympiad were staged on the specially constructed Olympic course at the Marine Stadium in Long Beach. Here a two thousand metre stretch of quiet sea water was lined with sloping sandy shores, on which thousands of spectators could sit and enjoy the competition as the oarsmen swept by, only a few yards distant.

The Rowing contests attracted sufficient entries in each event to provide the finest kind of competition. The width of the course, permitting four crews to race abreast, eliminated unnecessary heats, with the result that the oarsmen entered the Finals at the peak of their form.

With victories in the Double Sculls, the Two Oar with Coxswain, and the Eights, the United States won a major portion of the victories, while Great Britain, with victories in the Two Oar without Coxswain and the Four without Coxswain, took home two championships. The other countries winning were Australia in the Single Sculls and Germany in the Four with Coxswain.

In the Single Sculls event Robert Pearce of Australia, winner of the Olympic title in 1928, defended his championship and won again without apparent difficulty. Powerful in physique and a master of rowing form, Pearce dominated the event and was never headed. The greatest disappointment of the Rowing competition was the illness of Herbert Buhtz, the young German sculler, which prevented him from participating in his favorite event, the Single Sculls.

Although all the competition was spirited, the Eight Oar championship, the climax of the regatta, unquestionably was the high light in popular interest, bringing together as it did the great crews representing Italy, Canada, Great Britain, and the United States. Italy and the United States won their heats by narrow margins in splendid time and were generally considered the favorites to win, although the British and Canadian crews had shown remarkable form.

AUSTRALIAN AND URUGUAYAN OARSMEN TALK IT OVER

The prospect of a Titanic contest between these four fine crews attracted an immense throng on the final day and the race in every way came up to expectations. The Italian crew, rowing a very high stroke, took the lead at the start, with the other crews following closely, but as the race progressed the American crew gradually made up distance lost at the start and won by the margin of a few feet.

The finish was so close that only those exactly on the line knew which crew was victorious, and the Canadian and British Eights were so close that no open water at any time showed between the four shells, the total difference between the four crews being less than a length. It furnished a magnificent climax to a great regatta.

A fine feature of the Rowing competition was the manner in which all contests were held exactly on schedule time.

Review of Competition

Countries	Single Sculls	Double Sculls	Two with Coxswain	Two without Coxswain	Four with Coxswain	Four without Coxswain	Eights	Total Events in which Each Country Participated
Australia	1	..	..	..	..	..	..	1
Brazil	..	2	3	..	5	..	9	4
Canada	1	2	..	..	..	4	9	4
France	..	..	3	2	..	..	..	2
Germany	..	2	..	..	5	4	9	4
Great Britain	1	..	..	2	..	4	9	4
Holland	..	..	..	2	..	..	..	1
Italy	..	2	..	..	5	4	9	4
Japan	..	..	..	..	5	..	9	2
New Zealand	..	..	..	2	5	..	9	3
Poland	..	..	3	2	5	..	..	3
United States	1	2	3	2	5	4	9	7
Uruguay	1	..	..	..	..	..	..	1
Total Participants Each Event	5	10	12	12	35	20	72	..
Total Countries Each Event	5	5	4	6	7	5	8	..

GOVERNING BODY
FÉDÉRATION INTERNATIONALE DES SOCIÉTÉS D'AVIRON

RICO FIORONI . . . . . *President*, Switzerland
GASTON MÜLLEGG . . *General Secretary*, Rue Monbijou 51, Berne, Switzerland

JURY—ROWING

Tom Boles	United States
P. P. Bouton	France
Henry Penn Burke	United States
Roger L. Dequoy	France
Keith Enloe	United States
J. W. Fisher	United States
Major Goodcell	United States
William H. Harman	United States
Eugene Lenartowize	Poland
Donald Locke	United States
A. J. H. Magrath	United States
George G. Melloy	United States
W. W. Monahan	United States
Alberto M. Rossi	Italy
Luigi Di Sambuy	Italy
Charles Schaefer	Switzerland
Robert Sechaud	Switzerland
Richard A. Supplee	United States
R. C. White	United States
František Widimský	Czechoslovakia

GASTON MÜLLEGG
SWITZERLAND — SEC'Y-TREAS. ADMINISTRATIVE COUNCIL, F.I.S.A.

LUIGI DI SAMBUY
ITALY — VICE PRES. ADMINISTRATIVE COUNCIL, F.I.S.A.

Dates of Competitions
August 9 to August 13, 1932

Single Sculls
Maximum Number of Entrants . . . . 2 per Nation
Maximum Number of Competitors . . . 1 per Nation

Team Races
Maximum Number of Entries Each Category . . . 1 Crew per Nation with the Number of Substitutes stated below
Maximum Number of Competitors Each Category . . 1 Crew per Nation

List of Events
Pair Oared Boats. 2 Men 1 Oar Each (1 Reserve)
Double Sculls, 2 Men 2 Oars Each (1 Reserve)
Two Oared Shell with Coxswain (1 Reserve and the Coxswain)
Four Oared Shell without Coxswain (2 Reserves)
Four Oared Shell with Coxswain (2 Reserves and the Coxswain)
Eight Oared Shell with Coxswain (4 Reserves and the Coxswain)

Entrants and Participants
Out of 168 original entries, representing 13 countries, 152 contestants competed in the 7 events.

NEW ZEALAND'S EIGHT OAR CREW AFTER A WORKOUT

CONTESTANTS

AUSTRALIA

Single Sculls :	Henry Robert Pearce

BRAZIL

Double Sculls :	Henrique Tomassini
	Adamor Pinho Gonçlaves
Two with	Francisco Carlos Bricio
Coxswain	José Ramalho
	Estevam João Strata
Four with	Americo Garcia Fernandes
Coxswain	João Francisco De Castro
	Oliverio Kosta Popovitch
	Durval Bellini Ferreira Lima
	Osorio Antonio Pereira
Eights :	Amaro Miranda Da Cunha
	Claudionor Provenzano
	Joaquim Da Silva Faria
	Vasco De Carvalho
	Osorio Antonio Pereira
	José Rodrigues Mò
	Antonio Rebello, Jr.
	José Pichler
	Fernando Nabuco De Abreu

CANADA

Single Sculls :	Joseph Wright
Double Sculls :	Charles Pratt
	Noel De Mille
Four without	Fraser McDonald Herman
Coxswain	Francis Bernard Courtney
	Henry Joseph Pelham
	Russell Gordon Gammon
Eights :	Albert Taylor
	Stanley Stanyar
	George MacDonald
	Donald Boal
	William Thoburn
	Harry Fry
	Cedric Liddell
	Earl Eastwood
	Joseph Harris

FRANCE

Two with	Pierre Brunet
Coxswain	André Giriat
	Anselme Brusa
Two without	Marcel Vandernotte
Coxswain	Fernand Vandernotte

GERMANY

Double Sculls :	Herbert Buhtz
	Gerhard Boetzelen
Four with	Karl Heinz Neumann
Coxswain	Joachim Spremberg
	Horst Hoeck
	Hans Eller
	Walter Meyer
Four without	Walter Flinsch
Coxswain	Hans Maier
	Karl Aletter
	Ernst Gaber

Eights :	Hans-Wolfgang Heidland
	Heinrich Bender
	Fritz Bauer
	Theodor Hüllinghoff
	Gerhard von Düsterlho
	Hans Maier
	Walter Flinsch
	Ernst Gaber
	Karl Aletter

GREAT BRITAIN

Single Sculls :	Leslie Frank Southwood
Two without Coxswain	Lewis Clive
	Hugh Robert Arthur Edwards
Four without Coxswain	John C. Babcock
	Jack Beresford
	Rowland D. George
	Hugh Robert Arthur Edwards
Eights :	Thomas Garret Askwith
	David Haig-Thomas
	Lewis Luxton
	Donald Henry Ewan McCowen
	Kenneth Martin Payne
	John Maurice Ranking
	Harold Robert Norman Rickett
	William Austin Tyers Sambell
	Charles John Scott Sergel

HOLLAND

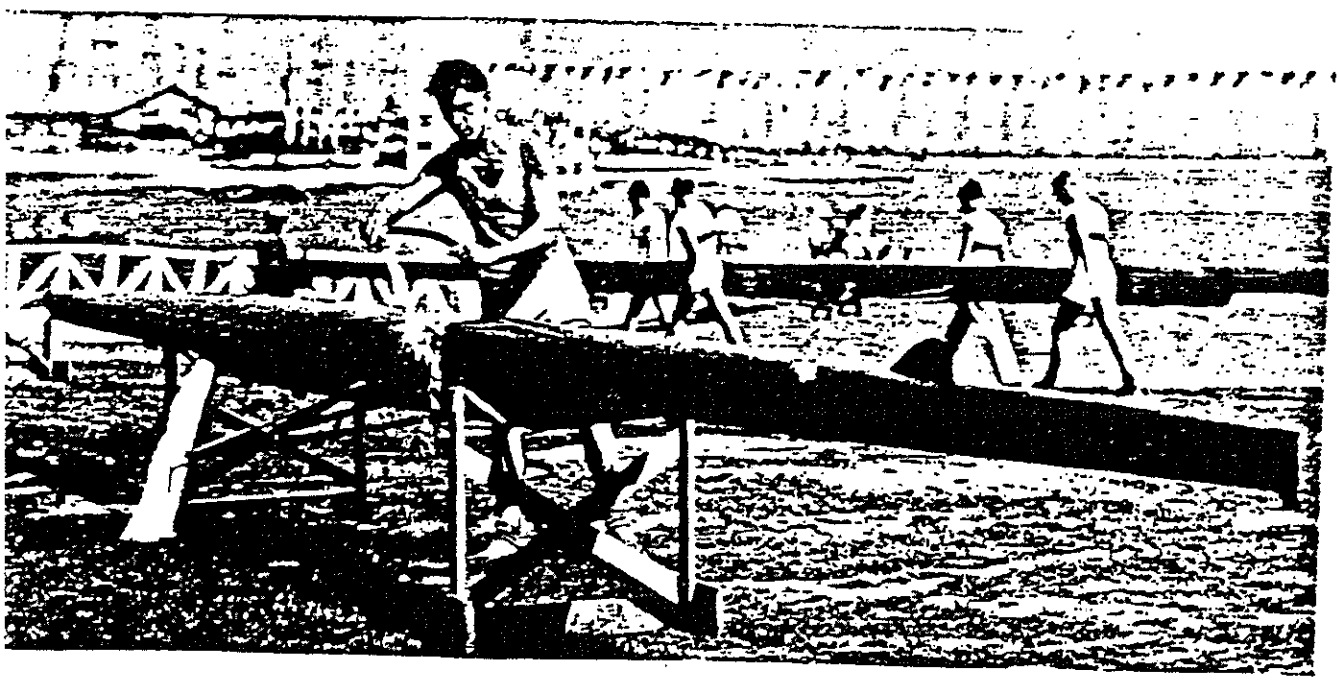
Two without Coxswain	Godfried Leonard Röell
	Pieter Anton Roelofsen

ITALY

Double Sculls :	Mario Moretti
	Orfeo Paroli
Four with Coxswain	Giovanni Scher
	Bruno Vattovaz
	Riccardo Divora
	Giovanni Plazzer
	Bruno Parovel
Four without Coxswain	Antonio Garzoni Provenzani
	Giliante D'Este
	Antonio Ghiardello
	Francesco Cossu
Eights :	Renato Barbieri
	Mario Balleri
	Renato Bracci
	Dino Barsotti
	Roberto Vestrini
	Guglielmo Del Bimbo
	Enrico Garzelli
	Vittorio Cioni
	Cesare Milani

JAPAN

Four with Coxswain	Daikichi Suzuki
	Umetaro Shibata
	Norio Ban
	Rokuro Takahashi
	Shokichi Nanba



WASHING OFF HIS SHELL

SINGLE SCULLS

CONTESTANTS

Australia

Henry Robert Pearce

Canada

Joseph Wright

Great Britain

Leslie Frank Southwood

United States

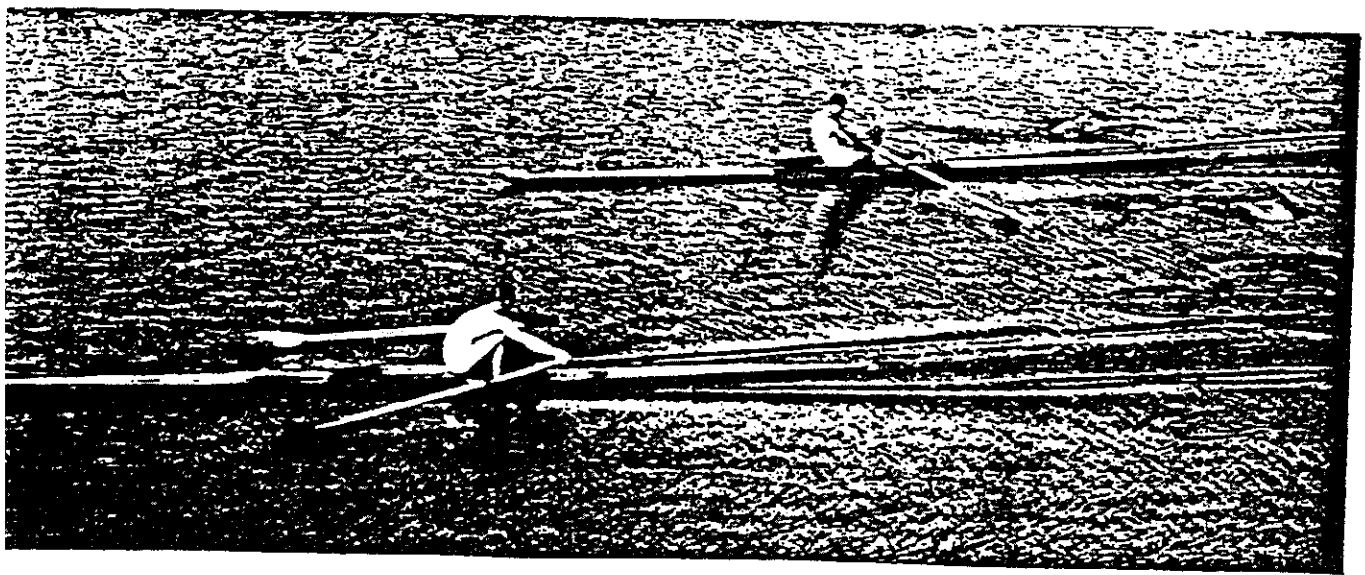
William G. Miller

Uruguay

Guillermo R. Douglas

CHAMPION OLYMPIQUE
ROBERT PEARCE. AUSTRALIA. SINGLE SCULLS

Heat	*Contestant*	*Country*	*Time Min. and Sec.*	*Place*
1st	Henry Robert Pearce	Australia	7:27	1st
	William G. Miller	United States	7:29 1 5	2nd
2nd	Leslie Frank Southwood	Great Britain	7:42 3 5	1st
	Guillermo R. Douglas	Uruguay	7:45	2nd
	Joseph Wright	Canada	8:30 3 5	3rd
Reclassi-	William G. Miller	United States	8:05 4 5	1st
fication	Guillermo R. Douglas	Uruguay	8:20 1 5	2nd
	Joseph Wright	Canada	8:37 4 5	3rd
Final	Henry Robert Pearce	Australia	7:44 2 5	1st
	William G. Miller	United States	7:45 1 5	2nd
	Guillermo R. Douglas	Uruguay	8:13 3 5	3rd
	Leslie Frank Southwood	Great Britain	8:33 3 5	4th



PEARCE, AUSTRALIA, LEADS MILLER, UNITED STATES, ACROSS THE

Eights :	Suburo Hara
	Yoshio Enomoto
	Shigeo Fujiwara
	Hidemitsu Tanaka
	Setsuo Matsuura
	Taro Nishidono
	Setsuji Tanaka
	Keizo Ikeda
	Toshi Sano

NEW ZEALAND

Two without Coxswain	Cyril Alec Stiles
	Fredrick Houghton Thompson
Four with Coxswain	Somers William Cox
	Noel Francis Pope
	John Drummond Solomon
	Charles Edwards Saunders
Eights :	Delmont Edward Gullery
	Bert Magnus Sandos
	Lawrence Jackson
	John MacDonald
	Frederick Houghton Thompson
	John Drummond Solomon
	Delmont Edward Gullery
	George Campbell Cooke
	Charles Edward Saunders
	Cyril Alec Stiles

POLAND

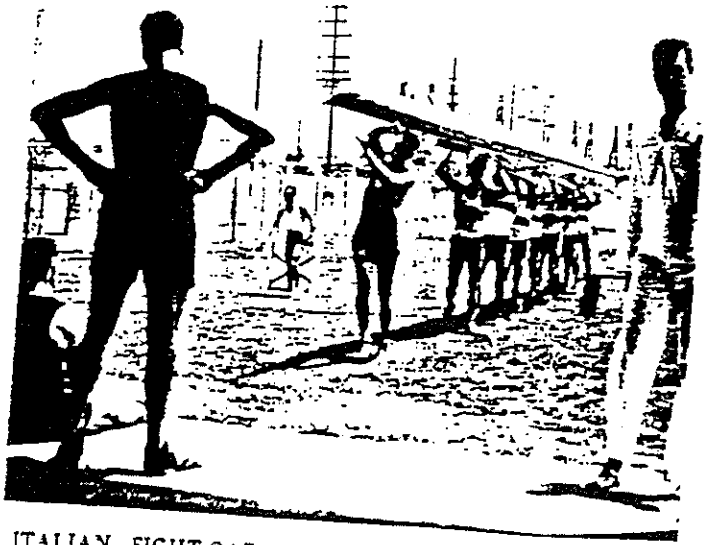
Two with Coxswain	Jerzy Skolimowski
	Janusz Ślązak
	Jerzy Braun
Two without Coxswain	Henryk Budzinski
	Jan Mikołajczak
Four with Coxswain	Jerzy Skolimowski
	Stanisław Urban
	Jerzy Braun
	Edward Kobylinski
	Janusz Ślązak

UNITED STATES

Single Sculls :	William G. Miller
Double Sculls :	Kenneth Myers
	W. E. Garrett Gilmore
Two with Coxswain	Joseph A. Schauers
	Charles M. Kieffer
	Edward F. Jennings
Two without Coxswain	Thomas Clark
	Eugene Clark
Four with Coxswain	Charles Drueding
	Edward Marshall
	Harry Grossmiller
	Francis English
	Thomas P. Mack, Jr.
Four without Coxswain	Edgar W. Johnson
	Thomas Williams Pierie
	George A. Mattson
	John McCosker
Eights :	Winslow Hall
	Harold Tower
	Charles Chandler
	Burton Jastram
	David Dunlap
	Duncan Gregg
	James Blair
	Edwin Salisbury
	Norris Graham

URUGUAY

Single Sculls :	Guillermo R. Douglas



ITALIAN EIGHT-OAR CREW ENTERS THE BOATHOUSE

VIEW INSIDE BOATHOUSE

NEAR THE FINISH LINE IN THE DOUBLE SCULLS FINAL

Reclassification (Cont'd)	Italy	Orfeo Paroli Mario Moretti	Stroke Bow	7:33 1/5	2nd
	Brazil	Henrique Tomassini Adamor Pinho Gonçalves	Stroke Bow	7:57 4/5	3rd
Final	United States	Kenneth Myers W. E. Garrett Gilmore	Stroke Bow	7:17 2/5	1st
	Germany	Herbert Buhtz Gerhard Boetzelen	Stroke Bow	7:22 4/5	2nd
	Canada	Charles Pratt Noel De Mille	Stroke Bow	7:27 3/5	3rd
	Italy	Orfeo Paroli Mario Moretti	Stroke Bow	7:49 1/5	4th

TWO WITH COXSWAIN

CONTESTANTS

Brazil
Francisco Carlos Bricio, José Ramalho, Estevam João Strata

France
Pierre Brunet, André Giriat, Anselme Brusa

Poland
Jerzy Skolimowski, Janusz Slązak, Jerzy Braun

United States
Joseph A. Schauers, Charles M. Kieffer, Edward F. Jennings

CHAMPIONS OLYMPIQUES

CREW OF THE UNITED STATES, TWO WITH COXSWAIN — JOSEPH A. SCHAUERS, STROKE, C...

CHAMPIONS OLYMPIQUES
CREW OF THE UNITED STATES, DOUBLE SCULLS — BOW, KENNETH MYERS, STROKE, W. E. GARRETT GILMORE

DOUBLE SCULLS
CONTESTANTS

Brazil
Henrique Tomassini, Adamor Pinho Gonçalves

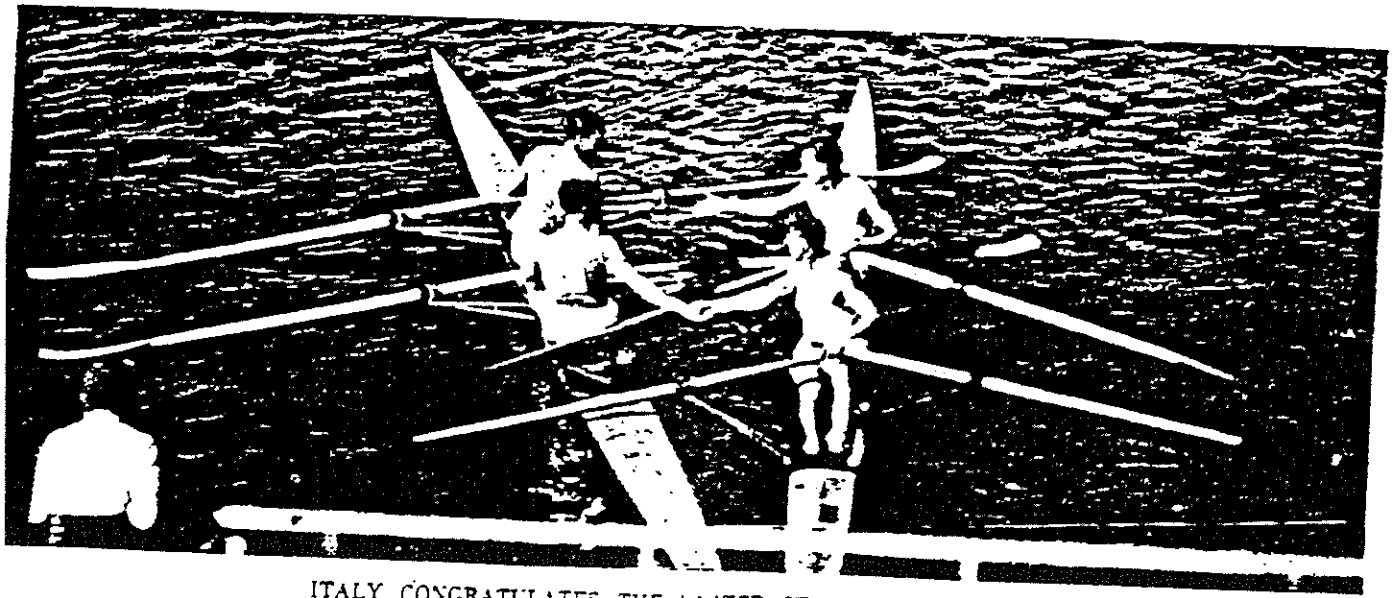
Canada
Charles Pratt, Noel De Mille

Germany
Herbert Buhtz, Gerhard Boetzelen

Italy
Mario Moretti, Orfeo Paroli

United States
Kenneth Myers, W. E. Garrett Gilmore

Heat	*Country*	*Contestants*	*Position*	*Time Min. and Sec.*	*Place*
1st	Canada	Charles Pratt	Stroke	7:25	1st
		Noel De Mille	Bow		
	Italy	Orfeo Paroli	Stroke	7:33	2nd
		Mario Moretti	Bow		
	Brazil	Henrique Tomassini	Stroke	7:38 4/5	3rd
		Adamor Pinho Gonçalves	Bow		
2nd	United States	Kenneth Myers	Stroke	7:14 3/5	1st
		W. E. Garrett Gilmore	Bow		
	Germany	Herbert Buhtz	Stroke	7:21 2/5	2nd
		Gerhard Boetzelen	Bow		
Reclassification	Germany	Herbert Buhtz	Stroke	7:28 2/5	1st
		Gerhard Boetzelen	Bow		



ITALY CONGRATULATES THE UNITED STATES ON WINNING

UNITED STATES. TWO WITH COXSWAIN. LEADS POLAND ACROSS THE FINISH LINE

(Only 4 Entries, No Heats Necessary)

Final	*Country*	*Contestants*	*Position*	*Time Min. and Sec.*	*Place*
	United States	Joseph A. Schauers	Stroke	8:25 4/5	1st
		Charles M. Kieffer	Bow		
		Edward F. Jennings	Coxswain		
	Poland	Jerzy Braun	Stroke	8:31 1/5	2nd
		Janusz Slązak	Bow		
		Jerzy Skolimowski	Coxswain		
	France	Anselme Brusa	Stroke	8:41 1/5	3rd
		André Giriat	Bow		
		Pierre Brunet	Coxswain		
	Brazil	José Ramalho	Stroke	8:53 1/5	4th
		Estevam João Strata	Bow		
		Francisco Carlos Bricio	Coxswain		

CHAMPIONS OLYMPIQUES

CREW OF GREAT BRITAIN, TWO WITHOUT COXSWAIN, LAST GAME STROKE, HUGH ...

TWO WITHOUT COXSWAIN

CONTESTANTS

France
Marcel Vandernotte, Fernand Vandernotte

Great Britain
Lewis Clive, Hugh Robert Arthur Edwards

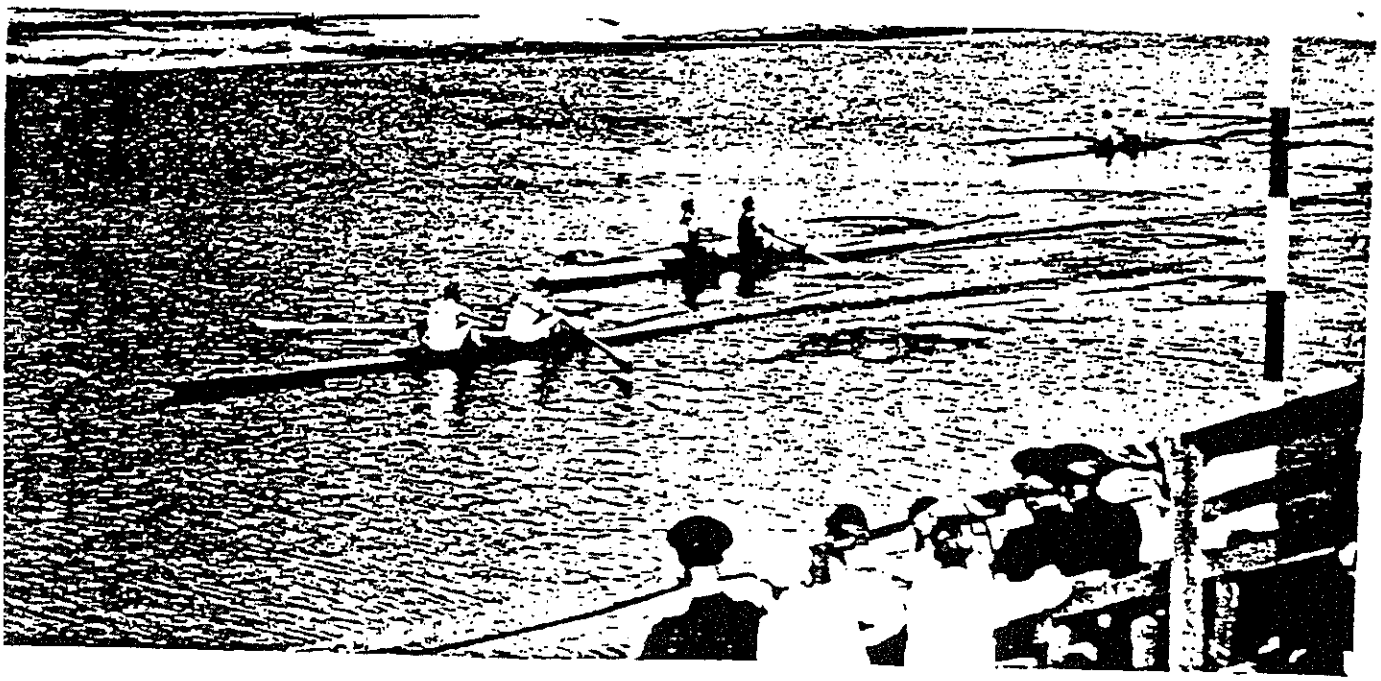
Holland
Godfried Leonard Röell, Pieter Anton Roelofsen

New Zealand
Cyril Alec Stiles, Fredrick Houghton Thompson

Poland
Henryk Budzinski, Jan Mikołajczak

United States
Thomas Clark, Eugene Clark

Heat	*Country*	*Contestants*	*Position*	*Time Min. and Sec.*	*Place*
1st	Poland	Henryk Budzinski	Stroke	7:53 2/5	1st
		Jan Mikołajczak	Bow		
	France	Fernand Vandernotte	Stroke	7:54 3/5	2nd
		Marcel Vandernotte	Bow		
	United States	Thomas Clark	Stroke	8:03 1/5	3rd
		Eugene Clark	Bow		
2nd	Great Britain	Lewis Clive	Stroke	7:47	1st
		H. R. Arthur Edwards	Bow		
	New Zealand	Cyril Alec Stiles	Stroke	7:50 1/5	2nd
		Fredrick Houghton Thompson	Bow		
	Holland	Godfried L. Röell	Stroke	7:51 4/5	3rd
		Pieter Anton Roelofsen	Bow		
Reclassification	Holland	Godfried L. Röell	Stroke	8:10	1st
		Pieter Anton Roelofsen	Bow		
	New Zealand	Cyril Alec Stiles	Stroke	8:11 2/5	2nd
		Fredrick Houghton Thompson	Bow		
	France	Fernand Vandernotte	Stroke	8:13	3rd
		Marcel Vandernotte	Bow		
	United States	Thomas Clark	Stroke	8:23	4th
		Eugene Clark	Bow		



GREAT BRITAIN AND NEW ZEALAND, TWO WITHOUT COXSWAIN

Final	Great Britain	Lewis Clive	Stroke	8:00	1st
		H. R. Arthur Edwards	Bow		
	New Zealand	Cyril Alec Stiles	Stroke	8:02 2 5	2nd
		Fredrick Houghton Thompson	Bow		
	Poland	Henryk Budzinski	Stroke	8:08 1 5	3rd
		Jan Mikołajczak	Bow		
	Holland	Godfried L. Röell	Stroke	8:08 2 5	4th
		Pieter Anton Roelofsen	Bow		

FOUR WITH COXSWAIN

CONTESTANTS

Brazil

Americo Garcia Fernandes, João Francisco De Castro, Oliverio Kosta Popovitch, Durval Bellini Ferreira Lima, Osorio Antonio Pereira

Germany

Karl Heinz Neumann, Joachim Spremberg, Horst Hoeck, Hans Eller, Walter Meyer

Italy

Giovanni Scher, Bruno Vattovaz, Riccardo Divora, Giovanni Plazzer, Bruno Parovel

Japan

Daikichi Suzuki, Umetaro Shibata, Norio Ban, Rokuro Takahashi, Shokichi Nanba

New Zealand

Somers William Cox, Noel Francis Pope, John Drummond Solomon, Charles Edward Saunders, Delmont Edward Gullery

Poland

Jerzy Skolimowski, Stanisław Urban, Jerzy Braun, Edward Kobylinski, Janusz Ślązak

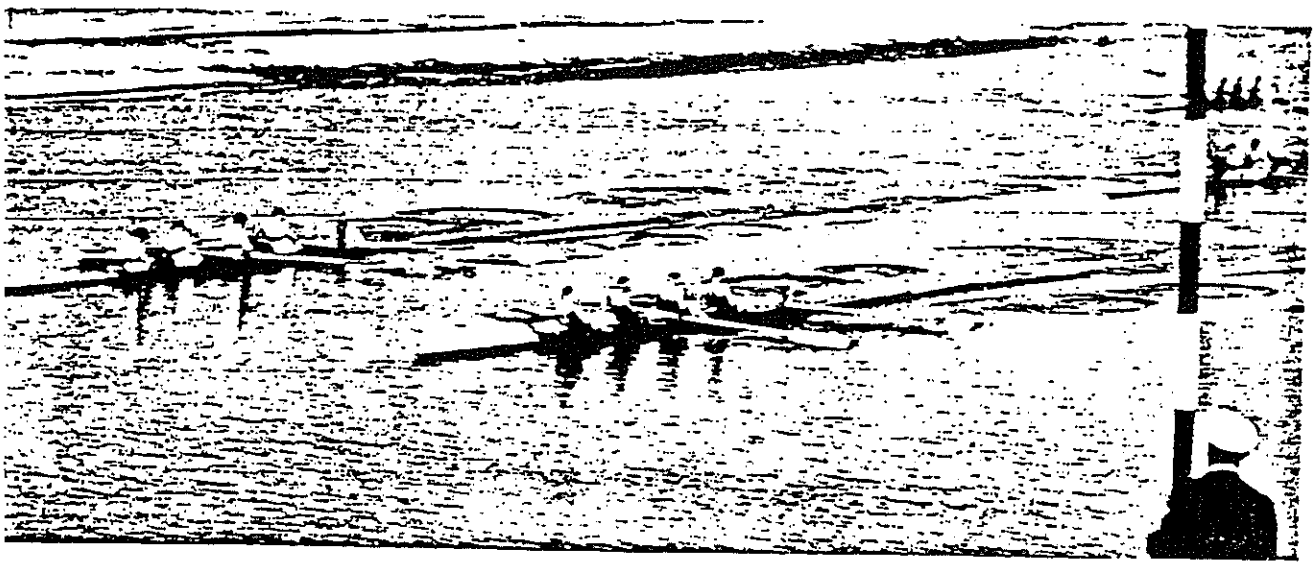
United States

Charles Drueding, Edward Marshall, Harry Grossmiller, Francis English, Thomas P. Mack, Jr.

Heat	*Country*	*Contestants*	*Position*	*Time Min. and Sec.*	*Place*
1st	Italy	Bruno Vattovaz	Stroke	7:06	1st
		Giovanni Plazzer			
		Riccardo Divora	Bow		
		Bruno Parovel			
		Giovanni Scher	Coxswain		

CHAMPIONS OLYMPIQUES

Crew of Germany, Four with Coxswain — Hans Eller (Stroke), Horst Hoeck, Walter Meyer, Joachim Spremberg (Bow), Karl Heinz Neumann (Coxswain)



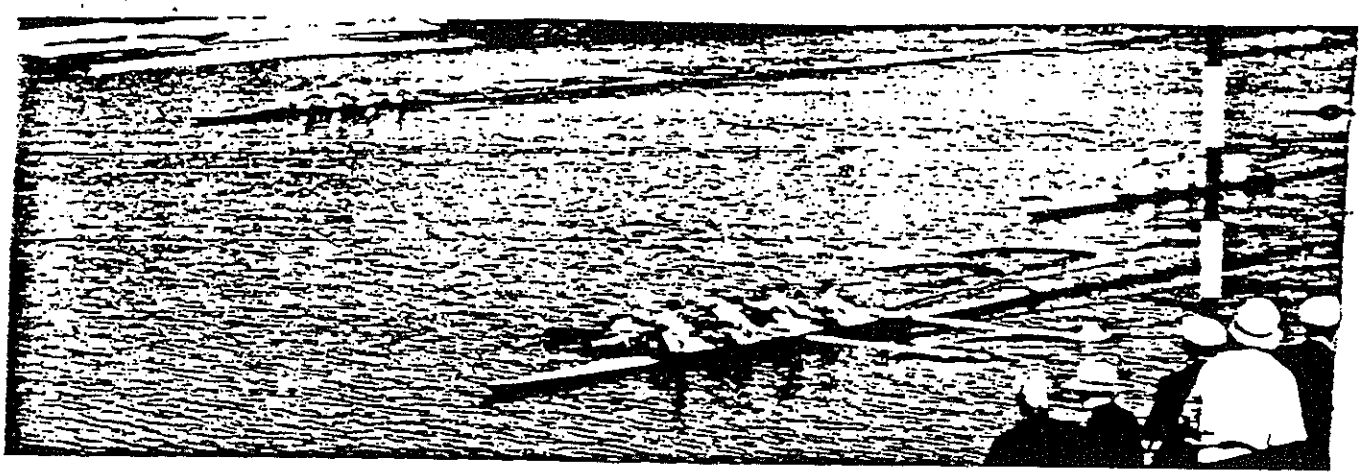
GERMANY AND ITALY. FOUR WITH COXSWAIN. IN A CLOSE FINISH

1st Heat (Cont'd)	Germany	Hans Eller	Stroke	7:09 1/5	2nd
		Horst Hoeck			
		Walter Meyer			
		Joachim Spremberg	Bow		
		Karl Heinz Neumann	Coxswain		
	New Zealand	Noel Francis Pope	Stroke	7:19 3/5	3rd
		Somers William Cox			
		Charles Edward Saunders			
		John Drummond Solomon	Bow		
		Delmont Edward Gullery	Coxswain		
	Brazil	Osorio Antonio Pereira	Stroke	7:29 2/5	4th
		Oliverio Kosta Popovitch			
		Durval Bellini Ferreira Lima			
		João Francisco De Castro	Bow		
		Americo Garcia Fernandes	Coxswain		
2nd	Poland	Jerzy Braun	Stroke	7:04 1/5	1st
		Janusz Ślązak			
		Stanisław Urban			
		Edward Kobylinski	Bow		
		Jerzy Skolimowski	Coxswain		
	United States	Francis English	Stroke	7:06 3/5	2nd
		Harry Grossmiller			
		Charles Drueding			
		Edward Marshall	Bow		
		Thomas P. Mack. Jr.	Coxswain		
	Japan	Rokuro Takahashi	Stroke	7:16 4/5	3rd
		Norio Ban			
		Umetaro Shibata			
		Daikichi Suzuki	Bow		
		Shokichi Nanba			
Declassification	New Zealand	Noel Francis Pope	Stroke	7:38 1/5	1st
		Somers William Cox			
		Charles Edward Saunders			
		John Drummond Solomon	Bow		
		Delmont Edward Gullery	Coxswain		

Reclassification (Cont'd)	Germany	Hans Eller Horst Hoeck Walter Meyer Joachim Spremberg Karl Heinz Neumann	Stroke Bow Coxswain	7:38 4/5	2nd
	United States	Francis English Harry Grossmiller Charles Drueding Edward Marshall Thomas P. Mack, Jr.	Stroke Bow Coxswain	7:41 3/5	3rd
	Japan	Rokuro Takahashi Norio Ban Umetaro Shibata Daikichi Suzuki Shokichi Nanba	Stroke Bow Coxswain	7:47	4th
Final	Germany	Hans Eller Horst Hoeck Walter Meyer Joachim Spremberg Karl Heinz Newmann	Stroke Bow Coxswain	7:19	1st
	Italy	Bruno Vattovaz Giovanni Plazzer Riccardo Divora Bruno Parovel Giovanni Scher	Stroke Bow Coxswain	7:19 1/5	2nd
	Poland	Jerzy Braun Janusz Slązak Stanisław Urban Edward Kobylinski Jerzy Skolimowski	Stroke Bow Coxswain	7:26 4/5	3rd
	New Zealand	Noel Francis Pope Somers William Cox Charles Edward Saunders John Drummond Solomon Delmont Edward Gullery	Stroke Bow Coxswain	7:32 3/5	4th

CREW OF GREAT BRITAIN, FOUR WITHOUT COXSWAIN — JOHN L. BABCOCK (STROKE), HUGH R. A. EDWARDS, JACK BERESFORD, ROWLAND D. GEORGE (BOW)

CHAMPIONS OLYMPIQUES



GREAT BRITAIN WINS THE FOUR WITHOUT COXSWAIN

FOUR WITHOUT COXSWAIN

CONTESTANTS

Canada

Fraser MacDonald Herman, Francis Bernard Courtney, Henry Joseph Pelham, Russell Gordon Gammon

Germany

Walter Flinsch, Hans Maier, Karl Aletter, Ernst Gaber

Great Britain

John C. Babcock, Jack Beresford, Rowland D. George, Hugh Robert Arthur Edwards

Italy

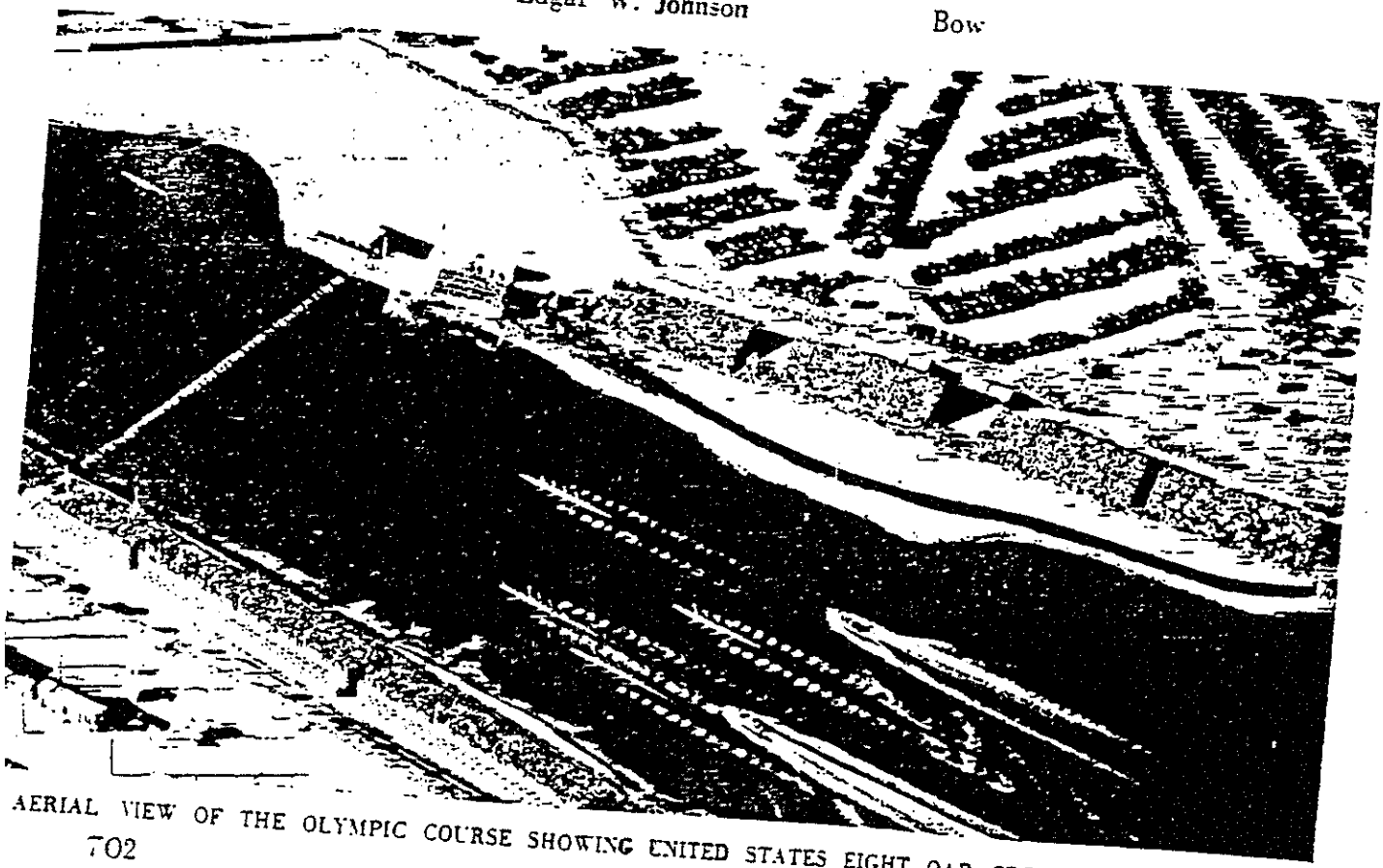
Antonio Garzoni Provenzani, Giliante D'Este, Antonio Ghiardello, Francesco Cossu

United States

Edgar W. Johnson, Thomas Williams Pierie, George A. Mattson, John McCosker

Heat	*Country*	*Contestant*	*Position*	*Time Min. and Sec.*	*Place*
1st	Great Britain	John C. Babcock	Stroke	7:13 1/5	1st
		Hugh Robert Arthur Edwards			
		Jack Beresford			
		Rowland D. George	Bow		
	United States	John McCosker	Stroke	7:19 2/5	2nd
		George A. Mattson			
		Thomas Williams Pierie			
		Edgar W. Johnson	Bow		
	Germany	Karl Aletter	Stroke	7:37 4/5	3rd
		Ernst Gaber			
		Walter Flinsch			
		Hans Maier	Bow		
2nd	Italy	Antonio Ghiardello	Stroke	7:06 4/5	1st
		Francesco Cossu			
		Giliante D'Este			
		Antonio Garzoni Provensani	Bow		
	Canada	Henry Joseph Pelham	Stroke	7:12	2nd
		Russell Gordon Gammon			
		Fraser MacDonald Herman			
		Francis Bernard Courtney	Bow		

Reclassification	Germany	Karl Aletter Ernst Gaber Walter Flinsch Hans Maier	Stroke	7:17 1/5	1st
	United States	John McCosker George A. Mattson Thomas Williams Pierie Edgar W. Johnson	Bow Stroke	7:18 2/5	2nd
	Canada	Henry Joseph Pelham Russell Gordon Gammon Fraser MacDonald Herman Francis Bernard Courtney	Bow Stroke	7:20 1/5	3rd
Final	Great Britain	John C. Babcock Hugh Robert Arthur Edwards Jack Beresford Rowland D. George	Bow Stroke	6:58 1/5	1st
	Germany	Karl Aletter Ernst Gaber Walter Flinsch Hans Maier	Bow Stroke	7:03	2nd
	Italy	Antonio Ghiardello Francesco Cossu Giliante D'Este Antonio Garzoni Provenzani	Bow Stroke	7:04	3rd
	United States	John McCosker George A. Mattson Thomas Williams Pierie Edgar W. Johnson	Bow Stroke	7:14 1/5	4th



AERIAL VIEW OF THE OLYMPIC COURSE SHOWING UNITED STATES EIGHT OAR CREW WINNING A HEAT

EIGHTS

CONTESTANTS

Brazil

Amaro Miranda Da Cunha. Claudionor Provenzano, Joaquim Da Silva Faria, Vasco De Carvalho, Osorio Antonio Pereira, José Rodrigues Mò, Antonio Rebello, Jr., José Pichler, Fernando Nabuco De Abreu

Canada

Albert Taylor, Stanley Stanyar, George MacDonald, Donald Boal, William Thoburn, Harry Fry, Cedric Liddell, Earl Eastwood, Joseph Harris

Germany

Hans-Wolfgang Heidland, Heinrich Bender, Fritz Bauer, Theodor Hüllinghoff, Gerhard von Düsterlho, Hans Maier, Walter Flinsch, Ernst Gaber, Karl Aletter

Great Britain

Thomas Garret Askwith, David Haig-Thomas, Lewis Luxton, Donald Henry Ewan McCowen, Kenneth Martin Payne, John Maurice Ranking, Harold Robert Norman Rickett, William Austin Tyers Sambell, Charles John Scott Sergel

Italy

Renato Barbieri, Mario Balleri, Renato Bracci, Dino Barsotti, Roberto Vestrini, Guglielmo Del Bimbo, Enrico Garzelli, Vittorio Cioni, Cesare Milani

Japan

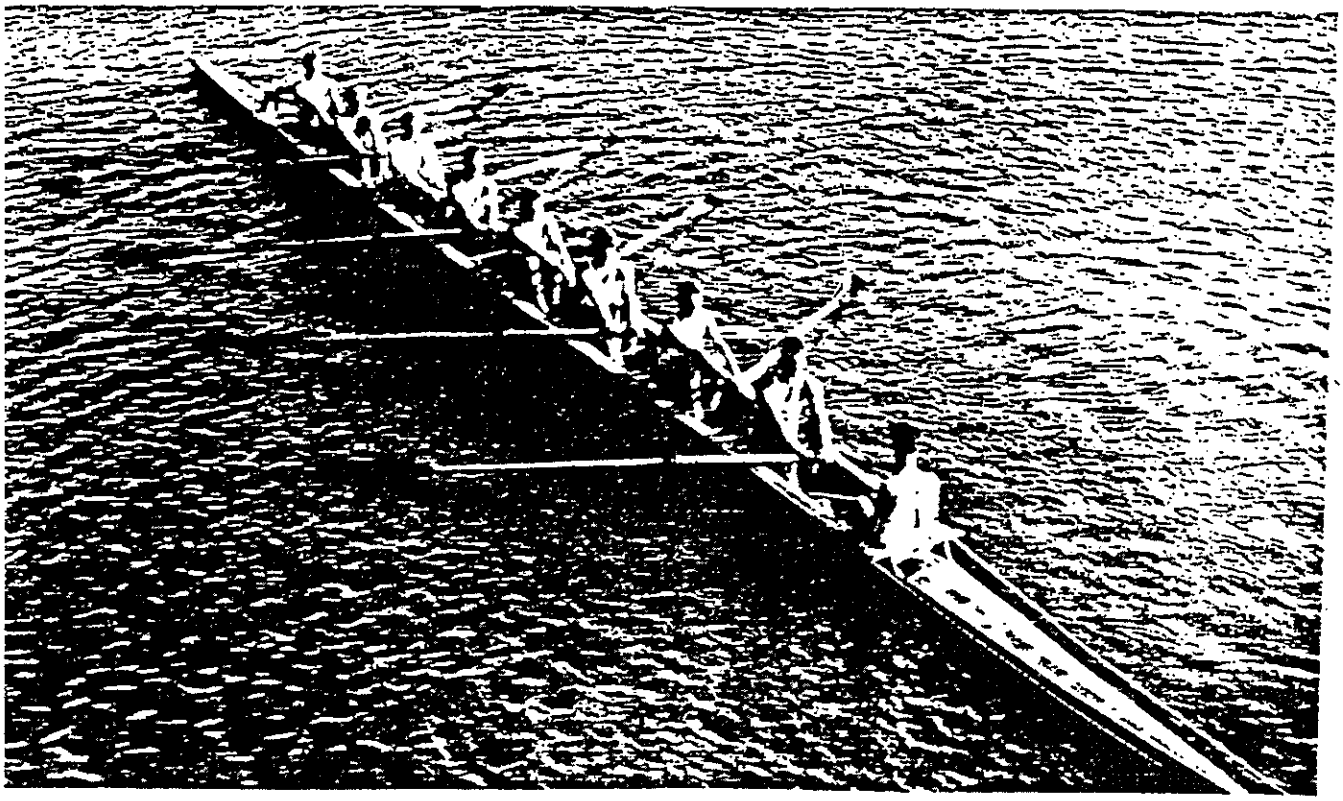
Suburo Hara, Yoshio Enomoto, Shigeo Fujiwara, Hidemitsu Tanaka, Setsuo Matsuura, Taro Nishidono, Setsuji Tanaka, Keizo Ikeda, Toshi Sano

New Zealand

Bert Magnus Sandos, Lawrence Jackson, John MacDonald, Frederick Houghton Thompson, John Drummond Solomon, Delmont Edward Gullery, George Campbell Cooke, Charles Edward Saunders, Cyril Alec Stiles

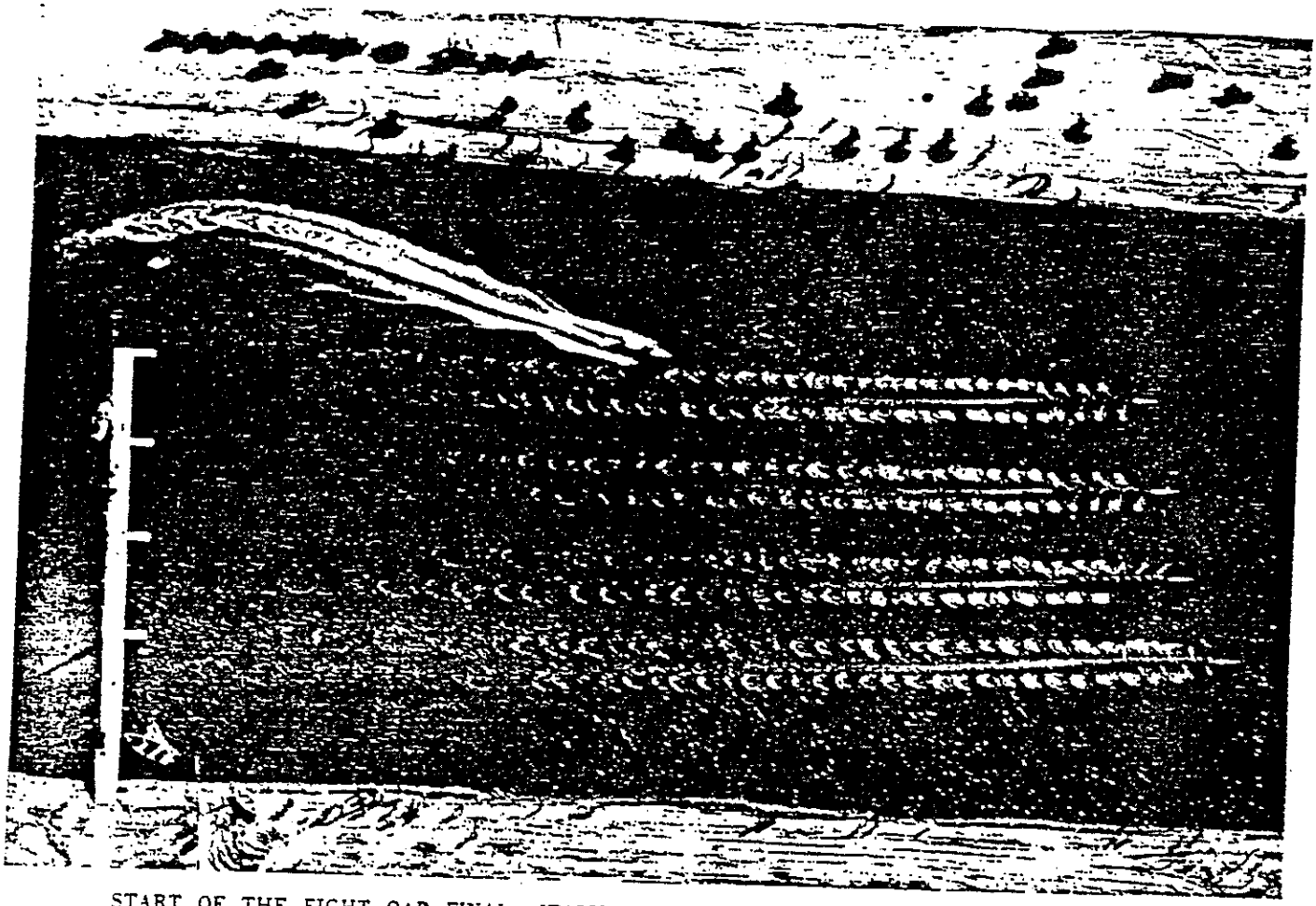
United States

Winslow Hall, Harold Tower, Charles Chandler, Burton Jastram, David Dunlap, Duncan Gregg, James Blair, Edwin Salisbury, Norris Graham



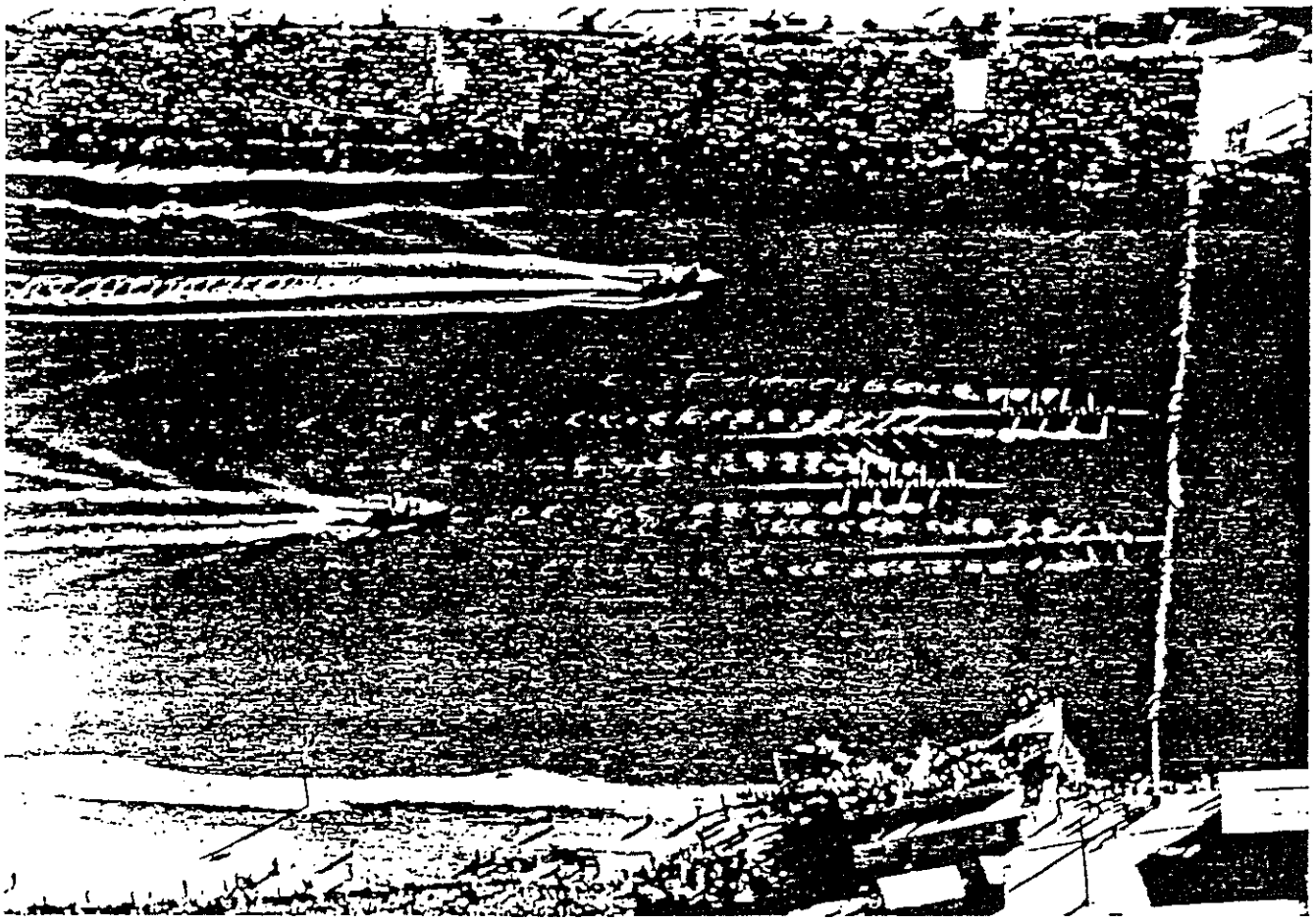
CHAMPIONS OLYMPIQUES

OF THE UNITED STATES, EIGHTS — EDWIN SALISBURY (STROKE), JAMES BLAIR, DUNCAN GREGG, DAVID DUNLAP, BURTON JASTRAM, CHARLES CHANDLER, HAROLD TOWER, WINSLOW HALL (BOW), NORRIS GRAHAM (COXSWAIN)



START OF THE EIGHT OAR FINAL—ITALY IN LEFT-HAND COURSE. THEN GREAT BRITAIN, CANADA AND UNITED STATES ON THE RIGHT

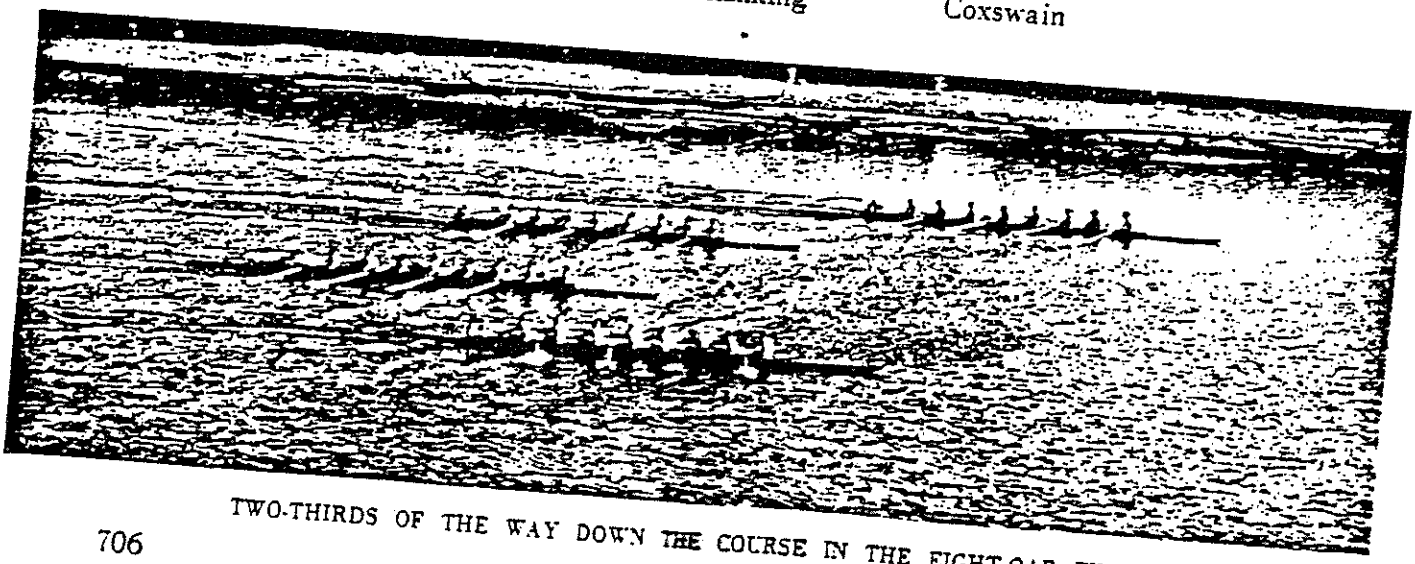
Heat	*Country*	*Contestants*		*Time Min. and Sec.*	*Place*
1st	Italy	Vittorio Cioni	Stroke	6:28 1/5	1st
		Mario Balleri			
		Renato Bracci			
		Dino Barsotti			
		Roberto Vestrini			
		Guglielmo Del Bimbo			
		Enrico Garzelli			
		Renato Barbieri	Bow		
		Cesare Milani	Coxswain		
	Great Britain	Lewis Luxton	Stroke	6:34 2/5	2nd
		Donald Henry Ewan McCowen			
		Harold Robert Norman Rickett			
		Charles John Scott Sergel			
		William Austin Tyers Sambell			
		Thomas Garret Askwith			
		Kenneth Martin Payne			
		David Haig-Thomas	Bow		
		John Maurice Ranking	Coxswain		
	Japan	Keizo Ikeda	Stroke	6:43 2/5	3rd
		Setsuji Tanaka			
		Taro Nishidono			
		Setsuo Matsuura			



AT THE FINISH LINE—UNITED STATES BEATS ITALY, WITH CANADA AND GREAT BRITAIN WITHIN A BOAT'S LENGTH

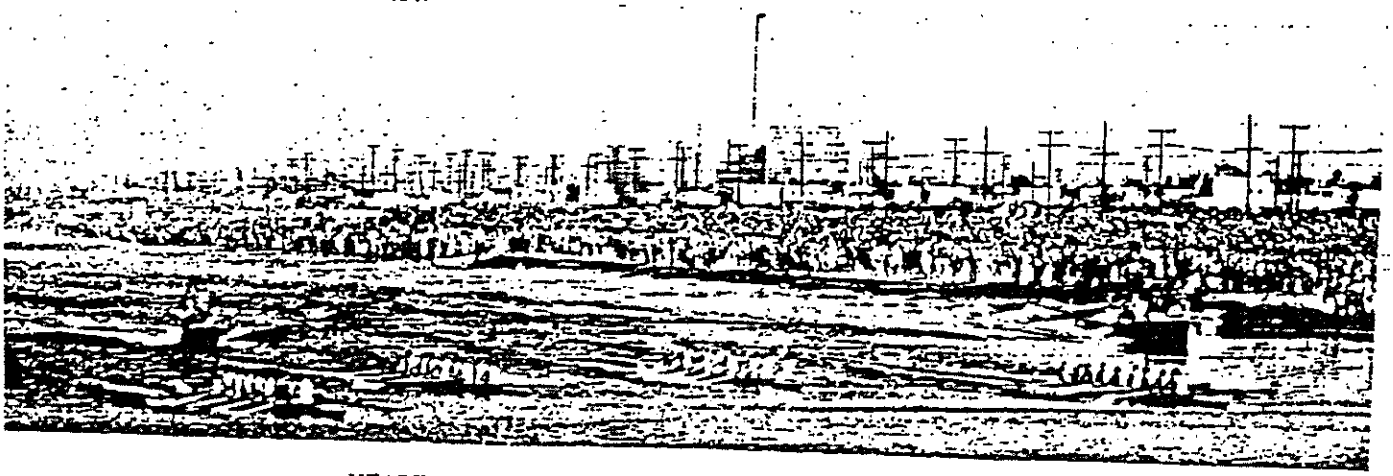
1st Heat (Continued)		Hidemitsu Tanaka			
		Shigeo Fujiwara			
		Yoshio Enomoto			
		Suburo Hara	Bow		
		Toshi Sano	Coxswain		
	Brazil	Vasco De Carvalho	Stroke	6:52 1/5	4th
		Joaquim Da Silva Faria			
		Osorio Antonio Pereira			
		Claudionor Provenzano			
		Antonio Rebello. Jr.			
		Fernando Nabuco De Abreu			
		José Pichler			
		José Rodrigues Mò	Bow		
		Amaro Miranda Da Cunha	Coxswain		
2nd	United States	Edwin Salisbury	Stroke	6:29	1st
		James Blair			
		Duncan Gregg			
		David Dunlap			
		Burton Jastram			
		Charles Chandler			
		Harold Tower			
		Winslow Hall	Bow		
		Norris Graham	Coxswain		

2nd Heat (Cont'd)	Canada	Earl Eastwood Joseph Harris Stanley Stanyar Harry Fry Cedric Liddell William Thoburn Donald Boal Albert Taylor George MacDonald	Stroke Bow Coxswain	6:33 1/5	2nd
	Germany	Karl Aletter Enrst Gaber Theodor Hüllinghoff Heinrich Bender Hans-Wolfgang Heidland Gerhard Von Düsterlho Walter Flinsch Hans Maier Fritz Bauer	Stroke Bow Coxswain	6:36 4/5	3rd
	New Zealand	George Campbell Cooke Bert Magnus Sandos Cyril Alec Stiles John MacDonald Lawrence Jackson Frederick Houghton Thompson Charles Edward Saunders John Drummond Solomon Delmont Edward Gullery	Stroke Bow Coxswain	6:38 1/5	4th
		Reclassification			
1st	Great Britain	Lewis Luxton Donald Henry Ewan McCowen Harold Robert Norman Rickett Charles John Scott Sergel William Austin Tyers Sambell Thomas Garret Askwith Kenneth Martin Payne David Haig-Thomas John Maurice Ranking	Stroke Bow Coxswain	6:49	1st



TWO-THIRDS OF THE WAY DOWN THE COURSE IN THE EIGHT-OAR FINAL

	New Zealand	George Campbell Cooke	Stroke	6:52 1/5	2nd
		Bert Magnus Sandos			
		Cyril Alec Stiles			
		John MacDonald			
		Lawrence Jackson			
		Frederick Houghton Thompson			
		Charles Edward Saunders			
		John Drummond Solomon	Bow		
		Delmont Edward Gullery	Coxswain		
		Note : Brazil withdrew from competition.			
2nd	Canada	Earl Eastwood	Stroke	7:03 1/5	1st
		Joseph Harris			
		Stanley Stanyar			
		Harry Fry			
		Cedric Liddell			
		William Thoburn			
		Donald Boal			
		Albert Taylor	Bow		
		George MacDonald	Coxswain		
	Germany	Karl Aletter	Stroke	7:10 3/5	2nd
		Ernst Gaber			
		Theodor Hüllinghoff			
		Heinrich Bender			
		Hans-Wolfgang Heidland			
		Gerhard von Düsterlho			
		Walter Flösch			
		Hans Maier	Bow		
		Fritz Bauer	Coxswain		
	Japan	Keizo Ikeda	Stroke	7:22 3/5	3rd
		Setsuji Tanaka			
		Taro Nishidono			
		Setsuo Matsuura			
		Hidemitsu Tanaka			
		Shigeo Fujiwara			
		Yoshio Enomoto			
		Suburo Hara	Bow		
		Toshi Sano	Coxswain		



NEARING THE FINISH LINE IN THE EIGHT-OAR FINAL

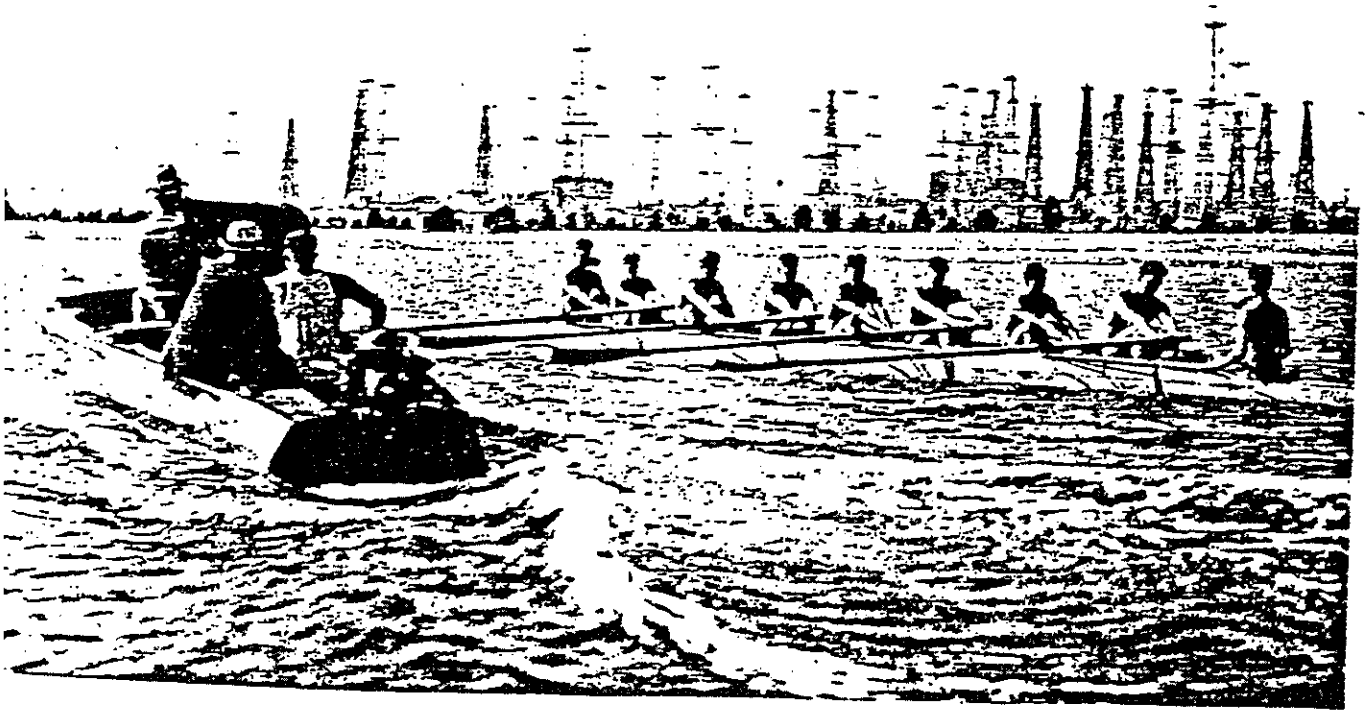
Final	United States	Edwin Salisbury	Stroke	6:37 3/5	1st
		James Blair			
		Duncan Gregg			
		David Dunlap			
		Burton Jastram			
		Charles Chandler			
		Harold Tower			
		Winslow Hall			
		Norris Graham	Bow		
	Italy	Vittorio Cioni	Coxswain		
		Mario Balleri	Stroke	6:37 4/5	2nd
		Renato Bracci			
		Dino Barsotti			
		Roberto Vestrini			
		Guglielmo Del Bimbo			
		Enrico Garzelli			
		Renato Barbieri			
		Cesare Milani	Bow		
	Canada	Earl Eastwood	Coxswain		
		Joseph Harris	Stroke	6:40 2/5	3rd
		Stanley Stanyar			
		Harry Fry			
		Cedric Liddell			
		William Thoburn			
		Donald Boal			
		Albert Taylor			
		George MacDonald	Bow		
	Great Britain	Lewis Luxton	Coxswain		
		Donald Henry Ewan McCowen	Stroke	6:40 4/5	4th
		Harold Robert Norman Rickett			
		Charles John Scott Sergel			
		William Austin Tyers Sambell			
		Thomas Garret Askwith			
		Kenneth Martin Payne			
		David Haig-Thomas	Bow		
		John Maurice Ranking	Coxswain		

THE WINNERS CELEBRATE BY GIVING THEIR COXSWAIN A DUCKING

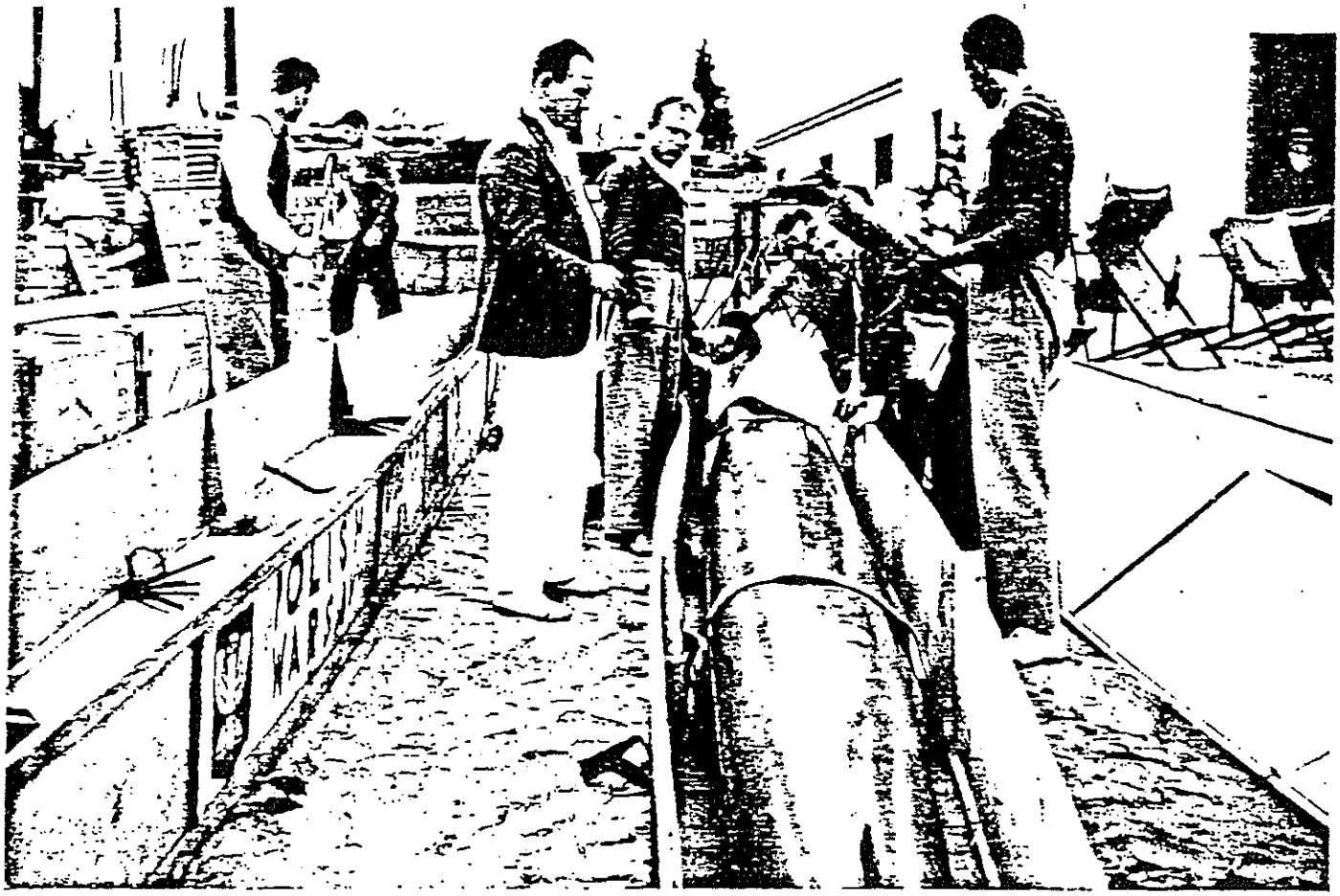
Cycling: The only board Cycling track in Southern California available to the Committee was the special track constructed in the Rose Bowl, Pasadena. Upon completion, the Cycling contestants were permitted to use the Rose Bowl track at all times for training purposes.

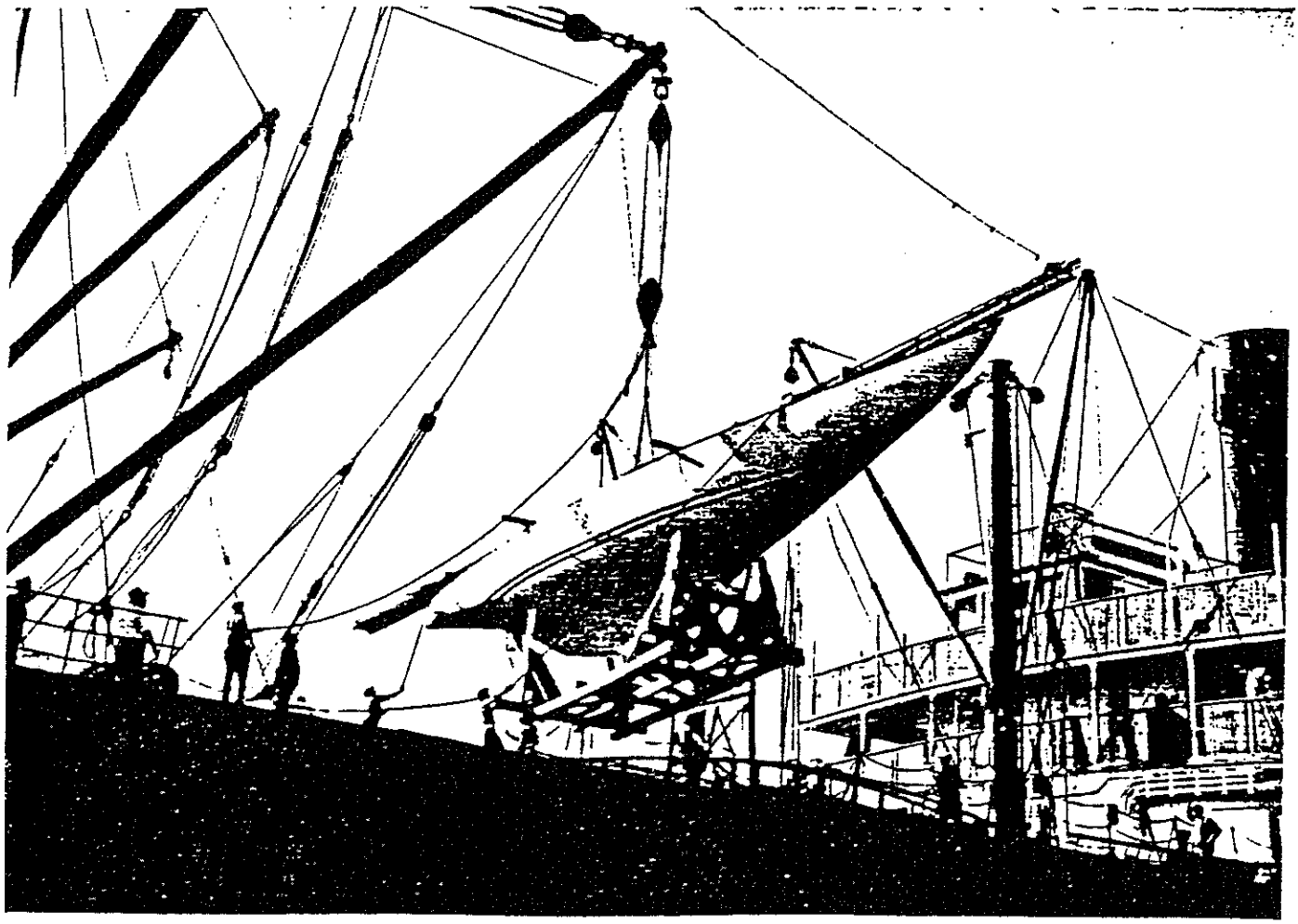
As each Cycling team arrived in Los Angeles, arrangements were made to transport the team in a special motor coach to the starting point of the road Cycling race, approximately forty-five miles from Los Angeles. An official accompanied the team for the full length of the course, pointing out the dangerous crossings and other hazards. In this manner each team was enabled to familiarize itself with conditions. Many of the contestants rode the course daily but some of them trained on the concrete highways in the vicinity of the Olympic Village.

Equestrian: Organized training for the Olympic Equestrian events was undesirable as well as impossible. Training over the actual Cross Country course was prohibited by the regulations, and the same was true of the *Prix des Nations* Jumping course. Training facilities made available to Equestrian contestants at the Riviera Country Club consisted of adequate level turf for training of the

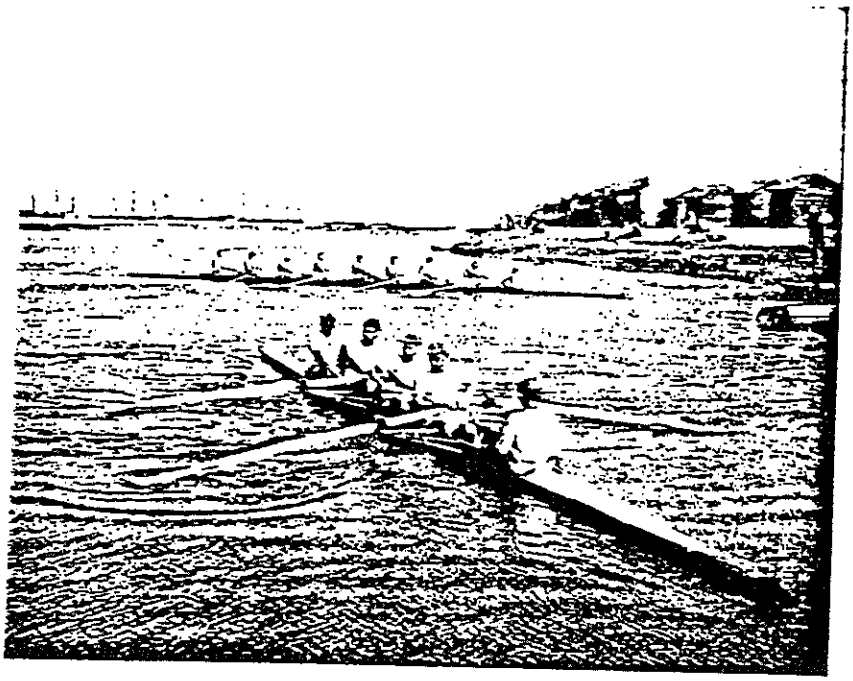


ON THE ROWING COURSE



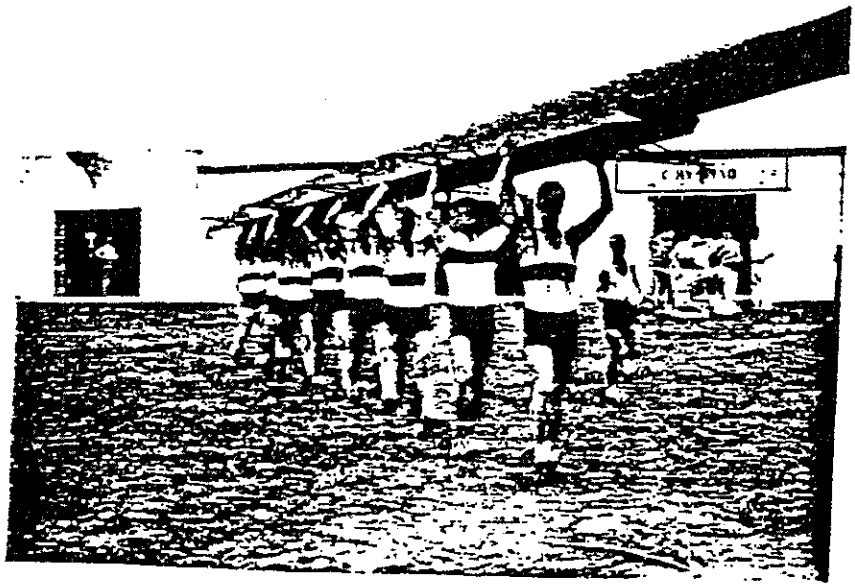


EQUIPMENT BECAME PRICELESS AFTER THE LONG JOURNEY
TOO LATE TO BE REPLACED. IT WAS CAREFULLY UNPACKED AND PUT IN ORDER



Dressage horses, a sample course of standard Jumping obstacles, and a certain area of flat country and mountain trails similar to those to be utilized in the actual Cross Country competition. These were available to all contestants and use was made of them without prearranged schedule. The riders co-operated in a fine spirit of good sportsmanship. All the facilities were located in the immediate vicinity of the Riviera Country Club, headquarters for the Equestrian events, where practically all the Equestrian teams were housed.

Fencing: Official specifications for the Fencing competition called for strips of cork carpet fifty metres in length. The only strips of this length available were the four in the Fencing Stadium. Absence of other strips of this length led to the fear that training facilities in this sport might prove to be inadequate. However, the co-operation of the various teams in adjusting their training schedules to the convenience of all concerned, solved the training problem satisfactorily through the use of the Fencing Stadium and the large gymnasium at the University of Southern California where shorter strips suited for practice were laid down.



Field Hockey: With only a few teams entered in the Olympic Field

APPENDIX C

UNITED STATES ARMY CORPS OF ENGINEERS LETTER, DETERMINATION OF ELIGIBILITY, LONG BEACH MARINE STADIUM, AND OFFICE OF HISTORIC PRESERVATION CONCURRANCE LETTER

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

REPLY TO
ATTENTION OF

January 26, 1990

Office of the Chief
Environmental Resources Branch

Ms. Kathryn Gualtieri
State Historic Preservation Officer
Office of Historic Preservation
P.O. Box 942896
Sacramento, California 94296-0001

Dear Ms. Gualtieri:

The Los Angeles District Corps of Engineers (Corps) is reviewing a proposed Section 404 project at Marine Stadium in Long Beach, Los Angeles County. The proposed project consists of the construction of swimming beaches and a boat mooring dock. This would require the removal of existing armor rock, the importation of beach sand, and excavation of the site to configure it for construction of the beach (enclosure 1).

A field investigation of the area of potential effects was conducted by the Corps archeology staff (enclosure 2). In addition, we reviewed a National Register nomination form which was submitted to your office in 1985 (enclosure 3). This information revealed the presence of only one potentially National Register eligible property, the Marine Stadium. Prior to the field survey, the Marine Stadium was considered potentially eligible under criterion a. for its association with the 1932 Olympics.

Based on a review of the National Register nomination form and the results of the site visit by the Corps archeology staff we have determined that Marine Stadium is not eligible for the National Register of Historic Places as it lacks sufficient integrity. Therefore, the proposed project will not involve properties listed in, or eligible for, the NRHP.

Please review the enclosed information. If you agree with our determinations please transmit you concurrence. We would appreciate a response within thirty days.

If you have any questions on this project, please call Mr. Stephen Dibble, Project Archeologist, at (213) 894-0244.

Sincerely,

Charles M. Holt
Chief, Regulatory Branch

Enclosures

STATE OF CALIFORNIA — THE RESOURCES AGENCY GEORGE DEUKMEJIAN, *Governor*

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
POST OFFICE BOX 942896
SACRAMENTO, CALIFORNIA 94296-0001
(916) 445-8006

28 February 1990

Reply to: **CoE 900129A**

Charles M. Holt, Chief
Environmental Resources Branch
US Army Corps of Engineers
Los Angeles District
P.O. Box 2711
Los Angeles, CA 90053-2325

Subject: **Determination of Eligibility - Long Beach Marine Stadium**

Dear Mr. Holt:

Thank you for consulting with us in compliance with Section 106 of the National Historic Preservation Act.

Thank you for sending us the photos of what remains of the Long Beach marine Stafdium. We agree that very little remains of the facility that hosted the 1932 Olympics. You have applied the National Register Criteria and found the site under discussion to be ineligible for inclusion in the National Register. I agree with your finding.

Your evaluation efforts conducted in compliance with 36 CFR 800.4(c) were adequate to confirm that your project will not affect historic properties.

Please note, however, that your agency will have additional responsibilities under 36 CFR 800 under the following circumstances:

1. If any person requests that the Advisory Council on Historic Preservation review your determination in accordance with 36 CFR 800.6(e).

2. If the project changes in ways that could affect historic properties [36 CFR 800.5(c)].

3. If historic properties are discovered while carrying out the project [36 CFR 800.11].

Unless any of the above conditions apply, my concurrence completes Section 106 review.

Thank you for your concern for California's heritage resources. If you have any questions, please call staff archaeologist Nicholas Del Cioppo at (916) 322-4419.

Sincerely,

Kathryn Gualtieri
State Historic Preservation Officer

[photographs enclosed]

APPENDIX E

GEOTECHNICAL EVALUATION

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

GEOTECHNICAL EVALUATION
ALAMITOS BAY MARINA IMPROVEMENT
MARINA DRIVE
LONG BEACH, CALIFORNIA

PREPARED FOR:
Transystems
180 Grand Avenue, Suite 400
Oakland, California 94612

PREPARED BY:
Ninyo & Moore
Geotechnical and Environmental Sciences Consultants
475 Goddard, Suite 200
Irvine, California 92618

February 9, 2007
Project No. 206918001

February 9, 2007
Project No. 206918001

Mr. Ken Johnson
Transystems
180 Grand Avenue, Suite 400
Oakland, California 94612

Subject: Geotechnical Evaluation
Alamitos Bay Marina Improvement
Marina Drive
Long Beach, California

Dear Mr. Johnson:

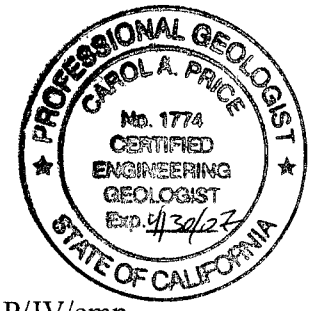
In accordance with your request and authorization, we have performed a geotechnical evaluation for the proposed improvements to the Alamitos Bay Marina in Long Beach, California. Our evaluation was performed to assess the soil and geologic conditions at the project site and to develop geotechnical recommendations for the design and construction of the improvements. This report presents our geotechnical findings, conclusions, and recommendations relative to the project.

We appreciate the opportunity to be of service on this project.

Respectfully submitted,
NINYO & MOORE

Kurt S. Yoshii, G.E.
Principal Engineer

Daniel Chu, Ph.D., G.E.
Chief Geotechnical Engineer

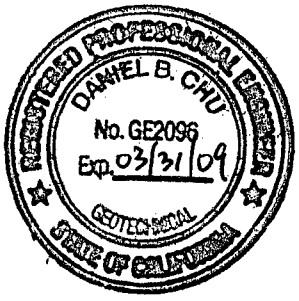


Carol A. Price, C.E.G.
Principal Geologist

Jalal Vakili, Ph.D., P.E.
Principal Engineer

MKM/CB/KSY/DC/CAP/JV/emp

Distribution: (5) Addressee



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Appendices

1. INTRODUCTION

In accordance with your request and authorization, we have performed a geotechnical evaluation for the proposed improvements to the Alamitos Bay Marina located in Long Beach, California. We understand that the proposed improvements will include the replacement of boat slips in Basins 1 through 7, a new crane platform in Basin 4, new restroom facilities, and new roadways and parking areas. The purpose of our geotechnical evaluation was to assess the soil and geologic conditions at the project site and to develop recommendations for the geotechnical aspects of design and construction of the proposed improvements. This report presents our geotechnical findings, conclusions, and recommendations regarding the proposed improvements.

2. SCOPE OF SERVICES

Our scope of services included the following:

- Project coordination and review of readily available background materials pertaining to the project, including geologic maps and literature, stereoscopic aerial photographs, in-house information, and as-built plans for the existing boat slip guide piles.

- Geotechnical site reconnaissance to observe the general site conditions, to select and mark our proposed boring and cone penetrometer test (CPT) locations, and to coordinate with Underground Service Alert for utility clearance.

- Subsurface exploration consisting of seven CPTs to depths of approximately 51 to 83½ feet below the existing ground surface. In addition, our subsurface exploration included the drilling, logging, and sampling of 13 small-diameter exploratory borings. Seven borings were drilled onshore to depths of approximately 20½ to 61½ feet below the existing ground surface, and six of the borings were drilled offshore to depths of approximately 51½ to 66½ feet below the existing ocean floor. The borings were logged by a representative of our firm, and bulk and relatively undisturbed soil samples were collected at selected intervals for laboratory testing.

- Laboratory testing of selected soil samples, including evaluation of in-situ moisture content and dry density, sieve analysis, percent of materials finer than the No. 200 sieve, Atterberg limits, shear strength, triaxial unconsolidated undrained compression, R-value, sand equivalent, and soil corrosivity.

- Data compilation and geotechnical analyses of the information obtained from our background review, surface evaluation, and laboratory testing.

- Preparation of this report presenting our findings, conclusions, and recommendations for the proposed project.

3. SITE DESCRIPTION

The Alamitos Bay Marina is located at the intersection of State Highway 1 (Pacific Coast Highway) and Second Street, within Los Angeles County in Long Beach, California (Figure 1). The site is irregular in shape and is bounded by Pacific Coast Highway to the northeast, the San Gabriel River to the southeast, Ocean Boulevard to the southwest, and Bay Shore Avenue and the Los Cerritos Channel to the northwest.

Alamitos Bay is a body of water located adjacent to the Pacific Ocean and contains both Naples Island and the Long Beach peninsula. The site is situated on relatively level terrain at an elevation between approximately 5 and 10 feet above mean sea level (MSL) (United States Geological Survey [USGS], 1981).

Alamitos Bay is a 50+ year old marina with approximately 1991 boat slips located throughout the Alamitos Bay area as stated on the Long Beach Marine Bureau (parks, recreation, and marine development) website. There are seven basins within Alamitos Bay. Basins 1 through 5 are located near the easterly portion of the bay and are primarily used as permanent boat slips basins. Basins 6 and 7 are located at the northwest and south of the bay, respectively, and are used primarily as waterways around Naples Island and along the Long Beach peninsula. The marina is primarily surrounded by residential properties, with commercial properties located along Second Street and Pacific Coast Highway. A majority of the marina perimeter is lined with parking areas, with a few structures, including restrooms, yacht clubs, restaurants, and other miscellaneous structures.

4. SITE BACKGROUND

The Alamitos Bay Marina, as it exists today, was formed as a result of a series of dredging activities that began in the early 1900s. In the 1950s, portions of the bay were dredged to form a circular waterway and the existing basins and boat slips were constructed. During this develop-

ment, the existing guide piles along the boat slips were placed. Based on our review of as-built plans provided by the City of Long Beach, the existing guide piles are 14-inch-diameter, concrete jacketed and capped, Douglas-fir timber piles and are 40 feet in length.

5. PROPOSED CONSTRUCTION

We understand that the proposed construction consists of offshore and onshore improvements. The waterside improvements will include the removal and replacement of the existing boat slips, including the guide piles, within Basins 1 through 7. The purpose of these improvements is to increase the size of the existing boat slips to accommodate larger boats. The landside improvements will include construction of a new crane platform within Basin 4 and new restroom facilities, roadways and parking areas, and miscellaneous improvements throughout the marina.

6. SUBSURFACE EVALUATION AND LABORATORY TESTING

Our onshore subsurface exploration at the subject site was performed on November 20, 21, and 22, 2006, and consisted of seven CPTs and the drilling, logging, and sampling of seven small-diameter borings. The approximate locations of the CPT soundings and the exploratory borings are shown on Figure 2. The CPTs ranged in depth from approximately 51 to 83½ feet below the existing ground surface. The borings were drilled with a truck-mounted drill rig utilizing 8-inch-diameter, hollow-stem augers. The borings were drilled to depths of approximately 20½ feet to 61½ feet below the existing ground surface and were logged by a representative from our firm. Bulk and relatively undisturbed soil samples were obtained at selected depths for laboratory testing. The logs of the exploratory borings are presented in Appendix A, and the CPT sounding logs are presented in Appendix B.

Our offshore subsurface evaluation at the subject site was performed between January 4 and 11, 2007, and consisted of the drilling, logging, and sampling of six small-diameter borings. The approximate locations of the exploratory borings are shown on Figure 2. The borings were drilled with a barge-mounted drill rig utilizing 8-inch-diameter, hollow-stem casing. The borings were drilled to depths of approximately 50½ feet to 66½ feet below the existing ground surface and

were logged by a representative from our firm. Bulk and relatively undisturbed soil samples were obtained at selected depths for laboratory testing. The logs of the exploratory borings are presented in Appendix A.

Laboratory testing of representative soil samples was performed to evaluate in-situ moisture content and dry density, gradation, percent of materials finer than the No. 200 sieve, Atterberg limits, shear strength, triaxial unconsolidated undrained compression, R-value, sand equivalent, and soil corrosivity. The results of our in-situ moisture content and dry density evaluation are presented on the boring logs in Appendix A. The remaining laboratory testing results are presented in Appendix C.

7. GEOLOGY AND SUBSURFACE CONDITIONS

7.1. Regional Geology

The subject site is located in the southwestern block of the Los Angeles Basin in the coastal plain of the Peninsular Ranges Geomorphic Province (Norris and Webb, 1990). The geomorphic province encompasses an area that extends approximately 125 miles from the Transverse Ranges and the Los Angeles Basin south to the Mexican border and the tip of Baja California (Norris and Webb, 1990). The Peninsular Ranges vary in width from approximately 30 to 100 miles and are generally characterized by northwest trending mountain ranges separated by subparallel fault zones. The major structural fault systems bounding this area include the southern onshore segment of the Newport-Inglewood fault located approximately 0.6 mile northwest of the site, as well as the potentially active Los Alamitos and Norwalk fault zones located approximately 3 miles northeast and 10.8 miles northeast, respectively (Jennings, 1994). In general, the mountain ranges are underlain by Jurassic-age metavolcanic and metasedimentary rocks and Cretaceous-age igneous rocks of the southern California batholith. Regional geologic mapping indicates that the project area is underlain by Holocene-age stream channel, alluvial fan, and flood plain deposits consisting of clay, silt, sand, and cobbles.

7.2. Site Geology

The Alamitos Bay Marina lies to the northwest of the San Gabriel River and south of the outlet of the Los Cerritos Channel. The San Gabriel River borders the southeastern perimeter of the marina and trends in a northeast-southwest direction. The Los Cerritos Channel roughly trends in a northeast-southwest direction and joins the Marina at its northern tip. Published geologic maps and literature indicate that the site is underlain by artificial fill consisting of sand and silty sand (California Division of Mines and Geology [CDMG], 1998). According to the State of California Seismic Hazard Zone maps of the project site, on-site soils are mapped as potentially susceptible to earthquake-induced liquefaction (Figure 3) (CDMG, 1998 and 1999).

During our subsurface exploration, we encountered fill materials to depths ranging from approximately 7 to 15½ in our onshore borings. The fill materials generally consisted of medium dense, clayey sand, medium dense, silty sand, and very stiff, sandy clay with trace gravel, wood shards, and shells. Alluvial deposits were encountered beneath the fill to the explored depth of approximately 83½ feet. The alluvial deposits generally consisted of interlayered sand, clay, and silt. The sand material encountered generally ranged from loose to very dense, silty sand and medium dense, poorly graded sand to silty sand. The clay material encountered generally ranged from very soft to hard, silty clay, and sandy clay. The silt generally ranged from very loose to dense, sandy silt and firm to hard, clayey silt. More detailed descriptions of the subsurface materials are presented on the boring logs in Appendix A.

7.3. Groundwater

Due to the subject site's close proximity to the Pacific Ocean, bentonite slurry was used in the majority of our onshore borings, and, therefore, groundwater depths were difficult to evaluate. In our Boring B-1, groundwater was measured at an approximate depth of 35 feet below the ground surface; however, due to the fine-grained nature of the soils encountered in the boring and the limited time for which the boring was left open, groundwater is anticipated to be much shallower. According to the CDMG (1998), historic high groundwater is estimated to be approximately 8 feet below the existing ground surface. However, fluctua-

tions in groundwater levels may occur due to tidal fluctuations, variations in precipitation, ground surface topography, subsurface stratification, irrigation, and other factors which may not have been evident at the time of our field evaluation.

8. FAULTING AND SEISMICITY

Based on our review of referenced geologic maps and stereoscopic aerial photographs, the ground surface in the vicinity of the subject site is not mapped as being transected by any known active or potentially active fault; therefore, the potential for surface fault rupture is considered to be low. Additionally, the site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo Special Studies Zone, Hart and Bryant, 1997). However, the subject site is located in a seismically active area, as is the majority of southern California, and the potential for strong ground motion at the site is considered significant. Figure 4 shows the approximate site location relative to the major faults in the region. The nearest known active fault is the Newport-Inglewood fault, located approximately 0.6 mile northwest of the project site.

Table 1 lists selected principal known active faults that may affect the subject site, the maximum moment magnitude (M_{max}) as published by the California Geological Survey (CGS) by Cao, et al. (2003), and the type of fault as defined in Table 16-U of the California Building Code (CBC, 2001). The approximate fault to site distances were calculated by the computer program FRISKSP developed by Blake (2001a).

Table 1 – Principal Active Faults

Fault	Approximate Fault to Site Distance in miles (km)	Maximum Moment Magnitude[1] (M_{max})	Fault Type[2]
Newport-Inglewood (Los Angeles Basin)	0.6 (0.9)	7.1	B
Palos Verdes	7.9 (12.7)	7.3	B
San Joaquin Hills (Blind Thrust)	10.9 (17.5)	6.6	B
Puente Hills (Blind Thrust)	12.9 (20.8)	7.1	B
Whittier	16.9 (27.2)	6.8	A
Upper Elysian Park (Blind Thrust)	21.4 (34.4)	6.4	B
San Jose	23.9 (38.4)	6.4	B
Raymond	25.4 (40.8)	6.5	B
Hollywood	26.3 (42.3)	6.4	B
Verdugo	26.3 (42.4)	6.9	B
San Andreas – 1857 Rupture	49.5 (79.6)	7.8	A

Notes:
[1] Cao et al., 2003.
[2] CBC, 2001; Cao et al., 2003.

The principal seismic hazards at the subject site are surface ground rupture, ground shaking, seismically induced liquefaction, and various manifestations of liquefaction-related hazards (e.g., dynamic settlement and lateral spread). A brief description of these hazards and the potential for their occurrences on site are discussed below.

8.1. Ground Rupture

The probability of damage from surface ground rupture is low due to the lack of known active faults directly underlying the subject site. Surface ground cracking related to shaking from distant events is not considered a significant hazard, although it is a possibility.

8.2. Ground Motion

Our evaluation of the ground shaking hazard included review of a probabilistic seismic hazard assessment that consisted of statewide estimates of peak horizontal ground accelerations conducted for California (Peterson, et al., 1996). In addition, for the purposes of evaluating seismically induced geotechnical hazards at the site, a site-specific probabilistic seismic hazard analysis was performed to evaluate anticipated peak ground accelerations (PGAs) us-

ing the computer program FRISKSP developed by Blake (2001c). A probabilistic analysis incorporates uncertainties in time, recurrence intervals, size, and location (along faults) of hypothetical earthquakes. This method thus accounts for likelihood (rather than certainty) of occurrence and provides levels of ground acceleration that might be more reasonably hypothesized for a finite exposure period. FRISKSP calculates the probability of occurrence of various ground accelerations at a site over a period of time and the probability of exceeding expected ground accelerations within the lifetime of the proposed structures from the significant earthquakes within a specific radius of search. For the present case, a search radius of 62 miles (100 kilometers) was selected. The earthquake magnitudes used in this program are based on the current CGS fault model.

The published guidelines of CGS (2004) define a PGA with a 10 percent probability of exceedance in 50 years as the Design Basis Earthquake (PGA_{DBE}) ground motion, and this value is typically used for residential, commercial, and industrial structures. The PGA with a 10 percent probability of exceedance in 100 years is defined as the Upper Bound Earthquake (PGA_{UBE}) ground motion and is used for public schools, hospitals, and other essential facilities in California. The statistical return periods for the PGA_{DBE} and PGA_{UBE} are approximately 475 and 949 years, respectively.

In evaluating the seismic hazards associated with the subject site, we have considered a PGA that has a 10 percent probability of being exceeded in 50 years (i.e., PGA_{DBE}) and used an attenuation relation proposed by Boore, et al. (1997), for soil (with an average shear wave velocity of 310 meters per second). The PGA_{DBE} for the site was 0.34g when weighted to an earthquake magnitude of 7.5. The PGA_{DBE} increases to 0.40g when no magnitude weighting factor is considered in probabilistic seismic hazard analysis. These estimates of ground motion do not include near-source factors that may be applicable in the design of structures on site.

8.3. Liquefaction

Liquefaction is the phenomenon in which loosely deposited, saturated, granular soils (located below the water table) with clay contents (particles less than 0.005 millimeters [mm]) of less than 15 percent, liquid limit of less than 35 percent, and natural moisture content greater than 90 percent of the liquid limit undergo rapid loss of shear strength due to development of excess pore pressure during strong earthquake-induced ground shaking. Ground shaking of sufficient duration results in the loss of grain-to-grain contact due to a rapid rise in pore water pressure, and it eventually causes the soil to behave as a fluid for a short period of time. Liquefaction is known generally to occur in saturated or near-saturated cohesionless soils at depths shallower than 50 feet below the ground surface. Factors known to influence liquefaction potential include composition and thickness of soil layers, grain size, relative density, groundwater level, degree of saturation, and both intensity and duration of ground shaking.

The liquefaction potential at the project site was evaluated using the CPT sounding results, the soil sampler blow counts recorded from the exploratory borings, and our laboratory test results. In addition, the historic high groundwater of 8 feet below the ground surface was considered for our liquefaction evaluation. The liquefaction analysis was based on the NCEER procedure (Youd, et al., 2001). For the analyses using the soil sampler blow counts, the computer program LIQUEFY2 (Blake, 2001a) was used to calculate the factor of safety against liquefaction. A magnitude-weighted PGA_{DBE} of 0.34g was used in our analysis for an earthquake magnitude of 7.5. Due to the variability of the on-site soils, the potential for liquefaction varies across the site. Our liquefaction analysis indicates that some of the granular soil layers located below the historic high groundwater level may liquefy during the design seismic event up to depths of approximately 48 feet below the ground surface for the onshore portions of the site and to depths of approximately 14 feet below the ground surface in the offshore portions of the site.

8.4. Lateral Spreading

Lateral spreading of the ground surface during an earthquake usually takes place along weak shear zones that have formed within a liquefiable soil layer. Lateral spread has generally been observed to take place in the direction of a free-face (i.e., retaining wall, slope, channel) but has also been observed to a lesser extent on ground surfaces with gentle slopes. An empirical model developed by Youd, et al. (1995, revised 2001), is typically used to predict the amount of horizontal ground displacement within a site. For sites located in proximity to a free-face, the amount of lateral ground displacement is strongly correlated with the distance of the site from the free-face. Other factors, such as earthquake magnitude, distance from the earthquake epicenter, thickness of the liquefiable layers, and the fines content and particle sizes of the liquefiable layers, also affect the amount of lateral ground displacement. Based on our analysis, seismically induced lateral spread of approximately 1 to 11 feet is estimated to occur.

8.5. Dynamic Settlement of Saturated Soils

The phenomenon of soil liquefaction may result in several hazards including liquefaction-induced settlement. In order to estimate the amount of post-earthquake settlement, the method proposed by Tokimatsu and Seed (1987) is generally used in which the seismically induced cyclic stress ratios and corrected blow counts (N-values) are correlated to the volumetric strain of the soil. The amount of soil settlement during a strong seismic event depends on the thickness of the liquefiable layers and the density and/or consistency of the soils.

Based on our analysis, post-earthquake dynamic ground settlements ranging from approximately 5 to 27 inches are estimated to occur in relatively saturated soils located below the historic high groundwater to depths of up to approximately 48 feet.

9. CONCLUSIONS

Based on the results of our geotechnical evaluation, the proposed project is feasible from a geotechnical perspective. There are no known geotechnical conditions that would preclude the

construction of the proposed improvements provided the recommendations of this report and appropriate construction practices are followed. In general, the following conclusions were made based on our evaluation:

- Groundwater was measured at a depth of approximately 35 feet below the ground surface in boring B-1 at the time of our drilling; however, due to the fine-grained nature of the soils encountered in the boring and the limited length of time for which the hole was left open, groundwater is anticipated to be encountered at shallower depths. The historic high groundwater within the project site is estimated at approximately 8 feet below the existing ground surface. Therefore, groundwater should be anticipated and planned for by the contractor during construction of the onshore improvements.

- During our subsurface exploration, clayey, silty, and sandy soils were encountered. Although caving was not observed in our onshore borings at the time of drilling, near surface groundwater may cause caving of coarse-grained alluvial soils.

- We estimate a peak ground acceleration (PGA_{DBE}) of 0.34g for an earthquake magnitude of 7.5 at the subject site that has a 10 percent probability of being exceeded in 50 years. We also estimate a PGA_{DBE} of 0.40g when no magnitude weighting factor is applied.

- The subsurface soils below the historic high groundwater are susceptible to liquefaction during the design seismic event. Our analysis indicates that the depth of liquefaction varies across the site but reaches depths of up to approximately 48 feet during the anticipated seismic event.

- Seismically-induced lateral spread of approximately 1 to 11 feet is estimated to occur.

- Liquefaction-induced ground settlement is estimated to be in the range of approximately 5 to 27 inches in the upper approximately 48 feet.

- The site is not located within a State of California Earthquake Fault Zone (Alquist-Priolo Special Studies Zone). Based on our review of published geologic maps and aerial photographs, no known active or potentially active faults underlie the site. The potential for surface fault rupture at the site is considered to be low.

10. RECOMMENDATIONS

In the following sections, we provide geotechnical recommendations for the design and construction of the proposed improvements at the Alamitos Bay Marina. These recommendations are based on our evaluation of the site geotechnical conditions and our understanding of the planned

development, including anticipated loads. The proposed construction should also be performed in accordance with the requirements of applicable governing agencies.

10.1. Earthwork

The quantity and type of earthwork operations performed during construction will depend on the final design plans. It is our understanding that at the time of this report, the design plans are still in their preliminary stages, but it is anticipated that minor grading will be associated with the construction of new roadways, parking areas, access ramps, and other miscellaneous improvements. If, in the final design, the existing bathrooms, including their underground utilities and adjacent improvements, are removed, earthwork at the site will include infilling of depressions created by the removal of below-grade improvements and grading associated with the installation of peripheral improvements, such as utilities and asphalt concrete pavement. Earthwork recommendations presented in the following sections are based upon the assumption that the finish grades at the site will not be changed significantly. Earthwork should be performed in accordance with the requirements of applicable agencies, and the recommendations presented herein.

10.1.1. Construction Plan Review and Pre-Construction Conference

We recommend that the grading and foundation plans be submitted to Ninyo & Moore for review to check for conformance to the recommendations provided in this report. We further recommend that a pre-construction conference be held in order to discuss the grading recommendations presented in this report. The owner and/or their representative, the governing agencies' representatives, the civil engineer, Ninyo & Moore, and the contractor should be in attendance to discuss the work plan, project schedule, and earthwork requirements.

10.1.2. Site Preparation

Prior to commencing earthwork operations, the existing improvements and deleterious materials at the site should be cleared. The existing improvements may include single-story bathroom structures and associated utilities, concrete flatwork, asphalt concrete

pavement, small planter areas, and other miscellaneous improvements. Debris from the clearing operations should be disposed of off-site. Resulting holes due to removal of obstructions that extend below grade, such as slabs or underground utilities, should be removed and filled with compacted fill.

10.1.3. Excavation Characteristics

We anticipate that excavation within the fill and alluvial materials present on site may be accomplished with grading equipment in good operating condition. Based on the results of our subsurface exploration, we expect that the subsurface soils encountered will be interlayered clay, silt, and sand. Although significant oversized materials were not encountered in our borings, oversized materials may be encountered in the alluvial deposits during the installation of deep foundations. Thus, the contractor should be prepared to take appropriate measures to address the presence of oversized materials.

In our opinion, temporary slopes in the fill or native soils should be stable at inclinations of 1½:1 (horizontal to vertical) or flatter soils above the water table. Some surficial sloughing may occur, and temporary slopes should be evaluated in the field by a competent person in accordance with Occupational Safety and Health Administration (OSHA) criteria. The on-site soils should be considered as Type C soils in accordance with OSHA.

Excavations close to or below the groundwater will encounter wet and loose or soft ground conditions. Wet soils may be subject to pumping under heavy equipment loads. Pumping soils will need to be stabilized prior to the placement of fill.

10.1.4. Fill Material

In general, the on-site earth materials should be suitable for reuse as fill. On-site and import fill soils should be free of trash, debris, roots, vegetation, or deleterious materials. Fill should generally be free of rocks or hard lumps of material greater than approximately 4 inches in diameter. Rocks or hard lumps larger than about 4 inches in diameter should be broken into smaller pieces or should be removed from the site. Im-

ported materials should consist of clean, granular material with a low expansion potential, corresponding to an expansion index of 50 or less as evaluated in accordance with Uniform Building Code (UBC) Standard 18-2 (International Conference of Building Officials [ICBO], 1997). Import material should be submitted to the project geotechnical consultant for review prior to importing to the site. The corrosion potential of proposed imported soils should also be evaluated if structures will be in contact with the imported soils. The contractor should be responsible for the uniformity of import material brought to the site.

10.1.5. Fill Placement and Compaction

Fill, structure backfill, and trench backfill associated with the proposed construction activities should be placed and compacted in accordance with project specifications and sound construction practices. Fill materials should be compacted to a relative compaction of 90 percent as evaluated by the American Society for Testing and Materials (ASTM) D 1557. Aggregate base materials beneath pavements should be compacted to a relative compaction of 95 percent. Fill materials should be moisture conditioned to slightly above the optimum laboratory moisture content. The lift thickness for fill soils will vary depending on the type of compaction equipment used but should generally be placed in horizontal lifts not exceeding 8 inches in loose thickness. Fill should be tested for specified compaction level by the geotechnical consultant.

10.2. Utilities

We understand that new utility lines associated with the construction of the bathroom structures may be constructed as part of the project. Trenches/excavations should be in conformance with OSHA guidelines for shoring and/or temporary slopes.

10.2.1. Trench Excavations

Temporary excavations above groundwater up to approximately 4 feet in depth should be generally stable. Excavations which expose friable, cohesionless sands, however, may be subject to caving. Excavations that seem unstable, expose cohesionless sands, or

are deeper than 4 feet, should be shored or the sides of the excavation laid back to slope inclinations of approximately 1½ to 1 (horizontal to vertical) for Type C soils per OSHA classification. We recommend that the contractor take appropriate measures to protect workers. OSHA requirements pertaining to worker safety should be observed. In the event that trenches are planned that extend below groundwater, dewatering or other special construction provisions may be appropriate.

10.2.2. Trench Bedding

We recommend that utility lines be supported on 6 or more inches of granular bedding material such as sand with a sand equivalent (SE) value of 30 or higher. Bedding material should be placed around the pipe and 12 inches or more above the top of the pipe in accordance with specifications of the recent edition of the "Greenbook" (Standard Specifications for Public Works). Our laboratory test results indicate that the on-site near-surface soils are not suitable as use for bedding around the pipe. Special care should be taken not to allow voids beneath the pipe. Bedding material and compaction requirements should be in accordance with the recommendations of this report, the project specifications, and applicable requirements of the appropriate governing agency.

10.2.3. Trench Backfill

Based on our subsurface evaluation, the on-site soils should be generally suitable for reuse as backfill provided they are free of organic material, clay lumps, debris, and rocks greater than approximately 4 inches in diameter. We recommend that trench backfill materials be in conformance with the "Greenbook" specifications for structure backfill. Fill should be moisture-conditioned to at or slightly above the laboratory optimum. Wet soils should be allowed to dry to a moisture content near the optimum prior to their placement as trench backfill. Trench backfill should be compacted to a relative compaction of 90 percent as evaluated by ASTM D 1557 in pavement areas where base materials are not utilized. The upper 12 inches of backfill should be compacted to a relative compaction of 95 percent as evaluated by ASTM D 1557. Special care should be exercised to avoid damaging the pipe during compaction of the backfill.

10.3. Seismic Design Considerations

Design of the proposed improvements should comply with design for structures located in Seismic Zone 4 in accordance with applicable jurisdictions and building codes and the standard practices of the Structural Engineers Association of California. A soil profile factor of S_D may be utilized in the UBC (ICBO, 1997) seismic design. Additional UBC seismic design parameters are provided in Table 2.

Table 2 – 1997 Uniform Building Code Seismic Recommendations

1997 UBC Seismic Design Factor	Value
Seismic Zone Factor, Z	0.4
Seismic Source Type*	B
Near Source Factor, N_a	1.3
Near Source Factor, N_v	1.6
Soil Profile Type	S_D
Seismic Coefficient, C_a	0.57
Seismic Coefficient, C_v	1.02

* Faults are designated as Type A, B or C, depending on maximum moment magnitude and slip rates (Table 16-U of UBC [ICBO, 1997]).

10.4. Deep Pile Foundation

10.4.1. Crane Platform

Due to the presence of potentially liquefiable soil layers between approximately 16 feet and 40 feet below the existing ground surface in the vicinity of Basin 4 and the presence of loose to medium dense, sandy soils up to depths of approximately 50 feet, shallow foundations without ground modification improvements are not suitable for the proposed crane platform. However, due to the size of the project, ground improvements may not be cost effective. As a result, we recommend that a deep foundation system be utilized. For our preliminary analysis, we considered 14-inch-diameter, precast, driven, concrete piles. Our analysis has taken into account the effects of potential negative skin friction in the event of liquefaction-induced dynamic settlement. Due to the existence of sheet piling in front of the proposed crane platform, additional lateral loads which may be induced by the lateral spreading were not considered in the pile design.

10.4.1.1. Axial Capacity

We evaluated the load-carrying capacities by assuming the use of 14-inch-diameter, driven reinforced concrete piles, with an embedment of 45 feet. The axial capacity was analyzed using the computer program SPILE (Federal Highway Administration [FHWA], 1993), as well as the procedures developed by Eslami and Fellenius (1997), our laboratory shear test results, and boring and CPT information. Results of our analysis indicate that for a 45-foot-deep driven pile, a design load of 100 tons for a 14-inch-diameter pile can be used. These values are also summarized in Table 3 below. Uplift capacities have also been calculated and provided in Table 3. The axial capacities presented below may be increased by one-third when considering loads of short duration such as wind or seismic forces. The negative skin friction caused by a liquefaction-induced dynamic settlement was also considered in our capacity analysis and factored into the ultimate pile capacity values. A minimum pile spacing of three pile diameters on centers should be maintained.

Table 3 – Axial Load Capacities for Crane Platform

Pile Type	**Concrete Driven Pile**
Pile Size	14-inch circular
Pile Length (ft)	Minimum 45
Pile Tip Elevation (ft, MSL)*	-35±
Allowable Axial Capacity (tons)	100
Uplift Capacity (tons)	60

Notes:
ft – feet
MSL – mean sea level
*Elevation based on USGS Topographic Map (1981). Specified tip elevation should be checked prior to construction.

10.4.1.2. Lateral Capacity

Lateral capacities for the 45-foot-deep foundations were evaluated for the fixed-head conditions at a lateral deflection of ¼ inch by using the computer program

LPILE Version 4M developed by Ensoft, Inc. (1999). The results of our analysis, based on the assumptions indicated above, are summarized in Table 4.

Table 4 – Driven Pile Lateral Load Capacities for Crane Platform

Pile Type	14-inch Circular Concrete	
Pile Length (ft)	**45**	**45**
Pile Head Condition	**Fixed**	**Free**
(Deflection at the top of pile)	¼ inch	¼
Lateral Capacity (tons)	7	3
Maximum Positive Moment (tons-ft)	10	10½
Maximum Negative Moment (tons-ft)	28	½
Depth to Maximum Positive Moment (ft)	9	6
Depth to Maximum Negative Moment (ft)	0	15
Depth to Zero Deflection (ft)	13	10
Notes: ft – feet Depth is measured from top of driven pile.		

10.4.1.3. Lateral Loading and Settlement

For lateral loading, driven piles in a group may be considered to act individually when the center-to-center spacing is greater than 3B (where B is the diameter of the driven pile or drilled pier) in the direction of normal loading and greater than 6B in the direction of parallel loading. Lateral load reduction factors are provided in Table 5.

Table 5 – Lateral Load Reduction Factors

Center-to Center Spacing for In-Line Loading	Ratio of Lateral Resistance of Pile Group to Single Pile
6B	1.0
5B	0.9
4B	0.8
3B	0.7

Settlement for the pile foundation system with the design working axial loads is anticipated to be less than approximately ½ inch. Differential settlement between adjacent piles is anticipated to be less than approximately ¼ inch.

10.4.2. Boat Slip Guide Piles

For our preliminary analysis, we considered 14-inch-diameter, precast, driven, concrete piles. Our analysis has taken into account the effects of potential negative skin friction in the event of liquefaction-induced dynamic settlement.

10.4.2.1. Axial Capacity

We evaluated the load-carrying capacities by assuming the use of 14-inch-diameter, driven, reinforced, concrete piles, with an embedment of 40 feet. The axial capacity was analyzed using the computer program SPILE, our laboratory shear test results, and boring information. Results of our analysis indicate that for a 40-foot-deep driven pile, a design load of 25 tons for a 14-inch-diameter pile can be used. These values are also summarized in Table 6 below. Uplift capacities have also been calculated and provided in Table 6. The axial capacities presented below may be increased by one-third when considering loads of short duration such as wind or seismic forces. The negative skin friction caused by a liquefaction-induced dynamic settlement was also considered in our capacity analysis and factored into the ultimate pile capacity values. A minimum pile spacing of three pile diameters on centers should be maintained.

Table 6 – Axial Load Capacities for Boat Slip Guide Piles

Pile Type	Concrete Driven Pile
Pile Size	14-inch circular
Pile Length (ft)	Minimum 45
Pile Embedment (ft)	Minimum 30
Pile Tip Elevation (ft, MSL)*	-40±
Allowable Axial Capacity (tons)	80
Uplift Capacity (tons)	60

Notes:
ft – feet
MSL – Mean Sea Level
*Elevation based on Hydrographic Survey provided by Transystems. Specified tip elevation should be checked prior to construction.

10.4.2.2. Lateral Capacity

Lateral capacities for the 40-foot-deep foundations were evaluated for the free-head condition using the computer program LPILE Version 4M developed by Ensoft, Inc. (1999). The results of our analysis, based on the assumptions indicated above, are summarized in Table 7.

Table 7 – Driven Pile Lateral Load Capacities for Boat Slip Guide Piles

Pile Type	**Concrete**
Pile Length (ft)	**50**
Pile Embedment (ft)	**30**
Pile Size	**14-inch circular**
Free-Head (Deflection at the top of pile, inch)	4
Lateral Capacity (tons)	1
Maximum Positive Moment (tons-ft)	24
Maximum Negative Moment (tons-ft)	-1
Depth to Maximum Positive Moment (ft)	22
Depth to Maximum Negative Moment (ft)	36
Depth to Zero Deflection (ft)	28

Notes:
ft – feet
Depth is measured from top of driven pile.

10.5. Spread Footings

Shallow foundations were considered for the proposed bathroom structures. These structures can be designed on shallow footings with the understanding that these structures may be severely damaged during the design earthquake event. We recommend that the shallow, continuous, spread footings be founded at a depth of 24 inches below the lowest adjacent finished grade, and should have a width of 12 inches. Preparation of subgrade for footings should include overexcavation of near-surface soils to a depth of 2 feet below the footing bottom. The overexcavation should extend a horizontal distance on either side equal to the depth of the overexcavation or 5 feet, whichever is greater, and backfilled with compacted fill as described in Sections 10.1.4 and 10.1.5. Footings located adjacent to utility trenches should have their bearing surfaces situated below an imaginary 1:1 (horizontal to vertical) plane projected upward from the bottom edge of the adjacent utility trench.

The spread footings, as described above and bearing on compacted fill, may be designed using an allowable bearing capacity of 2,000 pounds per square foot (psf). The bearing capacity may be increased by one-third when considering loads of short duration, such as wind or seismic forces. The spread footings should be reinforced in accordance with the recommendations of the project structural engineer.

Footings bearing in compacted fill soils may be designed using a coefficient of friction of 0.3, where the total frictional resistance equals the coefficient of friction times the dead load. Footings may be designed using a passive resistance value of 300 psf per foot of depth for a level ground condition up to a value of 3,000 psf per foot. The allowable lateral resistance can be taken as the sum of the frictional resistance and passive resistance provided the passive resistance does not exceed one-half of the total allowable resistance. The passive resistance (including the maximum value) may be increased by one-third when considering loads of short duration such as wind or seismic forces.

The anticipated settlement due to the bearing loads under the foundations is anticipated to be less than 1 inch.

10.6. Construction Considerations

Consideration should be given to how construction-related activities may affect the site as a whole. Driven piles have been designed to derive support from side friction. Deep foundations should be installed within specified limits of vertical and horizontal alignment and should not exceed a batter of two percent over the length. Further, the top of the driven piles should be within 3 inches of the surveyed location.

Historic high groundwater levels onshore have been estimated to be at a depth of approximately 8 feet below the surface. As a result, groundwater may be encountered in any site excavations. The contractor should be prepared to take appropriate measures to address the presence of groundwater in excavations, including dewatering.

10.7. Retaining Walls

Based on our understanding of the project, retaining structures are anticipated for the access ramps situated between the parking lot and the concrete walkway adjacent to the existing sea wall. In addition, if below-grade structures are considered for the proposed project, active and at-rest earth pressures (equivalent fluid pressures [EFP]) of 34 and 53 pounds per cubic foot should be used for yielding walls and restrained walls, supporting level backfill, respectively. In accordance with the CBC (ICBO, 2002), the dynamic lateral earth pressure should be utilized for a retaining wall higher than 12 feet when measuring from the bottom of the wall footing to the top of the wall. It is our understanding that the retaining walls constructed for this project will all be less than 12 feet in height, and, therefore, the dynamic lateral earth pressures for below-grade walls were not evaluated. If any retaining walls greater than 12 feet in height are constructed, the geotechnical engineer should provide the dynamic lateral earth pressures for design. The recommended lateral earth pressure values and considerations applicable for this project are summarized on Figures 5 and 6.

We recommend that if retaining walls are constructed as part of the site improvements, the retaining wall backfill should consist of select granular, free-draining material. Retaining wall backfill should conform with "Greenbook" recommendations for structural backfill.

Clayey fill and alluvial soils encountered in the borings and classified as CL are not suitable for re-use as structural backfill.

Measures should be taken to reduce the potential for build-up of hydrostatic pressure behind the retaining walls. Drainage design should include free-draining backfill materials and perforated drains as depicted on Figure 7. Solid outlet pipes should be connected to the perforated drains and then routed to a suitable area for discharge of accumulated water.

10.8. Preliminary Pavement Design Recommendations

During our field exploration, existing pavement sections and subgrade conditions were observed. In general, the pavement sections encountered consisted of asphalt concrete over subgrade soils. The thickness of the asphalt concrete throughout the site was observed to be approximately 4 to 5 inches thick at each of our boring locations.

The shallow subgrade soils encountered in our exploratory borings consisted of sandy clay. A representative, near-surface soil samples was tested for resistance value (R-value) in order to provide design pavement structural sections. Laboratory testing indicated the near surface sandy soils have an R-value of 69. However, due to the variability of the on-site soils, including the presence of clayey and silty soils, as well as our experience in the area, we used a design R-value of 40 for the purpose of developing asphalt pavement sections for the subgrade soils. No specific traffic loading information was available for our design at the time of the preparation of this report.

Based on our understanding of the project, we have anticipated that traffic will consist of mostly passenger-type, some heavy, and occasional emergency vehicles. Accordingly, we have assumed traffic indices (TI) of 5.0, 7.0, and 9.0 for the design of pavement sections. A TI of 5 has been assumed for general parking areas for passenger vehicles. A TI of 7 can be assumed for occasional emergency vehicles, and a TI of 9 can be assumed for areas with regular heavy truck traffic. Based on our design R-value and assumed traffic indices, we have developed the structural sections presented in Table 8 below.

Table 8 – Pavement Structural Sections

Traffic Index	Recommended Pavement Section	
	Flexible Pavement	
	AC/CAB (inches)	Full Depth AC (inches)
5	3.0/4.0	5.0
7	3.5/8.0	8.0
9	5.5/10.0	10.0
Notes: AC – Asphalt Concrete CAB – Crushed Aggregate Base		

In order to provide suitable support for the proposed pavement areas, we recommend that the subgrade soils be scarified approximately 12 inches, moisture conditioned to slightly over optimum moisture content, and compacted to 90 percent of the laboratory maximum dry density as evaluated by ASTM 1557. Crushed aggregate base should conform to the Standard Specifications for Public Works Construction "Greenbook," Section 200. The crushed aggregate base material should be placed at a relative compaction of 95 percent. Asphalt concrete should conform to "Greenbook," Section 203. We recommend that the paving operations be observed and tested by Ninyo & Moore.

10.9. Pre-Construction Survey and Monitoring

We recommend that a pre-construction survey of existing conditions be performed for adjacent buildings and properties prior to the start of construction. We also recommend that a monitoring program be implemented in order to monitor potential movement of existing buildings and properties and to help evaluate the vibration levels caused during construction related activities.

10.9.1. Documentation of Existing Conditions

The pre-construction survey should consist of photographic documentation of the exterior portions of adjacent buildings and the overall condition of adjacent properties,

including distress features such as cracks and/or separations that may be present. The purpose of the pre-construction survey is to develop documentation of existing conditions prior to construction that may serve as a basis for evaluating potential damage claims.

10.9.2. Construction Vibrations

People can perceive vibrations at low levels and tend to judge the vibrations as being much higher than they actually are. Hendron and Oriard (1972) stated that transient vibrations from construction activities, such as pile driving, are noticeable at peak particle velocities as low as 0.02 to 0.06 inch per second. At peak particle velocities as low as 0.2 to 0.4 inch per second, the vibrations are disturbing and may result in complaints and damage claims. However, these vibration levels are below the peak particle velocity threshold considered to cause cosmetic damage to commercial/residential construction.

We recommend that vibration caused by construction activities be monitored in terms of peak particle velocity during construction. To monitor the peak particle velocity, seismographs could be positioned at the construction site and monitored at selected intervals during construction. Consideration should be given to locating one seismograph close to the construction activity, another at the nearest building, and a third at a building farther away.

10.10. Corrosion

Laboratory testing was performed to evaluate soil pH, electrical resistivity, water-soluble chloride content, and water-soluble sulfate content of near-surface soil samples. The soil pH and electrical resistivity tests were performed in general accordance with California Test (CT) Method 643. Chloride content tests were performed in general accordance with CT Method 422. Sulfate content tests were performed in general accordance with CT Method 417. The laboratory test results are presented in Appendix C.

The results of the corrosivity testing indicated electrical resistivity ranging from approximately 114 to 154 ohm-centimeters, soil pH of 7.2 to 8.3, chloride contents varying between 3,270 and 6,240 parts per million (ppm), and sulfate content ranging from approximately 0.150 to 0.420 percent (i.e., 1,500 to 4,200 ppm). Based on the Caltrans (2003) criteria, the project site would be classified as corrosive, which is defined as a site having soils with more than 500 ppm of chlorides, more than 0.2 percent sulfates, or a pH less than 5.5.

10.11. Concrete Placement

Concrete in contact with soil or water that contains high concentrations of water-soluble sulfates can be subject to premature chemical and/or physical deterioration. The soil samples tested in this evaluation indicated water-soluble sulfate contents ranging from about 0.150 to 0.420 percent by weight (i.e., about 1,500 to 4,200 ppm). Based on the UBC criteria (ICBO, 1997), the potential for sulfate attack is negligible for water-soluble sulfate contents in soils ranging from about 0.0 to 0.10 percent by weight (0 to 1,000 ppm), moderate for water-soluble sulfate contents ranging from about 0.10 to 0.20 percent by weight (1,000 to 2,000 ppm), and severe for water-soluble sulfate contents ranging from about 0.20 to 2.00 percent by weight (2,000 to 20,000 ppm). Therefore, the site soils may be considered to have a moderate to severe potential for sulfate attack. Based on UBC criteria (ICBO, 1997), Type V cement should be used for concrete construction. The concrete should have a water-cement ratio no higher than 0.45 by weight for normal weight aggregate concrete and a 28-day compressive strength of 4,500 pounds per square inch (psi) or more.

In order to reduce the potential for shrinkage cracks in the concrete during curing, we recommend that the concrete for the proposed structures be placed with a slump of 4 inches based on ASTM C 143. The slump should be checked periodically at the site prior to concrete placement. We also recommend that crack control joints be provided in slabs in accordance with the recommendations of the structural engineer to reduce the potential for distress due to minor soil movement and concrete shrinkage. We further recommend that concrete cover over reinforcing steel for slabs-on-grade and foundations be provided in ac-

cordance with UBC 1907.7.1 (ICBO, 1997). The structural engineer should be consulted for additional concrete specifications.

10.12. Drainage

Proper surface drainage is imperative for satisfactory site performance. Positive drainage should be provided and maintained to direct surface water away from foundations and off site. Positive drainage is defined as a slope of 2 percent or more over a distance of 5 feet or greater away from structure foundations and top of slopes. Runoff should then be directed by the use of swales or pipes into a collective drainage system. Surface waters should not be allowed to flow over slope faces or pond adjacent to footings. Area drains for landscaped and paved areas are recommended. Nearby landscaping should consist of drought-tolerant plants, and landscape irrigation should be kept to a level just sufficient to maintain plant vigor. Overwatering should not be permitted.

11. CONSTRUCTION OBSERVATION

The recommendations provided in this report are based on our understanding of the proposed project and on our evaluation of the data collected based on subsurface conditions observed in one exploratory boring. It is imperative that the geotechnical consultant checks the subsurface conditions during construction. We recommend that Ninyo & Moore review the project plans and specifications prior to construction. It should be noted that, upon review of these documents, some recommendations presented in this report may be revised or modified.

During construction, we recommend that the duties of the geotechnical consultant include, but not be limited to:

- Observing clearing, grubbing, and removals.
- Observing excavation, placement, and compaction of fill.
- Evaluating imported materials prior to their use as fill (if used).
- Performing field tests to evaluate fill compaction.

- Observing foundation excavations for cleaning prior to placement of reinforcing steel.
- Field pile driving inspection to monitor and document the tip elevations and blow counts if driven piles are constructed.
- Field instrumentation during and after deep foundation construction to confirm the design assumptions.
- Performing material testing services including concrete compressive strength and steel tensile strength tests and inspections.

The recommendations provided in this report are based on the assumption that Ninyo & Moore will provide geotechnical observation and testing services during construction. In the event that the services of Ninyo & Moore are not utilized during construction, we request that the selected consultant provide the City of Long Beach with a letter (with a copy to Ninyo & Moore) indicating that they fully understand Ninyo & Moore's recommendations and that they are in full agreement with the design parameters and recommendations contained in this report.

12. LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Please also note that our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore

should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report is intended for design purposes only. It does not provide sufficient data to prepare an accurate bid by contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance, and additional exploration and laboratory testing.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified, and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

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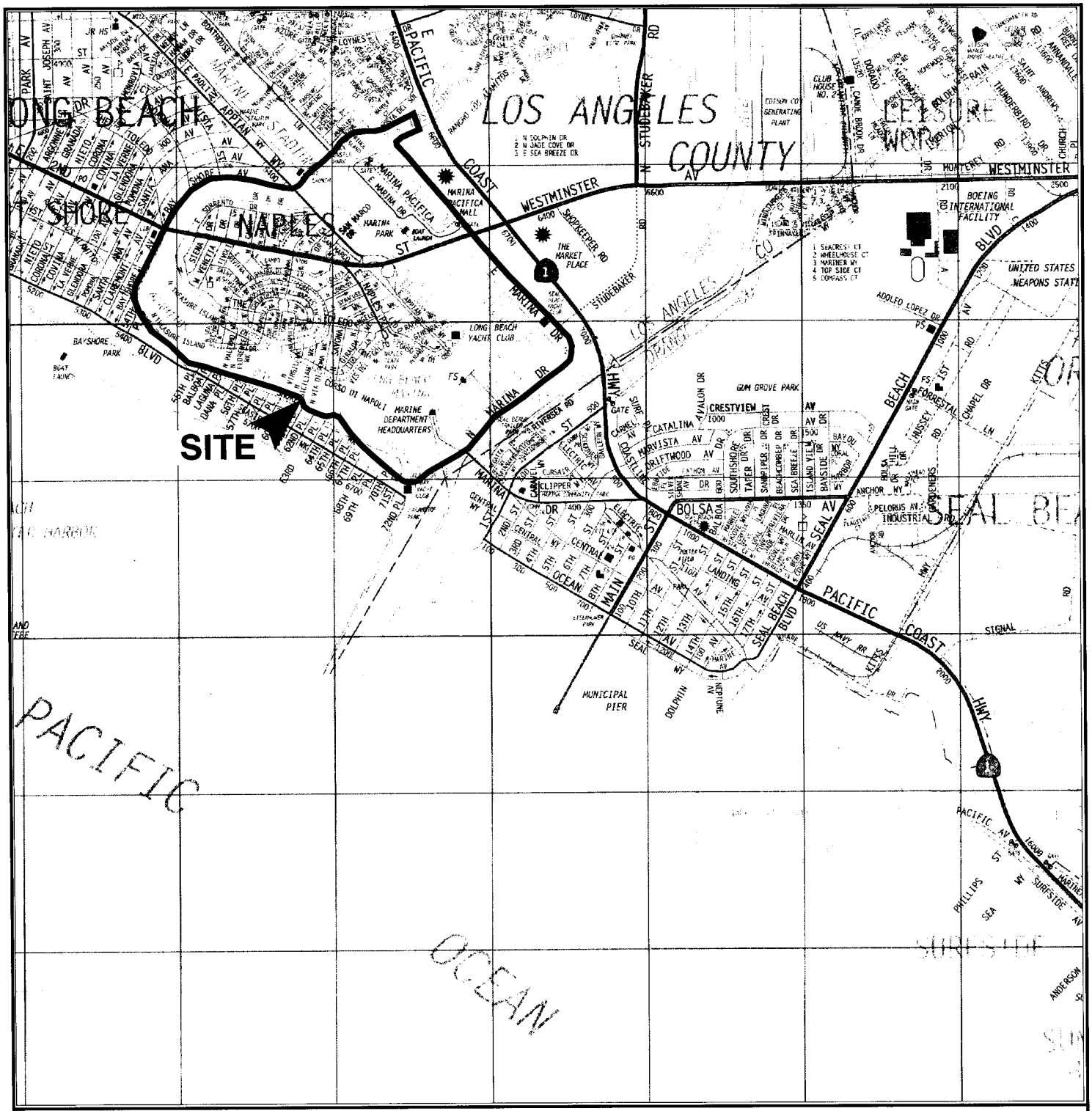
AERIAL PHOTOGRAPHS

Source	Scale	Date	Flight	Numbers
USDA	1:20,000	11-18-52	AXK-1K	3 and 4



REFERENCE: 2005 THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

APPROXIMATE SCALE IN FEET

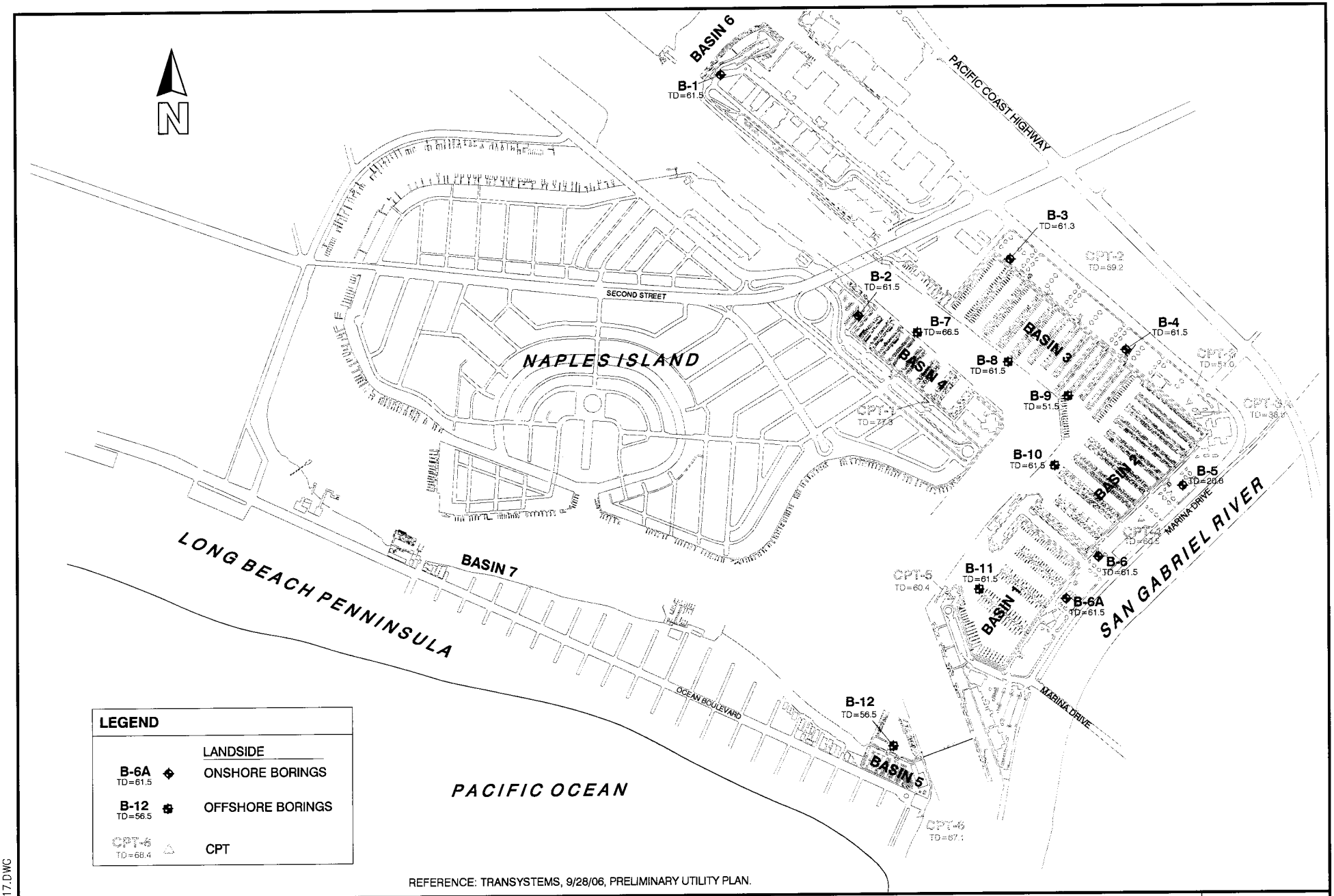
0 2400 4800

N

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

206918-A15.DWG

Ninyo & Moore	SITE LOCATION MAP	FIGURE
PROJECT NO. 206918001 / DATE 2/07	ALAMITOS BAY MARINA IMPROVEMENT PROJECT LONG BEACH, CALIFORNIA	1



REFERENCE: TRANSYSTEMS, 9/28/06, PRELIMINARY UTILITY PLAN.

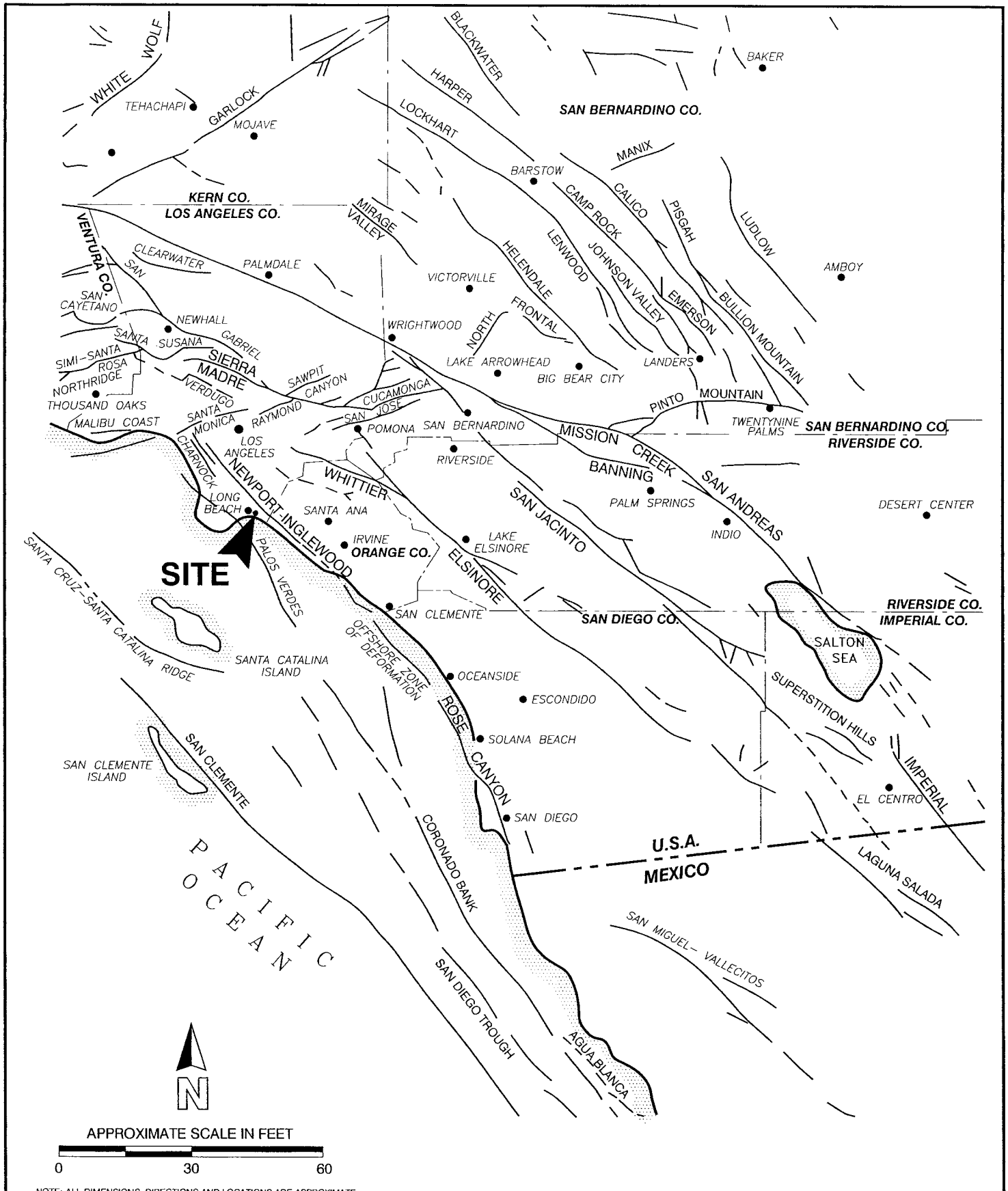
APPROXIMATE SCALE

0 1000 2000 FEET

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE

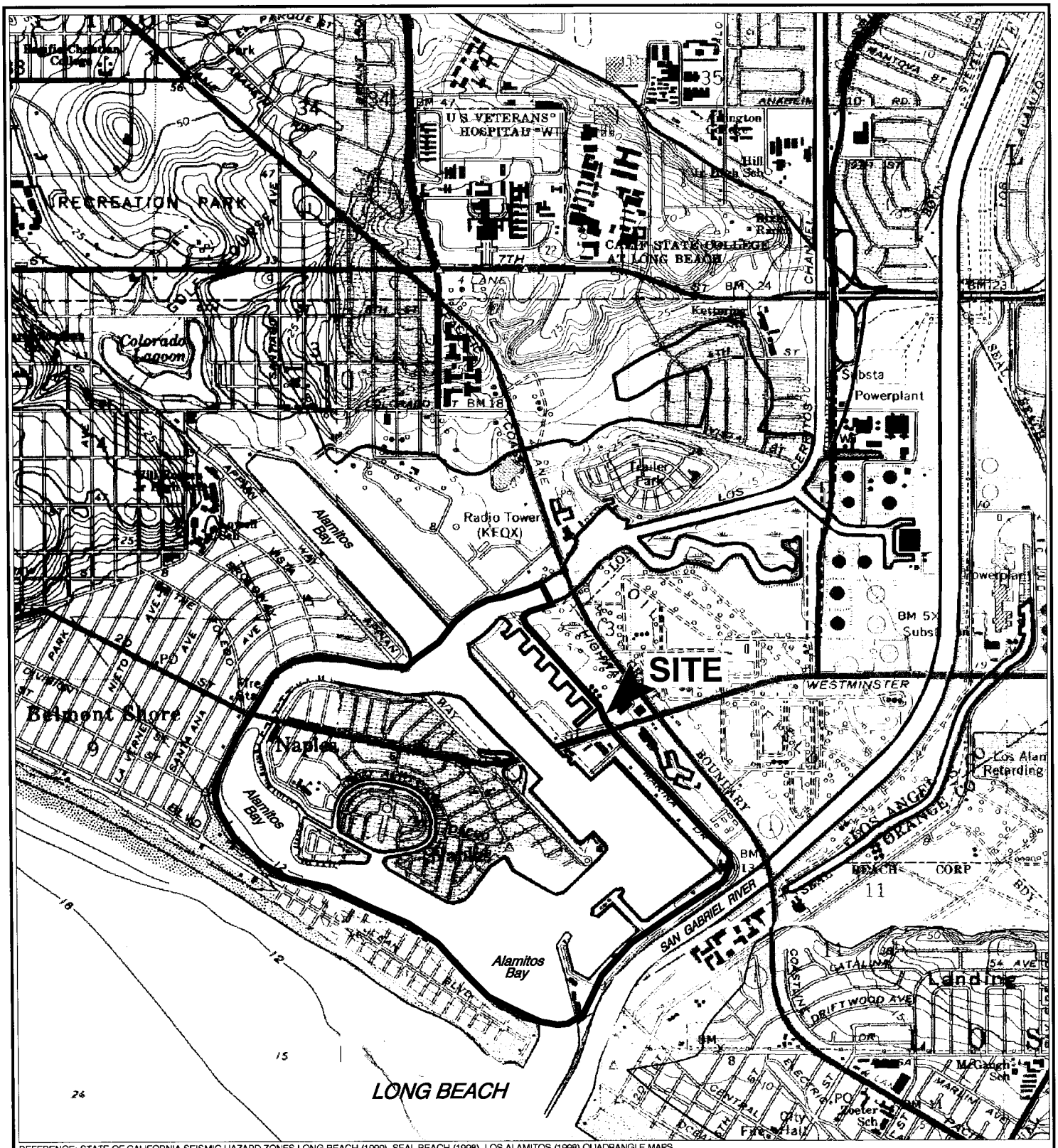
Ninyo & Moore	BORING AND CPT LOCATION MAP	FIGURE
PROJECT NO. 206918001 / DATE 2/07	ALAMITOS BAY MARINA IMPROVEMENT PROJECT LONG BEACH, CALIFORNIA	2

206918-A17.DWG



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore	FAULT LOCATION MAP	FIGURE
PROJECT NO. 206918001 / DATE 2/07	ALAMITOS BAY MARINA IMPROVEMENT PROJECT LONG BEACH, CALIFORNIA	3



REFERENCE: STATE OF CALIFORNIA SEISMIC HAZARD ZONES LONG BEACH (1999), SEAL BEACH (1998), LOS ALAMITOS (1998) QUADRANGLE MAPS.

APPROXIMATE SCALE IN FEET

0 2000 4000

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

N

MAP EXPLANATION

LIQUEFACTION:
Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

206918-A21.DWC

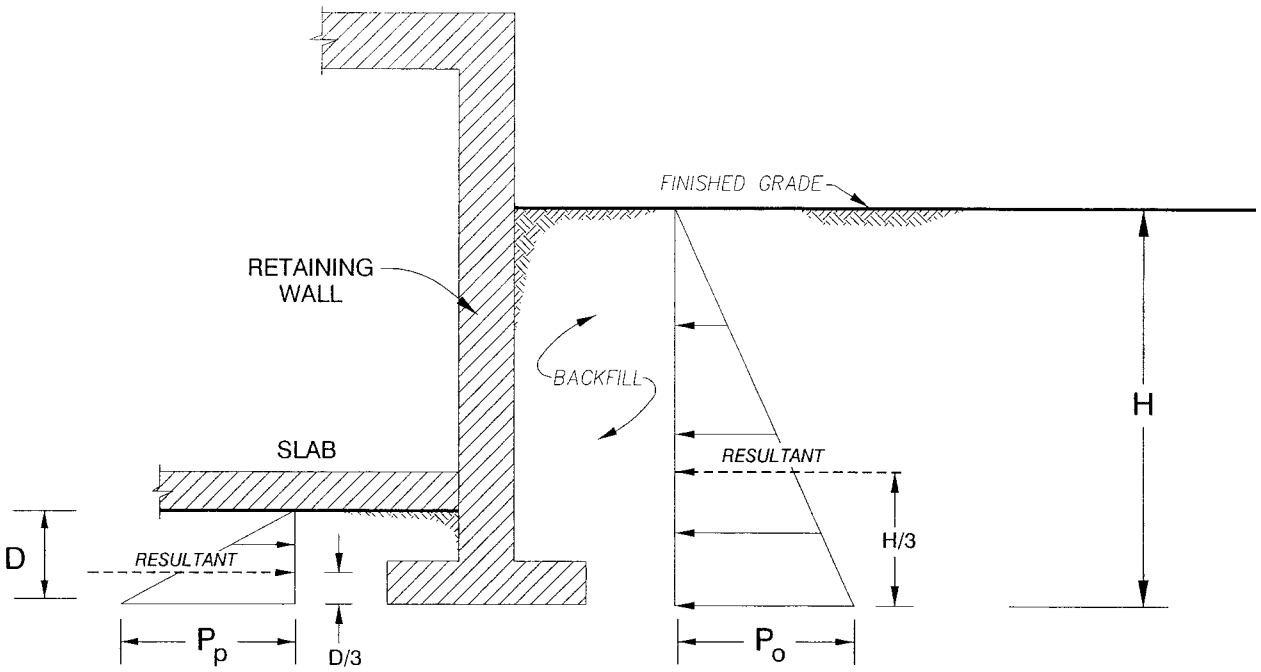
Ninyo & Moore

SEISMIC HAZARD ZONES MAP

FIGURE 4

PROJECT NO.	DATE
206918001	2/07

ALAMITOS BAY MARINA IMPROVEMENT PROJECT
LONG BEACH, CALIFORNIA



NOTES:

1. ASSUMES NO HYDROSTATIC PRESSURE BUILD-UP BEHIND THE RETAINING WALL
2. STRUCTURAL, GRANULAR BACKFILL MATERIALS AS SPECIFIED IN SECTION 10.1 SHOULD BE USED FOR RETAINING WALL BACKFILL
3. DRAINS AS RECOMMENDED IN THE RETAINING WALL DRAINAGE DETAIL SHOULD BE INSTALLED BEHIND THE RETAINING WALL
4. SURCHARGE PRESSURES CAUSED BY VEHICLES OR NEARBY STRUCTURES ARE NOT INCLUDED
5. H AND D ARE IN FEET (H IS LESS THAN 12 FEET)

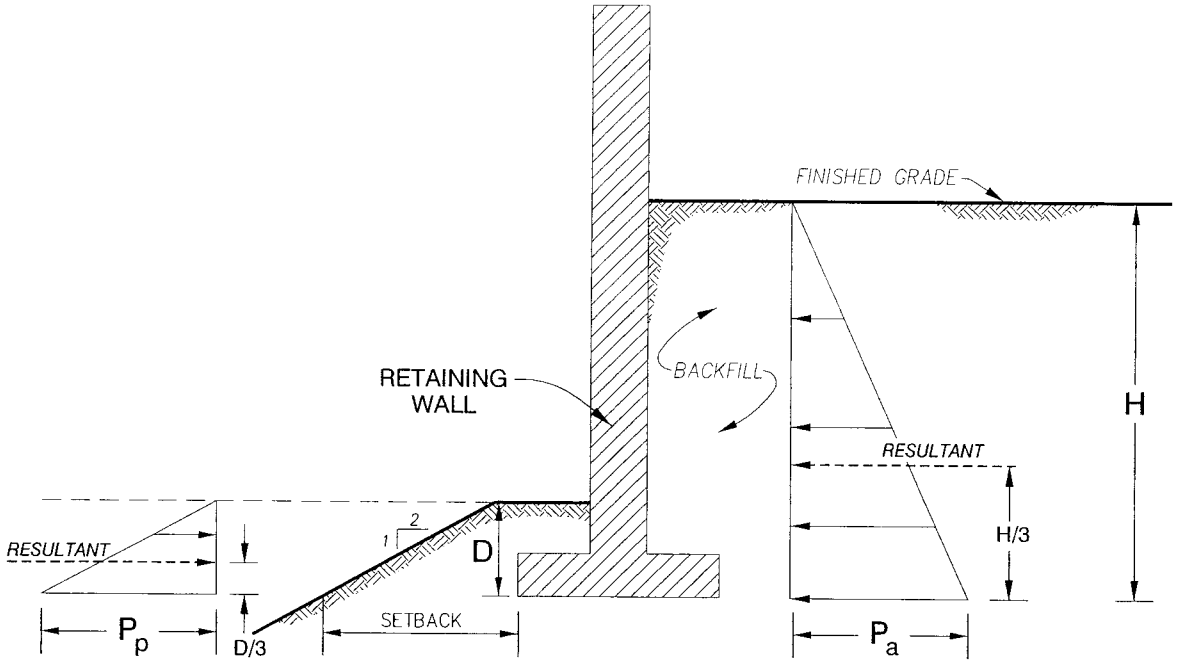
RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Lateral Earth Pressure	Equivalent Fluid Pressure ($lb/ft^2/ft$) [1]	
P_O	Level Backfill with Granular Soils [2]	2H:1V Sloping Backfill with Granular Soils [2]
	53H	82H
P_p	Level Ground	2H:1V Descending Ground
	300D	140D

NOT TO SCALE

206918_A18.DWG

Ninyo & Moore	LATERAL EARTH PRESSURES FOR RESTRAINED RETAINING WALLS	FIGURE
PROJECT NO. 206918001 / DATE 2/07	ALAMITOS BAY MARINA IMPROVEMENT PROJECT LONG BEACH, CALIFORNIA	5



NOTES:

1. ASSUMES NO HYDROSTATIC PRESSURE BUILD-UP BEHIND THE RETAINING WALL
2. STRUCTURAL, GRANULAR BACKFILL MATERIALS AS SPECIFIED IN SECTION 10.1 SHOULD BE USED FOR RETAINING WALL BACKFILL
3. DRAINS AS RECOMMENDED IN THE RETAINING WALL DRAINAGE DETAIL SHOULD BE INSTALLED BEHIND THE RETAINING WALL
4. SURCHARGE PRESSURES CAUSED BY VEHICLES OR NEARBY STRUCTURES ARE NOT INCLUDED
5. H AND D ARE IN FEET (H IS LESS THAN 12 FEET)
6. SETBACK SHOULD BE IN ACCORDANCE WITH FIGURE 18-I-1 OF THE CBC (2001)

RECOMMENDED GEOTECHNICAL DESIGN PARAMETERS

Lateral Earth Pressure	Equivalent Fluid Pressure ($lb/ft^2/ft$) [1]	
P_a	Level Backfill with Granular Soils [2]	2H:1V Sloping Backfill with Granular Soils [2]
	34H	53H
P_p	Level Ground	2H:1V Descending Ground
	300D	140D

NOT TO SCALE

206918_A19.DWG

Ninyo & Moore	LATERAL EARTH PRESSURES FOR YIELDING RETAINING WALLS	FIGURE
PROJECT NO. 206918001 / DATE 2/07	ALAMITOS BAY MARINA IMPROVEMENT PROJECT LONG BEACH, CALIFORNIA	6

APPENDICES FOR THE GEOTECHNICAL EVALUATION FOR THE ALAMITOS BAY MARINA REHABILITATION PROJECT ARE ON FILE WITH THE CITY OF LONG BEACH MARINE BUREAU

APPENDIX F

TIER III SEDIMENT CHARACTERIZATION, SUPPLEMENTAL SAMPLING AND ANALYSIS REPORT, AND BEST MANAGEMENT PRACTICES

Results of a Tier III Sediment Characterization Performed with Samples from Alamitos Bay Marina Long Beach, California

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TABLES

°C	degrees Celsius
µg/kg	microgram per kilogram
µm	micrometer
ASTM	American Society for Testing and Materials
BP	bioaccumulation potential
cm	centimeter
COC	chain of custody
DGPS	Differential Global Positioning System
EC_{50}	effective concentration for 50 percent of population
ERED	environmental residue-effects database
ER-L	effects range–low
ER-M	effects range–median
GC-FPD	gas chromatography – flame photometric detector
GC-MS	gas chromatography – mass spectrometry
IC_{50}	inhibition (sublethal) concentration for 50 percent of population
ITM	Inland Testing Manual
L	liter
LC_{50}	lethal concentration for 50 percent of population
LOEC	lowest-observed-effect concentration
LPC	Limiting permissible concentration
m	meter
MDL	method detection limit
mg/kg	milligram per kilogram
mg/L	milligram per liter
mL	milliliter
MLLW	mean lower low water
mm	millimeter
MRL	method reporting limit
NOEC	no-observed-effect concentration
OTM	Ocean Testing Manual
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
pH	hydrogen ion concentration
ppt	part per thousand
QA	quality assurance
QC	quality control
RPD	relative percent difference
SAP	sampling and analysis plan
sec	second
SIM	selective ion method
SOP	standard operating procedure
SP	solid phase
SPP	suspended particulate phase
STFATE	short term fate
TOC	total organic carbon
TRPH	total recoverable petroleum hydrocarbon
U.S.	United States
USACE	United States Army Corps of Engineers
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
UV	ultraviolet
Vol	volume
yd^3	cubic yard

CASE NARRATIVE

Full Tier III sampling and analysis procedures were conducted in accordance with the *Sampling and Analysis Plan (SAP), Alamitos Bay Marina Dredged Material Evaluation* (Weston Solutions 2007). Samples were collected from the Alamitos Bay Marina and LA-2 Reference site on 2 - 5 April 2007. Testing was conducted with the reference sample and composites of the project samples following guidance in *Evaluation of Dredged Material Proposed for Ocean Disposal* (USEPA/USACE 1991) otherwise known as the Ocean Testing Manual (OTM); *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual* (USEPA/USACE 1998), otherwise known as the Inland Testing Manual (ITM); and the *Regional Implementation Agreement (RIA) for the Evaluation of Dredged Material for Ocean Disposal* (USACE/USEPA 1993). After collection, samples were stored in a secured area at 4 ± 2°C. Samples were processed, and then shipped to the analytical laboratories in coolers on blue ice. All chemical analyses and bioassays were performed within required holding times from sample collection. Initial BP testing was also initiated within required holding times. However, following a laboratory error involving the inadvertent compositing of replicate tissue samples, BP testing exposures were re-initiated 11 July 2007. Composite tissue analysis results are reported in this report, and the retest results will be reported in an addendum to this document.

The analytical chemistry results showed that metals associated with urban run-off (i.e. copper, lead, mercury and zinc) were detected at nominally elevated concentrations across all docking basins. The only metal detected at a level significantly different from other sample areas was mercury measured in the Basin 1 sample at 0.8 mg/kg. Organic constituents, with the exception of DDT and a few PAH compounds, were below acceptable levels of detection. ∑DDT was detected at concentrations consistent throughout all docking basins, but at relatively low levels (up to 13.8 µg/kg). The total PAH concentrations were substantially lower than levels of ecological concern. The only significant toxicity observed among the five bioassays performed with the Alamitos Bay sediments was with the solid phase organism, *Rhepoxinius abronius*. The reduction in survival observed with this organism was relatively consistent throughout all basins, with a mean survival rate of 33.6% (52.4% lower than the LA-2 treatment survival). Because there were no other significant effects and no correlation with sediment contaminants, the causal agent of the observed toxicity can not be identified with the available data. If follow-up testing is performed to address the issues of elevated mercury concentrations in the Basin 1 sample and the reduction in *Rhepoxinius* survival across all docking basins, the results will be provided a supplement to this report. Table 1 summarizes sample identifications and participating laboratories involved with sample collection and analysis.

TABLE 1

Sample Collection and Analysis Summary

Sample Identification			Sampling and Analysis Delegation			
Individual Core I.D.s	Sample Composite I.D.	WESTON Laboratory I.D.	Sample Collection & Project Management	Sediment and Tissue Chemical Analysis	BP Testing Exposures	TOC, Grain Size & Bioassays
LA-2 Reference	LA-2	C070411.01	Weston Solutions Oakland, CA	EnviroMatrix Analytical San Diego, CA	Weston Solutions Port Gamble, WA	Weston Solutions Carlsbad, CA
B1-1,2,3,4,5	B1	C070411.02				
B2-1,2,3,4,5,6	B2	C070411.03				
B1-1,2,3,4	B3	C070411.04				
B1-1,2,3,4,5	B4	C070411.05				
B1-1,2,3,4	B5	C070411.06				
B1-1,2,3,4,5	B6	C070411.07				
B1-1,2,3	B7	C070411.08				

1 INTRODUCTION

As part of a 6 to 10 year phased construction program aimed at rehabilitating berthing slips and access features throughout the Alamitos Bay Marina (AB Marina), the City of Long Beach is proposing to dredge shoaled material from within all seven of the Marina's docking basins. The proposed disposal site for all phases of this project is the U.S. Environmental Protection Agency (USEPA) designated offshore disposal site, LA-2. The AB Marina is located in the southeastern corner of Los Angeles County at the intersection of Pacific Coast Highway and Second Street, just north of the San Gabriel River. A vicinity map depicting the relative locations of the proposed project location and sediment disposal site is provided as Figure 1.

The proposed dredging episode involves the removal of accumulated sediment in order to return each of the Marina's seven basins to the previously permitted depth that will allow unencumbered maneuvering of recreational vessels. The AB Marina construction program involves dredging Basins 2 through 7 to a target depth of 10 feet below Mean Lower Low Water (-10 ft MLLW). Basin 1 will be bisected and deepened to two different target depths: -12 and -15 ft MLLW. The estimated total volume of dredged material to be removed from the seven basins is 117,000 cubic yards (CY). Including an additional two feet of overdredge, the total volume represented by the proposed sampling depth is 287,000 CY. Dredge volumes for individual AB Marina docking basins are provided in Table 2. A project area map showing all seven basins is provided as Figure 2.

TABLE 2

Summary Individual Basin Dredge Volumes

Sample Area	Estimated Volume to Target Depth (CY)	1-ft Overdredge Volume (CY)	2-ft Overdredge Volume (CY)	Totals
Basin 1	28,400	12,400	12,900	53,700
Basin 2	37,700	21,200	31,000	89,900
Basin 3	19,200	13,200	23,500	55,900
Basin 4	19,600	14,700	31,000	65,300
Basin 5	1,320	1,100	1,450	3,870
Basin 6N	7,800	1,950	2,500	12,250
Basin 6S	2,000	900	1,200	4,100
Basin 7	1,000	500	600	2,100
Total	**117,020**	**65,950**	**104,150**	**287,120**

In accordance with the SAP, all material proposed for dredging including two feet of overdredge was evaluated for ocean disposal suitability following federal and regional guidelines outlined in the Ocean Testing Manual (USEPA/ACE 1991) and the Draft Regional Implementation Agreement (RIA) for the Evaluation of Dredged Material for Ocean Dumping (USACE/EPA 1993). Results of the sampling and analysis procedures performed under this study are assessed to determine whether sediment from the AB Marina will be suitable for aquatic disposal at LA-2, and to provide baseline sediment quality data for making decisions on additional testing requirements during the later years of the marina rehabilitation process.

Figure 1. Vicinity Map of Proposed Dredging and Disposal Area

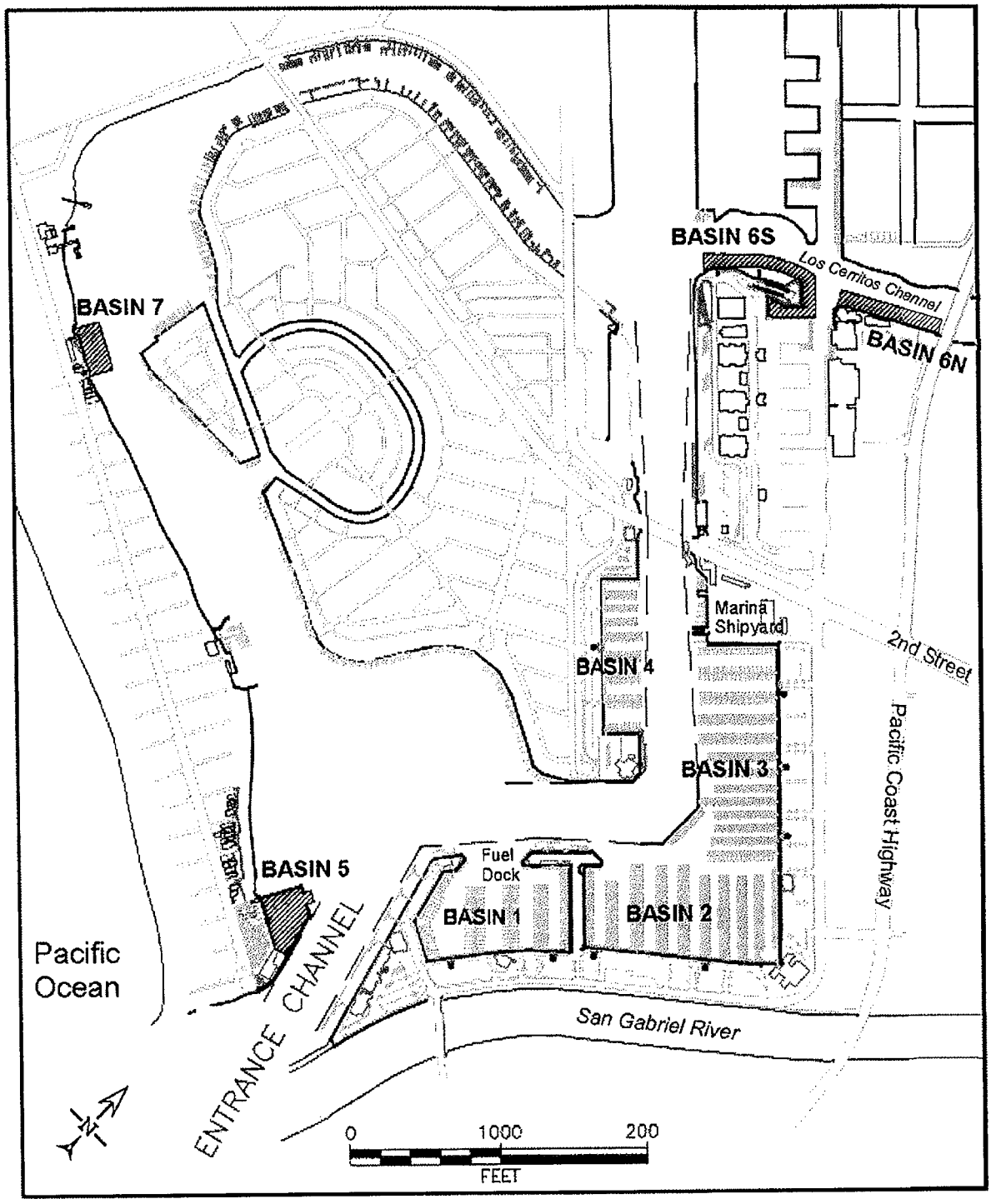

Figure 2. Project Area: Alamitos Bay Marina Docking Basins

The Tier III study was comprised of the analyses outlined in Table 3 and included the following:

Chemical analyses. The test and reference materials were analyzed for polycyclic aromatic hydrocarbons (PAHs), organotins, organochlorine pesticides, polychlorinated biphenyls (PCBs), and metals.

Conventional analyses. Materials were also analyzed for total organic carbon (TOC) and total and dissolved sulfides.

Physical analyses. Testing included analyses of percent solids, and grain size.

Biological analyses. Biological evaluation included three suspended particulate phase (SPP) bioassays (bivalve larvae, fish, and mysid shrimp), two solid phase (SP) bioassays (amphipod and polychaete worm), and two bioaccumulation potential (BP) bioassays (bivalve and polychaete worm) with tissue analyses. Tissues from bioaccumulation tests were analyzed for organochlorine pesticides and metals.

TABLE 3

Physical, Chemical, and Biological Analyses.

Physical	Chemical		Biological	
	Chemical Analyses	General Chemistry	Bioassays	Tissue Chemistry for BP Tests
• Grain size • % Solids	• Metals • OC Pesticides • PCBs • PAHs • Organotins	• Total and dissolved sulfides • Pore water Ammonia • TOC	SPP bioassays: • Bivalve larvae • Fish • Mysid SP bioassays: • Amphipod • Polychaete BP Tests: • Bivalve • Polychaete	• Metals • OP Pesticides

1.1 Background And History

The AB Marina, which includes seven basins and a total of 1,991 slips, has been in operation since the early 1960's. The AB Marina is home to four yacht clubs: the Alamitos Bay Yacht Club, the Navy Yacht Club, the Long Beach Yacht Club, and the Seal Beach Yacht Club. In the 1930's a major beach nourishment project was completed with the dredging of Alamitos Bay, and further expansion of the AB Marina and the AB Marina Jetty in the 1950's added to the stability of the surrounding beaches, although erosion and the resulting siltation continue to be problematic.

1.2 Previous Investigations

Sediments collected from docking basins within the AB Marina have been assessed for chemical contaminants twice since 1999 (Tetra Tech 1999 and 2003). Results of these studies are discussed below and contrasted with results of the most recent sediment assessments performed in Newport Harbor. Results of the three Newport Harbor sediment investigations performed since 2001 (MEC 2001 and 2003, and Weston 2005) are discussed because of proximity and similarities between the two Bay/Harbor complexes. See Figure 1 (page 2) for the relative locations of these two project sites. Table 1 shows

TABLE 4

Historic and Reference Sediment Data: Alamitos Bay Marina

Analyte	Alamitos Bay Marina		Newport Harbor (MEC 2001, 2003, & Weston 2005)	LA-2 Reference (Weston 2007)	Reference Values	
	Tetra Tech 2003	Tetra Tech 1999			ER-L	ER-M
Conventional Analytes						
Grain Size (%)						
Gravel	0.1 - 25.6	NT	0.0 - 3.5	0	NA	NA
Sand	5.5 - 62.9	NT	3.6 – 85.4	59.4	NA	NA
Clay	10.6 - 44.3	NT	4.9 – 53.1	32.2	NA	NA
Silt	11.4 - 53.1	NT	6.8 – 48.1	8.3	NA	NA
TOC %	0.7 - 1.7	0.1-0.4	0.2 – 1.7	0.59	NA	NA
Total Solids (%)	47.2 - 73.3	75.0-83.0	46.9 – 82.2	74.4	NA	NA
Sulfides (mg/kg)	<0.2	NA	<0.2 - 1100	1.35	NA	NA
Metals (mg/kg) Dry Weight)						
Arsenic	2.9 - 8.3	1.7 - 4.5	2.9 – 10.9	2.5	8.2	70.0
Cadmium	0.5 - 1.9	0.16 - 0.29	<0.1 – 2.0	0.2	1.2	9.6
Chromium	13.1 - 43.0	16 - 31	8.0 – 43.0	24.4	81.0	370
Copper	8.1 - 31.8	9.3 - 41	8.1 - 91.0	10.5	34.0	270
Lead	4.8 - 27.3	13 - 37	4.8 - 31.0	4.4	46.7	218
Mercury	<0.03 - 0.12	0.02 - 0.07	<0.03 - 0.8	0.02	0.2	0.71
Nickel	7.5 - 25.0	9.0-21	5.0 - 25.0	12.1	20.9	51.6
Selenium	0.4 - 1.7	ND - 0.14	0.4 – 1.7	0.5	NG	NG
Silver	<0.2	ND - 0.26	<0.2 - 0.5	0.7	1.0	3.7
Zinc	31.6 - 136	45 - 120	30.0 – 207	43.3	150	410
Organochlorine Pesticides (µg/kg)						
Total DDT	< 3 - 10.8	NT	<3.0 - 69.0	6.9	1.6	46.1
Total Chlordane	< 7 - < 11	NT	0.0 - 6.0	< 1	NA	NA
Toxaphene	NA	NT	< 200	< 10	NA	NA
Other Pesticides	NA	NT	<3.0	ND	NA	NA
Other Organic Constituents (µg/kg)						
Total PAH*	<14 - 33	NT	0.0 - 1179	30.7	4022	44792
Total PCB Aroclors	ND	NT	<33.0	0	22.7	NA
Total Organotins	NT	NT	<3.3 – 27.4	NA	NA	NA
Solid Phase Bioassays (% Survival)						
A. abdita	NT	NT	86 – 84	NT	NA	NA
E. estuarius	NT	NT	NT	84	NA	NA
M. nasuta	NT	NT	NT	82	NA	NA
R. abronius	NT	NT	NT	93	NA	NA
N. virens	NT	NT	NT	98	NA	NA
M. bahia	NT	NT	90 - 94	NT	NA	NA
Suspended Particulate Phase Bioassays (LC50)						
M. edulis	NT	NT	67 - >100	22.5 - >100	NA	NA
M. beryllina	NT	NT	>100	29.6 - >100	NA	NA

*Total = Detected +Undetected at the achieved MDL.
< indicates concentrations are less than the corresponding method detection limit (MDL).
NA = Not Available
NT = Not Tested
ND = Not Detected

the ranges of contaminant concentrations reported for the recent AB Marina and Newport Harbor sediment investigations. Bioassay data is also provided if available. Contaminant concentrations reported for recently collected sediments from the LA-2 reference disposal site (33°37'6"N by 118°17'24"W) as well as established sediment quality reference values (ER-L and ER-M values) are also provided in Table 1.

1.2.1 Alamitos Bay Marina

The two AB Marina studies were performed in 1999 and 2003. The 1999 study involved analysis of heavy metals only. In general, results of the two studies did not show significant deviations in metals concentrations with respect to each other. Minor exceptions to these otherwise consistent contaminant levels were arsenic, cadmium, copper and lead. Arsenic and cadmium, reported in 1999 at concentrations up to 4.5 and 0.3 mg/kg, respectively, were detected at 8.3 and 1.9 mg/kg in 2003. Although the 2003 levels of these constituents were elevated relative to 1999 AB Marina levels, they were only nominally higher than the ER-L (effects range – low) values and recently measured LA-2 concentrations, and within the range of levels recently reported for Newport Harbor sediments. The high end of the copper and lead concentration ranges reported for AB Marina sediments in 1999 fell from 41 and 37 mg/kg, respectively, to 32 and 27 mg/kg in 2003. These concentrations are lower than all reference values cited in Table 1. Nickel, reported at levels up to 25 mg/kg, was the only other metal constituent that exceeded both the recently measured LA-2 concentration and the ER-L value. It should be noted that the range of total organic carbon (TOC) values varied significantly between the two studies, rising from 0.11 – 0.39% in 1999 to 0.70 – 1.67% in 2003

The polyaromatic hydrocarbon (PAH) analytes measured in the 2003 AB Marina sediments were detected at concentrations substantially lower than the ER-L value. With the exception of total DDT, all other organic contaminants of ecological concern (PCB's and other pesticides) were not detected in 2003. It should be noted that organotin compounds were not measured for the 2003 AB Marina study. Concentrations of the organochlorine pesticide, DDT measured in 2003 ranged from below detection up to 10 ug/kg. Although present above the DDT ER-L, several biological impact study results reported by Weston bioassay laboratories have demonstrated that the high end of this range is not considered a bioaccumulation threat or high enough to elicit acute sediment toxicity among organisms commonly present in benthic environments off the California coast.

1.2.2 Newport Harbor

Results of the Newport Harbor sediment quality investigations provide data useful for predicting contaminant concentrations and biological impacts of AB Marina sediments based on use and geographical similarities between the two project areas. Newport Harbor is located approximately 16 miles south of AB Marina. The Newport data presented in Table 1 is a composite of the three different sediment quality assessment projects, each one representative of a different portion of the Harbor. Like the AB Marina studies, the Newport Harbor sediment assessments also showed ER-L excedences for arsenic, cadmium, and nickel, but also exhibited significant excedences in copper, mercury and zinc. Although copper and zinc concentrations were less than the detected concentrations in the cited LA-2 sample, the highest mercury concentration (0.8 mg/kg) exceeded the LA-2 level as well as the ER-M (0.71 mg/kg). Total DDT was detected in Newport Harbor at concentrations (ND to 69.0 ug/kg) up to seven times greater than those measured in AB Marina sediments. Other organochlorine pesticides, PAH, PCB and organotin constituents were either undetected or present at innocuous concentrations.

2 MATERIALS AND METHODS

2.1 FIELD COLLECTION PROGRAM FOR SEDIMENT CORE SAMPLES

Sampling was conducted at thirty-one designated sampling locations spread among seven basins within the AB Marina dredging footprint in Alamitos Bay, Long Beach, California. The SAP target and final Individual sample locations are depicted in Figures 3a-g. Cores from within each designated area were composited into single samples for subsequent testing and analysis.

Sampling began on April 2, 2007 and was completed on April 5, 2007. The weather was mostly cloudy with moderate wind. The sea was generally calm in the morning with mild chop in the afternoons. To collect sufficient sediment for analysis, multiple core samples were collected at all sample stations. The number of cores, their locations, their target lengths and the water and sampling depths at each station are provided in Table 5.

2.1.1 Core Collection Equipment

Cores were collected by using a P-3 electric vibracore (Figure 4) or a pushcore sampler (Figure 5). The vibracore was deployed from the *RV Early Bird II* and was equipped with a pre-cleaned 10-centimeter (4-inch) diameter aluminum barrel coupled to a stainless steel cutter head. The standard vibracore system is capable of collecting cores up to 15 ft in length and can be equipped to handle greater depths up to an additional 10 feet of material if necessary. The push-core device consisted of a 10-foot long, 2-inch diameter lexan core barrel, a brass flapper valve, and a 10-foot long PVC push handle.

2.1.2 Navigation

Geographic coordinates for each sample location within AB Marina were determined by pre-plotting the SAP specified locations onto a NOAA nautical chart. The sampling vessel attained position over each location using a Garmin® Global Positioning System (GPS) that uses U.S. Government Wide Angle Augmentation System (WAAS) differential correction data. Vessel position over sample location was typically maintained during coring operations by deployment of a stern anchor and adjusting vessel position to account for current and wind. Final geographical coordinates for each sample location were recorded with the GPS in customized log sheets upon collection of each sample, and are shown in Table 5.

2.1.3 Sediment Collection

2.1.3.1 Core Retrieval

Twenty-four sampling locations attempted by vibracore were positioned in five separate areas (Basins 1-5), with four to five core locations within each area. Five stations were sampled in Basin 6, three samples were collected by vibracore and two were collected by pushcore. In Basin 7, all three stations were collected by a pushcore sampler. LA-2 reference material was collected using a stainless steel pipe dredge.

Once the sampling vessel was positioned over the SAP prescribed sample location, water depth was measured using the vessel mounted fathometer and confirmed with a metered lead line. In certain locations the actual mudline elevations were not consistent with the initial condition survey used to plot the sample locations (See Table 3). This issue was most noticeable In Basin 2 where the actual elevations of the five stations sampled were 1.6 - 2.7 feet lower than indicated on the survey. In most cases, the mudline at the sample location or within five meters of the sample location was still higher than the proposed dredge depth, and the vessel was positioned over the highest shoaled spot near the initially plotted station. However, the observed water depth at station B2-3 as well as the entire fairway and adjacent fairways were below dredge depth. After consulting with

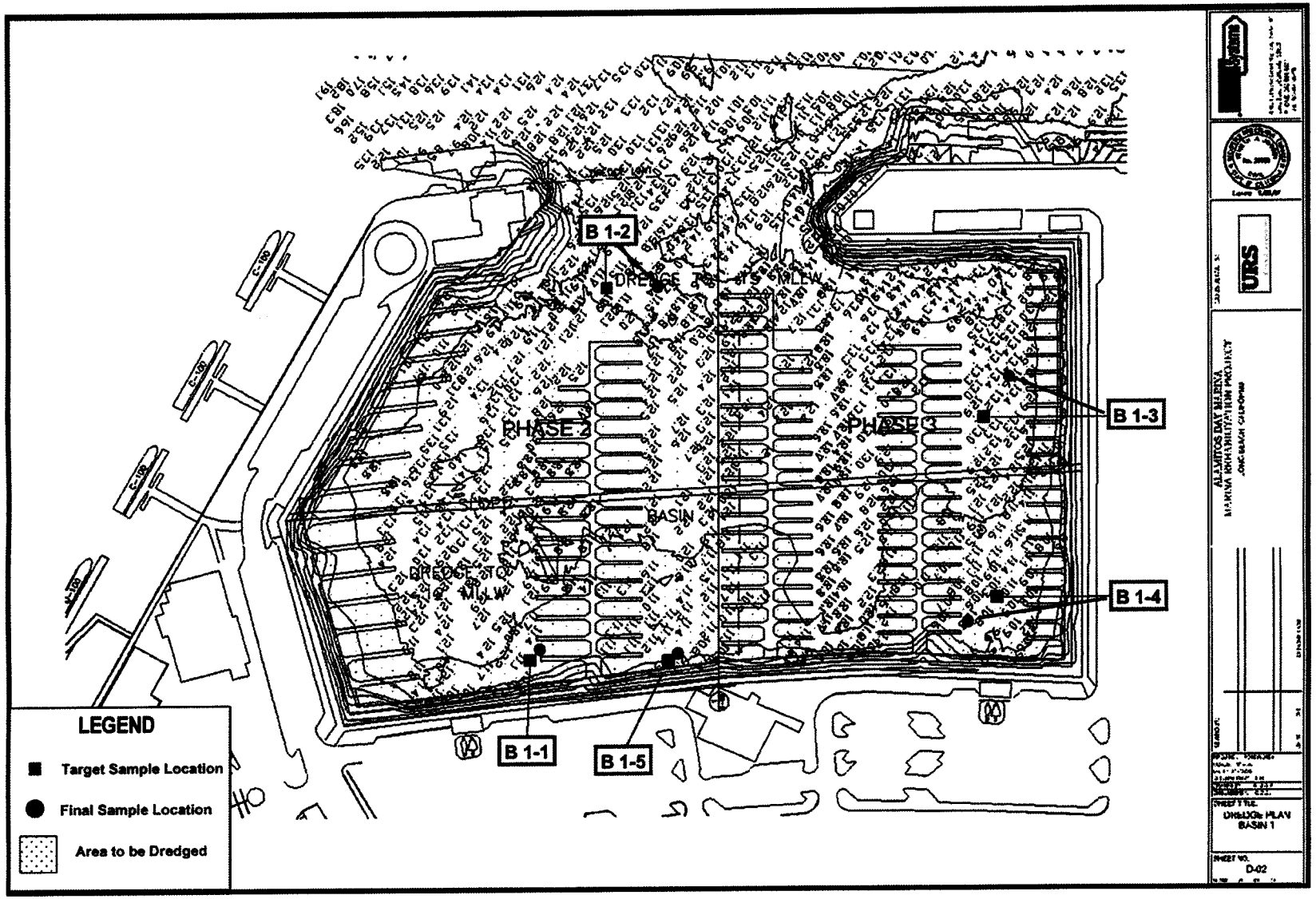

Figure 3a. Sample Locations Basin 1: Alamitos Bay Marina 2007

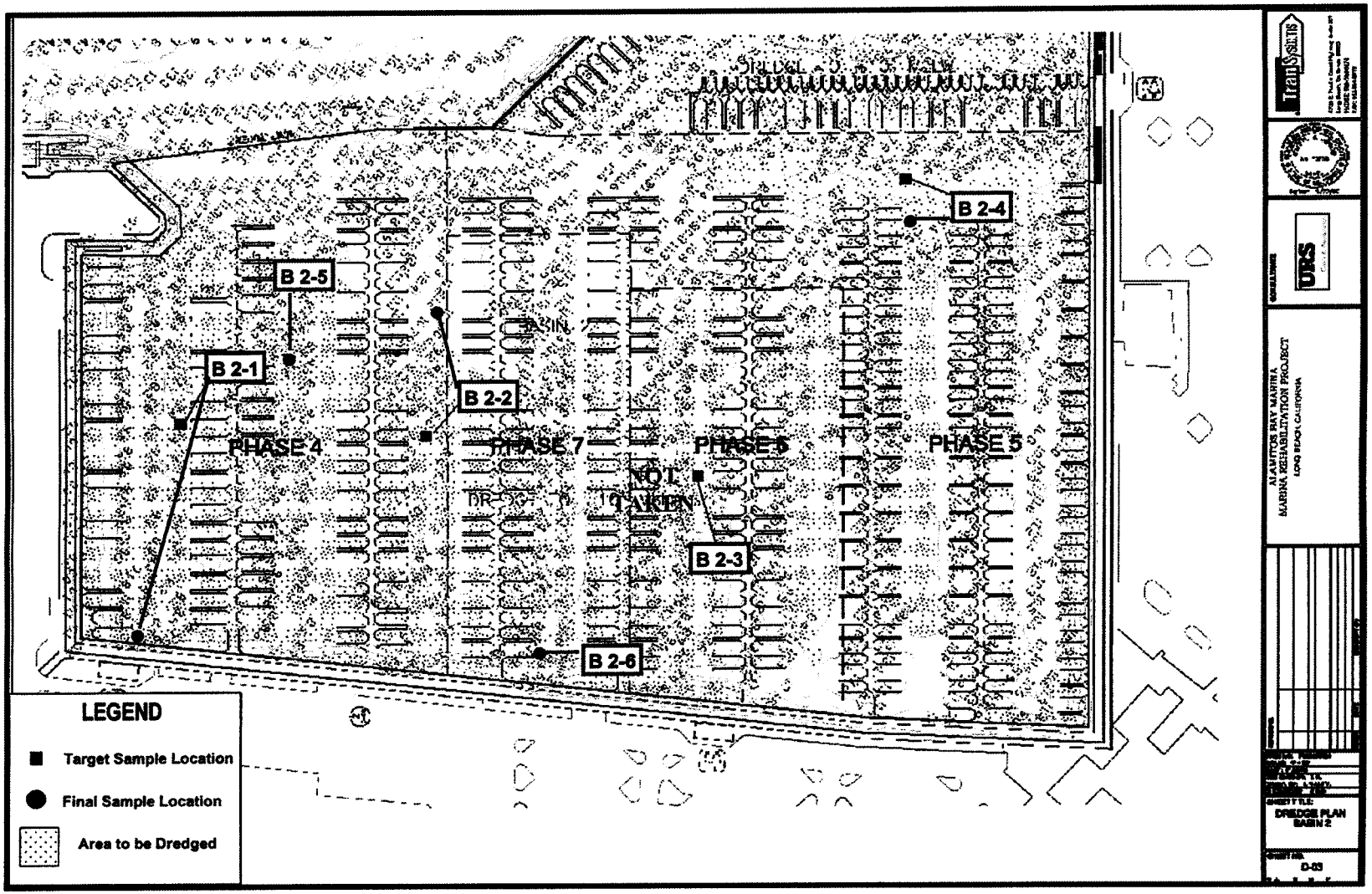

Figure 3b. Sample Locations Basin 2: Alamitos Bay Marina 2007

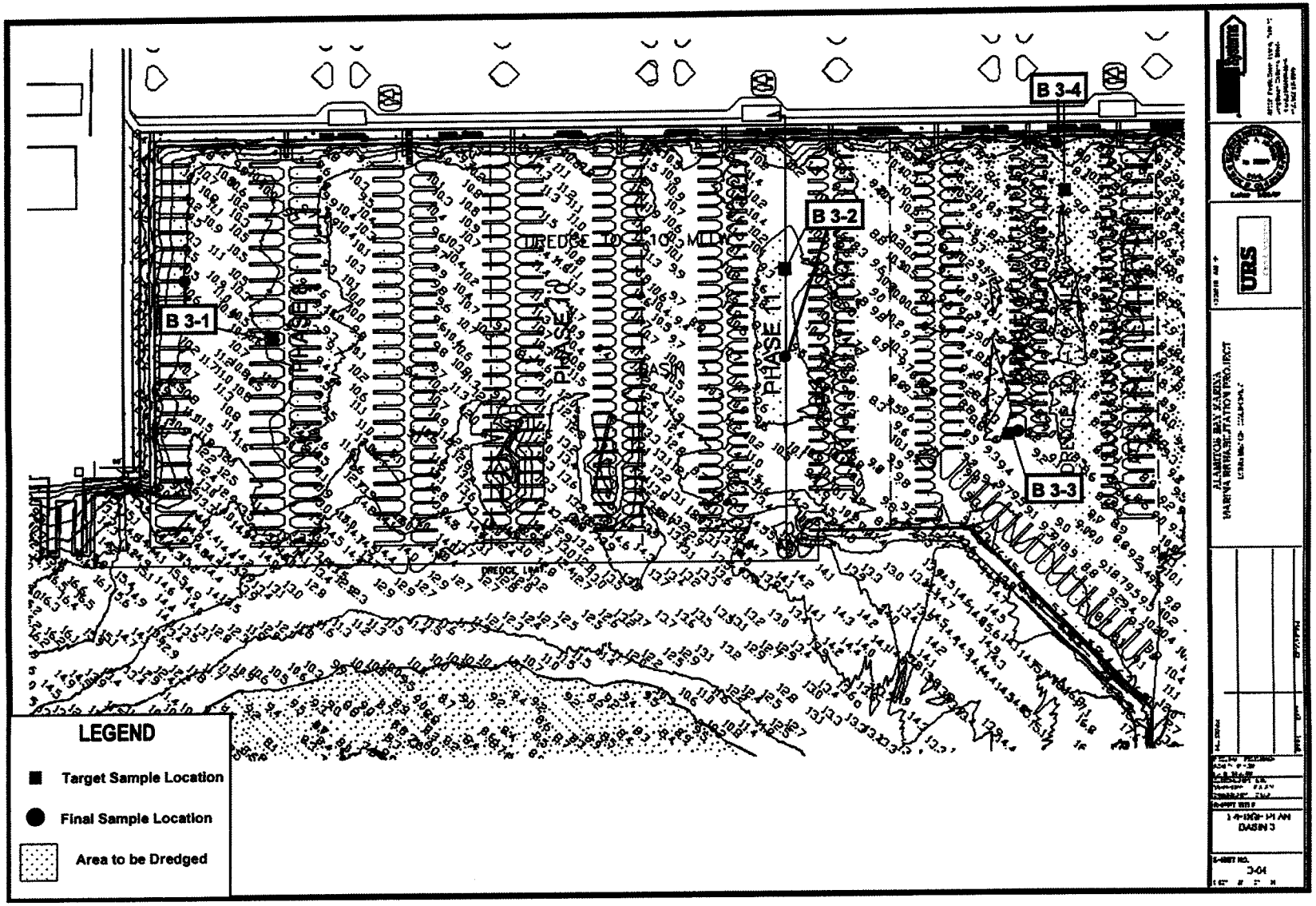

Figure 3c. Sample Locations Basin 3: Alamitos Bay Marina 2007

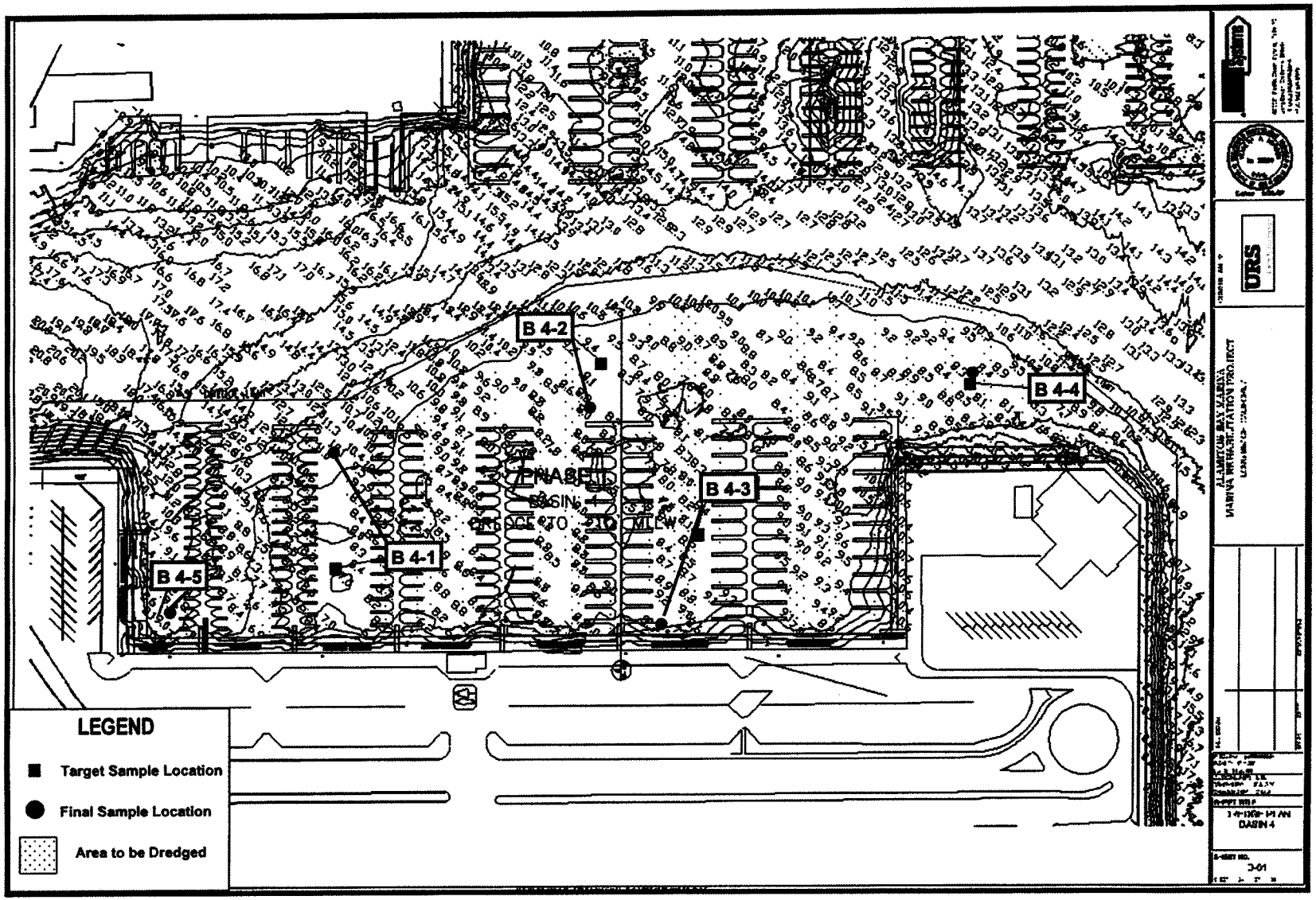

Figure 3d. Sample Locations Basin 4: Alamitos Bay Marina 2007

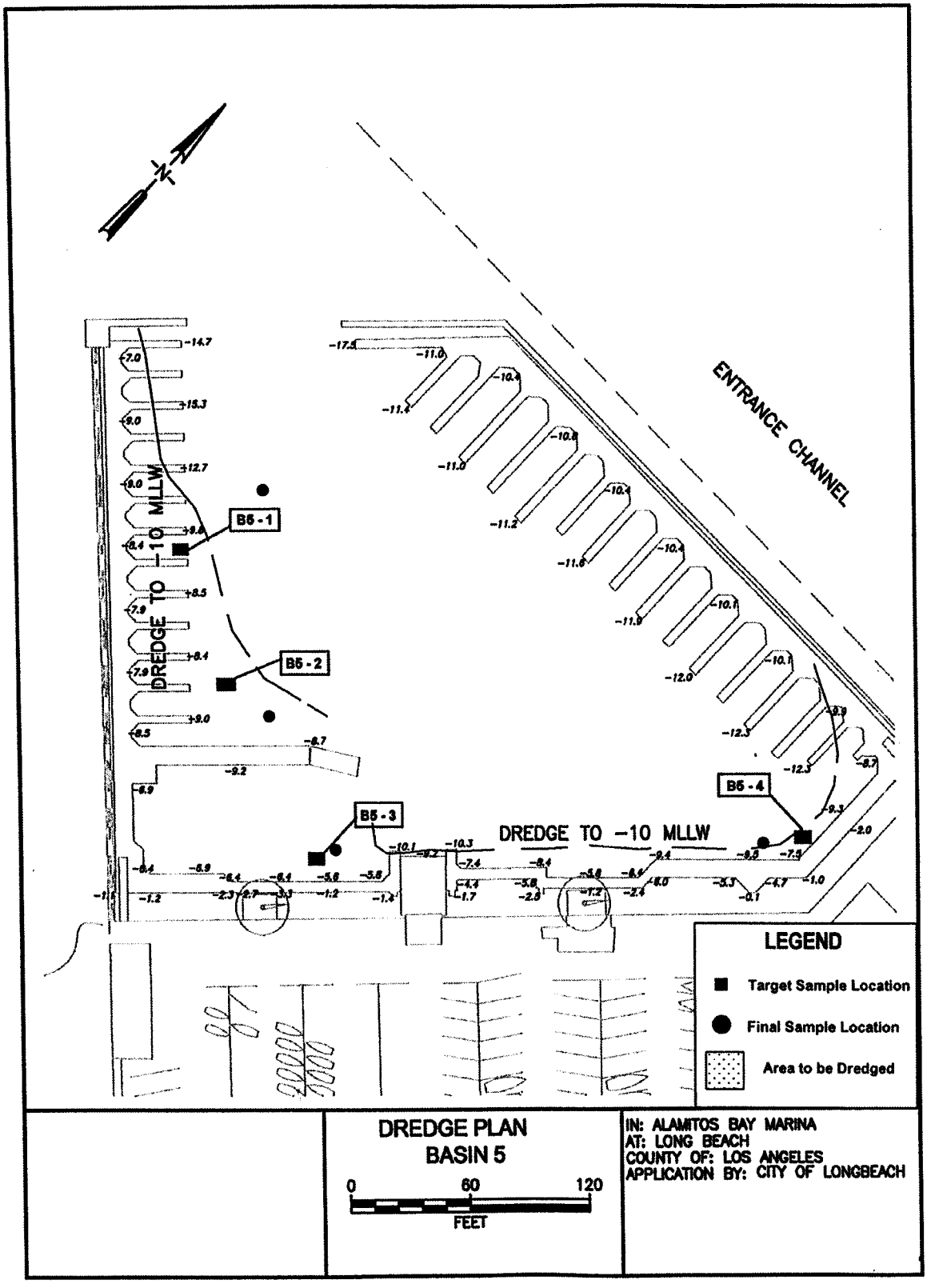

Figure 3e. Sample Locations Basin 5: Alamitos Bay Marina 2007

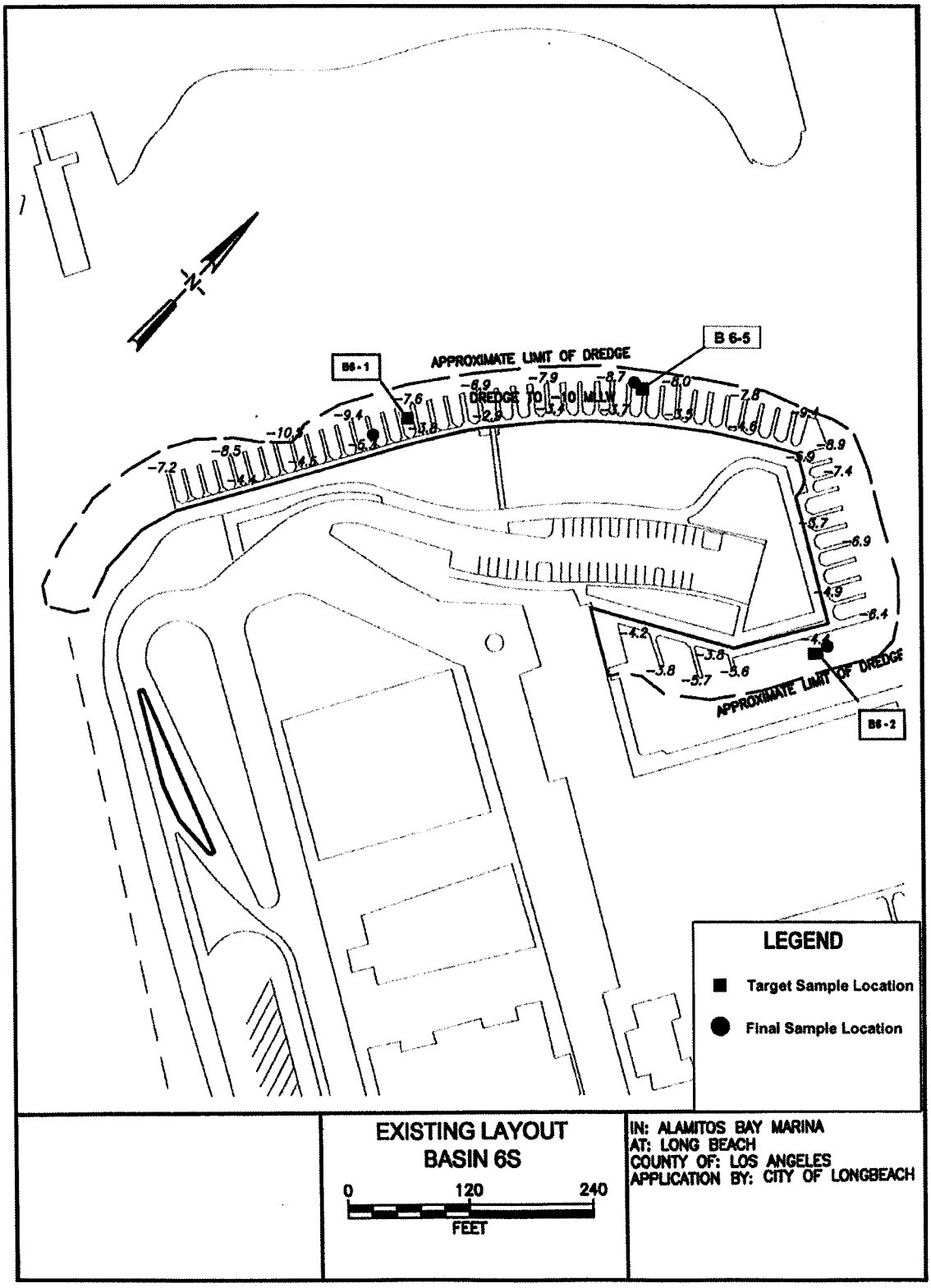

Figure 3f. Sample Locations Basin 6S: Alamitos Bay Marina 2007

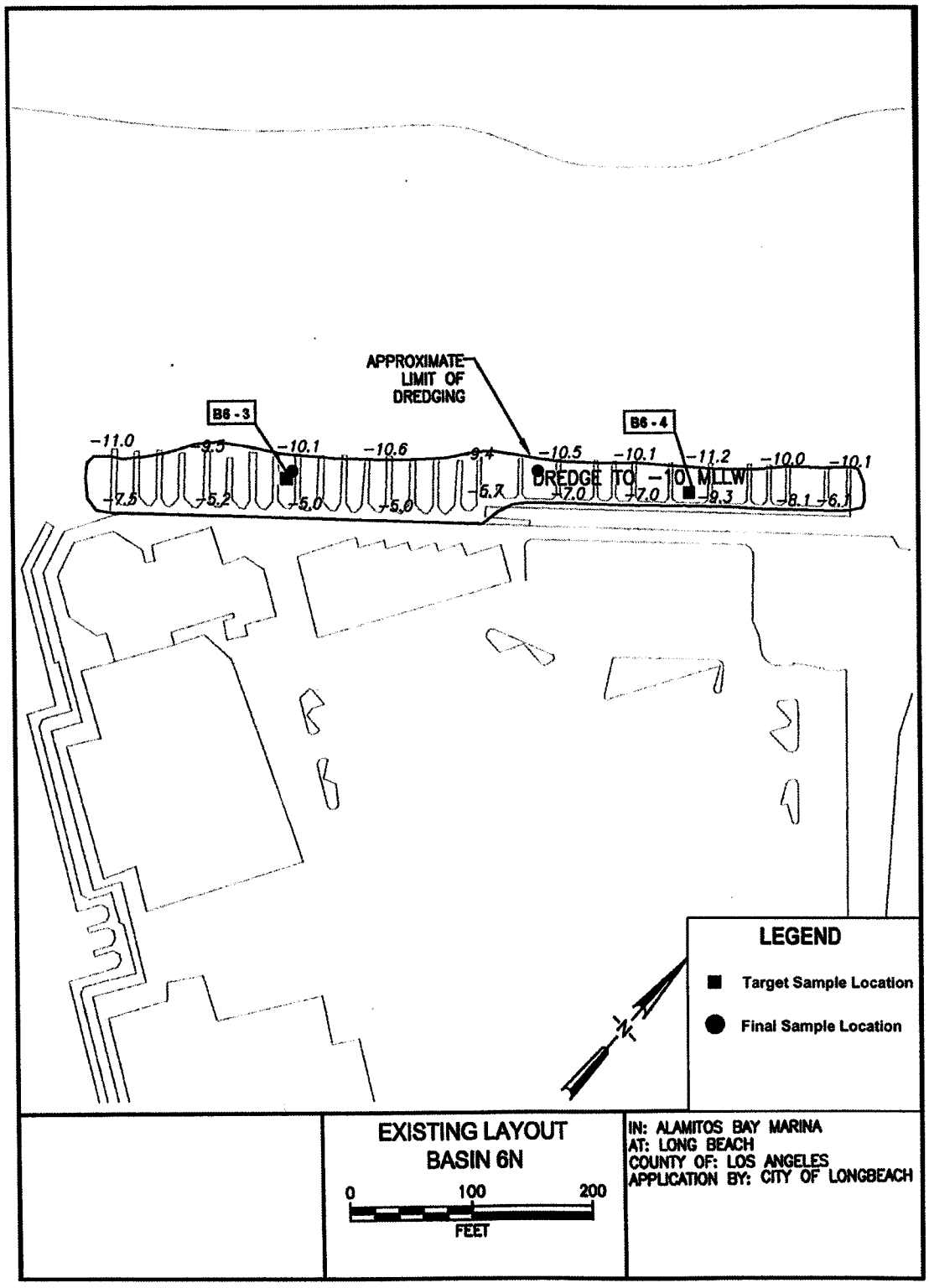

Figure 3g. Sample Locations Basin 6N: Alamitos Bay Marina 2007

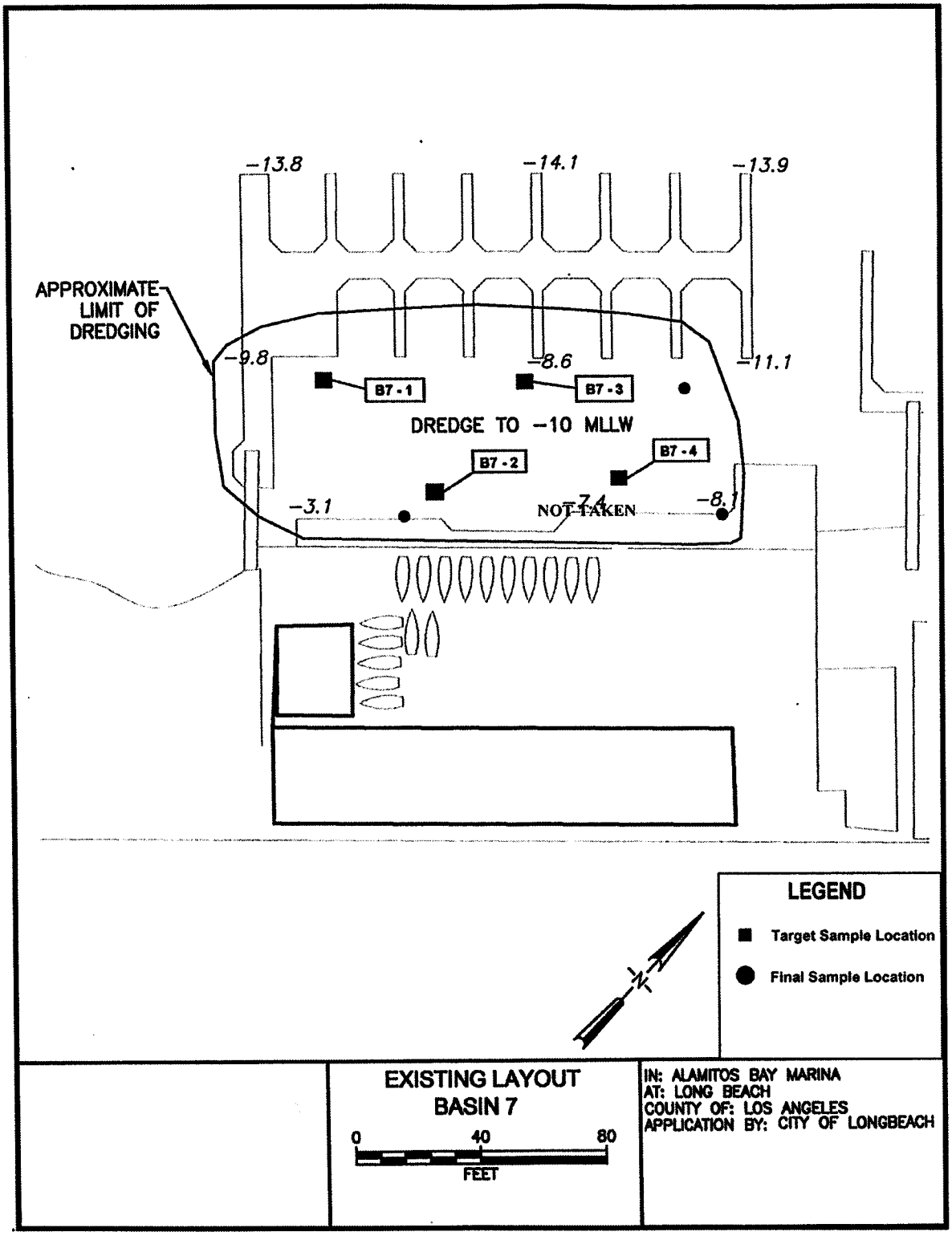

Figure 3h. Sample Locations Basin 7: Alamitos Bay Marina 2007

TABLE 5

Alamitos Bay Marina Core Log

Sample Station	Station Coordinates (NAD 83)	Mudline Depth (-ft MLLW)		Target Sample Depth* (-ft MLLW)	Target Core Length (ft)	Core Length Retrieved (ft)
		Expected	Actual			
B1 – 1	33°44.910N by 188°06.835W	11.1	10.9	14	3.1	3.3
B1 – 2	33°44.985N by 188°06.868W	11.8	11.7	17	5.3	5.3
B1 – 3	33°45.033N by 118°06.796W	13.2	13.5	17	3.5	3.5
B1 – 4	33°44.975N by 118°06.749W	10.9	11.0	14	3.0	4.5
B1 – 5	33°44.927N by 118°06.806W	10.8	9.8	14	4.2	4.5
B2 – 1	33°45.012N by 118°06.707W	7.4	9.1	12	2.9	4.3
B2 – 2	33°45.107N by 118°06.669W	7.0	9.4	12	2.6	3.5
B2 – 3	Not Sampled	8.0	NA	12	NA	NA
B2 – 4	33°45.177N by 118°06.610W	7.1	9.8	12	2.2	3.0
B2 – 5	33°45.063N by 118°06.706W	7.9	9.5	12	2.5	4.0
B2 – 6	33°45.077N by 118°06.601W	7.3	9.5	12	2.5	3.0
B3 – 1	33°45.363N by 118°06.818W	9.2	9.0	12	3.0	4.0
B3 – 2	33°45.266N by 118°06.722W	7.9	9.8	12	2.2	3.5
B3 – 3	33°45.205N by 118°06.705W	7.5	9.0	12	3.0	3.0
B3 – 4	33°45.248N by 118°06.642W	7.8	8.7	12	3.3	4.5
B4 – 1	33°45.286N by 118°06.931W	8.5	9.4	12	2.6	4.0
B4 – 2	33°45.270N by 118°06.898W	8.3	9.4	12	2.6	4.0
B4 – 3	33°45.234N by 118°06.919W	8.6	8.7	12	3.3	5.0
B4 – 4	33°45.228N by 118°06.832W	8.4	10.0	12	2.0	2.5
B4 – 5	33°45.304N by 118°06.994W	8.4	8.7	12	3.3	4.5
B5 – 1	33°44.821N by 118°07.046W	8.9	9.3	12	2.7	3.8
B5 – 2	33°44.808N by 188°07.055W	8.5	9.5	12	2.5	2.9
B5 – 3	33°44.796N by 118°07.057W	7.8	8.5	12	3.5	4.4
B5 – 4	33°44.779N by 118°07.020W	7.8	9.6	12	2.4	2.7
B6 – 3	33°45.735N by 118°07.006W	7.5	8.5	12	5.5	5.5
B6 – 4	33°45.752N by 118°06.966W	8.2	8.9	12	3.1	4.0
B6 – 1	33°45.678N by 118°07.170W	5.2	7.5	12	4.5	4.4
B6 – 2	33°45.683N by 118°07.074W	5.0	6.8	12	5.2	6.0
B6 – 5	33°45.706N by 118°07.128W	5.0	7.7	12	4.3	4.3
B7 – 1	33°45.127N by 118°07.738W	7.5	8.5	12	3.5	3.4
B7 – 2	33°45.129N by 118°07.722W	7.9	8.5	12	3.5	4.2
B7 – 3	33°45.120N by 118°07.722W	7.9	8.7	12	3.3	3.3
B7 – 4	Not Sampled	NA	NA	12	NA	NA

* Target core length includes two-foot overdredge depth tolerance

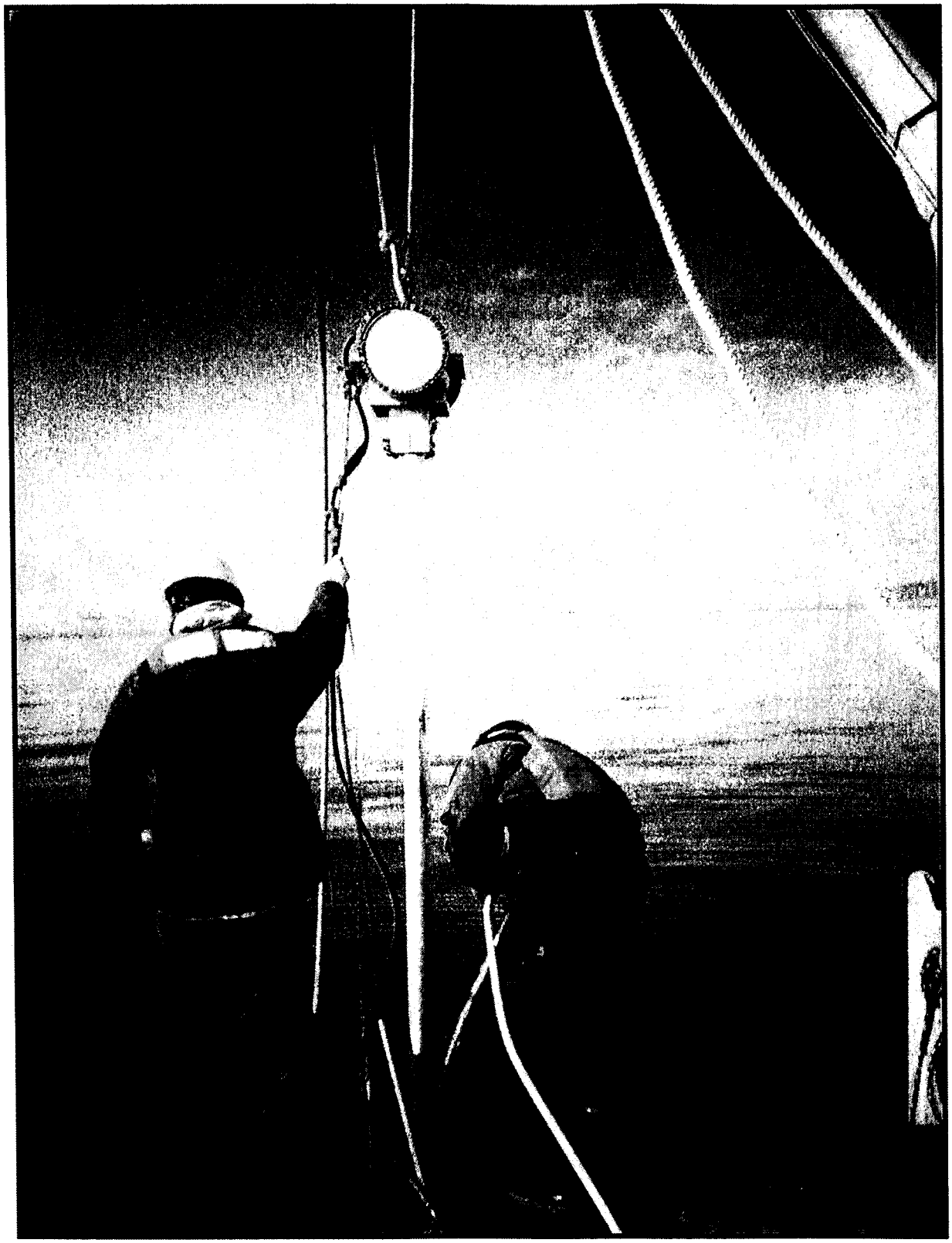

Figure 4. Vibracore Operations

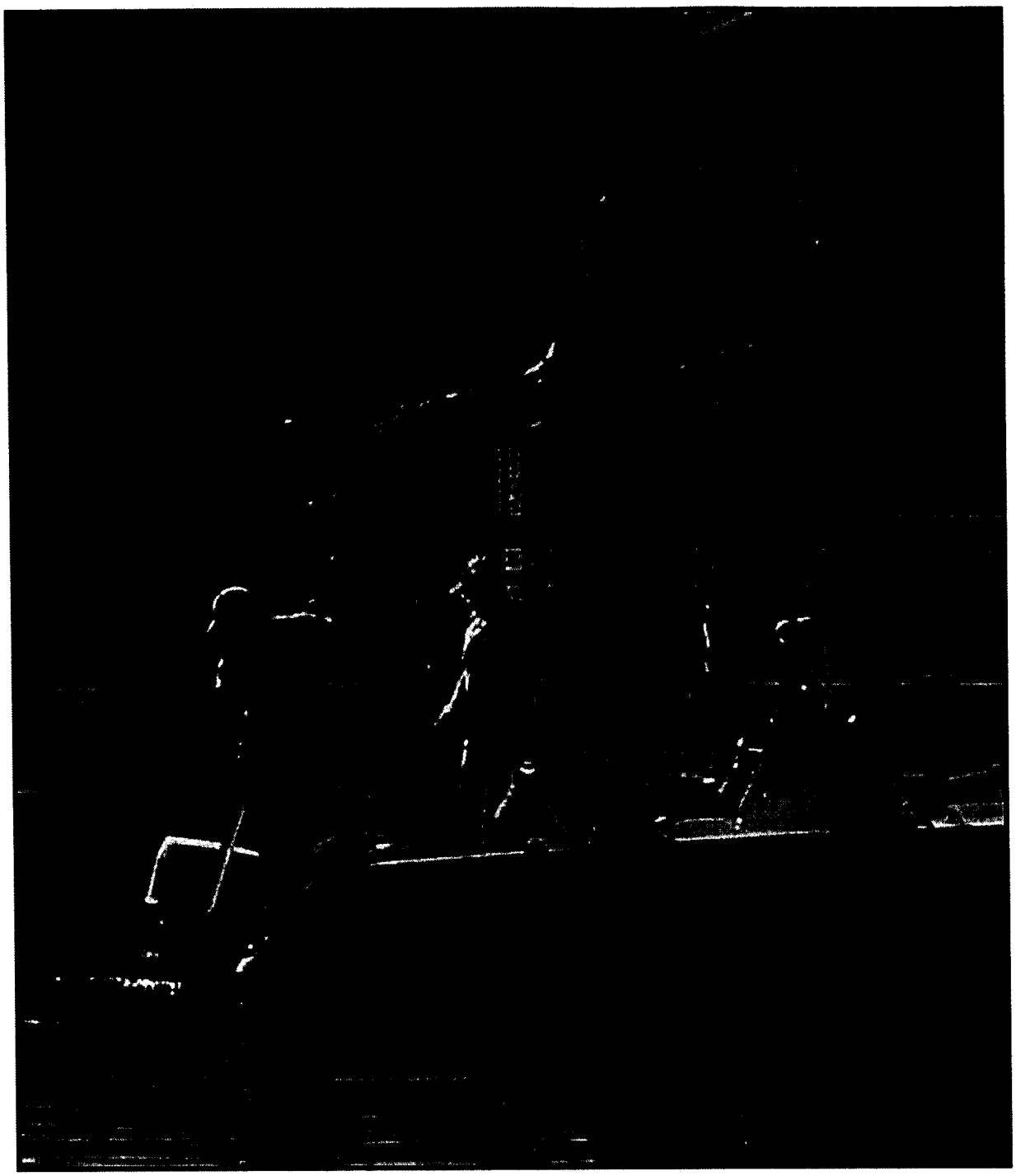

Figure 5. Pushcore Operations

the U.S. EPA, it was agreed that five samples as opposed to six samples would sufficiently represent the material proposed for dredging within Basin 2. Consequently station B2-3 was eliminated from the sampling plan. A similar USEPA guided decision was made with sample B7-4. A minimum of two vibracore samples or three pushcore samples were collected at each site in order to provide sufficient material for all required physical and chemical testing and archival purposes. Sediment cores were collected to sample depth, unless refusal was encountered.

2.1.3.2 Core Handling and Geologic Description

Each vibracore sample was retrieved to the vessel platform, where the sediment sample was extruded from the core barrel onto polyethylene-lined collection trays. Each core was then photographed and examined by a qualified scientist for texture, odor, color, length, approximate grain size distribution, and any evident stratification of the sediment. All core profile data excluding photographs are provided in custom log sheets in Appendix B. Core photos are available upon request.

Sediment for environmental testing was placed into clean food-grade plastic bags, labeled, logged into a field chain of custody (COC), and placed into a cooler. Core samples remained on ice and were shielded from light until delivered by Weston Solutions personnel to the Weston Solutions laboratory in Carlsbad, California, for processing.

2.1.4 Shipping

After processing and prior to shipping, subsample containers were placed in re-sealable plastic bags, wrapped in bubble wrap, and securely packed inside the cooler with ice packs or crushed ice. COC forms were completed, and the original signed COC forms were inserted in a re-sealable plastic bag and placed inside the cooler. The cooler lids were securely taped shut. Samples were delivered to the analytical labs listed in Table 6.

TABLE 6

Analytical Laboratories, Point of Contact, and Shipping Information

Laboratory	Analyses Performed	Point of Contact	Shipping Information
Weston Solutions, Inc. Carlsbad	Bioassays, Grain Size	Chris Osuch	2433 Impala Dr. Carlsbad, CA. 92008
Weston Solutions, Inc. Port Gamble	Bioaccumulation Exposure Treatments	Brian Hester	4729 NE View Dr. Port Gamble, WA. 98364
Enviromatrix Analytical, Inc.	Sediment Chemistry, Tissue Chemistry	Dan Verdon	414 Pontius Ave North Seattle, WA. 98109
Applied Marine Sciences, Inc.	TOC	K. S. Denis	502 N. Highway 3 Suite B League City, TX. 77573

2.1.5 Sample Processing and Storage

Sediment cores, reference sediment, soil cores, and dredge site water were stored at 4 degrees Celsius (°C) until processed. Testing began within 14 days from the time of collection. For analyses, the sediment cores representing each of the project areas were combined and thoroughly homogenized to a uniform consistency at the laboratory using a stainless steel mixing apparatus. Subsamples for chemical analysis were collected from each of the dredged material sampling area composites. Samples to undergo chemical analysis were placed into certified clean glass jars with Teflon-lined lids. A sub-sample from each core location as well as each of the area composites used in testing was frozen in case further delineation of chemical contamination was required.

2.1.6 Documentation and Chain-of-Custody

Samples were considered to be in custody if they were (1) in the custodian's possession or view, or (2) retained in a secured place (under lock) with restricted access. The principal documents used to identify samples and to document possession were COC records, field logbooks, and field tracking forms. COC procedures were used for all samples throughout the collection, transport, and analytical process and for all data and data documentation, whether in hard copy or electronic format. COC forms are reproduced in Appendix A.

COC procedures were initiated during sample collection. A COC record was provided with each sample or sample group. Each person who had custody of the samples signed the form and ensured that the samples were not left unattended unless properly secured. Documentation of sample handling and custody included the following:

- Sample identifier
- Sample collection date and time
- Any special notations on sample characteristics
- Initials of the person collecting the sample
- Date the sample was sent to the laboratory
- Shipping company and waybill information

The completed COC form was placed in a plastic envelope that traveled inside the ice chest containing the listed samples. The COC form was signed by the person transferring custody of the samples. The condition of the samples was recorded by the receiver. COC records were included in the final analytical report prepared by the laboratory, and were considered an integral part of that report.

2.1.7 Decontamination of Field and Laboratory Equipment

All vibracore and pushcore equipment was cleaned prior to sampling. Between stations, the core barrel and deck of the vessel were rinsed with site water. Before creating each composite, all stainless steel utensils (stainless steel bowls, spoons, spatulas, mixers, and other utensils) were cleaned with soapy water, rinsed with tap water, and then rinsed three times with deionized water.

2.2 Physical and Chemical Analysis

Physical and chemical parameters measured in this testing program were selected to provide data on potential chemicals of concern in proposed dredge material from AB Marina. Method detection limits (MDLs) for target analytes are described in the SAP (Weston Solutions 2007) and provided in Table 7 along with the achieved method detection limits.

2.2.1 Physical Analyses

Physical analyses of the sediment included grain size and total solids. Grain size was analyzed to provide data on the grain size distributions of project and reference sediment (e.g., gravel, sand, silt, and clay) using the sieve-pipette method (Plumb 1981). The frequency distribution of the size ranges (reported in micrometers [μm]) of the dredged material is reported in the data report. Total solids were measured to convert concentrations of the chemical parameters from a wet-weight to a dry-weight basis. Percent solids were determined by SM 2540G (Clesceri et al. 2000).

TABLE 7

Analytical Methods and Detection Limits

Analyte	SAP Specified Method	Method Used	Target RLs	Achieved MDLs	Achieved RLs
Sediment Organics (µg/kg)					
PAHs	EPA 8270	GC/MS SIMS	20	14.5 – 17.7	14.5 – 17.7
PCBs	EPA 8082	EPA 8082	20	3.39 – 4.13	14.5 – 17.7
Sediment Pesticides (µg/kg)					
Aldrin	EPA 8081A	EPA 8081	2	0.76 – 0.92	1.45 – 1.77
Alpha-BHC	EPA 8081A	EPA 8081	2	1.45 – 1.77	1.45 – 1.77
Beta-BHC	EPA 8081A	EPA 8081	2	0.88 – 1.08	1.45 – 1.77
Gamma-BHC	EPA 8081A	EPA 8081	2	0.91 – 1.11	1.45 – 1.77
Delta-BHC	EPA 8081A	EPA 8081	2	0.88 – 1.08	1.45 – 1.77
Chlordane	EPA 8081A	EPA 8081	20	3.45 – 4.20	3.70 – 4.51
2,4-DDD	EPA 8081A	EPA 8081	2	0.88 – 1.08	1.45 – 1.77
4,4-DDD	EPA 8081A	EPA 8081	2	0.88 – 1.08	1.45 – 1.77
2,4-DDE	EPA 8081A	EPA 8081	2	0.78 – 0.95	1.45 – 1.77
4,4-DDE	EPA 8081A	EPA 8081	2	0.78 – 0.95	1.45 – 1.77
2,4-DDT	EPA 8081A	EPA 8081	2	1.45 – 1.77	1.45 – 1.77
4,4-DDT	EPA 8081A	EPA 8081	2	1.45 – 1.77	1.45 – 1.77
Dieldrin	EPA 8081A	EPA 8081	2	0.94 – 1.15	1.45 – 1.77
Endosulfan I	EPA 8081A	EPA 8081	2	1.19 – 1.45	1.45 – 1.77
Endosulfan II	EPA 8081A	EPA 8081	2	1.23 – 1.50	1.45 – 1.77
Endosulfan Sulfate	EPA 8081A	EPA 8081	2	1.04 – 1.27	1.45 – 1.77
Endrin	EPA 8081A	EPA 8081	2	1.10 – 1.34	1.45 – 1.77
Endrin Aldehyde	EPA 8081A	EPA 8081	2	1.17 – 1.43	1.45 – 1.77
Heptachlor	EPA 8081A	EPA 8081	2	1.22 – 1.48	1.45 – 1.77
Heptachlor Epoxide	EPA 8081A	EPA 8081	2	1.20 – 1.47	1.45 – 1.77
Toxaphene	EPA 8081A	EPA 8081	20	12.8 – 15.5	18.0 – 21.9
Sediment Metals (mg/kg)					
Arsenic	EPA6020	EPA 6020	2.0	0.290 – 0.353	0.725 - 0.883
Cadmium	EPA 6020	EPA 6020	0.3	0.145 – 0.177	0.145 – 0.177
Chromium	EPA 6020	EPA 6020	5.0	0.580 – 0.707	1.45 – 1.77
Copper	EPA 6020	EPA 6020	5.0	0.580 – 0.707	0.725 – 0.883
Lead	EPA 6020	EPA 6020	5.0	0.72 – 0.88	0.72 – 0.88
Mercury	EPA 7471A	EPA 7471	0.02	0.03 – 0.04	0.07 – 0.09
Nickel	EPA 6020	EPA 6020	5.0	0.290 – 0.353	1.45 – 1.77
Selenium	EPA 7742	HGAA	0.1	0.1	0.1
Silver	EPA 6020	EPA 6020	0.2	0.14 – 0.18	0.14 – 0.18
Zinc	EPA 6020	EPA 6020	1.0	3.19 – 3.89	14.5 – 17.7
Conventionals					
Grain Size (%)	Plumb, 1981	Plumb, 1981	0.1	0.1	0.1
Total Organic Carbon (%)	EPA 415.1	ASTM D2579M	0.1	0.1	0.1
Total Solids (%)	SM 2540G	SM 2540G	0.1	0.1	0.1
Total Sulfides (mg/kg)	Plumb, 1981	Plumb, 1981	NA	3.6 – 4.4	3.6 – 4.4
Soluble Sulfides (mg/kg)	SMEWW 4500S2D	SMEWW 4500 SD	0.1	0.72 – 0.88	0.72 – 0.88

2.2.2 Dredged Material Chemistry

To minimize salt interference, the following chemical analyses were performed as recommended by the OTM (USEPA/USACE 1991). Analyses for priority pollutant metals (with the exception of mercury and selenium) were conducted in accordance with USEPA SW-846 Methods 3050/6020. Mercury analysis was performed using USEPA SW-846 Method 7471, and selenium analysis was performed using a proprietary modification of USEPA 7742 that include hydride generation coupled with atomic absorption spectrometry. The analysis for total sulfides followed Plumb (1981) and dissolved sulfides followed SM 4500 SD. Organotin compounds were measured using a gas chromatography- flame photometric detector (GC-FPD). Polynuclear aromatic compounds were measured by GC/MS using USEPA Method 8270. Organochlorine pesticides and PCBs were run using the USEPA Method 8270. The PCBs were identified on both an Aroclor and individual basis. TOC was determined using ASTM D2579M.

2.3 Bioassay Testing

The project plan included eight treatments: one composite sample for each of the AB Marina composite samples, and one LA-2 reference sample representing clean resident material. Tier III testing for this project included three Suspended Particulate Phase (SPP) toxicity tests, two Solid Phase (SP) toxicity tests, and two BP tests. All testing and analysis was performed in accordance with the following guidance:

- The OTM (USEPA/USACE 1991)
- *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual* (the Inland Testing Manual, or ITM) (USEPA/USACE 1998)[1]
- *Regional Implementation Agreement (RIA) for the Evaluation of Dredged Material for Ocean Disposal* (USACE, LA District/ USEPA Region IX, 1993)

Specific bioassays performed for this project are summarized in Table 8.

2.3.1 Suspended Particulate Phase Testing

The SPP bioassays were performed to estimate the potential impact of ocean disposal of dredged material to organisms that live in the water column. Elutriates were prepared for each composite sample by combining sediment from each area with AB Marina site seawater in a 1:4 ratio by volume, vigorously agitating for 30 minutes, and then allowing the material to settle for approximately 1 hour at room temperature (20°–23°C). Following settling, the supernatant was gently decanted. This supernatant represents the 100 percent test concentration and was used to create serial dilutions with clean seawater (Scripps Institute of Oceanography, ultraviolet (UV) sterilized, and filtered to 0.2 μm for the blue mussel larvae, 3 μm for the mysid shrimp and fish) for subsequent testing. SPP tests were conducted with three species (*Mytilus edulis, Mysidopsis bahia, and Menidia beryllina*) and were conducted in accordance with the procedures outlined in the ITM (USEPA/USACE 1998).

[1] While all evaluations were performed in accordance to guidance given in the OTM, specific methodologies and test conditions are provided in the ITM

TABLE 8

Bioassay Testing Performed on AB Marina Project Sediment

Type of Organism	Taxon	Project Materials	Native Control Sediment	Reference Sediment	Reference Toxicant	Ammonia Reference Toxicant
Suspended Phase Particulate Test (SPP Test)						
Bivalve larvae	*Mytilus edulis*	X	X	NA	X	X
Mysid shrimp	*Mysidopsis bahia*	X	X	NA	X	X
Fish	*Menidia beryllina*	X	X	NA	X	X
Solid Phase Test (SP Test)						
Amphipod	*Rhepoxinius abronius*	X	X	X	X	X
Polychaete	*Neanthes arenaceodentata*	X	X	X	X	X
Bioaccumulation Potential Test (BP Test)						
Mollusk	*Macoma nasuta*	X	X	X	NA	NA
Polychaete	*Nephtys caecoides*	X	X	X	NA	NA

NA: Not applicable

2.3.1.1 Mytilus edulis Test

Table 9 summarizes bioassay procedures and organism data for the *M. edulis* SPP test of AB Marina sediments. Bivalve larvae bioassay methods are from ASTM E724-98 (ASTM, 2005a). Three concentrations of the elutriate (100%, 50% and 10%) and a site water control were tested. Adult *M. edulis* were obtained from Carlsbad Aquafarms of Carlsbad, CA. Spawning was induced by temperature manipulation. Unfertilized eggs were separated from debris by filtering the suspension through an 80-um nitex mesh screen. Released gametes were then combined in individual containers of filtered seawater and allowed to fertilize for up to two hours under gentle aeration. Embryo stock density was estimated by counting an aliquot of dilute stock concentrate. Equal volumes of stock were then added to each test chamber to achieve an estimated density of 15-30 embryos/ml. The test was run using five replicates for each treatment and control at $16 \pm 2°$ C under a 16-hr light: 8-hr dark photoperiod. Temperature, pH, dissolved oxygen (DO), and salinity were measured at test initiation and termination. At 48 hours each replicate was preserved using a 0.25 mL formaldehyde solution. All larvae in each replicate were counted in a Sedgwick-Rafter cell to determine the total number of normally and abnormally developed larvae. The test acceptability criterion is $\geq$70% control survival (normal embryos based on initial inoculation). A reference toxicant test was conducted using copper sulfate as a positive control with concentrations of 2.5, 5.0,10, 20, and 40 ug Cu^{2+}/L.

2.3.1.2 Mysidopsis bahia Test

Table 10 summarizes bioassay procedures and organism data for the *M. bahia* SPP test of the AB Marina sediments. Three elutriate concentrations (100%, 50% and 10%) and a site water control were tested. The *M. bahia* bioassay method is described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA 2002). Three-day-old mysids were obtained from Aquatic Biosystems of Fort Collins, CO. Five replicates containing 500 mL of the three elutriate concentrations in 1-L plastic chambers were used, each containing 10 mysids. The test was conducted at 20°C under a 16-hr light: 8-hr dark photoperiod. The organisms were fed twice daily (< 24-hour-old *Artemia nauplii*). Water quality measurements including salinity, DO, pH, and temperature were recorded daily for one replicate from each concentration, and measured in all replicates at test termination. Survival was recorded daily. Test acceptability criterion for the test is $\geq$ 90% mean control survival. A reference toxicant test was conducted using copper chloride with concentrations of 62.5, 125, 250, 500, and 1,000 μg Cu^{2+}/L to measure the relative sensitivity of the test organisms.

TABLE 9

Bioassay Procedure and Organism Data for the 48 Hour Suspended Particulate Phase Bioassay using *Mytilus edulis*

SAMPLE IDENTIFICATION		
Sample ID(s)	LA – 2, B-1, B-2, B-3, B-4, B-5, B-6, B-7	
Dates Sampled	4/2-4/5/2007	
Date Received at Weston Lab	4/6/2007	
Volume Received	10 L	
Sample Storage Conditions	4 Degrees Celsius – dark	
Sample Treatment	1:4 sediment to site water elutriate preparation	
TEST SPECIES – *Mytilus edulis*		
Supplier	Carlsbad Aquafarm	
Date Acquired	4/17/2007	
Acclimation Time	Used immediately	
Age Group	Adult	
TEST PROCEDURES		
Test Location	WESTON Carlsbad lab; Room 2	
Test Type; Duration	Critical Life-Stage; 48 hours	
Test Dates	4/17 – 19/2007	
Control Water Source	0.2-µm filtered, U.V. sterilized San Francisco Bay seawater and Paradise Cay site water	
Test Photoperiod	16 hours light; 8 hours dark	
Test Chamber	20mL scintillation vials	
Replicates/Treatment	5	
Organisms/Replicate	$\bar{x}$ = 259	
Exposure Volume	10mL	
Feeding	None	
Water Renewal	None	
Test Temperature (°C)	Recommended: 16 ± 2	Actual: 15.4 – 16.7
Test Salinity (ppt)	Recommended: 30 ± 3	Actual: 29.8 – 33.8
Test Dissolved Oxygen (mg/L)	Recommended: > 5.0	Actual: 7.3 – 8.5
Test pH	Recommended: 7.8 ± 0.5	Actual: 7.8 – 8.4
Deviations from Procedures	None	

TABLE 10

Bioassay Procedure and Organism Data for the 96-Hour Suspended Particulate Phase Bioassay using *Mysidopsis bahia*

SAMPLE IDENTIFICATION		
Sample ID(s)	LA – 2, B-1, B-2, B-3, B-4, B-5, B-6, B-7	
Dates sampled	4/2-4/5/2007	
Date Received at Weston Lab	4/6/2007	
Approximate volume received	90L	
Sample storage conditions	4°C, dark, minimal head space	
TEST SPECIES – *Mysidopsis bahia*		
Supplier	Aquatic Biosystems, Fort Collins, Colorado	
Date acquired	4/17/2007	
Acclimation/holding time	1 day	
Age class	3 days old	
TEST PROCEDURES		
Test location	Weston Solutions Carlsbad lab, Room 3	
Test type/duration	Static – Acute SPP / 96 hours	
Test dates	4/18 – 22/2007	
Control water	Scripps Institute of Oceanography seawater; 3 μm filtered, UV sterilized	
Test temperature	Recommended: 20° ± 1°C	Actual: 18.7 – 20.9
Test salinity	Recommended: 32 ppt ± 2	Actual: 30.1 – 33.7 ppt
Test dissolved oxygen	Recommended: > 3.7 mg/L	Actual: 4.5 – 7.4mg/L
Test pH	Recommended: 7.8 ± 0.5	Actual: 7.7 – 8.4
Test total ammonia	Recommended: < NOEC (28.9	Actual: <0.5 – 5.11mg/L
Test photoperiod	16-hour light:8-hour dark	
Test chamber	1-L beakers	
Replicates/SPP concentration/Treatment	5	
SPP Concentrations	100%, 50%, 10%	
Organisms/Replicate	10	
Exposure Volume	500 mL	
Feeding	~1000 freshly hatched *Artemia nauplii* per replicate – twice daily	
Water Renewal	None	
Deviations from Test Protocol	None	

2.3.1.3 *Menidia beryllina* Test

Table 11 summarizes bioassay procedures and organism data for the larval *M. beryllina* SPP test of the AB Marina sediments. Sediment composite elutriates were prepared as described above. A 100% elutriate treatment and two dilutions (10 and 50% elutriate) created with AB Marina site water were tested for toxicity using larval inland silversides (*Menidia beryllina*). The inland silverside bioassay method is described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA 2002). Juvenile *Menidia beryllina* were obtained from Aquatic Biosystems of Fort Collins, CO. Ten organisms were exposed to 250 mLs of an elutriate dilution in each replicate. The test was conducted using five replicates for each treatment dilution, method control and site water control at 20±2°C under a 16 hour light: 8 hour dark photoperiod. Organisms were fed 0.2mL of a concentrated solution of *Artemia nauplii* after 48 hours. Temperature, pH, dissolved oxygen, and salinity were measured daily. Total ammonia was measured daily in the 100 percent concentration. Measurements in other concentrations were performed if the readings in the 100 percent elutriate were greater than 4 ppm total NH_3. Mortality and behavior observations were recorded and dead organisms were removed on a daily basis. A reference toxicant test were conducted employing copper as copper sulfate with concentrations of 50, 100, 200, 400 and 800 ug Cu^{2+}/L.

2.3.2 Solid Phase Testing

SP bioassays were performed to estimate the potential impact of ocean disposal of dredged sediment on benthic organisms that attempt to re-colonize the area. Dredged material was tested in 10-day SP tests using two species: a marine amphipod (*Rhepoxinius abronius*) and a polychaete worm (*Neanthes arenaceodentata*). *R. abronius* was selected over the amphipod *Ampelisca abdita* based on a relatively consistent grain size profile comprised of a moderate level of sand and less than 50% clays. Prior to testing, the reference, test, and control sediments were sieved to remove organisms. This was accomplished by press-sieving the sediment through a 2.0-millimeter (mm) mesh screen using only the water available in the sediment sample. Each sediment type (test, reference, and control) was run with five replicates.

2.3.2.1 *Rhepoxinius abronius* 10-Day Static Test

Bioassay methods for the infaunal amphipod bioassays follow ASTM E1367-99 (ASTM 2005b). Table 12 summarizes bioassay procedures and organism data for the *Rhepoxinius abronius* SP test using AB Marina test sediments. Test animals were supplied by Aquatic Environmental Science Inc. of Port Townsend, WA. Sediment was placed in replicate 1L glass jars to a depth of 2 cm to which was added approximately 900 mL of seawater. Additional surrogate replicates (i.e., w/out test organisms) for each treatment were set up to obtain measurements of pore water ammonia at test initiation and termination. After 24 hours, overlying water was renewed (80% by volume), and an initial set of water quality parameter measurements were taken from each replicate of each sediment treatment and recorded. The water quality parameters measured down, and sediment pore water was extracted via centrifugation for subsequent analysis of pH, salinity, and ammonia. Test organisms were then randomly distributed to test chambers (20 animals per chamber). Animals remaining in the water column and exhibiting abnormal behavior after one hour were replaced. The chambers were covered with watch glasses to minimize evaporation. The test was run under continuous light at a temperature of 20±2°C with gentle aeration applied to each test chamber. Daily water quality measurements were taken from one chamber per treatment, and the number of dead and surfaced animals was noted for each replicate. Pore water was extracted from

TABLE 11

Bioassay Procedure and Organism Data for the 96-Hour Suspended Particulate Phase Bioassay using *M. beryllina*

SAMPLE IDENTIFICATION		
Sample ID(s)	LA – 2, B-1, B-2, B-3, B-4, B-5, B-6, B-7	
Date Sampled	4/2-4/5/2007	
Date Received at Weston Lab	4/6/2007	
Volume Received	35 - 40 L per composite	
Sample Storage Conditions	4°C, dark, minimal head space	
TEST SPECIES – *Menidia beryllina*		
Supplier	Aquatic Indicators, Fort Collins, CO	
Date Acquired	4/17/2007	
Acclimation Time	3 days	
Age Group	13 days old at test initiation	
TEST PROCEDURES		
Test Location	WESTON Carlsbad lab; 20 Degree Room	
Test Type; Duration	Critical Life-Stage; 96 hours	
Test Dates	4/19 – 23/2007	
Control Water Source	Scripps Institute of Oceanography seawater; 3 μm filtered, UV sterilized	
Test Photoperiod	16 hours light; 8 hours dark	
Test Chamber	500 mL beakers	
Replicates/Treatment	5	
Organisms/Replicate	10	
Exposure Volume	250 mL	
Feeding	0.2 mL Artemia at 48-hours	
Water Renewal	None	
Test Temperature (°C)	Recommended: 20 ± 2	Actual: 18.5 – 20.9
Test Salinity (ppt)	Recommended: 20-32 ± 2	Actual: 32.0 – 34.1
Test Dissolved Oxygen (mg/L)	Recommended: >5.0	Actual: 2.6* – 8.5
Test pH	Recommended: >5.0	Actual: 7.7 – 8.3
Deviations from Procedures	D.O. found to be low in some samples. All samples were aerated to resolve deviation.	

TABLE 12

Bioassay Procedure and Organism Data for the 10-Day Solid Phase Bioassay using *R. abronius*

SAMPLE IDENTIFICATION		
Sample ID(s)	LA – 2, B-1, B-2, B-3, B-4, B-5, B-6, B-7	
Date sampled	4/2-4/5/2007	
Date received at Weston Solutions-	4/6/2007	
Approximate volume received	35 - 40 L per composite	
Sample storage conditions	4 Degrees Celsius – dark	
TEST SPECIES – *R. abronius*		
Supplier	Aquatic Environmental Science Inc., Port Townsend, WA	
Date acquired	5/2/2007	
Acclimation/holding time	2 days	
Age / size class	3-5mm	
TEST PROCEDURES		
Test location	Weston Solutions, Inc. Carlsbad; 15°C room	
Test type/duration	10 day Solid Phase	
Test dates	5/4 – 14/2007	
Control water	Scripps Institute of Oceanography seawater; 3 μm filtered, UV sterilized	
Test temperature	Recommended: 15 ± 2°C	Actual: 13.0 – 16.7
Test salinity	Recommended: 28 ± 2 ppt	Actual: 27.5 – 30.2
Test dissolved oxygen	Recommended: > 6.0 mg/L	Actual: 7.2 – 8.3
Test pH	Recommended: 7.8 ± 0.5	Actual: 7.5 – 8.2
Test photoperiod	Continuous	
Test chamber	1L glass jars	
Replicates/treatment	5	
Organisms/replicate	10	
Exposure volume	2 cm sediment/900mL seawater	
pFeeding	None	
Water renewal	None	
Deviations from test protocol	ITM test conditions recommend a 12L:12D light cycle. WESTON SOP suggests continuous light cycle based on references cited in ITM that recommend continuous light as a measure to help ensure organism burrowing (ASTM indicates "no special requirement" for light cycle).	

test chamber surrogates for additional ammonia analysis upon completion of the bioassay. On the 10th and final day of the test, sediments from the chambers were sieved through a 0.5mm screen and the number of survivors was recorded. The test acceptability criterion for both *A. abdita* and *R. abronius* is 90% mean control survival. One reference toxicant test was conducted for R. abronius; a positive control using cadmium chloride with triplicate concentrations of 0.25, 0.50, 1.0, 2.0, and 4.0 mg Cd^{2+}/L. Two reference toxicant tests were conducted for *A. abdita*: cadmium chloride and ammonia. Triplicate concentrations of 0.25, 0.5, 1.0, 2.0, and 4.0 mg/L of cadmium chloride were used, and triplicate concentrations of 5, 10, 20, 40, and 80 mg/L of ammonia were used.

2.3.2.2 *Neanthes arenaceodentata* 10-Day Static-Renewal Test

Bioassay methods for the marine polychaete bioassay are from the ITM (USEPA/USACE 1998). Juvenile worms were supplied by Don Reish of Long Beach, California. Table 13 summarizes bioassay procedures and organism data for the SP test with *Neanthes arenaceodentata*. Bioassay methods for the polychaete bioassay are from ASTM E1611-99

TABLE 13

Bioassay Procedure and Organism Data for 10-Day Solid Phase Bioassay using *N. arenaceodentata*

SAMPLE IDENTIFICATION		
Sample ID(s)	LA – 2, B-1, B-2, B-3, B-4, B-5, B-6, B-7	
Dates Sampled	4/2-4/5/2007	
Date Received at WESTON	4/11/2007	
Volume Received	35 - 40 L per composite	
Sample Storage Conditions	4 Degrees Celsius – dark	
Sample Treatment	Press sieved (0.5 mm)	
TEST SPECIES – *Neanthes arenaceodentata*		
Supplier	Dr. Don Reish, Long Beach, CA	
Date Acquired	4/26/2007	
Acclimation Time	6 hours	
Age Group	2-3 weeks post emergence	
TEST PROCEDURES		
Test Location	WESTON Carlsbad lab; 15° Room	
Test Type; Duration	Acute/Static; 10 days	
Test Dates	4/27 – 5/07/2007	
Control Water Source	Scripps Institute of Oceanography seawater; 3 μm filtered, UV sterilized	
Test Photoperiod	Continuous light*	
Test Chamber	1L glass jars	
Replicates/Treatment	5	
Organisms/Replicate	5	
Exposure Volume	2 cm sediment/900mL seawater	
Feeding	None	
Water Renewal	None	
Test Temperature (°C)	Recommended: 20 ± 1	Actual: 18.8 – 21.3
Test Salinity (ppt)	Recommended: 28 - 34	Actual: 31.6 – 33.1
Test Dissolved Oxygen (mg/L)	Recommended: > 5.0	Actual: 6.1 – 8.7
Test pH	Recommended: 8.0 ± 0.5	Actual: 7.9 – 8.3
Deviations from Procedures	No significant deviations	

(ASTM 2004b). Juvenile worms were supplied by Brezina & Associates of Dillon Beach, CA. Sediment was placed in replicate 1L glass jars to a depth of 2 cm to which was added approximately 900 mL of seawater. Additional surrogate replicates (no animals) for each treatment were set up in order to obtain measurements of pore water ammonia at test initiation and termination. After 24 hours, overlying water was renewed (80% by volume) and an initial set of water quality parameters was measured: temperature, dissolved oxygen, pH, salinity, and overlying-water ammonia from each treatment were recorded. In addition, a surrogate replicate from each treatment was used to extract sediment pore water via centrifugation for subsequent analysis of pH, salinity, ammonia, and sulfides. Test organisms were then randomly distributed to test chambers (5 animals per chamber). he test was run under a photoperiod of continuous light at a temperature of 15 ± 2°C with gentle aeration. Daily water quality measurements were taken and the number of dead and surfaced animals was noted for each replicate. On day 10, the sediments from the chambers were sieved through a 0.5 mm screen and the number of survivors was recorded. Test acceptability criterion is 90% mean control survival. A reference toxicant test was conducted using cadmium chloride with triplicate concentrations of 1, 2, 4, 8, and 16 mg Cd^{2+}/L.

2.4 Bioaccumulation Potential Testing

To determine the availability of the organochlorine pesticide DDT and heavy metals residues present in AB Marina sediments. Assessment of bioaccumulation potential (BP) was carried out using the polychaete worm *Nephtys caecoides* and the bivalve *Macoma nasuta* over a 28-day test period. *N. caecoides* and *M. nasuta* were both supplied by Brezina and Associates of Dillon Beach, CA. Bioaccumulation tests were conducted in accordance with those procedures outlined in USEPA (1994) and the ITM (USEPA/USACE 1998). Each of these tests was initiated using project samples and reference and control sediment in the same manner as the 10-day SP tests. Following the 28-day organism exposure process, tissues from each treatment replicate were frozen and shipped in individual glass containers to the analytical chemistry laboratory for analysis. However, instead of digesting and analyzing each tissue replicate individually, laboratory staff composited all five replicates per treatment prior to the digestion/analysis process. Table 14 summarizes bioassay procedures and organism data for the bioaccumulation study of the test sediments with *N. virens* and *M. nasuta*.

Although statistical deficiencies of this dataset prohibit discerning with certainty the potential for contaminant uptake, the tissue composite results will be presented and discussed in terms of screening for BP retesting. The BP retest was reinitiated with organism exposure treatments on 11 July 2007. If necessary, results of the subsequent tissue analysis will be reported in an addendum to this report

Tissue chemistry concentrations of the organisms that were exposed to AB Marina sediments were nominally compared to LA-2 tissue chemistry concentrations. Contaminant concentrations found to be significantly elevated above reference were interpreted in light of criteria specified in the OTM (USEPA/USACE 1991), including a comparison to published residue-effects values using the USACE/USEPA (2003) Environmental Residue-Effects Database (ERED). Data generated by any additional BP testing will be statistically analyzed using analysis of variance, *t*-tests, or non-parametric tests, depending on the assumptions of the individual tests (i.e., homogeneity of variance) as specified in the OTM (USEPA/USACE 1991).

TABLE 14

Bioassay Procedure and Organism Data for the 28-Day Bioaccumulation Studies using *Nephtys caecoides* and *Macoma nasuta*

SAMPLE IDENTIFICATION		
Sample ID(s)	LA – 2, B-1, B-2, B-3, B-4, B-5, B-6, B-7	
Dates Sampled	4/2-4/5/2007	
Date Received at MEC	4/6/2007	
Volume Received	35 - 40 L per composite	
Sample Storage Conditions	4 Degrees Celsius – dark	
TEST SPECIES – *Macoma nasuta; Nephtys caecoides*		
Supplier	Aquatic Research Organisms; Brezina and Associates	
Date Acquired	4/16/2007; 4/19/2007	
Acclimation Time	2 days; None	
Age Group	Adult	
TEST PROCEDURES		
Test Location	WESTON Port Gamble lab; 15° Room	
Test Type; Duration	Flow-through/28 days	
Test Dates	04/20 – 5/18/2007	
Control Water Source	Scripps Institute of Oceanography seawater; 3 μm filtered, UV sterilized	
Test Photoperiod	16 hour light: 8 hour dark	
Test Chamber	22 L fiberglass trays with non-contaminating covers	
Replicates/Treatment	5	
Organisms/Replicate	25; 60	
Exposure Volume	5 cm sediment (5 L)	
Feeding	None	
Water Renewal	Flow through (1.7 – 3.3 mL/sec)	
Test Temperature (°C)	Recommended: 15 ± 2	Actual: 14.3 – 16.0
Test Salinity (ppt)	Recommended: >25	Actual: 31 - 34
Test Dissolved Oxygen (mg/L)	Recommended: > 5.0	Actual: 5.9 – 9.9
Test pH	Recommended: 8.0 ± 0.5	Actual: 7.5 – 8.2
Deviations from Procedures	No significant deviations	

2.5 SEAWATER FOR BIOASSAY TESTING

Seawater used in this study, including the flow-through studies, came from either the Hood Canal in Puget Sound, WA (BP tests) or the Scripps Institution of Oceanography (SPP and SP tests) in La Jolla, California. These control seawater sources have been used successfully on similar bioassay testing programs by Weston Solutions. Extensive testing on a variety of test species and biannual chemical analysis of this seawater source has shown that there is no significant potential for toxicity or bioaccumulation from these water supplies. Similarly, good survival of organisms in the control sediment utilized in this testing program has been achieved consistently in previous dredged material testing.

2.6 WATER QUALITY

Water quality was monitored daily as appropriate for each test and was recorded on data sheets. Dissolved oxygen was measured using YSI Model 57 and Orion Model 840 oxygen meters and probes; pH was measured using both the Beckman digital and Orion Model 230A pH meters and probes. Salinity and temperature were measured with Orion Models 140 and 142 conductivity/salinity meters. Ammonia was analyzed using an Orion 95-12

electrode and the Orion 720 digital ion analyzer with a three-point calibration curve (1, 10, and 100 mg/L).

2.7 QUALITY ASSURANCE PROCEDURES

2.7.1 Chemical Analysis

The quality assurance and quality control (QA/QC) objectives for analyses conducted by EMAS are designed to meet the accreditation requirements of the California DHS, USEPA, USACE, and other state and federal programs. Chemical analyses were performed using the following QA/QC applications:

- Quality Control Standard
- Analytical Blanks
- Surrogate Percent Recovery
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) percent recoveries
- Matrix Spike Recovery/Matrix Spike Duplicate Recovery (MS/MSD) and/or
- Relative Percent Difference (RPD for LCS/LCSD, MS/MSD, and duplicates)

2.7.2 Biological Evaluation

Westons's Quality control staff performs periodic audits to ensure that test conditions, data collection, and test procedures are conducted in accordance with regulatory guidance and the Weston QAPP. Weston's SOPs has been audited and approved by an independent, EPA-approved laboratory and placed in the QAPP as well as laboratory files.

2.7.2.1 Test Organism Handling

All test organisms were shipped via overnight delivery service to Weston's laboratories in Carlsbad, CA and Port Gamble, WA. Organism container water was analyzed for dissolved oxygen, salinity temperature and pH upon receipt to ensure organisms were not exposed to water quality conditions dissimilar to test conditions. Organisms received at salinities different than the specified test conditions were acclimated to test salinity in accordance with approved SOPs for the laboratory. Animal receipt and maintenance log books were used to record the source and health of the test organisms.

2.7.2.2 Bioassay Testing

The quality assurance objectives for toxicity testing conducted by Weston Solutions are consistent with U.S. EPA guidance (USEPA 2002). These objectives for data quality include:

- Water sampling and handling
- Source and condition of test organisms
- Condition and maintenance of equipment
- Test conditions
- Instrument calibration
- Use of reference toxicants
- Record keeping
- Data evaluation

The bioassay methods employed for this study are detailed in USEPA (2002), and in Weston's internal laboratory Standard Operating Procedures (SOPs). These SOPs and protocols have been approved by the laboratory director. All data collected and produced are recorded on approved data sheets and included as part of the permanent project file. These data sheets and all subsequent statistical analyses were checked to ensure that required test conditions were within specifications cited in the standard operating procedures and the analysis performed

where appropriate. Any unforeseen circumstances that might have affected the integrity of the study were reported with the test results.

SOPs for each analytical instrument used in bioassay testing are maintained in the Maintenance and Calibration Log. Equipment is maintained under a regular schedule to prevent equipment failure and/or changes in operational parameters. Instruments used in support of testing are calibrated daily and calibration data are logged by the technician performing the calibration. Stock standard solutions are stored in at least two separate containers, so that fresh standard solution is available in the event that the stock standard currently in use becomes contaminated. Working standards that are in frequent contact with electrodes, pipettes, etc. are kept in separate working bottles to reduce the chance of contamination of stock standards. The laboratory seawater source is analyzed semi-annually for priority pollutants and results are kept on file in Weston's Carlsbad laboratory.

Reference toxicant tests are used as an internal quality check of the sensitivity of test organisms. The results of these tests are compared with laboratory database values for the reference toxicant used to verify that test animal performance was within acceptable limits. Similarly, water quality measurements were monitored to ensure that they complied with the prescribed limits, and corrective action was taken if necessary.

2.7.3 Data Analysis and Statistical Methods

Major deviations from prescribed protocols required approval of both the client and the QC manager. Circumstances or deviations that might affect the integrity of the study are reported with the results. The data, analyses, and report were also reviewed for accuracy by the QA manager. All data underwent a 100 percent QA check for accuracy and completeness, and an additional secondary check was performed on a minimum of 10 percent of the data.

3 RESULTS

3.1 CHEMICAL AND PHYSICAL CHARACTERISTICS OF DREDGED MATERIAL

Results of physical and chemical analyses for AB Marina project dredged materials are discussed below. All results are expressed in dry weight unless otherwise indicated. Summary results are presented in Table 15.

Results of chemical analyses of project dredged materials were compared to LA-2 reference material results as well as effects range-low (ER-L) and effects range-high (ER-M) values developed by Long et al. (1995). The effects range values are helpful in assessing the potential significance of elevated sediment-associated contaminants of concern, in conjunction with biological analyses. Briefly, these values were developed from a large data set where results of both benthic organism effects (e.g., amphipod tests) and chemical analysis were available for individual samples. The ER-L was then calculated as the lower tenth percentile of the observed effects concentrations and the ER-M as the 50th percentile of the observed effects concentrations. While these values are useful for identifying elevated sediment-associated contaminants, they should not be used to infer causality because of the inherent variability and uncertainty of the approach. The ER-L and ER-M sediment quality values are included in Table 15 for comparative purposes only.

For certain pesticide compounds (dieldrin and chlordane for example) the ER-L (0.02 µg/kg and 0.5 µg/kg, respectively) and ER-M levels (8 µg/kg and 6 µg/kg, respectively) are so low as to make it largely impractical to detect them in typical harbor sediments using standard analytical procedures. Accordingly, having non-detect results that are greater than the ER-L, ER-M, or MDLs would not require re-analysis.

3.1.1 Conventional and Metals Sediment Constituents

Project material collected from the AB Marina was mostly fine-grained in composition, but ranged widely from 52% (Basin 7) to 81% (Basin 1) silts and clays. Total solids measurements ranged from 59 to 68%. TOC levels were relatively low, ranging form 0.8 to 1.4%, and sulfides were not detected.

With the exception of nominal exceedances reported for mercury and zinc, all achieved detection limits were below SAP target reporting limits. Both metals were however detected in all samples at levels significantly higher than the achieved MDLs. Most metals constituents were present in AB Marina sediments at levels below or consistent with ER-L reference values. Metals commonly associated with urban run-off (i.e. copper, lead, mercury and zinc) however were detected at levels exceeding ER-Ls throughout the Marina complex although zinc was found at elevated levels in Basins 4, 5 and 6 only. Arsenic was also found in the Basin 1 sample at a concentration exceeding the ER-L for this contaminant by 10%. However, in general the observed exceedances did not exceed the ER-L values by any substantial degree, and with the exception of mercury detected in the Basin 1 sample, none of the metals concentrations approached ER-M levels. Mercury was detected in the finer grained sediments of Basin 1 at a concentration of 0.83 mg/kg, exceeding the ER-M by 0.12 mg/kg.

TABLE 15

Results of Chemical and Physical Analyses of Alamitos Bay Marina Sediment

Analyte	Sample Identification							LA-2	ER-L	ER-M
	B1	B2	B3	B4	B5	B6	B7			
Conventionals										
Grain Size (%)										
Sand	19.10	22.62	36.85	19.63	20.74	25.39	42.52	43.83	NA	NA
Clay	30.10	22.17	17.27	22.18	26.70	27.40	24.18	11.38	NA	NA
Silt	50.49	54.07	44.65	57.88	52.31	45.97	27.29	44.59	NA	NA
Total Organic Carbon (%)	1.17	1.20	0.79	1.14	1.33	1.20	1.41	0.45	NA	NA
Total Solids (%)	57.2	63.1	69.0	65.4	56.6	56.9	59.6	68.2	NA	NA
Soluble Sulfides (mg/kg)	<0.87	<0.79	<0.72	<0.76	<0.88	<0.88	3.05	<0.73	NA	NA
Total Sulfides (mg/kg)	<4.4	<4.0	<3.6	<3.8	<4.4	<4.4	<4.2	<3.7	NA	NA
Metals (mg/kg)										
As	8.98	6.65	5.50	6.22	7.33	6.65	7.10	3.59	8.2	70.0
Cd	0.864	0.747	0.601	0.855	0.901	1.13	0.558	0.220	1.2	9.6
Cr	47.8	41.5	34.7	41.5	50.8	49.9	39.1	28.7	81.0	370
Cu	60.1	49.2	44.3	52.3	56.0	76.2	54.6	9.60	34.0	270
Pb	71.0	72.1	54.8	85.0	97.9	70.9	58.8	6.96	46.7	218
Hg	0.83	0.36	0.36	0.29	.031	0.18	0.28	0.04	0.2	0.71
Ni	22.5	18.9	17.6	20.2	22.7	22.4	18.6	13.1	20.9	51.6
Ag	0.33	0.34	0.23	0.35	0.46	0.58	0.50	ND	1.0	3.7
Zn	148	135	102	204	155	213	135	50.8	150	410
PAHs (ug/kg)										
Acenaphthene	<6.29	<5.71	<5.22	<5.50	<6.36	<6.33	<6.04	<5.28	NA	NA
Acenaphthylene	<8.18	<7.42	<6.78	<7.16	<8.27	<8.22	<7.85	<6.86	NA	NA
Anthracene	<11.0	<9.98	<9.13	<9.63	<11.1	<11.1	<10.6	<9.24	NA	NA
Benzo (a) anthracene	<11.7	<10.6	<9.67	11.1	<11.8	<11.7	20.5	<9.78	NA	NA
Benzo (b) fluoranthene	<15.5	<14.1	<12.9	<13.6	<15.7	<15.6	20.6	<13.0	NA	NA
Benzo (k) fluoranthene	<12.0	<10.8	<9.91	<10.5	<12.1	<12.0	11.5	<10.0	NA	NA
Benzo (ghi) perylene	<17.0	<15.4	<14.1	<14.9	<17.2	<17.1	<16.3	<14.3	NA	NA
Benzo (a) pyrene	<12.9	<11.7	<10.7	<11.3	<13.0	<13.0	14.9	<10.8	NA	NA
Chrysene	<6.92	6.78	<5.74	8.24	7.46	<6.96	17.1	<5.81	NA	NA
Dibenz (ah) anthracene	<16.0	<14.5	<13.3	<14.0	<16.2	<16.1	<15.4	<13.5	NA	NA
Fluoranthene	<10.1	10.0	<8.35	13.0	13.0	<10.1	25.2	<8.45	NA	NA
Fluorene	<8.18	<7.42	<6.78	<7.16	<8.27	<8.22	<7.85	<6.86	NA	NA
Indeno (1,2,3-cd) pyrene	<17.5	<15.8	<14.5	<15.3	<17.7	<17.6	<16.8	<14.7	NA	NA
Naphthalene	<3.34	<3.03	<2.77	<2.92	<3.37	<3.36	<3.20	<2.80	NA	NA
Phenanthrene	<7.33	<6.64	<6.07	<6.41	7.83	<7.36	7.75	<6.14	NA	NA
Pyrene	<10.6	11.0	<8.81	14.1	13.8	<10.7	24.1	<8.91	NA	NA
Total Detected LMW PAH	ND	ND	ND	ND	7.83	ND	7.75	ND	NA	NA
Total LMW PAH*	<11.0	<9.96	<9.13	<9.63	<11.1	<11.1	<10.6	<9.24	NA	NA
Total Detected HMW PAH	ND	17.78	ND	46.4	34.35	ND	122.25	ND	NA	NA
Total HMW PAH*	<17.5	17.78	<14.5	46.4	34.35	<17.6	122.25	<14.7	NA	NA
Total Detected PAH	ND	17.78	ND	46.4	42.1	ND	130	ND	NA	NA
Total PAH*	<17.5	17.78	<14.5	46.4	42.1	<17.6	130	<14.7	4022	44792

Italicized analytes indicate LMW PAHs.
< Indicates concentrations are less than the corresponding method detection limit (MDL)
ER-L = Effects Range- Low: Lower tenth percentile concentration of screened sediment toxicity data, at which toxicity may begin
ER-M = Effects Range-Median: Median concentration of a compilation of toxic samples. (Long 1995)
*Total=Detected+Undetected at the achieved MDL.

TABLE 15 (CONT.)

Results of Chemical and Physical Analyses of Alamitos Marina Sediment

Analyte	Sample Identification							LA-2	ER-L	ER-M
	B1	B2	B3	B4	B5	B6	B7			
PCB Aroclors (ug/kg)										
1016	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
1221	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
1232	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
1242	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
1248	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
1254	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
1260	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	NA	NA
Total	<4.09	<3.71	<3.39	<3.58	<4.13	<4.11	<3.93	<3.43	22.7	NA
Pesticides (ug/kg)										
Aldrin	<0.91	<0.83	<0.76	<0.80	<0.92	<0.92	<0.88	<0.77	NA	NA
Alpha-BHC	<1.75	<1.58	<1.45	<1.53	<1.77	<1.76	<1.68	<1.47	NA	NA
Beta-BHC	<1.07	<0.97	<0.88	<0.93	<1.08	<1.07	<1.02	<0.89	NA	NA
Gamma-BHC	<1.10	<1.00	<0.91	<0.96	<1.11	<1.11	<1.06	<0.92	NA	NA
Delta-BHC	<1.07	<0.97	<0.88	<0.93	<1.08	<1.07	<1.02	<0.89	NA	NA
Chlordane	<4.16	<3.77	<3.45	<3.64	<4.20	<4.18	<3.99	<3.49	NA	NA
2,4-DDD	<1.07	<0..97	<0.88	<0.93	<1.08	<1.07	<1.02	<0.89	NA	NA
4,4-DDD	<1.07	<0.97	<0.88	<0.93	<1.08	<1.07	<1.02	<0.89	NA	NA
2,4 DDE	<0.94	<0.86	<0.86	<0.83	<0.95	<0.95	<0.91	<0.79	NA	NA
4,4 DDE	13.5	11.7	13.5	13.8	12.5	6.77	7.26	4.16	NA	NA
2,4 DDT	<1.75	<1.58	<1.45	<1.53	<1.77	<1.76	<1.68	<1.47	NA	NA
4,4 DDT	<17.5	<15.8	<14.5	<15.3	<17.7	<17.6	<16.8	<14.7	NA	NA
Total DDT	13.5	11.7	13.5	13.8	12.5	6.77	7.26	4.16	1.6	46.1
Dieldrin	<1.14	<1.03	<0.94	<0.99	<1.15	<1.14	<1.09	<0.95	NA	NA
Endosulfan I	<1.43	<1.30	<1.19	<1.25	<1.45	<1.44	<1.38	<1.20	NA	NA
Endosulfan II	<1.49	<1.35	<1.23	<1.30	<1.50	<1.49	<1.43	<1.25	NA	NA
Endosulfan sulfate	<1.26	<1.14	<1.04	<1.10	<1.27	<1.27	<1.21	<1.06	NA	NA
Endrin	<1.33	<1.20	<1.10	<1.16	<1.34	<1.34	<1.28	<1.11	NA	NA
Endrin aldehyde	<1.42	<1.28	<1.17	<1.24	<1.43	<1.42	<1.36	<1.19	NA	NA
Heptachlor	<1.47	<1.33	<1.23	<1.28	<1.48	<1.48	<1.41	<1.23	NA	NA
Heptachlor epoxide	<1.45	<1.32	<1.20	<1.27	<1.47	<1.46	<1.39	<1.22	NA	NA
Methoxychlor	<26.0	<23.6	<21.6	<22.8	<26.3	<26.2	<25.0	<21.8	NA	NA
Toxaphene	<15.4	<13.9	<12.8	<13.5	<15.5	<15.5	<14.8	<12.9	NA	NA
Organotins (ug/kg)										
Tetrabutyltin	<1.56	<1.41	<1.29	<1.36	<1.57	<1.57	<1.49	<1.30	NA	NA
Tributyltin	<1.73	<1.57	<1.43	<1.51	<1.75	<1.74	<1.66	<1.45	NA	NA
Dibutyltin	<2.01	<1.82	<1.67	<1.76	<3.06	<2.02	<1.93	<1.69	NA	NA
Monobutyltin	<0.96	<0.87	<0.80	<0.84	<3.06	<0.97	<0.92	<1.30	NA	NA

< Indicates concentrations are less than the corresponding method detection limit (MDL)
ER-L = Effects Range- Low: Lower tenth percentile concentration of screened sediment toxicity data, at which toxicity may begin
ER-M = Effects Range-Median: Median concentration of a compilation of toxic samples. (Long 1995)

3.1.2 Organic Sediment Constituents

As shown in Table 7, the achieved MDLs were lower than the SAP reporting limits for all organic constituents. Total PAH concentrations reported for AB Marina sediment samples, including undetected constituents at their MDLs, were under 150 µg/kg across all docking basins. With the exception of DDT, no other organic contaminants were measured above the achieved MDLs. ∑DDT was detected in all sediment samples including the LA-2 reference material sample at concentrations exceeding the ER-L value of 1.6 µg/kg. The LA-2 sample measured 4.2 µg/kg ∑DDT, and ∑DDT concentrations exhibited by the AB Marina composite samples ranged from 6.8 to 13.8 µg/kg, all substantially lower than the ER-M value of 46.1 µg/kg.

3.2 BIOASSAY TESTING

3.2.1 Suspended Particulate Phase Testing

To assess the potential water column impacts of AB Marina sediments dispersed within the LA-2 aquatic environment, three SPP bioassays were performed with elutriates created with project composite samples.

3.2.1.1 Mytilus edulis Test Results.

Results of the *M. edulis* bioassays performed with AB Marina sediments are summarized in Table 16. Water quality parameters in *M. edulis* water column tests were within the recommended limits prescribed for this test species. Mean percentage of normal surviving laboratory control embryos relative to the initial embryo density was 90.0%, meeting the passing criteria for this test (>70%). The site water mean survival rate was 90.4%. The only statistically significant effects observed across all AB Marina *M. edulis* tests relative to the site water results were detected for both survival rate (86.7%) and normal development rate (86.7%) calculated for the highest Basin 6 elutriate concentration. However the LC50 and EC50 values calculated for this treatment as well as for all AB Marina treatments evaluated with the *M. edulis* bioassay were >100%.

The copper chloride reference toxicant was tested at nominal concentrations of 2.5, 5.0, 10, 20 and 40 ug Cu^{2+}/L. The calculated survival Cu LC50 of 15.1 ug Cu^{2+}/L was within two standard deviations of the laboratory mean (20.7 ± 7.0 ug Cu^{2+}/L) The calculated development Cu EC50 of 7.5 ug Cu^{2+}/L was also within two standard deviations of the laboratory mean (8.4 ± 1.5 ug Cu^{2+}/L), indicating that the sensitivity of the *M. edulis* used in the SPP assessment of AB Marina sediments fell within the normal range.

3.2.1.2 Mysidopsis bahia Test Results.

Test results for *Mysidopsis bahia* SPP bioassays performed with AB Marina sediment elutriates are summarized in Table 17. Water quality parameters in *M. bahia* SPP tests were within the recommended limits prescribed for this test species. The mean survival rate among laboratory control replicates was 100%, meeting the passing criteria for this test. The site water mean survival rate was also 100%. The mean survival rates calculated for the seven undiluted elutriates (100% treatments) ranged from 96 to 100%. Statistically significant effects were not detected among any of the AB Marina elutriate dilutions relative to the site-water control group. Consequently, the LC50 values were all >100%.

The copper sulfate reference toxicant was tested at nominal concentrations of 50, 100, 200, 400 and 800 µg Cu^{2+}/L. The calculated LC50 was 222 µg Cu^{2+}/L, which was within two standard deviations of the lab mean (413 ± 117 µg Cu^{2+}/L), indicating normal *M. beryllina* sensitivity.

TABLE 16

Summary of *M. edulis* Water Column Toxicity Bioassay Results

Sample	Conc. (%)	Survival		Development	
		Mean % Survival	LC50 (%)	% Normal	EC50 (%)
Lab Control	-	90.0	NA	97.2	NA
Site Water	-	90.4	NA	96.3	NA
B1	10	92.2	>100	97.4	>100
	50	93.6		97.7	
	100	91.4		96.8	
B2	10	90.9	>100	98.0	>100
	50	94.6		97.4	
	100	90.7		96.9	
B3	10	92.9	>100	96.7	>100
	50	95.4		97.6	
	100	93.4		97.5	
B4	10	91.2	>100	97.0	>100
	50	93.1		97.1	
	100	89.8		96.9	
B5	10	95.0	>100	97.7	>100
	50	93.1		97.3	
	100	90.6		97.1	
B6	10	88.4	>100	97.4	>100
	50	91.2		97.6	
	100	86.7*		58.8*	
B7	10	94.4	>100	96.7	>100
	50	89.1		97.7	
	100	94.9		96.1	

* Statistically significant difference from the Site Water Control

Copper Sulfate Reference Toxicant				
Conc. (%)	Survival		Development	
	Mean % Survival	LC50 (µg/L)	% Normal	EC50(µg/L)
Control	95.3	15.136	97.5	7.519
2.5	88.1		92.2	
5.0	92.3		93.8	
10	86		4.9	
20	11.4		0	
40	0.1		0	
Laboratory Mean E/LC50 (µg/L):		20.700		8.423
Standard Deviation:		7.001		1.510
Sensitivity:		Normal		Normal

TABLE 17

Summary of *M. bahia* Water Column Toxicity Bioassay Results

Sample	Conc. (%)	Mean % Survival	LC50 (%)
Lab Control	-	100	NA
Site Water	-	100	NA
B1	10	100	>100
	50	100	
	100	98.0	
B2	10	100	>100
	50	100	
	100	100	
B3	10	100	>100
	50	100	
	100	98.0	
B4	10	100	>100
	50	98.0	
	100	96.0	
B5	10	100	>100
	50	100	
	100	100	
B6	10	100	>100
	50	98.0	
	100	98.0	
B7	10	100	>100
	50	100	
	100	98.0	

Reference Toxicant					
Copper Sulfate Survival			Ammonia Survival		
Conc. (%)	Mean % Survival	LC50 (µg/L)	Conc. (%)	Mean % Survival	EC50(µg/L)
Control	100	222.133	Control	96.7	52.255
62.5	100		7.18	100	
125	100		14.3	100	
250	33.3		28.1	100	
500	16.7		55.3	43.3	
1000	3.3		106	0	
Laboratory Mean E/LC50 (µg/L):		412.827			39.718
Standard Deviation:		117.494			8.457
Sensitivity:		Normal			Normal

3.2.1.3 Menidia beryllina Test Results.

Test results for *Menidia beryllina* SPP bioassays performed with AB Marina sediment elutriates are summarized in Table 18. Water quality parameters in *M. beryllina* SPP tests were within the recommended limits prescribed for this test species. The mean survival rate among laboratory control replicates was 100%, meeting the passing criteria for this test. The site water mean survival rate was also 98%. The mean survival rates calculated for the seven undiluted elutriates (100% treatments) ranged from 86 to 100%. The only statistically significant effect detected among any of the elutriate dilutions relative to the site-water control group was observed with the 100% B4 elutriate (86% survival). However the LC50 and EC50 values calculated for this treatment as well as for all AB Marina treatments evaluated with the *M. edulis* bioassay were >100%.

The copper sulfate reference toxicant was tested at nominal concentrations of 50, 100, 200, 400 and 800 µg Cu^{2+}/L. The calculated LC50 was 798.8 µg Cu^{2+}/L, which fell outside two standard deviations of the lab mean (197 ± 87.6 µg Cu^{2+}/L), indicating that *M. beryllina* sensitivity was lower than normal and detailed in Appendix D.

3.2.1.4 Limiting Permissible Concentration (LPC).

Due to the absence of significant effects in the water column toxicity tests performed with the AB Marina sediment elutriates, the LC and EC50 values were all >100%. Consequently, the toxicity threshold, or Limiting Permissible Concentration (LPC), for the AB Marina sediment fluid phase is not calculable but assumed to be >1%. Therefore, the concentration of the dredged material's fluid phase at the edge of the LA-2 mixing zone is expected to be substantially lower than the LPC, meeting the SPP criteria for aquatic disposal.

3.2.2 Solid Phase Testing

To assess the potential benthic impacts of AB Marina sediments deposited within the LA-2 aquatic environment, two SP bioassays were performed with project composite samples.

3.2.2.1 Rhepoxinius abronius 10-Day Test Results.

Results of this SP test conducted with *R. abronius* are summarized in Table 19. Required water quality parameters were monitored daily in each treatment and were consistently acceptable for the protocol. Mean control survival for the 10-day *R. abronius* test was 95%, meeting the ITM test acceptability criterion of 90%. The mean LA-2 reference site survival rate was 86%. The mean survival rate calculated for the AB Marina composite samples ranged from 26 to 40%. All seven AB Marina treatment survival rates were significantly different from the LA-2 survival rate.

The positive control reference toxicant used was cadmium chloride, tested at nominal concentrations of 0.25, 0.5, 1.0, 2.0, and 4.0 mg Cd^{2+}/L. The calculated Cd LC50 was 0.83 mg Cd^{2+}/L, which was not within two standard deviations of the laboratory mean (0.75 ± 0.33 mg Cd^{2+}/L), indicating that *R. abronius* sensitivity was within the normal range. The ammonia LC50 (69.6 mg NH_3/L) was also within the normal range of organism sensitivity.

TABLE 18

Summary of *M. beryllina* Water Column Toxicity Bioassay Results

SAMPLE	Conc. (%)	Mean % Survival	LC50 (%)
Lab Control	-	100	NA
Site Water	-	98	NA
B1	10	100	>100
	50	98	
	100	100	
B2	10	98	>100
	50	94	
	100	100	
B3	10	98	>100
	50	98	
	100	92	
B4	10	98	>100
	50	98	
	100	86*	
B5	10	98	>100
	50	100	
	100	98	
B6	10	100	>100
	50	94	
	100	94	
B7	10	100	>100
	50	100	
	100	98	

* Statistically significant difference from the Site Water Control

Reference Toxicants					
Copper Sulfate Survival			Ammonia Survival		
Conc. (%)	Mean % Survival	LC50 (µg/L)	Conc. (%)	Mean % Survival	EC50(µg/L)
Control	100	199.437	Control	96.7	26.229
25	96.7		2.96	100	
50	100		6.75	93.3	
100	96.7		14.1	83.3	
200	50		27.9	46.7	
400	0		57.1	0	
Laboratory Mean E/LC50 (µg/L):		197.188			32.386
Standard Deviation:		87.637			18.029
Sensitivity:		Normal			Normal

TABLE 19

Test Sediment Data Summary – *R. abronius*

Sample I.D.	% Survival (Mean ± SD)	% Reduction from Reference*	% Survival per Replicate				
			1	2	3	4	5
Control	95	-	85	100	100	95	95
LA-2	86	-	95	85	60	95	95
B1	33*	53	40	25	20	40	40
B2	26*	60	25	25	15	35	30
B3	35*	51	20	45	30	35	45
B4	26*	60	30	25	15	30	30
B5	37*	49	50	35	20	30	50
B6	40*	46	50	25	45	40	40
B7	38*	48	45	60	10	40	35

* Statistically significant difference from the Site Water Control

Reference Toxicant Results					
Cadmium			Ammonia		
Conc. (mg/L)	% Survival	LC50 (mg/L)	mg NH_3/L	% Survival	LC50 (mg/L)
Control	97	0.827	Control	97	69.58
0.125	100		16.2	90	
0.25	100		31.2	90	
0.50	80		60	80	
1.0	33		124	0	
2.0	0		220	0	
Laboratory Mean LC_{50} (mg/L):		0.752			78.62
Standard Deviation:		0.334			17.92
Sensitivity:		Normal			Normal

3.2.2.2 Neanthes arenaceodentata 10-Day Static Test Results

Results for all tests conducted with *N. arenaceodentata* are summarized in Table 20. Relevant water quality parameters were monitored daily for each treatment and were consistently acceptable for the protocol. The mean LA-2 reference site survival rate was 98%. The mean survival rate calculated for the AB Marina composite samples ranged from 98 to 100%, indicating that the dredged material meets the polychaete SP criteria for aquatic disposal suitability.

The positive control reference toxicant used was cadmium chloride, tested at nominal concentrations of 2.5, 5, 10, 20, and 40 mg Cd^{2+}/L. The calculated Cd LC50 was 8.8 mg Cd^{2+}/L, which was within two standard deviations of the laboratory mean (10.5 ± 2.9 mg Cd^{2+}/L), indicating that *N. caecoides* sensitivity fell within the normal range. The ammonia LC50 (127 mg NH_3/L) was also within the normal range of organism sensitivity.

3.3 Bioaccumulation Potential Tests

3.3.1 Organism Exposures

Water quality parameters in the flow-through bioaccumulation exposures were within the recommended limits prescribed for the test species. At the end of 28 days, the test organisms were removed via a 1-mm screen, counted, and placed in a flow-through chamber without sediment for purging of gut contents for 24 hours. Mean survival for the bivalve clams ranged from 90.4 to 97.6% across the control, reference and all AB Marina sediment treatments. Mean survival for the bivalve clams ranged from 79.3 to 92.7% across the control, reference and all AB Marina sediment treatments. A summary of survival results for bioaccumulation test species is presented in Table 21.

3.3.2 Tissue Chemistry

Based on sediment chemistry results, tissues from BP test organisms exposed to AB Marina sediments were analyzed for DDT and metals residues. As discussed in Section 2.4, the chemistry laboratory staff composited tissues from all five replicates for each sample treatment, prohibiting statistical comparisons for individual sample areas. The results will however be discussed in terms of absolute comparisons to determine whether the limited data set may warrant a reduction in analytical scope for the analyses of test organism tissues as part of the current retest procedures. All tissue chemistry data is presented in Table 22.

3.3.2.1 Macoma nasuta

The ?DDT concentration reported for the LA-2 exposed *Macoma nasuta* tissues was <1.0 µg/kg. The ?DDT concentrations in *Macoma* tissues reported for the project site treatments ranged from <1.0 to 8.3 µg/kg wet weight, well below any of the following established environmental and human health protection criteria (all wet weight basis):

- National Academy of Sciences recommendation: 50 µg/kg
- National Sediment Quality Inventory Wildlife Criteria: 39.3 µg/kg
- NY/NJ Harbor Estuary Program Wildlife Value: 20 µg/kg
- U.S. EPA screening value for human health: 300 µg/kg

All metals detected in *M. nasuta* tissues exposed to AB Marina sediments with the exception of lead were seemingly consistent with the levels reported for LA-2 exposed *M. nasuta* tissues. The lead concentration reported for the LA-2 tissue composite was 0.270 mg/kg, while the AB Marina tissue composites ranged from 0.431 to 1.120 mg/kg.

TABLE 20
Test Sediment Data Summary – *N. arenaceodentata*

Sample I.D.	% Survival (Mean ± SD)	% Reduction from Reference*	% Survival per Replicate				
			1	2	3	4	5
Control	96	-	100	90	100	90	100
LA-2	98	-	100	100	100	90	100
B1	98	NA	100	90	100	100	100
B2	100	NA	100	100	100	100	100
B3	98	NA	100	100	90	100	100
B4	100	NA	100	100	100	100	100
B5	100	NA	100	100	100	100	100
B6	98	NA	100	100	100	90	100
B7	98	NA	100	90	100	100	100

NA = Not Applicable: Reference survival is lower than or equal to % survival results.

Reference Toxicant Results					
Cadmium			Ammonia		
Conc. (mg/L)	% Survival	LC50 (mg/L)	mg NH_3/L	% Survival	LC50 (mg/L)
Control	100	8.817	Control	80	126.95
3.75	100		17.6	93	
7.5	73		35.1	100	
15	0		63.6	100	
30	0		136	40	
60	0		250	0	
Laboratory Mean LC_{50} (mg/L):		10.531			105.50
Standard Deviation:		2.973			29.59
Sensitivity:		Normal			Normal

TABLE 21
Summary of Bioaccumulation Sediment Exposure Survival Results.

Sample ID	*Macoma nasuta* (% Survival)	*Nephtys caecoides* (% Survival)
Control	90.4	92.7
LA-2	96.0	87.7
B1	97.6	79.3
B2	96.8	83.3
B3	93.6	87.3
B4	92.8	86.0
B5	96.0	81.7
B6	95.2	81.0
B7	95.2	82.0

* Percent survival estimate based on initiation of test with 35 animals in replicate 1.

TABLE 22

Summary of Tissue Analysis for Bioaccumulation Tests with *M. nasuta* and *N. caecoides*

Sample	Substrate	DDT (µg/Kg)	Metals (mg/kg)									
			Hg	Cd	Cr	Cu	Pb	Ni	Se	Ag	Zn	As
Background	Mn Tissue	<1.00	0.012	<0.100	<0.100	2.71	0.141	0.375	0.114	<0.100	12.0	2.30
	Nc Tissue	<1.00	0.024	0.190	0.641	6.83	0.138	0.919	0.886	<0.100	31.6	3.58
LA-2 Reference	Sediment	4.16	0.04	0.220	28.7	9.60	6.96	13.1	0.33	<0.15	50.8	3.59
	Mn Tissue	<1.00	0.011	<0.100	0.303	3.11	0.270	0.746	0.166	<0.100	16.0	3.20
	Nc Tissue	7.36	0.014	0.320	<0.100	3.66	0.206	0.616	0.691	<0.100	48.6	4.09
B1	Sediment	13.5	0.83	0.664	47.8	60.1	71.0	22.5	0.41	0.33	148	8.98
	Mn Tissue	7.58	0.018	<0.100	0.347	3.09	0.798	0.738	0.229	<0.100	16.4	2.61
	Nc Tissue	14.0	0.013	0.286	0.247	3.60	0.206	0.616	0.691	<0.100	48.6	4.09
B2	Sediment	11.7	0.36	0.747	41.5	49.2	72.1	18.9	0.37	0.34	135	6.05
	Mn Tissue	7.34	0.019	<0.100	0.307	3.68	0.802	0.725	0.258	<0.100	17.8	2.98
	Nc Tissue	9.62	<0.005	0.293	<0.100	3.47	0.255	0.689	0.648	<0.100	40.8	3.73
B3	Sediment	13.5	0.36	0.601	34.7	44.3	54.8	17.6	0.31	0.23	102	5.50
	Mn Tissue	8.27	0.018	<0.100	0.464	4.17	1.12	0.772	0.255	<0.100	20.9	2.90
	Nc Tissue	<1.00	<0.005	0.300	<0.100	3.33	0.269	0.577	0.606	<0.100	43.6	3.64
B4	Sediment	13.8	0.29	0.855	41.5	52.3	85.0	20.2	0.33	0.35	204	6.22
	Mn Tissue	7.80	<0.005	<0.100	0.344	2.99	0.829	0.719	0.179	<0.100	17.5	2.30
	Nc Tissue	11.6	0.008	0.269	<0.100	3.58	0.374	0.619	0.767	<0.100	42.6	3.77
B5	Sediment	12.5	0.31	0.901	50.8	56.0	97.9	22.7	0.47	0.46	155	7.33
	Mn Tissue	7.29	0.007	<0.100	0.330	3.28	0.817	0.615	0.132	<0.100	16.5	2.62
	Nc Tissue	12.1	0.005	0.294	0.111	4.48	0.399	0.705	0.816	<0.100	47.5	3.92
B6	Sediment	6.77	0.18	1.13	49.9	76.2	70.9	22.4	0.42	0.58	213	6.65
	Mn Tissue	<1.00	0.010	<0.100	0.187	3.09	0.431	0.908	0.358	<0.100	15.2	2.89
	Nc Tissue	23.2	0.005	0.325	0.110	4.98	0.284	0.679	0.462	<0.100	48.9	3.60
B7	Sediment	7.26	0.28	0.558	39.1	54.6	58.8	18.6	0.35	0.50	136	7.10
	Mn Tissue	6.89	0.015	<0.100	0.461	3.43	0.600	0.660	0.278	<0.100	16.5	2.74
	Nc Tissue	11.4	0.005	0.282	<0.100	4.24	0.278	0.684	0.746	<0.100	42.6	3.86

< Indicates concentrations are less than the corresponding method detection limit (MDL)

3.3.2.2 Nephtys caecoides

The ?DDT concentration reported for the LA-2 exposed *N. caecoides* tissues was 7.36 µg/kg. The ?DDT concentrations in *Macoma* tissues reported for the project site treatments ranged from <1.0 to 23.2 µg/kg wet weight. Other than the 23.2 µg/kg detected in the composite made from tissues exposed to Basin 6 sediments, none of the Nephtys tissue composites exhibited ?DDT concentrations above 14.0 µg/kg.

All metals detected in *N. caecoides* tissues exposed to AB Marina sediments, including lead, appear to be consistent with the levels reported for *N. caecoides* tissues exposed to the LA-2 reference sample.

4 DISCUSSION

4.1 CHEMICAL AND PHYSICAL ANALYSIS OF TEST SEDIMENTS

- The metals copper, mercury and lead were detected at levels above ER-L values in most AB Marina samples. Mercury measured in sample B6 was the one exception.
- Zinc was detected at levels above the ER-L value in samples B4, B5 and B6; and arsenic was detected above the ER-L in sample B1.
- With the exception of mercury detected in the Basin 1 sample (0.83 mg/kg), none of the measured metals exceeded more than 29% of the span between the ER-L and ER-M values.
- Mercury in the Basin 1 sample does not appear to exhibit bioaccumulative potential as the concentrations observed in the B1 composite tissue samples for both BP species were consistent with both the background (time = 0) and reference sediment tissues. If additional analyses are necessary to resolve the extent to which Basin 1 sediments exhibit higher mercury concentrations, results will be provided in an addendum to this report.
- With the exception of DDT and negligible concentrations of PAH constituents, organic contaminants were not detected in AB Marina sediments.
- DDT concentrations was detected in the LA-2 reference sample at 4.16 µg/kg, and ranged from 6.77 to 13.8 µg/kg in AB Marina composite samples. Normalized to organic carbon content, the highest DDT concentration was 1.2 ppm OC. These values are higher than the ER-L, but below levels of significant concern as established by U.S. EPA Region IX, which determined that 7.5 ppm OC should be considered a site specific threshold for bioaccumulative concern for another coastal California harbor (USEPA 1998).

4.2 BIOASSAYS

- Significant toxicity was not observed with the polychaete SP or any of the three SPP tests
- The amphipod SP test using *Rhepoxinius abronius* exhibited significant toxicity among all AB Marina samples relative to the LA-2 reference treatments. This amphipod was selected based on previous performance in grain size profiles similar to those exhibited by the AB Marina sediments.
- Because the toxicity results do not vary significantly among the seven project samples ($\bar{X}$ = 34 +/- 5.6%), there is no significant correlation between contaminant concentrations or grain size constituents.
- The observed *R. abronius* survival rates contrast significantly with the high survival rates observed with each of the six other species tested under this study (see Table 24). Due to the absence of any significantly elevated contaminant concentrations, additional test procedures may be necessary to ascertain the relevance of the reduced *R. abronius* survival rates. Results of any additional testing will be provided in an addendum to this report.

4.3 BIOACCUMULATION STUDIES

- Due to the inadvertent compositing of the treatment tissue replicates, statistical analysis is not possible with the data currently available. Retesting has been initiated and tissue chemistry results will be provided as an addendum to this report.

TABLE 23

Mean Survival Rate Summary for SP and BP Tests

Species	Sample Identification						
	B-1	B-2	B-3	B-4	B-5	B-6	B-7
R. abronius (%)	33	26	35	26	37	40	38
N. arenaceodentata (%)	98	100	98	100	100	98	98
M. nasuta (%)	98	97	94	94	97	95	94
N. caecoides (%)	79	83	87	85	81	83	81
M. edulis (LC50)	>100	>100	>100	>100	>100	>100	>100
M. bahia (LC50)	>100	>100	>100	>100	>100	>100	>100
M. beryllina (LC50)	>100	>100	>100	>100	>100	>100	>100

- DDT and heavy metals were measured in tissues exposed to project and reference sediments. However, since sediment contaminant levels were generally low, tissue concentrations following 28-day exposures were not expected to be elevated.
- Although the absence of sample replication prohibited statistical comparisons between contaminant concentrations detected project samples and those detected in the LA-2 reference sample, a review of the tissue composite data shows that the only contaminant detected at a level substantially higher than the LA-2 tissues was lead measured in *M. nasuta* tissues.
- However, the *M. nasuta* lead concentrations (up to 1.12 mg/kg) is still below the tissue level of concern (2.8 mg/kg) as established by the Environmental Residue-Effects Database (ERED) generated by the U.S. Army Corps of Engineers (USACE 2005).

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TIER III SEDIMENT CHARACTERIZATION REPORT APPENDICES ARE ON FILE SEPARATELY WITH THE CITY OF LONG BEACH

SUPPLEMENTAL SAMPLING AND ANALYSIS REPORT

ALAMITOS BAY MARINA BASIN 1

Prepared for

City of Long Beach

Department of Parks, Recreation, and Marine

2760 Studebaker Road

Long Beach, California 90815

Prepared by

Anchor QEA, L.P.

28202 Cabot Road, Suite 425

Laguna Niguel, California 92677

May 2009

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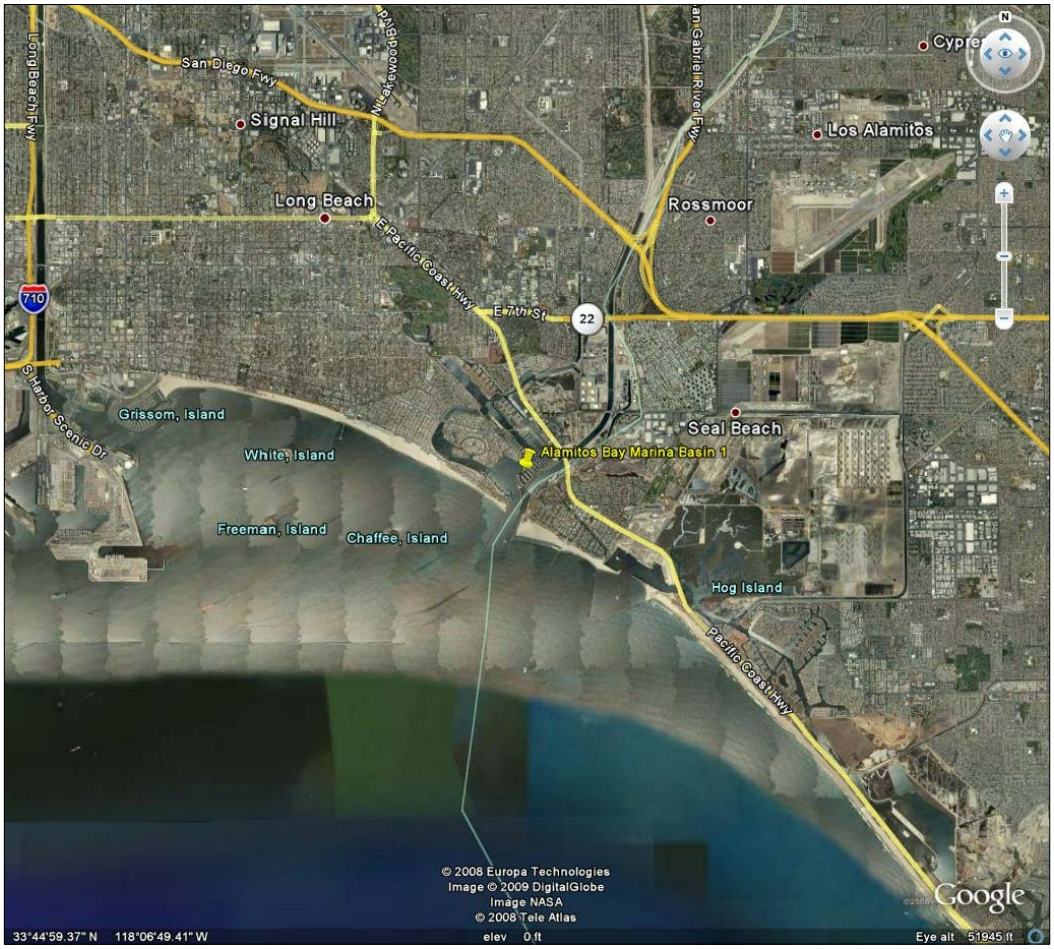
LIST OF ACRONYMS AND ABRREVIATIONS

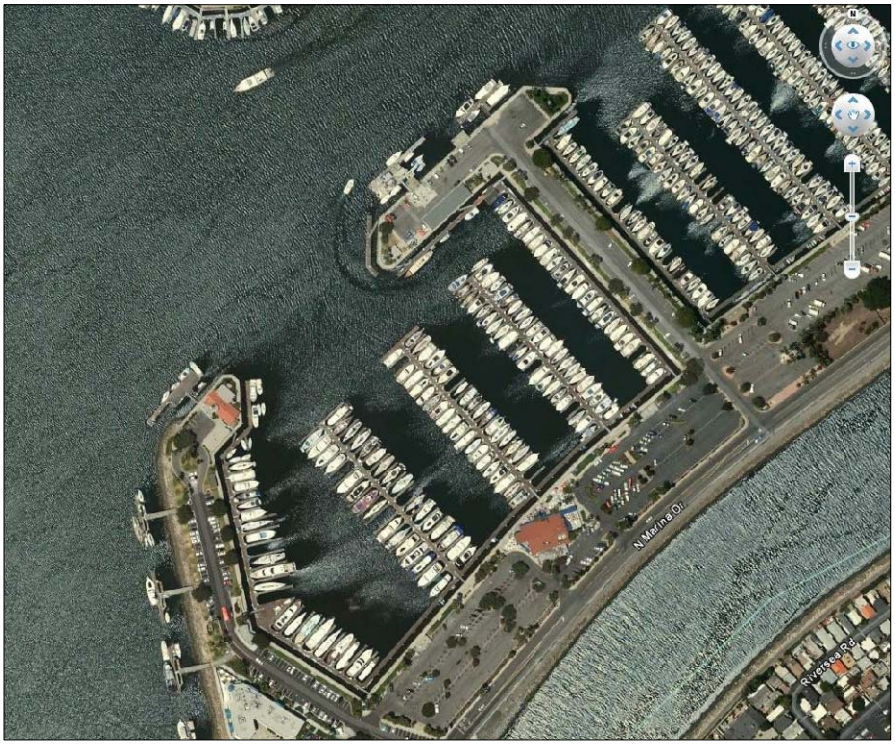
Calscience	Calscience Marine Analytical Laboratory
ERL	effects range low
ND	non-detect
QA	quality assurance
QC	quality control
SSAP	Supplemental Sampling and Analysis Plan
USEPA	U.S. Environmental Protection Agency
Weston	Weston Solutions, Inc.

1 INTRODUCTION

This document presents the results of the supplemental dredged material sampling and analysis field program for Basin 1 of the Alamitos Bay Marina, located in the City of Long Beach, California (Figure 1). Sampling and analysis was conducted pursuant to the approved Supplemental Sampling and Analysis Plan (SSAP) dated January 2009 (Anchor). The SSAP was prepared in response to agencies concerns regarding mercury distribution in Basin 1. Previous sampling and analysis results conducted by Weston Solutions, Inc. (Weston; 2007a and 2007b), in 2007 indicated acceptable Tier III test results, but some elevated concentrations of mercury were found in Basin 1. Subsequently, the agencies and the applicant agreed to pursue this supplemental sampling to further refine the horizontal and vertical extent of mercury within Basin 1. This document presents the results of that effort.

The general scope of work for this sampling effort included collecting physical and chemical data from twelve sediment core samples at discrete, 1-foot intervals to characterize the distribution of mercury in the proposed dredge cuts. The sampling locations are shown in Figure 2.





Apr 28, 2009 2:24pm cdavidson K:\Jobs\080548-Long Beach On-Call\080548-01 Alamitos Bay\080548801-RP-001.dwg FIG 1

Figure 1
Vicinity Map
Alamitos Bay Marina Basin 1

ANCHOR QEA

ALAMITOS MARINA MAIN CHANNEL

Harbor Master

FUEL DOCK

1

2

3

4

5

6

7

BASIN 1

BASIN 1

Gangway

Gangway

Gangway

Crab Pot

Dredge to -15 ft. MLLW

Dredge to -12 ft. MLLW

B1-2
0.28 mg/kg

B1-3
0.72 mg/kg

B1-1
0.41 mg/kg

B1-5
0.68 mg/kg

B1-4
1.07 mg/kg

Bench Mark Gang 7 Chiseled X Top
Bulkhead Wall El= 9.46' MLLW

LEGEND:

- 1 — Proposed Sample Location and Number
- Areas with Highest Contamination Potential
- B1-1 — 2007 Sampling Location and Number
- 0.41 mg/kg — 2007 Mercury Concentration
- Dredge Limit

0 100
Scale in Feet

HORIZONTAL DATUM: California State Plane, Zone 6 NAD83.
VERTICAL DATUM: Mean Lower Low Water (MLLW).

May 18, 2009 10:25am cdavidson K:\Jobs\080548-Long Beach On-Call\080548-01 Alamitos Bay\080548-01-RP-002.dwg FIG 2 (1)

ANCHOR QEA

Figure 2
Proposed Supplemental Sampling Locations
Alamitos Bay Marina Basin 1

2 REPORT ORGANIZATION

This report presents the results of the sampling and analysis program as described in the project SAP. This report is organized as follows:

- Section 1 – Introduction
- Section 2 – Report Organization
- Section 3 – Sediment Core Collection and Sample Processing
- Section 4 – Chemical and Physical Analyses
- Section 5 – Quality Assurance and Quality Control Summary
- Section 6 – Conclusions and Recommended Suitability Determinations
- Section 7 – References

Appendices provide supporting project documentation and are organized as follows:

- Appendix A – Field Recording Forms
- Appendix B – Laboratory Data Package

3 SEDIMENT CORE COLLECTION AND SAMPLE PROCESSING

This section summarizes the sediment sampling and processing activities conducted in connection with the characterization of marina sediments. Sampling and sample processing were carried out in accordance with the SSAP.

3.1 Summary of Sample Collection Activities

A total of 12 sediment core samples were extracted and subsampled at discrete intervals on February 19 and 20, 2009. Samples were collected by a barge-mounted vibro-core (pictured below). Core logs presented in Appendix A depict the locations of the discrete intervals relative to each core. Table 1 (below) presents the data by core and interval and includes a note reconciling this issue.

Photograph 1. Barge-mounted vibro-core.

Table 1
Sediment Core Recovery and Compositing Scheme

Station Sample ID	Water Depth (MLLW)	Penetration Depth (MLLW)	Core Recovery (feet)	Discrete Samples Collected
ABM-CS-1	-10.2	-15.2	3.1	01, 02 ,03
ABM-CS-2	-11.4	-15.5	4.0	01, 02, 03, 04
ABM-CS-3	-12.2	-17.2	5.0	01, 02, 03, 04, 05
ABM-CS-4	-10.5	-15.5	5.0	01, 02, 03, 04, 05
ABM-CS-5	-10.2	-15.2	5.0	01, 02, 03, 04, 05
ABM-CS-6	-12.0	-15.5	3.5	01, 02, 03, 04
ABM-CS-7	-11.0	-17.0	6.0	01, 02, 03, 04, 05, 06
ABM-CS-8	-12.6	-17.3	4.7	01, 02, 03, 04
ABM-CS-9	-11.8	-15.0	3.2	01, 02, 03
ABM-CS-10	-12.1	-14.1	2.0	01, 02
ABM-CS-11	-11.7	-13.7	2.0	01, 02
ABM-CS-12	-11.4	17.4	6.0	01, 02, 03, 04, 05, 06

3.2 Summary of Sample Processing Activities

Sediment cores were processed on shore, per the SSAP and regional guidance. Sample containers were filled, labeled, packed, and shipped to CalScience Marine Analytical Laboratory (CalScience) in Huntington Beach, California, for mercury analyses. Appropriate chain-of-custody procedures were followed.

3.3 Deviations from the Supplemental Sampling and Analysis Plan

Cored depths are all considered to adequately represent the dredge prism for sediment characterization. During sample processing, there were no deviations from the procedures detailed in the SAP.

4 CHEMICAL AND PHYSICAL ANALYSES

All discrete sediment samples were analyzed for mercury and grain size as described in the SSAP. Mercury was analyzed using U.S. Environmental Protection Agency (USEPA) method 7471A. Data for mercury and grain size by core and interval is presented in Table 2 below.

Table 2

Mercury and Grain Size by Core and Interval

Station ID	Interval	Top of Interval (feet MLLW)	Bottom of Interval (feet MLLW)	Mercury	Percent Fines
ABM-CS-1	1	-10.2	-11.2	0.0487	66
	2	-11.2	-12.2	0.242	72
	3	-12.2	-13.2	ND	16
ABM-CS-2	1	-11.4	-12.4	0.277	82
	2	-12.4	-14.4	0.324	72
	3	-13.4	-14	ND	63
	4	-14	-15.4	ND	31
ABM-CS-3	1	-12.2	-13.2	1.42	89
	2	-13.2	-14.2	0.131	31
	3	-14.2	-15.2	0.0363	26
	4	-15.2	-16.2	ND	20
	5	-16.2	-17.2	ND	36
ABM-CS-4	1	-10.5	-11.5	0.172	84
	2	-11.5	-12.5	1.44	83
	3	-12.5	-13.5	1.79	84
	4	-13.5	-14.5	1.03	90
	5	-14.5	-15.5	ND	43
ABM-CS-5	1	-10.2	-11.2	0.261	83
	2	-11.2	-12.2	0.658	82
	3	-12.2	-13.2	2.74	85
	4	-13.2	-14.2	0.0433	82
	5	-14.2	-15.2	0.0575	54
ABM-CS-6	1	-12	-13	0.387	83
	2	-13	-14	2.03	78
	3	-14	-15	2.38	76
	4	-15	-15.5	ND	54
ABM-CS-7	1	-11	-12	1.35	84
	2	-12	-13	2.22	67
	3	-13	-14	0.337	31
	4	-14	-15	ND	13
	5	-15	-16	ND	27
	6	-16	-17	ND	32

Table 2
Mercury and Grain Size by Core and Interval

Station ID	Interval	Top of Interval (feet MLLW)	Bottom of Interval (feet MLLW)	Mercury	Percent Fines
ABM-CS-8	1	-12.6	-13.6	1.66	85
	2	-13.6	-15.1	2.19	84
	3	-15.1	-16.6	0.0407	7
	4	-16.6	-17.3	ND	1
ABM-CS-9	1	-11.8	-12.8	0.692	88
	2	-12.8	-13.8	0,985	99
	3	-13.8	-15	1.83	91
ABM-CS-10	1	-12.1	-13.1	0.205	68
	2	-13.1	-14.1	ND	72
ABM-CS-11	1	-11.7	-12.7	0.183	74
	2	-12.7	-13.7	0.299	79
ABM-CS-12	1	-11.4	-12.4	0.199	76
	2	-12.4	-13.4	0.288	77
	3	-13.4	-14.4	0.458	76
	4	-14.4	-15.4	ND	83
	5	-15.4	-16.4	ND	83
	6	-16.4	-17.4	ND	81

Notes:
ND – non-detect

4.1 Visual Analysis of Cores in the Field

Visual inspection of cores in the field indicated that material is predominantly comprised of gray to dark gray silts overlaying, fine to silty sands containing some cobble and shell fragments. No obvious contaminant layers or sheens were observed. For detailed visual descriptions of each core please see Appendix A. Cores were also photo-logged in the field.

4.2 Results of Chemical and Physical Analyses

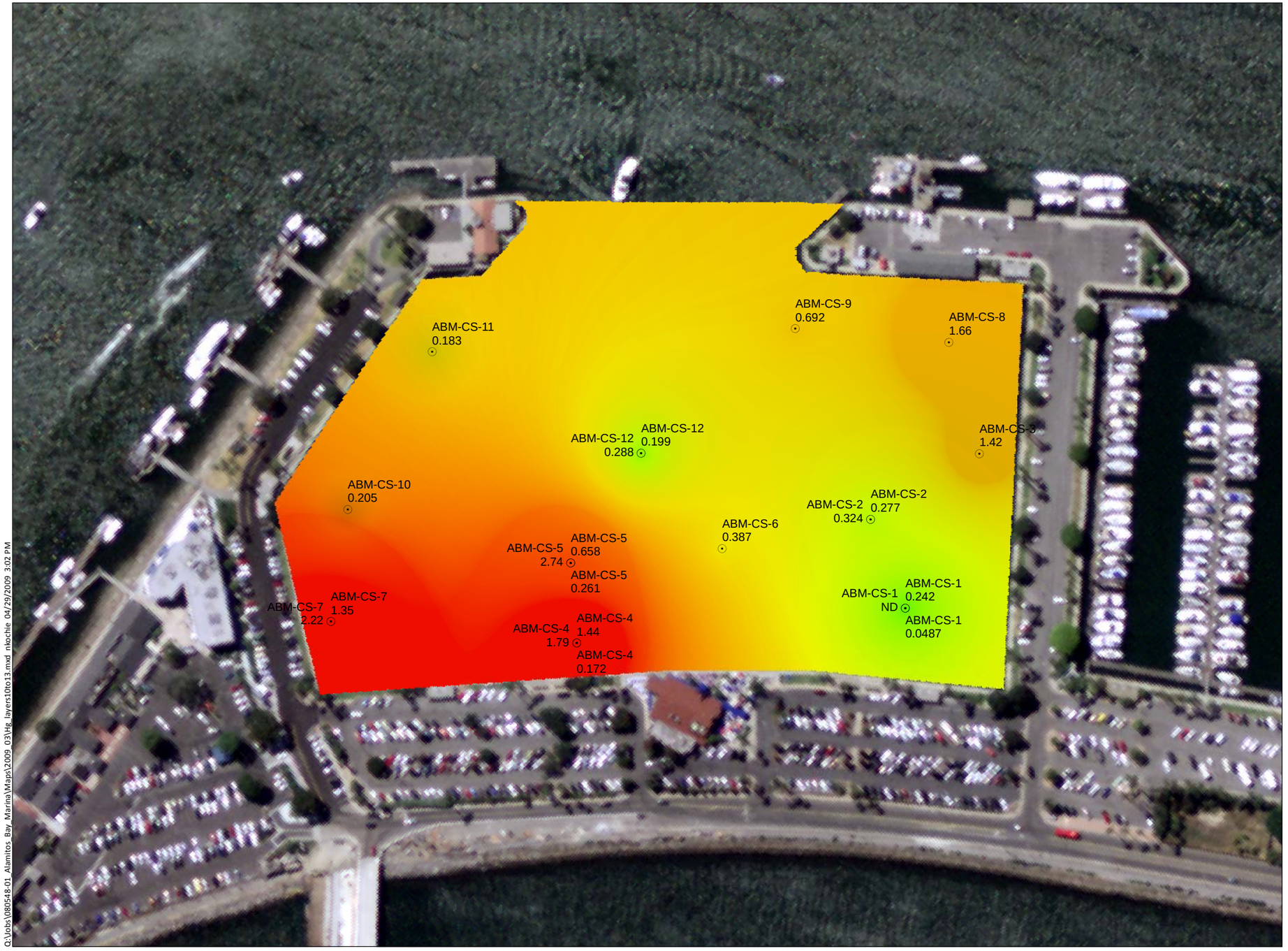
The results of the discrete interval analyses for mercury are depicted in Table 2 and on Figures 3 though 6. Mercury concentrations appeared highly dependent on grain size and location within the basin. The figures show a conservative weighted average interpretation of mercury concentrations throughout the basin, which are computed based on the point data contained in Table 2. Figure 3 shows the modeled mosaic of mercury concentrations from -10 to -13 feet MLLW. Figure 4 similarly shows the mercury concentrations below -13

feet MLLW. An evaluation of the overall area interpreted indicates that the "southeast" and "northwest" corners have low (effects range low [ERL] or below) mercury concentrations. These areas are shown in Figures 5 and 6, which were generated by isolating these "corner" areas and running the model on the concentrations within these boundaries.

An interpolation of mercury concentration related to grain size is shown in Figure 7. In general, unacceptable (e.g. higher than ERL) mercury concentrations occur predominantly in finer grained (e.g., silty) material above 60 percent fines.

The result of this program is that 33,738 cubic yards (cy) of material is requested for approval for disposal at LA-2 (including 2 feet of overdepth), and 25,504 cy (including 2 feet of overdepth) would be required to be disposed of in an approved confined location (e.g., an approved landfill, confined aquatic disposal [CAD], or upland confined disposal facility [CDF]).

These results were discussed with the agencies in a conference call format. The result of the call was agreement that the areas shown in Figures 5 and 6 were acceptable for ocean disposal, in combination with the previously completed Tier III analyses. Based on this call, the applicant's engineer created a dredge plan matching these results (Figure 8).



Sample Location

Mercury Concentration (ppm)

High : 2.59369

Low : 0.042564

Note:
1. High and Low values from all interval depths.
2. Non-detect value calculated as 0.05 in IDW.

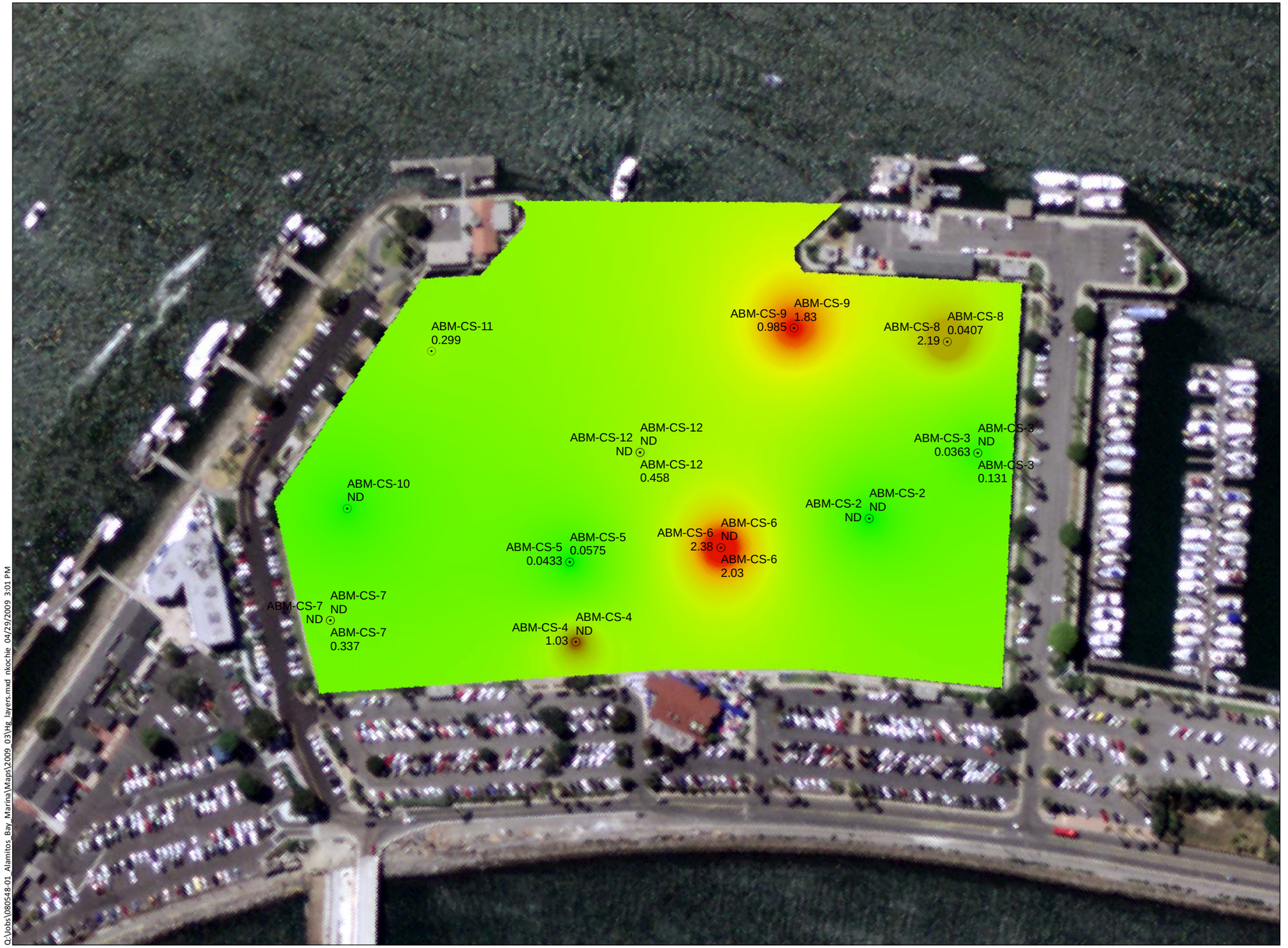
Feet

0 75 150

Q:\Jobs\080548-01_Alamitos_Bay_Marina\Maps\2009_03\Hg_layers10to13.mxd nkochie 04/29/2009 3:02 PM

Figure 3
Mercury Concentrations -10 to -13 feet MLLW
Alamitos Bay Marina Basin 1

ANCHOR QEA



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Sample Location

Mercury Concentration (ppm)

High : 2.59369

Low : 0.042564

Note:
1. High and Low values from all interval depths.
2. Non-detect value calculated as 0.05 in IDW.

Feet
0 75 150

ANCHOR QEA

Figure 4
Mercury Concentrations -13 to -16 feet MLLW
Alamitos Bay Marina Basin 1

Sample Location

Mercury Concentration (ppm)

High : 2.59369

Low : 0.042564

Note:
1. High and low values from all interval depths and all sample locations.
2. Non-detect value calculated as 0.05 in IDW.

Feet
0 75 150

Q:\Jobs\080548-01_Alamitos_Bay_Marina\Maps\2009_03\Hg_10to16_NWcorner.mxd nkochie 04/29/2009 2:59 PM

ANCHOR QEA

Figure 5
Mercury Concentrations -10 to -16 feet MLLW
Alamitos Bay Marina Basin 1

Sample Location

Mercury Concentration (ppm)

High : 2.59369

Low : 0.042564

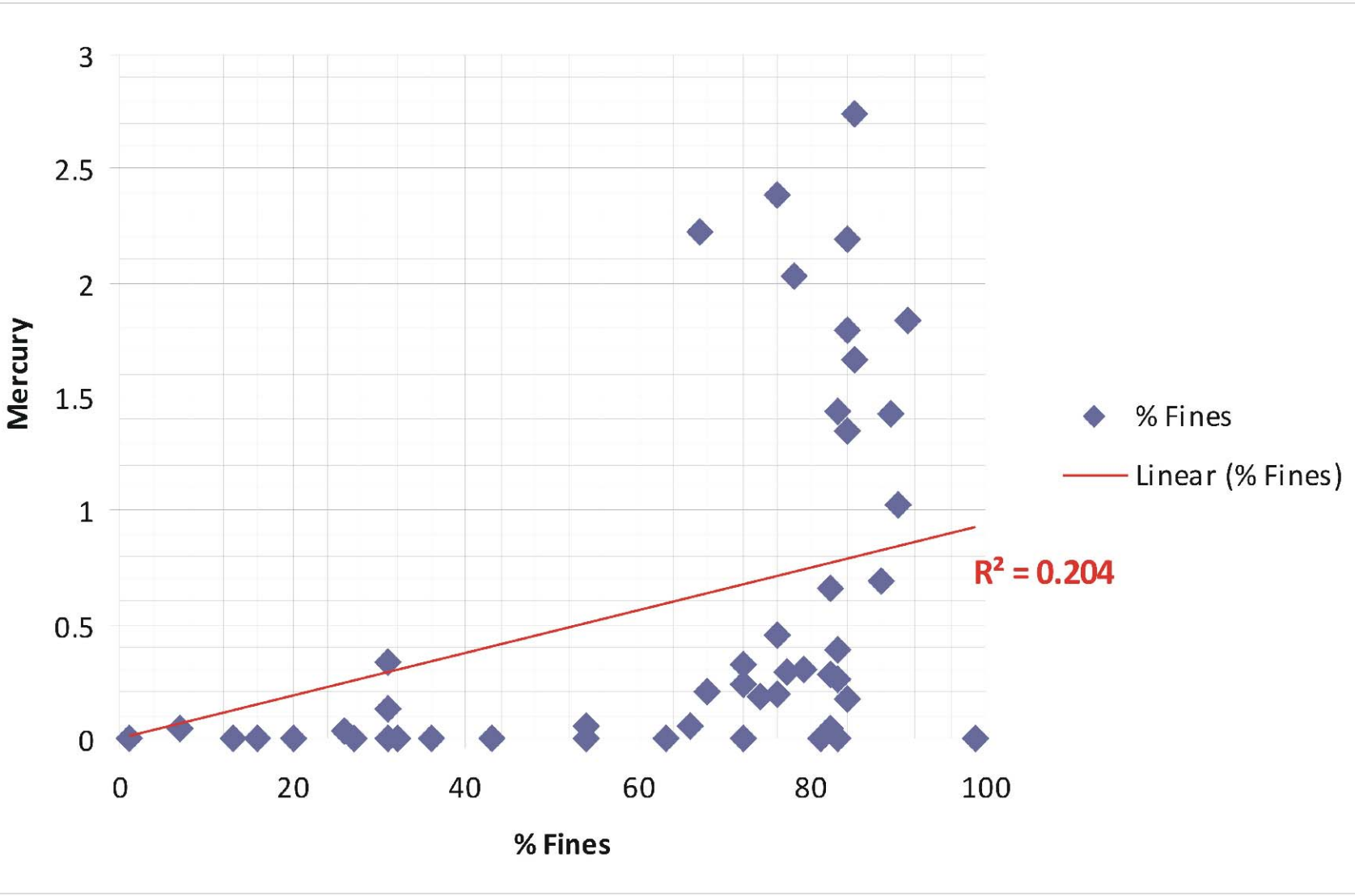
Note:
1. High and low values from all interval depths and all sample locations.
2. Non-detect value calculated as 0.05 in IDW.

Feet
0 75 150

Q:\Jobs\080548-01_Alamitos_Bay_Marina\Maps\2009_03\Hg_10to16_SEcornermxd nkochie 04/29/2009 3:00 PM

ANCHOR QEA

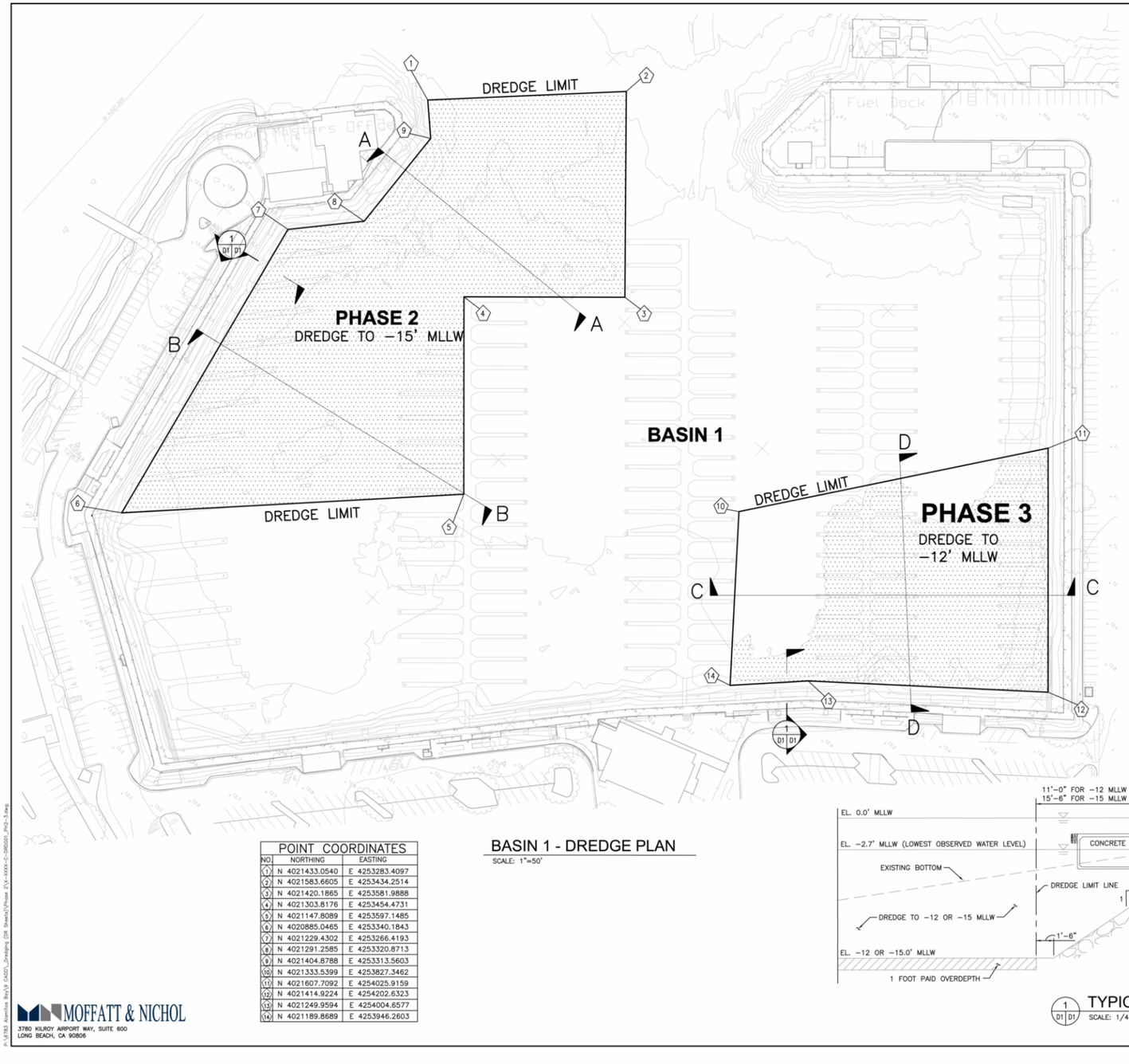
Figure 6
Mercury Concentrations -10 to -16 feet MLLW
Alamitos Bay Marina Basin 1



Apr 29, 2009 9:31am cdavidson K:\Jobs\080548-Long Beach On-Call\080548-01 Alamitos Bay\080548801-RP-003.dwg FIG 7

Figure 7
Mercury Concentration by Grain Size
Alamitos Bay Marina Basin 1

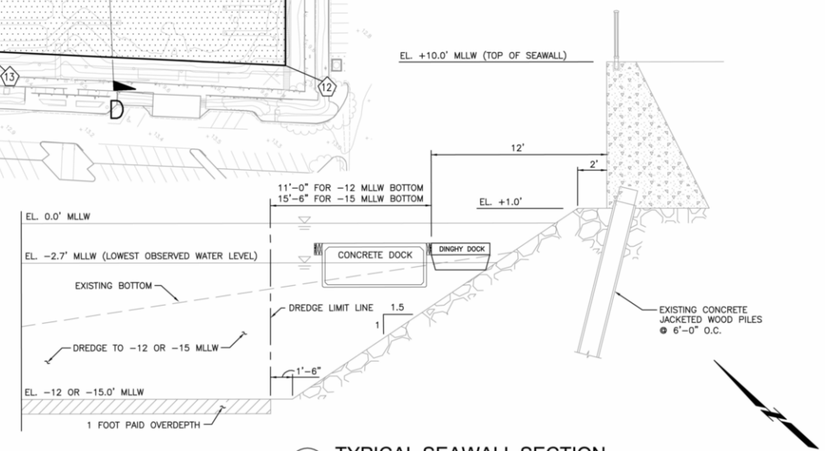
ANCHOR QEA



NOTE: AREAS SHOWN TO BE DREDGED HAVE BEEN DETERMINED TO HAVE LOW CONCENTRATIONS OF MERCURY AND ARE ANTICIPATED TO BE ACCEPTABLE TO DISPOSE OF OFFSHORE.

POINT COORDINATES		
NO.	NORTHING	EASTING
1	N 4021433.0540	E 4253283.4097
2	N 4021583.6605	E 4253434.2514
3	N 4021420.1865	E 4253581.9888
4	N 4021303.8176	E 4253454.4731
5	N 4021147.8089	E 4253597.1485
6	N 4020885.0465	E 4253340.1843
7	N 4021229.4302	E 4253266.4193
8	N 4021291.2585	E 4253320.8713
9	N 4021404.8788	E 4253313.5603
10	N 4021333.5399	E 4253827.3462
11	N 4021607.7092	E 4254025.9159
12	N 4021414.9224	E 4254202.6323
13	N 4021249.9594	E 4254004.6577
14	N 4021189.8689	E 4253946.2603

BASIN 1 - DREDGE PLAN
SCALE: 1"=50'



1 D1 D1 TYPICAL SEAWALL SECTION
SCALE: 1/4"=1'–0"

SCALE: 1"=50'

MOFFATT & NICHOL
3780 KILROY AIRPORT WAY, SUITE 600
LONG BEACH, CA 90806

R:\4783 Alamitos Bay\8 CADD_Dredging DSR (Reach)\Phase 2\2x-xxxx-c-080501_dr2-2.dwg

REVISIONS: No. | DATE | SHEET | DESCRIPTION
REVISIONS: No. | DATE | SHEET | DESCRIPTION
AS–BUILT:

ALAMITOS BAY MARINA BASIN 1
PHASES 2 & 3
DREDGE PLAN

GRAPHIC SCALE: 0 1 2 3
PAGE
FIELD BOOK
NO. R– XXXX
JOB NO.
SHEET X OF XX
DRAWING NO. X–XXXX–DR1

Figure 8
Dredge Plan
Alamitos Bay Marina Basin 1

5 QUALITY ASSURANCE AND QUALITY CONTROL SUMMARY

Quality assurance/quality control (QA/QC) review entailed reviewing for sample integrity, achievement of target reporting limits, correct methodology, instrument calibration, and all appropriate QC requirements. Several duplicate samples were run to ensure consistency of results. Results for these samples were reviewed, and the data quality assessment found that all data were usable as qualified. Method blanks and laboratory control samples performed indicate that all laboratory methods were correct, and the data were released without qualification. For more information, please see the laboratory data package in Appendix B.

6 CONCLUSIONS AND RECOMMENDED SUITABILITY DETERMINATIONS

Based on the results presented in this report, and in combination with the previous Tier I through III results presented in the Weston reports (2007a and 2007b), the City of Long Beach hereby requests approval for ocean disposal at LA-2 for:

- Basin 1, dredge material from the prisms indicated in Figure 8
- Basins 2 through 7, all dredged material as described in the Weston reports (2007a and 2007b)

Again, the corresponding Tier III evaluations were presented in the Weston reports (2007a and 2007b). In Basin 1, the applicant has demonstrated that mercury concentrations in the requested areas are very low (below ERL to non-detect), and the grain size is unsuitable for beneficial reuse. All other material in Basin 1 (material from outside the prisms shown on Figure 8) would be taken to an approved off-site location.

The combined Alamitos Bay Marina Basin project (Basins 1 through 7) would include approximately 262,000 cy of ocean disposal phased over several years of construction. Note that moving forward, the City and the agencies will need to discuss phased reconfirmation of bulk chemical results, which would depend on the overall duration of the project.

7 REFERENCES

Anchor Environmental CA, L.P. (Anchor). 2009. Alamitos Bay Marina Basin 1 Supplemental Sampling and Analysis Plan (SSAP). Prepared for the City of Long Beach by Anchor. January, 2009.

Weston Solutions, Inc. (Weston). 2007a. Results of a Tier 3 Sediment Characterization with Samples from Alamitos Bay, Long Beach, California. Prepared by Weston on behalf of the City of Long Beach. July 2007.

Weston. 2007b. Follow-up Testing to the 2007 Alamitos Bay Marina Sediment Suitability Study. Prepared by Weston on behalf of the City of Long Beach. October 2007.

APPENDIX A
FIELD RECORDING FORMS

Sediment Core Collection Form

Station ID:	ABM-CS-1	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 44.9843’	Long/Easting:	118° 06.7584’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	11:00		
(A) Measured Water Depth	11.0’		
(B) Tide Height	0.8’		
(C) Mudline Elevation	-10.2’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	5’		
Description of Core Drive	Hard, steady push		
Refusal Encountered?	No		
Total Core Recover Length	3.1’		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** clay, **organic matter**	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong **H_2S**, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Layering – fine sandy silt on top. Fine grain sand bottom		

Comments:

Shells and rocks found throughout core

Recorded by: BAG, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-1	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	11.0'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-10.2'	Diameter of Core (inches)	4
Penetration Length (feet)	5	Core Quality	☐ Good ■ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	3.1	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
9"	01 01 Dup		fine sandy silt, shells, trash, rock, dark gray color, weak sulfide odor
1			
19"	02 02 Dup		fine sandy silt, shells, layer of organic debris at 12-13", dark gray color
2			
	03 03 Dup		fine grain sand, dark gray color, 4" rock at 17-18"
37.2" 3			end of core (~-15' MLLW)
4			
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-2	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 44.9833’	Long/Easting:	118° 06.7920’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	12:00		
(A) Measured Water Depth	11.6’		
(B) Tide Height	0.2’		
(C) Mudline Elevation	-11.4’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	4’		
Description of Core Drive	Soft, easy push Softer surface layer		
Refusal Encountered?	No		
Total Core Recover Length	4.1’		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** **clay**, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	**None**, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous			

Comments:

Clay randomly found throughout core

Recorded by: BAG, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-2	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	11.6'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-11.4'	Diameter of Core (inches)	4
Penetration Length (feet)	4	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	4.1	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silt, no odor, dark gray color
1			
16"	02		fine sandy silt with clay lenses, shell at 17"
22" 2	03		gray clay
28"			
3	04		fine grain sand, gray color brown coloring spread throughout
49" 4			end of core (~-15.5' MLLW)
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-3	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 45.0191’	Long/Easting:	118° 06.7210’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	9:30		
(A) Measured Water Depth	14.5’		
(B) Tide Height	2.3’		
(C) Mudline Elevation	-12.2’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	6’		
Description of Core Drive	Hard push towards bottom		
Refusal Encountered?	No		
Total Core Recover Length	6’		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	**None**, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Layering – fine sandy silt top, fine grain sand bottom		

Comments:

Rocks and shell fragments spread throughout core

Recorded by: BAG, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-3	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	14.5'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-12.2'	Diameter of Core (inches)	4
Penetration Length (feet)	6	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	6	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silt, gray color, no odor, trash, shell fragments
1			
16"			
	02		fine grain sand, gray color, no odor, rocks at 24", 28", and 39"
2			small shell fragments
	03		
3			
	04		
4			
	05		
57"			
5			fine sandy silt, gray color
6			end of core (~-18' MLLW)
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-4	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 45.0191’	Long/Easting:	118° 06.7210’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	1:30		
(A) Measured Water Depth	10.5’		
(B) Tide Height	0.0’		
(C) Mudline Elevation	-10.5’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	4’		
Description of Core Drive	Very smooth, easy push		
Refusal Encountered?	No		
Total Core Recover Length	4’		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong H_2S, **petroleum**, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Layering – silt, clay, and fine grained sand		

Comments:

Clay spread throughout bottom of core

Some shells and shell fragments found throughout core

Recorded by: BAG, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-4	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	10.5'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-10.5'	Diameter of Core (inches)	4
Penetration Length (feet)	4	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	4	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		silt, slight hydrocarbon odor, dark gray color
1			
19"	02		
2			silt, moderate hydrocarbon odor, dark gray color, shell at 19"
	03		
33"	04		clay, gray color with brown lenses
3			
37"	05		fine grain sand, shell fragments, clay lenses, gray color
4			end of core (~-14.5' MLLW)
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID: ABM-CS-5 **Date:** 2-19-09

Project Name: Alamitos Bay Marina Basin 1 **Project Number:** 080482-01 BG03 T4

Coordinates:
Lat/Northing 33° 44.9388' Long/Easting: 118° 06.8274'

Vertical Datum **MLLW** MLW Other:

Depth Measurement Sounder **Leadline**

Project Depth 12' **Overdredge** 2'

	Attempt 1	Attempt 2	Attempt 3
Time Start:	2:30		
(A) Measured Water Depth	10.7'		
(B) Tide Height	0.4'		
(C) Mudline Elevation	-10.2'		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	4'		
Description of Core Drive	Soft, easy push		
Refusal Encountered?	No		
Total Core Recover Length	3.9'		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong **H_2S**, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Homogeneous		

Comments:

Color lightens with depth of core

Recorded by: BAG, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-5	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	10.2'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-10.2'	Diameter of Core (inches)	4
Penetration Length (feet)	4	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	3.9	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual / Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		very slight odor, fine sandy silt dark gray to a lighter gray as core deepens
1	02		
2	03		
3	04		
45"	05		fine grain sand, gray color
4			end of core (~-14' MLLW)
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-6	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 44.9670’	Long/Easting:	118° 06.7977’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	3:00	3:45	4:20
(A) Measured Water Depth	9.7’	13.5’	13.8’
(B) Tide Height	0.7’	1.1’	1.9’
(C) Mudline Elevation	-9.0’	-12.4’	-11.9’
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	5’	2’	3.5’
Description of Core Drive	Soft, easy push	Soft, easy push	Soft, easy push
Refusal Encountered?	No	No	No
Total Core Recover Length	0’	1.6’	3.5’
Time End:	3:40	4:15	

Core Characteristics

Sediment Type	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, **sand** C M **F** , **silt** clay, organic matter
Sediment Color	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	**gray**, black, brown brown surface, **olivine**
Sediment Odor	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	**None**, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous			Layering

Comments:

Attempt 1: Lost core tube in mud

Attempt 2: Short length

Recorded by: BAG, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-6	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	13.8'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-12.0'	Diameter of Core (inches)	4
Penetration Length (feet)	3.5	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	3.5	Average % Compaction =	

Theoretical Depth in (ft.) Actual / Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		silt, no odor, dark gray color
1			
	02		wood debris at 14"
20"			
2			
	03		silt, olive green color
3			
	04		fine grain sand, bottom v-shaped fine sandy silt between 39.5" and 42"
42"			end of core (~-15.5' MLLW)
4			
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-7	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 44.8885’	Long/Easting:	118° 06.8516’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	15’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:			
(A) Measured Water Depth	14.0’		
(B) Tide Height	3.0’		
(C) Mudline Elevation	-11.0’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	6’		
Description of Core Drive	Hard at end of drive		
Refusal Encountered?	No		
Total Core Recover Length	6.2’		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C **M** F , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, **mod**, strong H_2S, **petroleum**, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Layerings		

Comments:

Shell fragments throughout core

Clay at bottom of core

Recorded by: JM (ABC), TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.19.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-7	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	14.0'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-11.0'	Diameter of Core (inches)	4
Penetration Length (feet)	6	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	6.2	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silt, moderate hydrocarbon odor, dark gray color, shell fragments
1	02		
25" 2	03		medium grain sand, gray color, shell fragments
3	04		
4			
51.6"	05		medium grain sand with clay, gray color, shells
5	06		
6			
74"			end of core (~-17' MLLW)
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-7	**Date:**	2-19-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 44.8885’	Long/Easting:	118° 06.8516’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	15’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:			
(A) Measured Water Depth	14.0’		
(B) Tide Height	3.0’		
(C) Mudline Elevation	-11.0’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	6’		
Description of Core Drive	Hard at end of drive		
Refusal Encountered?	No		
Total Core Recover Length	6.2’		
Time End:			

Core Characteristics

Sediment Type	cobble, gravel, **sand** C **M** F , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, slight, **mod**, strong H_2S, **petroleum**, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Layerings		

Comments:

Shell fragments throughout core

Clay at bottom of core

Recorded by: JM (ABC), TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.20.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-8	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	17.2'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-12.6'	Diameter of Core (inches)	4
Penetration Length (feet)	6	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	6	Average % Compaction =	

Theoretical Depth in (ft.) Actual / Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
1	01		fine sandy silt, dark gray color, no odor, shell fragment at 10"
2	02		
29"			
3	03		medium grain sand, no odor, dark gray color
4	04		
57"			
5			course grain sand with clay mixed throughout, no odor, dark gray color
			mixed vegetation throughout
6			end of core (~ -18.5' MLLW)
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-9	**Date:**	2-20-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 45.0400’	Long/Easting:	118° 06.8186’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	8:45		
(A) Measured Water Depth	15.1’		
(B) Tide Height	3.3’		
(C) Mudline Elevation	-11.8’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	3’		
Description of Core Drive	Easy push		
Refusal Encountered?	No		
Total Core Recover Length	2.8’		
Time End:	9:45		

Core Characteristics

Sediment Type	cobble, gravel, sand C M F , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong **H_2S**, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Homogeneous		

Comments:

Cored too much, removed bottom 1’ on boat, dark fine sandy silt

Relocated core due to deep depth at original location

Recorded by: DWF, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.20.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-9	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	15.1'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-11.8'	Diameter of Core (inches)	4
Penetration Length (feet)	3	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	2.8	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silty, dark gray color, slight sulfuric odor
1			
	02		
2			
	03		shell fragments at 30"
34"			end of core (~ 15' MLLW)
3			
4			
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID: ABM-CS-10 **Date:** 2-20-09

Project Name: Alamitos Bay Marina Basin 1 **Project Number:** 080482-01 BG03 T4

Coordinates:
Lat/Northing 33° 45.0070' Long/Easting: 118° 06.8391'

Vertical Datum **MLLW** MLW Other:

Depth Measurement Sounder **Leadline**

Project Depth 12' **Overdredge** 2'

	Attempt 1	Attempt 2	Attempt 3
Time Start:	10:35		
(A) Measured Water Depth	14.1'		
(B) Tide Height	2.0'		
(C) Mudline Elevation	-12.1'		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	4'		
Description of Core Drive	Easy push		
Refusal Encountered?	No		
Total Core Recover Length	3.25'		
Time End:	11:00		

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong **H_2S**, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Homogeneous		

Comments:

Relocated due to original location being too deep

Recorded by: DWF, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.20.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-10	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	14.1'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-12.1'	Diameter of Core (inches)	4
Penetration Length (feet)	4	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	3.25	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silt, slight sulfuric odor, dark gray color
1			
	02		
2			shell at 26.5"
35" 3			fine grain sand
39"			end of core (~ -15.5' MLLW)
4			
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-11	**Date:**	2-20-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 45.9641’	Long/Easting:	118° 06.8395’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	12’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	11:28		
(A) Measured Water Depth	12.7’		
(B) Tide Height	1.0’		
(C) Mudline Elevation	-11.7’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	4’		
Description of Core Drive	Easy push		
Refusal Encountered?	No		
Total Core Recover Length	3.5’		
Time End:	11:50		

Core Characteristics

Sediment Type	cobble, gravel, sand C M F , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong **H_2S**, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Homogeneous		
Comments:			

Recorded by: DWF, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.20.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-11	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	12.7'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-11.7'	Diameter of Core (inches)	4
Penetration Length (feet)	4	Core Quality	☐ Good ■ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	3.5	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silt, dark gray color, slight sulfuric odor
1			
	02		piece of black plastic at 18"
2			
3			
42"			end of core (~ -16' MLLW)
4			
5			
6			
7			
8			
9			

Sediment Core Collection Form

Station ID:	ABM-CS-12	**Date:**	2-20-09
Project Name:	Alamitos Bay Marina Basin 1	**Project Number:**	080482-01 BG03 T4
Coordinates: Lat/Northing	33° 44.9461’	Long/Easting:	118° 06.9027’
Vertical Datum	**MLLW**	MLW	Other:
Depth Measurement	Sounder	**Leadline**	
Project Depth	15’	**Overdredge**	2’

	Attempt 1	Attempt 2	Attempt 3
Time Start:	12:00		
(A) Measured Water Depth	11.9’		
(B) Tide Height	0.5’		
(C) Mudline Elevation	-11.4’		
(-A+B = C include sign of tide height as reported)			
Estimated Penetration Length	7’		
Description of Core Drive	Easy push		
Refusal Encountered?	Yes, at 7’		
Total Core Recover Length	7’		
Time End:	12:27		

Core Characteristics

Sediment Type	cobble, gravel, **sand** C M **F** , **silt** clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter	cobble, gravel, sand C M F , silt clay, organic matter
Sediment Color	**gray**, black, brown brown surface, olivine	gray, black, brown brown surface, olivine	gray, black, brown brown surface, olivine
Sediment Odor	None, **slight**, mod, strong **H_2S**, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic	None, slight, mod, strong H_2S, petroleum, septic
Any Layering Homogeneous	Homogeneous		

Comments:

Some shells and shell fragments throughout core

Recorded by: DWF, TLS

Visual Classification of Subsurface Core

ANCHOR QEA

Job	Alamitos Bay Marina Basin 1	Date	2.20.09
Job No.	080482-01 BG03 T4	Core Pushed By	TEG
Exploration/Core No.	ABM-CS-12	Core Logged By	TLS, BJ, JM (ABC)
Water Depth	11.9'	Type of Core	☐ Shelby ☐ Piston Core ■ Other- Vibracore
Mudline Elevation	-11.4'	Diameter of Core (inches)	4
Penetration Length (feet)	7	Core Quality	■ Good ☐ Fair ☐ Poor ☐ Disturbed
Core Recovery (feet)	7	Average % Compaction =	

Theoretical / Depth in (ft.) / Actual — Core Sections	Sample Interval	Sample Analytes	Classification and Remarks (Color, Consistency, Moisture, Grain Size, Sheen, Odor)
	01		fine sandy silt, slight sulfuric odor, dark gray color, shell at the top
1	02		
2	03		
3	04		
4	05		
5	06		shell fragment at 60"
6			
81"			fine grain sand, gray color, slight odor
7			end of core (~ -18.5' MLLW)
8			
9			

APPENDIX B
LABTORATORY DATA PACKAGE

Calscience
Environmental
Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

February 27, 2009

Scott Johnson
Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Subject: **Calscience Work Order No.: 09-02-1819**
Client Reference: Alamitos Bay Marina Basin

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/19/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Robert Stearns
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-7-01	**09-02-1819-1-A**	**02/19/09 09:33**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:28**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.35	0.0327	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-7-02	**09-02-1819-2-A**	**02/19/09 09:33**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:31**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	2.22	0.0309	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-7-03	**09-02-1819-3-A**	**02/19/09 09:33**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:33**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.337	0.0264	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-7-04	**09-02-1819-4-A**	**02/19/09 09:33**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:35**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0258	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-7-05	**09-02-1819-5-A**	**02/19/09 09:33**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:37**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0250	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-7-06	**09-02-1819-6-A**	**02/19/09 09:33**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:40**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0248	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-3-01	**09-02-1819-7-A**	**02/19/09 10:20**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:48**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.42	0.0355	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-3-02	**09-02-1819-8-A**	**02/19/09 10:20**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:50**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.131	0.0287	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-3-03	**09-02-1819-9-A**	**02/19/09 10:20**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:52**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.0363	0.0270	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-3-04	**09-02-1819-10-A**	**02/19/09 10:20**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:54**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0278	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-3-05	**09-02-1819-11-A**	**02/19/09 10:20**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:56**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0264	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-1-01	**09-02-1819-12-A**	**02/19/09 11:36**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:59**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0288	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-1-01 DUP	**09-02-1819-13-A**	**02/19/09 11:36**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:01**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.0487	0.0316	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-1-02	**09-02-1819-14-A**	**02/19/09 11:36**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:03**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0281	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-1-02 DUP	**09-02-1819-15-A**	**02/19/09 11:36**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:05**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.242	0.0284	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-1-03	**09-02-1819-16-A**	**02/19/09 11:36**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:20**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0261	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-1-03 DUP	**09-02-1819-17-A**	**02/19/09 11:36**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:07**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0253	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-2-01	**09-02-1819-18-A**	**02/19/09 12:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:24**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.277	0.0347	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-2-02	**09-02-1819-19-A**	**02/19/09 12:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:27**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.324	0.0299	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-2-03	**09-02-1819-20-A**	**02/19/09 12:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:29**	**090220L01**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0300	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-2-04	**09-02-1819-21-A**	**02/19/09 12:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 15:22**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0266	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-4-01	**09-02-1819-22-A**	**02/19/09 14:00**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:31**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.172	0.0360	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-4-02	**09-02-1819-23-A**	**02/19/09 14:00**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:33**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.44	0.0335	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-4-03	**09-02-1819-24-A**	**02/19/09 14:00**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:36**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.79	0.0347	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-4-04	**09-02-1819-25-A**	**02/19/09 14:00**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:38**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.03	0.0313	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-4-05	**09-02-1819-26-A**	**02/19/09 14:00**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:40**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0270	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-5-01	**09-02-1819-27-A**	**02/19/09 14:50**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:42**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.261	0.0349	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-5-02	**09-02-1819-28-A**	**02/19/09 14:50**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:45**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.658	0.0332	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-5-03	**09-02-1819-29-A**	**02/19/09 14:50**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 16:58**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	2.74	0.0302	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-5-04	**09-02-1819-30-A**	**02/19/09 14:50**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 17:00**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.0433	0.0292	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-5-05	**09-02-1819-31-A**	**02/19/09 14:50**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 17:03**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.0575	0.0285	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-6-01	**09-02-1819-32-A**	**02/19/09 16:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 17:05**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.387	0.0363	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-6-02	**09-02-1819-33-A**	**02/19/09 16:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 17:07**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	2.03	0.0337	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-6-03	**09-02-1819-34-A**	**02/19/09 16:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 17:09**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	2.38	0.0315	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-6-04	**09-02-1819-35-A**	**02/19/09 16:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 17:11**	**090220L02**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0266	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-452-94**	**N/A**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 14:53**	**090220L01**

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0200	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories	Date Received: 02/19/09
29 North Olive Street	Work Order No: 09-02-1819
Ventura, CA 93001-2552	Preparation: EPA 7471A Total
	Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-452-95**	**N/A**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 14:55**	**090220L02**

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0200	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-7-01	**09-02-1819-1**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	61.3	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-7-02	**09-02-1819-2**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	64.8	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-7-03	**09-02-1819-3**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	75.8	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-7-04	**09-02-1819-4**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	77.8	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-7-05	**09-02-1819-5**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	80.3	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-7-06	**09-02-1819-6**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	80.9	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-3-01	**09-02-1819-7**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	56.5	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-3-02	**09-02-1819-8**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	69.8	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-3-03	**09-02-1819-9**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	74.1	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-3-04	**09-02-1819-10**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	72.0	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-3-05	**09-02-1819-11**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	75.9	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-1-01	**09-02-1819-12**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	69.7	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-1-01 DUP	**09-02-1819-13**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	63.4	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-1-02	**09-02-1819-14**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	71.3	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-1-02 DUP	**09-02-1819-15**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	70.5	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-1-03	**09-02-1819-16**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	76.7	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-1-03 DUP	**09-02-1819-17**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	79.2	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-2-01	**09-02-1819-18**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	57.7	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-2-02	**09-02-1819-19**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	67.1	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-2-03	**09-02-1819-20**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	66.8	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-2-04	**09-02-1819-21**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	75.3	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-4-01	**09-02-1819-22**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	55.7	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-4-02	**09-02-1819-23**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	59.9	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-4-03	**09-02-1819-24**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	57.8	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-4-04	**09-02-1819-25**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	64.1	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-4-05	**09-02-1819-26**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	74.2	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-5-01	**09-02-1819-27**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	57.4	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-5-02	**09-02-1819-28**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	60.4	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-5-03	**09-02-1819-29**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	66.4	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-5-04	**09-02-1819-30**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	68.6	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-5-05	**09-02-1819-31**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	70.3	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-6-01	**09-02-1819-32**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	55.2	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-6-02	**09-02-1819-33**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	59.4	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-6-03	**09-02-1819-34**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	63.7	0.100	1		%	02/25/09	02/25/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-6-04	**09-02-1819-35**	**02/19/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	75.4	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	ND	0.100	1		%	02/25/09	02/25/09	SM 2540 B
Solids, Total	ND	0.100	1		%	02/25/09	02/25/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
ABM-CS-1-03	**Solid**	**Mercury**	**02/20/09**	**02/20/09**	**090220S01**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	96	104	76-136	8	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/19/09
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
ABM-CS-2-04	**Solid**	**Mercury**	**02/20/09**	**02/20/09**	**090220S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	101	112	76-136	11	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: N/A
Work Order No: 09-02-1819

Project: Alamitos Bay Marina Basin

Matrix: Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Solids, Total	SM 2540 B	ABM-CS-7-01	02/25/09	61.3	60.0	2	0-25	
Solids, Total	SM 2540 B	ABM-CS-2-04	02/25/09	75.3	74.5	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: N/A
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-452-94	**Solid**	**Mercury**	**02/20/09**	**02/20/09**	**090220L01**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	102	103	82-124	1	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: N/A
Work Order No: 09-02-1819
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-452-95	**Solid**	**Mercury**	**02/20/09**	**02/20/09**	**090220L02**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	102	104	82-124	1	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-02-1819

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Calscience Environmental Laboratories, Inc.

☒ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 2.19.09

Page 1 of 4

LABORATORY CLIENT: ABC Laboratories

ADDRESS: 29 N. Olive St

CITY: Ventura STATE: CA ZIP: 93003

TEL: 805-643-5621 x11 E-MAIL: scott@aquabio.org

CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1

P.O. NO.:

PROJECT CONTACT: Scott Johnson

LAB USE ONLY: 02-1819

SAMPLER(S): (PRINT) Jim Mann

COELT LOG CODE:

COOLER RECEIPT TEMP= °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ Equis & edd

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g) Method 8015 Modified for silica gel cleanup	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+	Mercury - 7471A		
1	ABM-CS-7-01		2.19.09	0933	Sed													X				X		
2	ABM-CS-7-02		2.19.09	0933	Sed													X				X		
3	ABM-CS-7-03		2.19.09	0933	Sed													X				X		
4	ABM-CS-7-04		2.19.09	0933	Sed													X				X		
5	ABM-CS-7-05		2.19.09	0933	Sed													X				X		
6	ABM-CS-7-06		2.19.09	0933	Sed													X				X		
7	ABM-CS-3-01		2.19.09	1020	Sed													X				X		
8	ABM-CS-3-02		2.19.09	1020	Sed													X				X		
9	ABM-CS-3-03		2.19.09	1020	Sed													X				X		
~~10~~			2.19.09	1020	Sed													X				X		

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
		02/19/09	17:00
Relinquished by: (Signature)	Received by: (Signature/Affiliation) Danny G CEL	Date: 2/19/09	Time: 17:40
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

Date 2.19.09

Page 2 of 4

LABORATORY CLIENT: ABC Laboratories

ADDRESS: 29 N. Olive St

CITY: Ventura STATE: CA ZIP: 93001

TEL: 805-643-5621 x 11 E-MAIL: Scott@aquabio.org

CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1

P.O. NO.:

PROJECT CONTACT: Scott Johnson

LAB USE ONLY: 02-1819

SAMPLER(S): (PRINT) Jim Mann

COELT LOG CODE

COOLER RECEIPT TEMP= °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ Equis & edd

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+	Mercury-7471A
10	ABM-CS-3-04		2.19.09	1020	Sed																	X
11	ABM-CS-3-05		2.19.09	1020	Sed																	X
12	ABM-CS-1-01		2.19.09	1136	Sed																	X
13	ABM-CS-1-01(Dup)		2.19.09	1136	Sed																	X
14	ABM-CS-1-02		2.19.09	1136	Sed																	X
15	ABM-CS-1-02(Dup)		2.19.09	1136	Sed																	X
16	ABM-CS-1-03		2.19.09	1136	Sed																	X
17	ABM-CS-1-03(Dup)		2.19.09	1136	Sed																	X
18	ABM-CS-2-01		2.19.09	1245	Sed																	X
19	ABM-CS-2-02		2.19.09	1245	Sed																	X

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 02/19/09	Time: 1700
Relinquished by: (Signature)	Received by: (Signature/Affiliation) Dannyle CEL	Date: 2/19/09	Time: 17:40
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

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Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 2-19-09

Page 3 of 4

LABORATORY CLIENT: ABC Laboratories

ADDRESS: 29 N. Olive St

CITY: Ventura STATE: CA ZIP: 93001

TEL: 805-643-5621 x11 E-MAIL: Scott@aquabio.org

CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1

P.O. NO.:

PROJECT CONTACT: Scott Johnson

LAB USE ONLY: 02-1819

SAMPLER(S): (PRINT) Jim Mann

COELT LOG CODE:

COOLER RECEIPT TEMP= °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ Equis # edd

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+	Mercury-7471A		
20	ABM-CS-2-03		2-19-09	1245	Sed																	X		
21	ABM-CS-2-04		2-19-09	1245	Sed																	X		
22	ABM-CS-4-01		2-19-09	1400	Sed																	X		
23	ABM-CS-4-02		2-19-09	1400	Sed																	X		
24	ABM-CS-4-03		2-19-09	1400	Sed																	X		
25	ABM-CS-4-04		2-19-09	1400	Sed																	X		
26	ABM-CS-4-05		2-19-09	1400	Sed																	X		
27	ABM-CS-5-01		2-19-09	1450	Sed																	X		
28	ABM-CS-5-02		2-19-09	1450	Sed																	X		
29	ABM-CS-5-03		2-19-09	1450	Sed																	X		

Relinquished by: (Signature) BJohn	Received by: (Signature/Affiliation) CEL	Date: 02/19/09	Time: 17:00
Relinquished by: (Signature)	Received by: (Signature/Affiliation) Danny Le CEL	Date: 2/19/09	Time: 17:40
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

Date 2·19·09

Page 4 of 4

LABORATORY CLIENT: ABC Laboratories

ADDRESS: 29 N. Olive Street

CITY: Ventura STATE: CA ZIP: 93001

TEL: 805-643-5621 x11 E-MAIL: ScottC@aquabio.org

CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1

P.O. NO.:

PROJECT CONTACT: Scott Johnson

LAB USE ONLY: 02-1819

SAMPLER(S): (PRINT) Jim Mann

COELT LOG CODE

COOLER RECEIPT TEMP= °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ Equis & edd

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+	Mercury - 7471A		
30	ABM-CS-5-04		2·19·09	1450	Sed																	X		
31	ABM-CS-5-05		2·19·09	1450	Sed																	X		
32	ABM-CS-6-01		2·19·09	1645	Sed																	X		
33	ABM-CS-6-02		2·19·09	1645	Sed																	X		
34	ABM-CS-6-03		2·19·09	1645	Sed																	X		
35	ABM-CS-6-04		2·19·09	1645	Sed																	X		

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date: 02/19/09	Time: 17:00
Relinquished by: (Signature)	Received by: (Signature/Affiliation) Danny le CEL	Date: 2/19/09	Time: 17:40
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

05/01/07 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-02-1819

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ABC. DATE: 02/19/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.4 °C - 0.2 °C (CF) = 1.2 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by:_____).

☑ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** VG

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** VG

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:**

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☐	☑	☐
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Correct containers and volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☑
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☑4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBpo_4 ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGBs ☐250CGB ☐250CGBs ☐1PB ☐500PB ☐500PBna ☐250PB ☐250PBn ☐125PB ☐125PBznna ☐100PBsterile ☐100PBna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® ☐_____

Checked/Labeled by:

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Reviewed by: YL

Preservative: h:HCL n:HNO_3 na_2:$Na_2S_2O_3$ na:NaOH po_4:H_3PO_4 s:H_2SO_4 znna:$ZnAc_2$+NaOH

Scanned by:

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-02-1819

SAMPLE ANOMALY FORM

CHAIN OF CUSTODY (COC):

- ☐ **Not relinquished by client** – no signature
- ☐ **No date/time relinquished**
- ☐ **COC not received with samples** – notify PM
- ☑ **Incomplete information regarding samples, tests, etc.**

Comments:

Received 1 4oz. Jar for each sample.

SAMPLES - CONTAINERS & LABELS:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **No preservative noted on label** – list test and notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and Time Collected**
  - ☐ **Project Information**
  - ☐ **# of containers**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Other:** _____

Comments:

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO_2 or DO or Organic Lead Received

Comments: _____

Initial / Date 2/19/09

Calscience
Environmental
Laboratories, Inc.

ACCREDITED IN ACCORDANCE WITH nelac

February 27, 2009

Scott Johnson
Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Subject: **Calscience Work Order No.: 09-02-1922**
Client Reference: Alamitos Bay Marina Basin

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 2/20/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Robert Stearns
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-8-01	**09-02-1922-1-A**	**02/20/09 08:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:23**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.66	0.0348	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-8-02	**09-02-1922-2-A**	**02/20/09 08:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:26**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	2.19	0.0333	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-8-03	**09-02-1922-3-A**	**02/20/09 08:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:28**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.0407	0.0283	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-8-04	**09-02-1922-4-A**	**02/20/09 08:45**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:30**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0266	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-9-01	**09-02-1922-5-A**	**02/20/09 10:02**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:37**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.692	0.0428	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-9-02	**09-02-1922-6-A**	**02/20/09 10:02**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:39**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.985	0.0359	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-9-03	**09-02-1922-7-A**	**02/20/09 10:02**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:41**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	1.83	0.0389	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-10-01	**09-02-1922-8-A**	**02/20/09 11:15**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:43**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.205	0.0336	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-10-02	**09-02-1922-9-A**	**02/20/09 11:15**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:46**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0316	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-11-01	**09-02-1922-10-A**	**02/20/09 11:58**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:48**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.183	0.0349	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-11-02	**09-02-1922-11-A**	**02/20/09 11:58**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:50**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.299	0.0330	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-12-01	**09-02-1922-12-A**	**02/20/09 12:40**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:52**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.199	0.0340	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-12-02	**09-02-1922-13-A**	**02/20/09 12:40**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:54**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.288	0.0335	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-12-03	**09-02-1922-14-A**	**02/20/09 12:40**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:57**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	0.458	0.0321	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-12-04	**09-02-1922-15-A**	**02/20/09 12:40**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 21:03**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0344	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-12-05	**09-02-1922-16-A**	**02/20/09 12:40**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 21:05**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0333	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
ABM-CS-12-06	**09-02-1922-17-A**	**02/20/09 12:40**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 21:08**	**090220L06**

-Results are reported on a dry weight basis.

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0307	1		mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-452-96**	**N/A**	**Solid**	**Mercury**	**02/20/09**	**02/20/09 20:12**	**090220L06**

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.0200	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922
Preparation: EPA 7470A Total
Method: EPA 7470A

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Rinsate ABM-CS-9	**09-02-1922-18-A**	**02/20/09 10:20**	**Aqueous**	**Mercury**	**02/24/09**	**02/24/09 17:02**	**090224L02B**

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.000200	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Field blank ABM-CS-9	**09-02-1922-19-A**	**02/20/09 10:20**	**Aqueous**	**Mercury**	**02/24/09**	**02/24/09 17:04**	**090224L02B**

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.000200	1		mg/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-457-128**	**N/A**	**Aqueous**	**Mercury**	**02/24/09**	**02/24/09 16:44**	**090224L02B**

Parameter	Result	RL	DF	Qual	Units
Mercury	ND	0.000200	1		mg/L

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-8-01	**09-02-1922-1**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	57.6	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-8-02	**09-02-1922-2**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	60.2	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-8-03	**09-02-1922-3**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	70.9	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-8-04	**09-02-1922-4**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	75.4	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-9-01	**09-02-1922-5**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	46.8	0.100	1		%	02/26/09	02/26/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-9-02	**09-02-1922-6**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	55.8	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-9-03	**09-02-1922-7**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	51.5	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-10-01	**09-02-1922-8**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	59.7	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-10-02	**09-02-1922-9**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	63.4	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-11-01	**09-02-1922-10**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	57.5	0.100	1		%	02/26/09	02/26/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-11-02	**09-02-1922-11**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	60.8	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-12-01	**09-02-1922-12**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	58.9	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-12-02	**09-02-1922-13**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	59.8	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-12-03	**09-02-1922-14**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	62.4	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-12-04	**09-02-1922-15**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	58.2	0.100	1		%	02/26/09	02/26/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922

Project: Alamitos Bay Marina Basin

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-12-05	**09-02-1922-16**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	60.2	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
ABM-CS-12-06	**09-02-1922-17**	**02/20/09**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	65.3	0.100	1		%	02/26/09	02/26/09	SM 2540 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Solid**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Solids, Total	ND	0.100	1		%	02/26/09	02/26/09	SM 2540 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922
Preparation: EPA 7471A Total
Method: EPA 7471A

Project Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
ABM-CS-8-01	**Solid**	**Mercury**	**02/20/09**	**02/20/09**	**090220S06**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	114	100	76-136	6	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: 02/20/09
Work Order No: 09-02-1922
Preparation: EPA 7470A Total
Method: EPA 7470A

Project Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-02-2053-1	**Aqueous**	**Mercury**	**02/24/09**	**02/24/09**	**090224S02**

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	91	91	66-126	1	0-7	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: N/A
Work Order No: 09-02-1922

Project: Alamitos Bay Marina Basin

Matrix: Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Solids, Total	SM 2540 B	ABM-CS-8-01	02/26/09	57.6	58.7	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: N/A
Work Order No: 09-02-1922
Preparation: EPA 7471A Total
Method: EPA 7471A

Project: Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-452-96	**Solid**	**Mercury**	**02/20/09**	**02/20/09**	**090220L06**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	97	97	82-124	0	0-16	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

Aquatic Bioassay & Consulting Laboratories
29 North Olive Street
Ventura, CA 93001-2552

Date Received: N/A
Work Order No: 09-02-1922
Preparation: EPA 7470A Total
Method: EPA 7470A

Project: Alamitos Bay Marina Basin

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-457-128	**Aqueous**	**Mercury**	**02/24/09**	**02/24/09**	**090224L02B**

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	93	94	90-122	1	0-14	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 09-02-1922

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS Recovery Percentage is within LCS ME Control Limit range.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Calscience Environmental Laboratories, Inc.

☐ SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 2.20.09

LABORATORY CLIENT: ABC Laboratories		CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1	P.O. NO.:
ADDRESS: 29 N. Olive Street		PROJECT CONTACT: Scott Johnson	LAB USE ONLY 0 2 - 1 9 2 2
CITY: Ventura	STATE: CA ZIP: 93001	SAMPLER(S): (PRINT) Jim Mann	COELT LOG CODE ☐☐☐☐
TEL: 805-643-5621 x11	E-MAIL: Scott@aquabio.org		COOLER RECEIPT TEMP= °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) ☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ Equis & edd

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH (___)	BTEX / MTBE (8260B) or (___)	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+ ___	Mercury 7471A		
1	ABM-CS-8-01		2.20.09	0845	Sed	1																X		
2	ABM-CS-8-02		2.20.09	0845																		X		
3	ABM-CS-8-03		2.20.09	0845																		X		
4	ABM-CS-8-04		2.20.09	0845																		X		
5	ABM-CS-9-01		2.20.09	1002																		X		
6	ABM-CS-9-02		2.20.09	1002																		X		
7	ABM-CS-9-03		2.20.09	1002																		X		
8	ABM-CS-10-01		2.20.09	1115																		X		
9	ABM-CS-10-02		2.20.09	1115																		X		
10	ABM-CS-11-01		2.20.09	11:58	↓	↓																X		

Relinquished by: (Signature)	Received by: (Signature/Affiliation) bannyle CEL	Date: 2.20.09	Time: 13:43 (DLC)
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time: 13:43
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
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05/01/07 Revision

Calscience Environmental Laboratories, Inc.

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7440 Lincoln Way
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(714) 895-5494

☐ NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 2-20-09

LABORATORY CLIENT: ABC Laboratories		CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1	P.O. NO.:
ADDRESS: 29 N. Olive Street		PROJECT CONTACT: Scott Johnson	LAB USE ONLY 02-1922
CITY: Ventura	STATE: CA ZIP: 93001	SAMPLER(S): (PRINT) Jim Mann	COELT LOG CODE ☐☐☐☐
TEL: 805-643-5621 x11	E-MAIL: Scott@aquabio.org		COOLER RECEIPT TEMP= °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ Equis edd

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+	Mercury 7471A		
11	ABM-CS-11-02		2-20-09	1158	Sed	1																X		
12	ABM-CS-12-01		2-20-09	1240	Sed																	X		
13	ABM-CS-12-02		2-20-09	1240	Sed																	X		
14	ABM-CS-12-03		2-20-09	1240	Sed																	X		
15	ABM-CS-12-04		2-20-09	1240	Sed																	X		
16	ABM-CS-12-05		2-20-09	1240	Sed																	X		
17	ABM-CS-12-06		2-20-09	1240	Sed	↓																X		

Relinquished by: (Signature)	Received by: (Signature/Affiliation) Danny Le CEL	Date: 2-20-09	Time: 13:43
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

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(925) 689-9022

CHAIN OF CUSTODY RECORD

Date 2·20·09

Page 3 of 3

LABORATORY CLIENT: ABC Laboratories

ADDRESS: 29 N. Olive Street

CITY: Ventura STATE: CA ZIP: 93001

TEL: 805-643-5621 x11 E-MAIL:

CLIENT PROJECT NAME / NUMBER: Alamitos Bay Marina Basin 1

PROJECT CONTACT: Scott Johnson

SAMPLER(S): (PRINT) Jim Mann

P.O. NO.:

LAB USE ONLY: 02-1922

COELT LOG CODE: ☐☐☐☐

COOLER RECEIPT TEMP= °C

TURNAROUND TIME:
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING FORMS ☐ COELT EDF ☒ E

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (g)	TPH (d) or (C6-C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260B) or ( )	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) [7196A or 7199 or 218.6]	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]+			
18	Rinsate ABM-CS-9		9·20·09	1020	Water	1																		
19	Fuld blank ABM-CS-9		9·20·09	1020	Water	"																		

Relinquished by: (Signature)	Received by: (Signature/Affiliation) Danny Le CEL	Date: 2·20·09	Time: 13:43
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

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05/01/07 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-02-1922

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: ABC Labs.

DATE: 02/20/09

TEMPERATURE: (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.5 °C - 0.2 °C (CF) = 2.3 °C ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by:_____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter ☐ Metals Only ☐ PCBs Only **Initial:** DL

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** DL

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** WSC

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☑	☐	☐
COC document(s) received complete.....	☐	☑	☐
Sampler's name indicated on COC.....	☑	☐	☐
Sample container label(s) consistent with COC.....	☑	☐	☐
Sample container(s) intact and good condition.....	☑	☐	☐
Correct containers and volume for analyses requested.....	☑	☐	☐
Analyses received within holding time.....	☑	☐	☐
Proper preservation noted on COC or sample container.....	☑	☐	☐
Volatile analysis container(s) free of headspace.....	☐	☐	☑
Tedlar bag(s) free of condensation.....	☐	☐	☑

CONTAINER TYPE:

Solid: ☑4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve ☐EnCores® ☐TerraCores® ☐_____

Water: ☐VOA ☐VOAh ☐VOAna_2 ☐125AGB ☐125AGBh ☐125AGBpo_4 ☐1AGB ☐1AGBna_2 ☐1AGBs ☐500AGB ☐500AGBs ☐250CGB ☐250CGBs ☐1PB ☐500PB ☐500PBna ☐250PB ☑250PBn ☐125PB ☐125PBznna ☐100PBsterile ☐100PBna_2 ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Summa® ☐_____

Checked/Labeled by: WSC

Reviewed by: NL

Scanned by: WSC

Container: C:Clear A:Amber P:Poly/Plastic G:Glass J:Jar B:Bottle

Preservative: h:HCL n:HNO_3 na_2:$Na_2S_2O_3$ na:NaOH po_4:H_3PO_4 s:H_2SO_4 znna:$ZnAc_2$+NaOH

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 09-02-1912

SAMPLE ANOMALY FORM

CHAIN OF CUSTODY (COC):

- ☐ **Not relinquished by client – no signature**
- ☐ **No date/time relinquished**
- ☐ **COC not received with samples** – notify PM
- ☑ **Incomplete information regarding samples, tests, etc.**

Comments:

(-18) + (-19) no analyses requested.

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Samples NOT RECEIVED but listed on COC**
- ☐ **Samples received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample labels do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of containers**
- ☐ **Sample containers compromised** – Note in comments
  - ☐ **Leaking**
  - ☐ **Broken**
  - ☐ **Without Labels**
- ☐ **Other:** _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of RSK or CO_2 or DO or Organic Lead Received

Comments: _____

Initial / Date LSC. 2-20-09

BEST MANAGEMENT PRACTICES

BEST MANAGEMENT PRACTICES

Best Management Practices (BMP) are the actual practices--including the forms, procedures, charts, software references, etc.--actually used by dredgers to minimize consequences of dredging and disposal on water quality. Common BMPs include Silt Curtains, Gunderbooms, and Operational Controls.

SILT CURTAINS

Silt curtains are intended to allow suspended sediment at a dredging site to settle out of the water column in a controlled area, minimizing the area that is affected by the increased suspended sediment usually present at a dredging site. A silt curtain is an impermeable barrier. They are constructed of a flexible reinforced thermoplastic material. The upper hem has floatation material and the lower hem has ballast material. Silt curtains are most effective when used on a project where they are not opened and closed to allow equipment access to the dredging or disposal area. Silt curtains are also limited to project locations with less than 1-2 knot currents.

GUNDERBOOMS

Gunderbooms are designed to allow water to flow through the curtain while filtering suspended dredged sediment from the flow. Gunderbooms are similar to silt curtains but are constructed of permeable geotextile fabrics. They are also designed to extend from the water surface to the project bottom.

MECHANICAL DREDGE OPERATIONAL CONTROLS

There are three fundamental controls possible with mechanical dredges.

- **Increase cycle time.** Longer cycle time reduces the velocity of the ascending loaded bucketthrough the water column, which reduces potential to wash sediment form the bucket. However, limiting the velocity of the descending bucket reduces the volume of sediment that is picked up and requires more total bites to remove the project material. The majority of the sediment resuspension, for a clamshell dredge, occurs when the bucket hits the bottom.

- **Eliminate multiple bites.** When the clamshell bucket hits the bottom, an impact wave of suspended sediment travels along the bottom away form the dredge bucket. When the clamshell bucket takes multiple bites, the bucket loses sediment as it is reopened for subsequent bites. Sediment is also released higher in the water column, as the bucket is raised, opened, and lowered.

· **Eliminate bottom stockpiling.** Bottom stockpiling of the dredged sediment in silty sediment has a similar effect as multiple bite dredging; an increased volume of sediment is released into the water column from the operation.

HYDRAULIC DREDGE OPERATIONAL CONTROLS

There are three fundamental controls possible with hydraulic dredges.

· **Reduce cutterhead rotation speed.** Reducing cutterhead rotation speed reduces the potential for side casting the excavated sediment away form the suction entrance and resuspending sediment. This measure is typically effective only on maintenance or relatively loose, fine grain sediment.

· **Reduce swing speed.** Reducing the swing speed ensures that the dredge head does not move through the cut faster than it can hydraulically pump the sediment. Reducing swing speed reduces the volume of resuspended sediment. The goal is to swing the dredge head at a speed that allows as much of the disturbed sediment as possible to be removed with the hydraulic flow. Typical swing speeds are 5-30 feet/minute.

· **Eliminate bank undercutting.** Dredgers should remove the sediment in maximum lifts equal to 80% or less of the cutterhead diameter.

HOPPER DREDGES AND BARGES OPERATIONAL CONTROLS

There are three controls possible with dredges and barges.

· **Eliminate or reduce hopper overflow.** Eliminating or reducing hopper overflow reduces the volume of fine material which flows from the hopper in the overflow. One caution is that this control may significantly reduce project production for hopper dredges or when hydraulic dredging into a barge.

· **Lower hopper fill level.** Lowering the hopper fill level in rough sea conditions can prevent material loss during transport.

· **Recirculation system.** Water from the hopper overflow can be recirculated to the draghead and is used to transport more material into the hopper.

SPECIALTY EQUIPMENT

· **Pneuma Pump.** The Pneuma pump is used primarily for removal of fine-grained sediment. The Pneuma pump offers high solids concentration (up to 90%) in the dredge slurry, with minimal turbidity.

APPENDIX G

FIRST SEARCH ENVIRONMENTAL DATABASE REPORT

TRACK INFO SERVICES, LLC

Environmental FirstSearch™ Report

Target Property:

ALAMITOS BAY MARINA REHABILITATION

LONG BEACH CA 90803

Job Number: TSY0701

PREPARED FOR:

LSA Associates, Inc.

20 Executive Park, Suite 200

Irvine, CA 92614

06-27-07

Tel: (866) 664-9981 *Fax: (818) 249-4227*

Environmental FirstSearch
Search Summary Report

Target Site: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	05-08-07	1.00	0	0	0	0	0	0	0
NPL Delisted	Y	03-08-07	0.50	0	0	0	0	-	0	0
CERCLIS	Y	05-08-07	0.50	0	0	0	0	-	0	0
NFRAP	Y	05-08-07	0.50	0	0	0	1	-	1	2
RCRA COR ACT	Y	06-06-06	1.00	0	0	0	0	0	1	1
RCRA TSD	Y	06-06-06	0.50	0	0	0	0	-	0	0
RCRA GEN	Y	06-06-06	0.25	2	2	3	-	-	1	8
RCRA NLR	Y	06-06-06	0.12	1	0	-	-	-	0	1
Federal IC / EC	Y	04-16-07	0.25	0	0	0	-	-	0	0
ERNS	Y	12-31-06	0.12	7	9	-	-	-	12	28
Tribal Lands	Y	12-01-05	1.00	0	0	0	0	0	0	0
State/Tribal Sites	Y	08-15-06	1.00	0	0	0	0	0	0	0
State Spills 90	Y	01-03-07	0.12	5	2	-	-	1	2	10
State/Tribal SWL	Y	06-07-07	0.50	6	0	0	1	-	6	13
State/Tribal LUST	Y	04-24-07	0.50	4	3	0	2	-	4	13
State/Tribal UST/AST	Y	01-03-07	0.25	26	9	1	-	-	1	37
State/Tribal EC	Y	NA	0.25	0	0	0	-	-	0	0
State/Tribal IC	Y	04-27-07	0.25	0	0	0	-	-	0	0
State/Tribal VCP	Y	08-15-06	0.50	0	0	0	0	-	0	0
State/Tribal Brownfields	Y	03-27-06	0.50	0	0	0	0	-	0	0
State Permits	Y	09-26-06	0.25	0	0	0	-	-	0	0
State Other	Y	01-01-07	0.25	0	0	1	-	-	1	2
- TOTALS -				51	25	5	4	1	29	115

Environmental FirstSearch
Site Information Report

Request Date:	06-27-07	**Search Type:**	AREA
Requestor Name:	Laura Rocha		0.62 sq mile(s)
Standard:	ASTM-05	**Job Number:**	TSY0701
		Filtered Report	

Target Site: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

Demographics

Sites:	115	**Non-Geocoded:**	29	**Population:**	NA
Radon:	NA				

Site Location

	Degrees (Decimal)	**Degrees (Min/Sec)**		**UTMs**
Longitude:	-118.118438	-118:7:6	**Easting:**	396412.971
Latitude:	33.753944	33:45:14	**Northing:**	3735242.468
			Zone:	11

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 0.25 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel
90740	SEAL BEACH	CA	0.00 --	Y

Services:

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Historical Topos	No	
City Directories	No	
Title Search/Env Liens	No	
Municipal Reports	No	
Online Topos	Yes	06-27-07

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	UST	MARINA PACIFICA HOMEOWNERS ASS TISID-STATE29227/ACTIVE	6201 2ND LONG BEACH CA 90803	0.00 --	1
2	UST	MARINA PACIFICA HOMEOWNER S ASSOC. LBCITY2660	6201 E 2ND ST LONG BEACH CA 90803	0.00 --	1
3	ERNS	NRC-761949/FIXED	6201 EAST 2ND STREET LONG BEACH CA 90803	0.00 --	1
6	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY818	235 MARINA DR LONG BEACH CA 90803	0.00 --	2
6	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY2497	6460 MARINA DR LONG BEACH CA 90803	0.00 --	3
7	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY813	0207 MARINA DR LONG BEACH CA 90803	0.00 --	4
7	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY2499	6610 MARINA DR LONG BEACH CA 90803	0.00 --	5
8	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY2993	0237 MARINA DR LONG BEACH CA 90803	0.00 --	6
8	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY817	0221 MARINA DR LONG BEACH CA 90803	0.00 --	7
9	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY2498	6530 MARINA DR LONG BEACH CA 90803	0.00 --	8
9	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY814	6101 APPIAN WAY LONG BEACH CA 90803	0.00 --	9
10	UST	ALAMITOS BAY MAINT YD (2 D/W JOOR) LBCITY798	6204 E 2ND ST LONG BEACH CA 90803	0.00 --	10
11	UST	ALAMITOS BAY MARINA TISID-STATE29331/ACTIVE	6204 2ND LONG BEACH CA 90803	0.00 --	10
12	LUST	ALAMITOS BAY MAINTENANCE YARD T0603701726/CASE CLOSED	6204 002ND ST E LONG BEACH CA 90803	0.00 --	10
13	LUST	MARINA SHIPYARD T0603701724/CASE CLOSED	6400 MARINA DR LONG BEACH CA 90803	0.00 --	11
14	RCRAGN	INDEL DBA MARINA SHIPYARD CAD982013187/SGN	6400 MARINA DR LONG BEACH CA 90803	0.00 --	11
15	UST	WEST MARINE PROUDCTS LBCITY1725	6400 MARINA DR LONG BEACH CA 90803	0.00 --	11
15	UST	MARIA SHIPYARD TISID-STATE29155/ACTIVE	6400 MARINA LONG BEACH CA 90803	0.00 --	11
16	ERNS	UNOCAL 166590/FIXED FACILITY	227 MARINE DRIVE (COMPANY M LONG BEACH CA	0.00 --	12
17	ERNS	UNOCAL 449325/FIXED FACILITY	227 MARINE DRIVE LONG BEACH CA 90803	0.00 --	12
18	LUST	UNOCAL 0023 T0603701727/CASE CLOSED	227 MARINA DR N LONG BEACH CA 90803	0.00 --	12

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
19	UST	ALAMITOS BAY MARINA TISID-STATE29330/ACTIVE	227 MARINA LONG BEACH CA 90803	0.00 --	12
20	UST	TAI PAN BISTRO LBCITY1222	6380 E PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	13
21	LUST	TOSCO - 76 STATION 5379 (FORMER) T0603701721/REMEDIAL ACTION	6280 002ND ST E LONG BEACH CA 90803	0.00 --	14
22	UST	VACANT/DEMO (FORMERLY TOSCO 30865 LBCITY2251	6280 E 2ND ST LONG BEACH CA 90803	0.00 --	14
23	UST	LBCITY5839/DEAD FILE BY AGENCY	233 MARINA DR LONG BEACH CA 90803	0.00 --	15
23	UST	LBCITY6367	6262 E PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	16
24	UST	LBCITY4791	6246 E PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	17
24	UST	LBCITY5547/DEAD FILE BY AGENCY	49 62ND PL LONG BEACH CA 90805	0.00 --	18
25	UST	LBCITY6247	6125 E OCEAN BLVD LONG BEACH CA 90803	0.00 --	19
25	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY2500	6264 E PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	20
26	SPILLS	TERMO OIL SITE G_SL184481431	6301 PACIFIC COAST HWY E LONG BEACH CA	0.00 --	21
26	SPILLS	TERMO OIL COMPANY SLC40576	6301 PACIFIC COAST HIGHWAY LONG BEACH CA 90813	0.00 --	21
27	ERNS	UNKNOWN 298052/FIXED FACILITY	ALOMOES BAY MARINA, 200 MAR LONG BEACH CA 90801	0.00 --	22
29	RCRAGN	USCG MOORINGS LONG BEACH CA3690390528/SGN	223 MARINA DRIVE LONG BEACH CA 90803	0.00 --	23
30	ERNS	UNKNOWN 343290/MARINE VESSEL (EPA R	223 MARINA DR LONG BEACH CA 90803	0.00 --	23
31	ERNS	204801/FIXED FACILITY	6378 E. PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	24
33	ERNS	334879/FIXED FACILITY	ACROSS FROM 225 MARINA DRIV LONG BEACH CA	0.00 --	25
34	SPILLS	CHEVRON - ALAMITOS BAY PARTNERSHIP G_SLT4303129	6655 MARINA DR LONG BEACH CA 90813	0.00 --	26
34	SPILLS	MARINA PACIFICA MALL G_SLT43209207	6300 E. PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	27
35	SPILLS	MARINA PACIFICA MALL SLC40314	6300 PACIFIC COAST HIGHWAY LONG BEACH CA 90803	0.00 --	27

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
35	UST	LONG BEACH MARINE BUREAU - 1 D/W J LBCITY2501	6201 MARINA DR LONG BEACH CA 90803	0.00 --	28
36	UST	CITY OF LB-ALAMITOS BAY MARINA-5 S LBCITY632	0227 MARINA DR LONG BEACH CA 90803	0.00 --	29
37	UST	LBCITY5921/DEAD FILE BY AGENCY	6363 E PACIFIC COAST HWY LONG BEACH CA 90803	0.01 NE	30
38	SWL	CITY DUMP and SALVAGE NO. 1 WMUD4 190025NUR	6363 PACIFIC COAST HIGHWAY LONG BEACH CA	0.00 --	30
40	SWL	BELMONT SHORES MOBILE HOME ESTATES SWIS19-AK-5009/CLOSED	6230 E MARINA VIEW DR/6261 LONG BEACH CA	0.00 --	31
41	SWL	CITY DUMP and SALVAGE 2 SWIS19-AK-5017/CLOSED	7001-7199 PCH NORTH OF SAN LONG BEACH CA	0.00 --	32
42	SWL	CITY DUMP and SALVAGE NO. 2 WMUD4 190019NUR	6501 PACIFIC COAST HIGHWAY LONG BEACH CA	0.00 --	33
44	SWL	CITY DUMP SALVAGE 1 DS SWIS19-AK-0006/CLOSED	6363 PACIFIC COAST HWY LO LONG BEACH CA 90740	0.00 --	34
45	SWL	CITY DUMP SALVAGE 3 D.S. SWIS19-AK-0008/CLOSED	6364 PACIFIC COAST HWY LONG BEACH CA 90803	0.00 --	35
46	UST	LBCITY5649/DEAD FILE BY AGENCY	6201 BAY SHORE AVE LONG BEACH CA 90803	0.00 --	36
46	RCRANLR	LONG BEACH MAINT YARD CITY OF CAD982035412/NLR	205 MARINA DR. LONG BEACH CA 90803	0.00 --	37
47	SPILLS	J S CLEANERS and LAUNDRY SLC40841	6481 PACIFIC COAST HIGHWAY LONG BEACH CA 90803	0.01 NE	38
47	SPILLS	J S CLEANERS and LAUNDRY G_SL2044X1602	6481 EAST PACIFIC COAST HWY LONG BEACH CA	0.01 NE	38
48	ERNS	EXXON 188341/FIXED FACILITY	STATION 7-3047 6401 E PACI LONG BEACH CA	0.01 NE	39
49	UST	CHEVRON STATION 202015 TISID-STATE29258/ACTIVE	6401 PACIFIC COAST LONG BEACH CA 90803	0.01 NE	40
50	ERNS	562139/UNKNOWN	6401 EAST PACIFIC COAST HWY LONG BEACH CA	0.01 NE	40
51	ERNS	MOBIL OIL 487121/FIXED FACILITY	6401 EAST PACIFIC COAST HWY LONG BEACH CA 90803	0.01 NE	40
52	UST	MOBIL-BT7-FRAN DLR-CORP.SITE-4 D/W LBCITY2431	6401 E PACIFIC COAST HWY LONG BEACH CA 90803	0.01 NE	40
53	ERNS	EXXON 167621/FIXED FACILITY	6401 E. PACIFIC COAST HWY LONG BEACH CA 90803	0.01 NE	40
54	ERNS	MOBIL ENV HOTLINE 475501/FIXED FACILITY	6401 EAST PACIFIC COAST HWY LONG BEACH CA	0.01 NE	40

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
55	ERNS	EXXON USA 284931/UNKNOWN (EPA REGIONS	6401 EAST PACIFIC COAST HWY LONG BEACH CA 90803	0.01 NE	40
57	ERNS	MOBIL 475510/HIGHWAY RELATED	6401 E. PACIFIC COAST HWY LONG BEACH CA	0.01 NE	40
58	RCRAGN	EXXON STA NO 73047 CAD981381049/SGN	6401 E PACIFIC COAST HWY LONG BEACH CA 90803	0.01 NE	40
59	LUST	EXXON 7-3047 (FORMER) T0603701717/REMEDIAL ACTION	6401 PACIFIC COAST HWY E LONG BEACH CA 90803	0.01 NE	40
60	ERNS	TANK FARM NRC-710444/FIXED	6301 EAST PACIFIC COAST HWY LONG BEACH CA	0.01 NE	41
63	UST	VACANT (DAVE S MARINA CHEVRON) LBCITY3065	6301 WESTMINSTER AVE LONG BEACH CA 90803	0.01 NE	42
64	RCRAGN	DAVES MARINA CHEVRON CAD981657109/SGN	6301 WESTMINSTER AVE LONG BEACH CA 90803	0.01 NE	42
65	LUST	CHEVRON 9-0016 T0603701725/CASE CLOSED	6301 WESTMINSTER AVE LONG BEACH CA 90803	0.01 NE	42
66	UST	CHEVRON STATION 9-0016 TISID-STATE29457/ACTIVE	6301 WESTMINSTER LONG BEACH CA 90803	0.01 NE	42
67	UST	 LBCITY5438/DEAD FILE BY AGENCY	5800 E 2ND ST LONG BEACH CA 90803	0.07 SW	43
67	UST	TEMP CLOSURE-MARINA TEXACO - 6 S/W LBCITY1628	5788 E 2ND ST LONG BEACH CA 90803	0.08 SW	44
68	LUST	G and M OIL 17 T0603701719/REMEDIAL ACTION	5788 002ND ST E LONG BEACH CA 90803	0.08 SW	44
69	UST	GandM OIL CO. 17 TISID-STATE29478/ACTIVE	5788 2ND LONG BEACH CA 90803	0.08 SW	44
70	ERNS	 NRC-790349/MOBILE	5767 E. 2ND ST. LONG BEACH CA	0.09 SW	45
73	UST	 LBCITY5437/DEAD FILE BY AGENCY	5735 E 2ND ST LONG BEACH CA 90803	0.11 SW	46
73	RCRAGN	DOVER SALES CO RandB ENTERPRISES CAD981572357/SGN	333 FIRST STREET SEAL BEACH CA 90740	0.14 SE	47
74	OTHER	FRMR EXXONMOBIL SEAL BCH SEPARATIO CAL30550002/PROPERTY/SITE REFERR	101 MARINA DRIVE SEAL BEACH CA 90740	0.16 SE	48
75	RCRAGN	LONG BEACH USD-NAPLES ELEMENTARY CAD981419864/SGN	5537 THE TOLEDO LONG BEACH CA 90803	0.18 NE	49
76	RCRAGN	MCFARLAND ENERGY CAD981160310/SGN	6433 WESTMINSTER LONG BEACH CA 90803	0.19 NE	50
77	UST	 LBCITY5988/DEAD FILE BY AGENCY	5661 THE TOLEDO LONG BEACH CA 90803	0.19 NE	51

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
78	LUST	TEXACO SERVICE STATION FORMER T0603701718/CASE CLOSED	5470 002ND ST E LONG BEACH CA 90803	0.30 SW	52
79	NFRAP	WHALER S COVE HOMEOWNERS CAD983670589/NFRAP-N	6053 LOYNES DRIVE LONG BEACH CA 90803	0.31 NE	53
80	LUST	ARCO 6066 T0605900372/REMEDIAL ACTION	490 PACIFIC COAST SEAL BEACH CA 90740	0.37 SE	54
81	SWL	HAYNES GENERATING STATION WMUD4B193500002/ACTIVE	6801 WESTMINSTER AVE LONG BEACH CA 90803	0.40 NE	55
82	SPILLS	DEPT OF TRANSPORTATION DISTRICT 7 G_SL2048R1707	2100 PACIFIC COAST HWY LONG BEACH CA	6.64 NW	56

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
83	ERNS	UNKNOWN 179263/HIGHWAY RELATED	NB 710 NORTH OF PACIFIC COA LONG BEACH CA	NON GC	
84	ERNS	UNKNOWN 512946/UNKNOWN (NRC)	CLARK and PACIFIC COAST HWY LONG BEACH CA	NON GC	
85	ERNS	UNKNOWN 205675/UNKNOWN (NRC)	MARINA PACIFICA MALL/6378 E LONG BEACH CA 90803	NON GC	
87	ERNS	YANKOVIC AND SONS 525886/MARINE VESSEL (EPA R	NORTH SEA BERTHED AT BRAVO LONG BEACH CA	NON GC	
88	ERNS	 NRC-762820/FIXED	690 NORTH STUDEBAKER LONG BEACH CA	NON GC	
91	ERNS	UNKNOWN 343375/UNKNOWN (EPA REGIONS	SAN GABRIEL RIVER ABOVE WES SEAL BEACH CA 90740	NON GC	
92	SPILLS	TEXACO USA-BRYANT LEASE SLC40014	7000 PACIFIC COAST HIGHWAY SEAL BEACH CA 90740	NON GC	
93	ERNS	UNKNOWN 486823/UNKNOWN (NRC)	LONG BEACH BLVD AT PACIFIC LONG BEACH CA	NON GC	
94	SWL	STUDEBAKER/LOYNES DISPOSAL SITE SWIS19-AK-0002/CLOSED	LOYNES DR and NORTH STUDEBA LONG BEACH CA	NON GC	
96	SPILLS	TEXACO USA-BRYANT LEASE G_SLT4301311	7000 PACIFIC COAST HWY SEAL BEACH CA 90740	NON GC	
97	SWL	LOYNES/BIXBY DISPOSAL SITE SWIS19-AK-0003/CLOSED	LOYNES DR and BIXBY VILLAGE LONG BEACH CA	NON GC	
98	SWL	WHALERS COVE/CITY SALVAGE 1 and 2 SWIS19-AK-5016/CLOSED	6251 PCH/6001-6083 LOYNES D LONG BEACH CA	NON GC	
99	NFRAP	DOW CHEMICAL CO SEAL BEACH PLT CAD980817589/NFRAP-N	PACIFIC COAST HWY SEAL BEACH CA 90740	NON GC	
100	RCRACOR	NAVAL WEAPONS STATION SEAL BEACH CA0170024491/CA	800 SEAL BEACH BLVD. N45W SEAL BEACH CA 90740	NON GC	
106	RCRAGN	ALAMITOS BAY PARTNERSHIP CAD982053266/SGN	S/PCH N/MARINA DR W/STUDEBA LONG BEACH CA 90803	NON GC	
107	ERNS	C.U. CHEMICAL CORP 289316/MARINE- RELEASED FRO	PACIFIC CONTAINER TERM PIER LONG BEACH CA	NON GC	
109	ERNS	OIL FIELD TRUCKING CO. 465477/HIGHWAY RELATED	PACIFIC COAST HWY AND OBISP LONG BEACH CA	NON GC	
110	ERNS	UNION OIL 170776/UNKNOWN	ALAMEDOS BAY MARINA DRIVE LONG BEACH CA	NON GC	
110	UST	MOBIL OIL CO TISID-STATE28423/ACTIVE	101 PACIFIC COAST LONG BEACH CA	NON GC	
111	SWL	LA COUNTY FLOOD CONTROL DUMP SWIS19-AK-5008/CLOSED	SW WESTMINSTERAVE AND HWY 1 LONG BEACH CA	NON GC	

Environmental FirstSearch
Sites Summary Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

TOTAL: 115 **GEOCODED:** 86 **NON GEOCODED:** 29 **SELECTED:** 0

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
112	ERNS	UNK 75074/UNKNOWN	ARCHIE S MARINA PAC COAST H LONG BEACH CA	NON GC	
113	SWL	SITE 6A - BOAT DISPOSAL SWIS19-AK-5038/CLOSED	NORTH SEASIDE AVE. (621-967 LONG BEACH CA	NON GC	
114	OTHER	KAYO OIL ORCO_GW_86UT1	16305 PACIFIC COAST HWY SEAL BEACH CA 90740	NON GC	
115	LUST	CHEVRON-ALAMITOS BAY PARTNERSH T0603701722/CASE CLOSED	PACIFIC COAST HWY LONG BEACH CA 90803	NON GC	
116	LUST	KAYO OIL T0605900157/CASE CLOSED	16305 PACIFIC COAST SEAL BEACH CA 90740	NON GC	
117	LUST	SEAL BEACH GENERATING STATION T0605900263/CASE CLOSED	1ST ST SEAL BEACH CA 90740	NON GC	
118	LUST	STATE LANDS COMMISSION T0605900594/CASE CLOSED	PACIFIC COAST HWY SEAL BEACH CA 90740	NON GC	
119	ERNS	UNK 109908/UNKNOWN	SHORELINE MARINA LONG BEACH CA	NON GC	
120	SWL	CITY DUMP AND SALAVAGE 1and3 SWIS19-AK-5003/CLOSED	PACIFIC COAST HIGHWAY AT LO LONG BEACH CA	NON GC	

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 60 **DIST/DIR:** 0.00 -- **MAP ID:** 1

NAME:	MARINA PACIFICA HOMEOWNERS ASS	**REV:**	01/01/94
ADDRESS:	6201 2ND	**ID1:**	TISID-STATE29227
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 59 **DIST/DIR:** 0.00 -- **MAP ID:** 1

NAME:	MARINA PACIFICA HOMEOWNER S ASSOC.	**REV:**	04/14/00
ADDRESS:	6201 E 2ND ST	**ID1:**	LBCITY2660
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	
CONTACT:	MARINA PACIFICA HOMEOWNERS ASSOC	**PHONE:**	(310)598-3323

Permit Number (if blank, not reported): 90461
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 4/29/96
Leak Test: 4/29/96
Facility Type: REC. HALL and OFFICE
Square Feet: 0
Class: B2
Inspection Date:
Comments:
08/06/97 SWENSON- HEALTH SAYS CLEAN CONTACT M.YAMADA 570-4136 06/09/97 SWENSON- DEEP INC REMOVED 2 300 GAL DIESEL PROJECT 229721. NOEL PLUTCHAK 5761 SAMPLING TO ABN ENV LAB (818)575-5137 06/06/97 O CONNOR- FINAL OK ON NEW 486 GAL A/G TANK HOOVER LUBE CUBE 09/09/96 PORTER- NO WRMP; OLD A and B FORMS FINANCIAL RESPONSIBILITY OK 04/29/96 PORTER- TANKS and LINES TESTED OK 08/29/86 SWENSON- DIRTY-HEALTH LEAD 11/04/85 SWENSON- HMMP FINAL REPORT OK 04/23/74 SWENSON- TEBBE CO INSTALLED 2 300 GAL DIESEL MARINA PACIFICA

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 24 **DIST/DIR:** 0.00 -- **MAP ID:** 1

NAME:
ADDRESS: 6201 EAST 2ND STREET
LONG BEACH CA 90803
LOS ANGELES
CONTACT: UNKNOWN

REV: 12/31/05
ID1: NRC-761949
ID2:
STATUS: FIXED
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 6/13/2005 3:11:42 PM **DATE COMPLETE:** 6/13/2005 3:20:39 PM
CALL TAKER: KWC2316 **CALL TYPE:** INC

RESPONSIBLE PARTY: UNKNOWN
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY:
ORGANIZATION TYPE: UNKNOWN

ADDRESS:
XX

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: CALLER STATED THAT AN INDIVIDUAL WAS DUMPING OIL IN THE COMPLEX TRASH HOUSE.

INCIDENT TYPE:	FIXED	**INCIDENT CAUSE:**	DUMPING
INCIDENT DATE:	6/13/2005 12:00:00 PM	**INCIDENT DATE DESC:**	DISCOVERED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
AIRCRAFT TYPE:		**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	OTHER	**POWER GEN FACILITY:**	N
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**GRADE CROSSING:**	N
LOCATION SUBDIVISION:		**RAILROAD MILEPOST:**	
TYPE VEHICLE INVOLVED:		**CROSSING DEVICE TYPE:**	
DEVICE OPERATIONAL:	Y		
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 24 **DIST/DIR:** 0.00 -- **MAP ID:** 1

NAME:
ADDRESS: 6201 EAST 2ND STREET
LONG BEACH CA 90803
LOS ANGELES
CONTACT: UNKNOWN

REV: 12/31/05
ID1: NRC-761949
ID2:
STATUS: FIXED
PHONE:

TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	TRASH HOUSE
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:		**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	OVERCAST	**AIR TEMPERATURE:**	75
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: NONE

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 24 **DIST/DIR:** 0.00 -- **MAP ID:** 1

NAME:
ADDRESS: 6201 EAST 2ND STREET
LONG BEACH CA 90803
LOS ANGELES
CONTACT: UNKNOWN

REV: 12/31/05
ID1: NRC-761949
ID2:
STATUS: FIXED
PHONE:

EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: THE CALLER HAD NO ADDITIONAL INFORMATION

MATERIAL INFORMATION

CHRIS CODE:	OTH	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO

NAME OF MATERIAL: OTHER OIL
AMOUNT OF MATERIAL: 1 GALLON(S)
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 49 **DIST/DIR:** 0.00 -- **MAP ID:** 2

NAME:	LONG BEACH MARINE BUREAU - 1 D/W JOOR	**REV:**	04/14/00
ADDRESS:	235 MARINA DR	**ID1:**	LBCITY818
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	DAVID MC CARTY - FLEET SER SUPERVISOR	**PHONE:**	(310)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
09/06/00 PORTER- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-A4-ILS3) 09/01/96 PORTER- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

UST

SEARCH ID: 50 **DIST/DIR:** 0.00 -- **MAP ID:** 3

NAME:	LONG BEACH MARINE BUREAU - 1 D/W JOOR	**REV:**	04/14/00
ADDRESS:	6460 MARINA DR	**ID1:**	LBCITY2497
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	DAVID MC CARTY-FLEET SERVICES SUPERVISOR	**PHONE:**	(562)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 600
Class:
Inspection Date:
Comments:
09/06/00 SWENSON- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-A4-ILS3) 04/14/95 HAYS- A and B FORMS WRMP and FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 51 **DIST/DIR:** 0.00 -- **MAP ID:** 4

NAME:	LONG BEACH MARINE BUREAU - 1 D/W JOOR	**REV:**	04/14/00
ADDRESS:	0207 MARINA DR	**ID1:**	LBCITY813
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	DAVID MC CARTY - FLEET SER SUPERVISOR	**PHONE:**	(310)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
09/06/00 PORTER- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-A4-ILS3) 09/01/96 PORTER- A and B FORMS WRMP and FINANCIAL RESPONSIBILITY OK 11/01/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

UST

SEARCH ID: 52 **DIST/DIR:** 0.00 -- **MAP ID:** 5

NAME:	LONG BEACH MARINE BUREAU - 1 D/W JOOR	**REV:**	04/14/00
ADDRESS:	6610 MARINA DR	**ID1:**	LBCITY2499
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	
CONTACT:	DAVID MC CARTY-FLEET SERVICES SUPERVISOR	**PHONE:**	(562)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
08/27/96 PORTER- ELECTRONIC MONITOR CERTIFIED (RONAN X76S-A4-LS3) 04/14/95 HAYS- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 53 **DIST/DIR:** 0.00 -- **MAP ID:** 6

NAME: LONG BEACH MARINE BUREAU - 1 D/W JOOR
ADDRESS: 0237 MARINA DR
LONG BEACH CA 90803
Los Angeles
CONTACT: DAVID MC CARTY - FLEET SER SUPERVISOR

REV: 04/14/00
ID1: LBCITY2993
ID2:
STATUS:
PHONE: (310)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
10/10/97 PORTER- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-A4-ILS3) 09/01/96 PORTER- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

UST

SEARCH ID: 54 **DIST/DIR:** 0.00 -- **MAP ID:** 7

NAME: LONG BEACH MARINE BUREAU - 1 D/W JOOR
ADDRESS: 0221 MARINA DR
LONG BEACH CA 90803
LOS ANGELES
CONTACT: DAVID MC CARTY - FLEET SER SUPERVISOR

REV: 04/14/00
ID1: LBCITY817
ID2:
STATUS:
PHONE: (310)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
09/06/00 SWENSON- ELECTRONIC MONITORING CERTIFIED)RONAN X76S-A4-ILS3) 09/01/96 PORTER- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 55 **DIST/DIR:** 0.00 -- **MAP ID:** 8

NAME:	LONG BEACH MARINE BUREAU - 1 D/W JOOR	**REV:**	04/14/00
ADDRESS:	6530 MARINA DR	**ID1:**	LBCITY2498
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	DAVID MC CARTY-FLEET SERVICES SUPERVISOR	**PHONE:**	(562)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
09/06/00 SWENSON- ELECTRONIC MONITOR CERTIFIED (RONAN X765S-84-ILS3) 04/17/95 HAYS- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

UST

SEARCH ID: 56 **DIST/DIR:** 0.00 -- **MAP ID:** 9

NAME:	LONG BEACH MARINE BUREAU - 1 D/W JOOR	**REV:**	04/14/00
ADDRESS:	6101 APPIAN WAY	**ID1:**	LBCITY814
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	
CONTACT:	DAVID MC CARTY - FLEET SERV SUPERVISOR	**PHONE:**	(310)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPAL MARINE BUREAU
Square Feet: 600
Class: B-1
Inspection Date: 11/25/97
Comments:
11/25/97 PORTER- ELECTRONIC MONITORING CERTIFIED (RONAN X76S) 07/03/95 HAYS- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/01/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O MARINE BUREAU

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 41 **DIST/DIR:** 0.00 -- **MAP ID:** 10

NAME:	ALAMITOS BAY MAINT YD (2 D/W JOOR)	**REV:**	04/14/00
ADDRESS:	6204 E 2ND ST	**ID1:**	LBCITY798
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	
CONTACT:	L.B.CITY FACILITY 798	**PHONE:**	(562)570-5410

Permit Number (if blank, not reported): NONE
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MAINTENANCE YARD
Square Feet: 400
Class: B-1, H-4
Inspection Date: 9/1/96
Comments:
09/13/99 SWENSON- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-A4-5SL3) 07/09/99 SWENSON- ISSUED 1998 COMPLIANCE STICKER 05837 TO D.MCCARTY 03/05/98 SWENSON- MANESS REPORT ON ABANDONMENT OF 3 GROUNDWATER WELLS (WELL ABANDONMENT PERMIT 0372) COPY TO D.MCCARTY 11/25/97 SWENSON- RWQCB SAYS NO FURTHER ACTION REQUIRED 07/29/97 SWENSON- RWQCB MONITORING WELL INSTALL WORKPLAN APPROVAL 12/11/96 SWENSON- GROUNDWATER INVESTIGATION WORKPLAN REVIEW 10/17/96 SWENSON- DIRTY-RWQCB ID 908030116 CONTACT D.KOO (213)266-7540 08/06/96 PORTER- ELECTRONIC MONITORING CERTIFIED (RONAN X76S) 09/21/95 SWENSON- REFERRED AGAIN TO RWQCB PER LETTER FROM D.SMITH TO D.MCCARTY SITE NOT YET ASSIGNED TO ANYONE AT BOARD. CONSULTANT (PIC) SAYS MINOR SOIL CONTAMINATION AT 15 AND KNOWN GROUNDWATER CONTAMINATION 08/16/95 PORTER- A and B FORMS WRMP and FINANCIAL RESPONSIBILITY OK 09/01/88 SWENSON- PSDI INSTALLED 2 6M JOOR 06/22/88 SWENSON- PSDI (MOINE SUB) REMOVED 3 2M GAS ALAMITOS BAY MAINT YD. GEO.T.HERSCH PIC.(P.W.INSP PAT CASTRO CONST.ENG.) DIRTY-RWQCB LEAD 00/00/63 SWENSON- 2M INSTALLED (2 2M EXISTING)

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 42 **DIST/DIR:** 0.00 -- **MAP ID:** 10

NAME:	ALAMITOS BAY MARINA	**REV:**	01/01/94
ADDRESS:	6204 2ND	**ID1:**	TISID-STATE29331
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

LUST

SEARCH ID: 77 **DIST/DIR:** 0.00 -- **MAP ID:** 10

NAME: ALAMITOS BAY MAINTENANCE YARD
ADDRESS: 6204 002ND ST E
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701726
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *CITY OF LB FLEET SERVICES BURE*
ADDRESS OF RESPONSIBLE PARTY: *2801 E. WILLOW ST., LONG BEACH, CA 90806*
SITE OPERATOR: *CHUCK RAMSEY*
WATER SYSTEM:

CASE NUMBER: *908030116*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *SUBSURFACE MONITORING*
DATE DISCOVERED (blank if not reported): *1987-08-31 00:00:00*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1987-10-14 00:00:00*
REVIEW DATE (blank if not reported): *1998-03-05 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1996-11-04 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1997-07-29 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1997-11-25 00:00:00*
REPORT DATE (blank if not reported): *1987-09-04 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *1965-01-01 00:00:00*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *75*
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *1*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

LUST

SEARCH ID: 82 **DIST/DIR:** 0.00 -- **MAP ID:** 11

NAME: MARINA SHIPYARD
ADDRESS: 6400 MARINA DR
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701724
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

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LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *MARINA SHIPYARD*
ADDRESS OF RESPONSIBLE PARTY: *6400 MARINA DR., LONG BEACH, CA 90803*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030089*
CASE TYPE: *SOIL ONLY*
SUBSTANCE LEAKED: *HYDROCARBONS*
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1988-06-17 00:00:00*
REVIEW DATE (blank if not reported): *1988-06-17 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported): *1985-04-11 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1985-04-11 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1985-04-11 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1997-09-22 00:00:00*
REPORT DATE (blank if not reported): *1985-05-29 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 5 **DIST/DIR:** 0.00 -- **MAP ID:** 11

NAME:	INDEL DBA MARINA SHIPYARD	**REV:**	6/6/06
ADDRESS:	6400 MARINA DR	**ID1:**	CAD982013187
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	SGN
CONTACT:	ENVIRONMENTAL MANAGER	**PHONE:**	2135940995

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
6400 MARINA DR
LONG BEACH CA 90803

PHONE: 2135940995

UNIVERSE INFORMATION:

NAIC INFORMATION

336612 - BOAT BUILDING
336612 - BOAT BUILDING

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 66 **DIST/DIR:** 0.00 -- **MAP ID:** 11

NAME:	WEST MARINE PROUDCTS	**REV:**	04/14/00
ADDRESS:	6400 MARINA DR	**ID1:**	LBCITY1725
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	
CONTACT:	MARINA SHIPYARD	**PHONE:**	(310)594-0995

Permit Number (if blank, not reported):	10048
Tank In Compliance with UST Regulations:	T (TRUE)
Tank Test:	7/7/1907
Leak Test:	
Facility Type:	MARINE RETAIL
Square Feet:	7000
Class:	B2
Inspection Date:	12/8/93

Comments:
07/16/96 SWENSON- DIRTY-HEALTH LEAD CONTACT M.YAMADA 570-4136 05/10/95 SWENSON- VECTOR 3 ENV REMOVED 1M GAS PROJECT 191895 SAMPLES TO CandE LABS 921-8123 10/18/94 HAYS- EXTENSION TO REMOVE APPROVED UNTIL 1/1/95 05/00/85 SWENSON- MARINA SHIPYARD FINAL REPORT OK SANTINA-THOMPSON

UST

SEARCH ID: 58 **DIST/DIR:** 0.00 -- **MAP ID:** 11

NAME:	MARIA SHIPYARD	**REV:**	01/01/94
ADDRESS:	6400 MARINA	**ID1:**	TISID-STATE29155
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

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Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 19 **DIST/DIR:** 0.00 -- **MAP ID:** 12

NAME: UNOCAL
ADDRESS: 227 MARINE DRIVE (COMPANY MARINA)
LONG BEACH CA
Los Angeles
CONTACT:

REV: 5/29/90 0:
ID1: 166590
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/29/1990 **TIME OF SPILL:** 1400

PRODUCT RELEASED (1): GASOLINE: AUTOMOTIVE (4.23G PB/G
QUANTITY (1): 6
UNITS (1): GAL

PRODUCT RELEASED (2): OIL: DIESEL
QUANTITY (2): 2
UNITS (2): GAL

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: TOP SOIL AND GRAVEL

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: REMOVED THE CONTAMINATED SOIL AND DRUMMED IT FOR DISPOSAL. REPAIRED THE EQUIPMENT.
RELEASE DETECTION: 3 STORAGE TANKS (2 10,000 GAL TANKS AND 1 6,000 GAL TANK) / DURING ROUTINE TESTING, DISCOVERED CORROSION IN SOME VENT LINES AND IN A BUN
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 166590
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: UNOCAL
ADDRESS: 17700 CASTLETON ST. SUITE 500
CITY OF INDUSTRY CA 91748

DUN and BRADSTREET :

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 20 **DIST/DIR:** 0.00 -- **MAP ID:** 12

NAME: UNOCAL
ADDRESS: 227 MARINE DRIVE
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 8/11/95
ID1: 449325
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/11/1995 **TIME OF SPILL:** 1550

PRODUCT RELEASED (1): OIL: DIESEL
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: ASPHAULT ADJACENT TO ALAMEDA BAY MARINA

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: LEAK IS ONGOING/INVESTIGATION UNDERWAY
RELEASE DETECTION: 4000 GAL TANK/WATERLINE BREAK
MISC. NOTES: DIESEL IS BEING FORCED UP THROUGH THE ASPHAULT BEC

DISCHARGER INFORMATION
DISCHARGER ID: 449325 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: UNOCAL
ADDRESS: 2929 IMPERIAL HWY
BREA CA 92621

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

LUST

SEARCH ID: 85 **DIST/DIR:** 0.00 -- **MAP ID:** 12

NAME: UNOCAL 0023
ADDRESS: 227 MARINA DR N
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701727
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *UNOCAL CORPORATION*
ADDRESS OF RESPONSIBLE PARTY: *376 S. VALENCIA AVENUE BREA CA 92621*
SITE OPERATOR: *FORMER ALAMITOS BAY MARINA*
WATER SYSTEM:

CASE NUMBER: *908030125*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *HYDROCARBONS*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *NO DESCRIPTION*
DATE DISCOVERED (blank if not reported): *1996-03-12 00:00:00*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported): *1996-03-12 00:00:00*
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1986-12-31 00:00:00*
REVIEW DATE (blank if not reported): *1996-12-18 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1991-11-27 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1996-09-09 00:00:00*
REPORT DATE (blank if not reported): *1996-03-22 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 43 **DIST/DIR:** 0.00 -- **MAP ID:** 12

NAME:	ALAMITOS BAY MARINA	**REV:**	01/01/94
ADDRESS:	227 MARINA	**ID1:**	TISID-STATE29330
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 62 **DIST/DIR:** 0.00 -- **MAP ID:** 13

NAME:	TAI PAN BISTRO	**REV:**	04/14/00
ADDRESS:	6380 E PACIFIC COAST HWY	**ID1:**	LBCITY1222
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	STANDARD OIL CO	**PHONE:**	

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test:
Leak Test:
Facility Type:
Square Feet: 0
Class:
Inspection Date:
Comments:
10/29/63 SWENSON- STANDARD OIL RMVD (ABANDONED) 2M. INSTALL INFO?

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

LUST

SEARCH ID: 84 **DIST/DIR:** 0.00 -- **MAP ID:** 14

NAME: TOSCO - 76 STATION 5379 (FORMER)
ADDRESS: 6280 002ND ST E
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701721
ID2:
STATUS: REMEDIAL ACTION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *STEVE KEANE*
ADDRESS OF RESPONSIBLE PARTY: *3525 HYLAND AVE., COSTA MESA, CA 92626*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030052*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *REMEDIAL ACTION*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *EXCAVATE AND DISPOSE-REMOVE CONTAMINATED SOIL AND DISPOSE IN APPROVED SITE*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *DLSEL*
DATE OF ENFORCEMENT (blank if not reported): *2000-07-28 00:00:00*

ENTER DATE (blank if not reported): *1988-03-10 00:00:00*
REVIEW DATE (blank if not reported): *2002-07-15 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1985-09-05 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *2003-10-22 00:00:00*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *2006-01-17 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported): *2003-05-22 00:00:00*
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *2007-01-19 00:00:00*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported): *1987-09-16 00:00:00*
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1987-09-16 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *2002-04-16 00:00:00*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *6,100*
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *2*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: ***

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 65 **DIST/DIR:** 0.00 -- **MAP ID:** 14

NAME:	VACANT/DEMO (FORMERLY TOSCO 30865)	**REV:**	04/14/00
ADDRESS:	6280 E 2ND ST	**ID1:**	LBCITY2251
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	
CONTACT:	TOSCO CORP.	**PHONE:**	(714)428-6425

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test:
Leak Test:
Facility Type:
Square Feet: 0
Class:
Inspection Date: 7/23/98
Comments:
07/23/98 PORTER- ENVIRO TANK SPECIALISTS REMOVED 2 PROJECT 256158. D. CROSS SAMPLING TO CAL SCIENCE LAB (714)895-5494 05/19/98 PORTER- A and B FORMS WRMP and FINANCIAL RESPONSIBILITY OK 03/20/98 SWENSON- RWQCB RESPONSE TO SITE CHARACTERIZATION WORKPLAN 03/13/98 PORTER- BILLED UST NON-COMPLIANCE 1 05/29/97 SWENSON- RWQCB REQUEST FOR ADDITIONAL G/W INVESTIGATION AND MONITORING ID 908030052 02/12/97 PORTER- ELECTRONIC MONITOR CERTIFIED (RED JACKET PPM-4000) 11/26/96 SWENSON- RWQCB ID 908030052 (LOW-RISK SITE CLOSURE DENIED) 10/19/89 SWENSON- L.BLAIN INSTALLED 2 10M MODERN WITH S/W FG PIPING (TRENCH) DIRTY-RWQCB LEAD 10/18/89 SWENSON- L.BLAIN REMOVED 3 (2 10M 550) UNOCAL 09/00/85 SWENSON- LEIGHTON FINAL OK (2 10M 550) UNOCAL 5379

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 67 **DIST/DIR:** 0.00 -- **MAP ID:** 15

NAME:
ADDRESS: 233 MARINA DR
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 04/06/01
ID1: LBCITY5839
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
11/19/81 WELLER- ALEXANDER LAND CLEARING REMOVED 5 (4 10M D976166 D976047 048 049 AND 5M D976102) 06/10/60 SWENSON-COAST EQUIP INSTALLED 5 (4 10M 5M) FOR CITY OF L.B. MARINA FUELING FACILITY 2 (UL S ABOVE)

UST

SEARCH ID: 68 **DIST/DIR:** 0.00 -- **MAP ID:** 16

NAME:
ADDRESS: 6262 E PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT: R.B.TEBBE CORP - MARINA PACIFICA

REV: 04/14/00
ID1: LBCITY6367
ID2:
STATUS:
PHONE:

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: F (FALSE: POSSIBLE IN VIOLATION)
Tank Test:
Leak Test:
Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
01/29/85 WELLER- JOHN DODD CO RMVD 9M E949068 FOR FARLEY MOOTHART 04/23/75 SWENSON- R.B.TEBBE CORP (MARINA PACIFICA) INST 9M (TEMP USE)

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 70 **DIST/DIR:** 0.00 -- **MAP ID:** 17

NAME:
ADDRESS: 6246 E PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT: PASHA GROUP AUTOMOTIVE

REV: 04/14/00
ID1: LBCITY4791
ID2:
STATUS:
PHONE: (213)437-0911

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test:
Leak Test:
Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
05/17/89 SWENSON- HEALTH SAYS CLEAN (SUZANNE GANDY 427-7421) 03/25/86 LALLO- PASHA GROUP AUTO RMVD 5 (2 10M DIESEL 7.5M LUBE OIL 5M GAS 1M W/O) POMONA VALLEY EQUIP. RENTALS

UST

SEARCH ID: 74 **DIST/DIR:** 0.00 -- **MAP ID:** 18

NAME:
ADDRESS: 49 62ND PL
LONG BEACH CA 90805
Los Angeles
CONTACT:

REV: 04/06/01
ID1: LBCITY5547
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 75 **DIST/DIR:** 0.00 -- **MAP ID:** 19

NAME:
ADDRESS: 6125 E OCEAN BLVD
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/14/00
ID1: LBCITY6247
ID2:
STATUS:
PHONE:

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test:
Leak Test:
Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
11/22/85 MARSHALL- KENT and SONS REMOVED 5 (4 3M 550) FOR M.CRAIG 07/29/49 SWENSON- COAST EQUIP INSTALLED 4 3M AND REMOVED 2 550 FOR THE TEXACO. BASED ON ATTACHED DRAWING LOOKS LIKE 550 WAS ADDED WITH 4 3M S

UST

SEARCH ID: 57 **DIST/DIR:** 0.00 -- **MAP ID:** 20

NAME: LONG BEACH MARINE BUREAU - 1 D/W JOOR
ADDRESS: 6264 E PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT: DAVID MC CARTY-FLEET SERVICES SUPERVISOR

REV: 04/14/00
ID1: LBCITY2500
ID2:
STATUS:
PHONE: (562)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 400
Class:
Inspection Date: 6/25/97
Comments:
12/07/00 SWENSON- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-A4-ILS3) 04/15/95 HAYS- A and B FORMS WRMP and FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 D/W JOOR W/O

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SPILLS

SEARCH ID: 32 **DIST/DIR:** 0.00 -- **MAP ID:** 21

NAME: TERMO OIL SITE
ADDRESS: 6301 PACIFIC COAST HWY E
LONG BEACH CA
CONTACT:

REV: 01/03/07
ID1: G_SL184481431
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *LOS ANGELES RWQCB (REGION 4)*
LEAD AGENCY CONTACT: *DAVID YOUNG*
LEAD AGENCY CASE NUMBER: *0576*
RESPONSIBLE PARTY: *The Thermo Company*
SUBSTANCE RELEASED: *PET*
RECENT DTW:
STATUS: *Verification Monitoring Underway*

SPILLS

SEARCH ID: 31 **DIST/DIR:** 0.00 -- **MAP ID:** 21

NAME: TERMO OIL COMPANY
ADDRESS: 6301 PACIFIC COAST HIGHWAY
LONG BEACH CA 90813
LOS ANGELES
CONTACT:

REV: 01/03/02
ID1: SLC40576
ID2:
STATUS:
PHONE:

Staff: *JES*
Status: *POST REMEDIATION MONITORING*
Substance: *TPH*

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 17 **DIST/DIR:** 0.00 -- **MAP ID:** 22

NAME: UNKNOWN
ADDRESS: ALOMOES BAY MARINA, 200 MARINA DR AT THE FUEL DOCK
LONG BEACH CA 90801
LOS ANGELES
CONTACT:

REV: 12/21/92
ID1: 298052
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 12/21/1992 **TIME OF SPILL:** 1150

PRODUCT RELEASED (1): GASOLINE
QUANTITY (1): 50
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: LONG BEACH RUPTURED

SPILL INFORMATION
DATE OF SPILL: 12/21/1992 **TIME OF SPILL:** 1150

PRODUCT RELEASED (1): GASOLINE
QUANTITY (1): 50
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: LONG BEACH RUPTURED

CAUSE OF RELEASE
DUMPING: YES **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: FD SECURED IT AND DISSIPATING
RELEASE DETECTION: FUEL LINE RUPTURED

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 17 **DIST/DIR:** 0.00 -- **MAP ID:** 22

NAME: UNKNOWN
ADDRESS: ALOMOES BAY MARINA, 200 MARINA DR AT THE FUEL DOCK
LONG BEACH CA 90801
LOS ANGELES
CONTACT:

REV: 12/21/92
ID1: 298052
ID2:
STATUS: FIXED FACILITY
PHONE:

MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 298052
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: FD SECURED IT AND DISSIPATING
RELEASE DETECTION: FUEL LINE RUPTURED
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 298052
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 8 **DIST/DIR:** 0.00 -- **MAP ID:** 23

NAME:	USCG MOORINGS LONG BEACH	**REV:**	6/6/06
ADDRESS:	223 MARINA DRIVE	**ID1:**	CA3690390528
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	SGN
CONTACT:	ENVIRONMENTAL MANAGER	**PHONE:**	2135985338

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
223 MARINA DRIVE
LONG BEACH CA 90803

PHONE: 2135985338

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 18 **DIST/DIR:** 0.00 -- **MAP ID:** 23

NAME: UNKNOWN
ADDRESS: 223 MARINA DR
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 9/24/93
ID1: 343290
ID2:
STATUS: MARINE VESSEL (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 9/24/1993 **TIME OF SPILL:** 0915

PRODUCT RELEASED (1): DIESEL
QUANTITY (1): 20
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: LONG BEACH HARBOR

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: YES **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CLEANUP BY LONG BEACH HARBOR
RELEASE DETECTION: VESSEL= VICTOR PUMP FELL INTO WATER
MISC. NOTES: RELEASE 287 CONSENT ORDER DOCKET.

DISCHARGER INFORMATION
DISCHARGER ID: 343290 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 22 **DIST/DIR:** 0.00 -- **MAP ID:** 24

NAME:
ADDRESS: 6378 E. PACIFIC COAST HWY
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 2/23/91
ID1: 204801
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 2/23/1991 **TIME OF SPILL:** 0500

PRODUCT RELEASED (1): SOILS NOS, 58.5 SB-1,2,3,4,5,6
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** YES
WATERBODY AFFECTED BY RELEASE:

SPILL INFORMATION
DATE OF SPILL: 2/23/1991 **TIME OF SPILL:** 0500

PRODUCT RELEASED (1): SOILS NOS, 58.5 SB-1,2,3,4,5,6
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** YES
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: NONE
RELEASE DETECTION: UNKNOWN / DUMPED 6 55 GALLON DRUMS IN COMPANY PARKING LOT.

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 22 **DIST/DIR:** 0.00 -- **MAP ID:** 24

NAME:
ADDRESS: 6378 E. PACIFIC COAST HWY
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 2/23/91
ID1: 204801
ID2:
STATUS: FIXED FACILITY
PHONE:

MISC. NOTES: DRUMS ARE BLACK, LIDS ARE WHITE, WRITING IS IN BLACK

DISCHARGER INFORMATION
DISCHARGER ID: 204801 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER:
ADDRESS:

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: NONE
RELEASE DETECTION: UNKNOWN / DUMPED 6 55 GALLON DRUMS IN COMPANY PARKING LOT.
MISC. NOTES: DRUMS ARE BLACK, LIDS ARE WHITE, WRITING IS IN BLACK

DISCHARGER INFORMATION
DISCHARGER ID: 204801 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER:
ADDRESS:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 23 **DIST/DIR:** 0.00 -- **MAP ID:** 25

NAME:
ADDRESS: ACROSS FROM 225 MARINA DRIVE ON THE SIDEWALK
LONG BEACH CA
Los Angeles
CONTACT:

REV: 8/15/93
ID1: 334879
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/15/1993 **TIME OF SPILL:** 0630

PRODUCT RELEASED (1): UNKNOWN MATERIAL
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: CEMENT

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: NONE.
RELEASE DETECTION: 55 GALLON DRUM ON SIDEWALK NEAR THE BAY/LEAKING. MAY HAVE BEEN LEFT BY A CG CUTTER THAT USED TO BE BASED NEARBY.
MISC. NOTES: PRODUCT SWEATING THROUGH DRUM. A LITTLE PRODUCT ON THE CEMENT. UNKNOWN WHAT PRODUCT THE DRUM CONTAINS.

DISCHARGER INFORMATION
DISCHARGER ID: 334879 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER:
ADDRESS:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SPILLS

SEARCH ID: 26 **DIST/DIR:** 0.00 -- **MAP ID:** 26

NAME: CHEVRON - ALAMITOS BAY PARTNERSHIP
ADDRESS: 6655 MARINA DR
LONG BEACH CA 90813
CONTACT:

REV: 01/03/07
ID1: G_SLT4303129
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *LOS ANGELES RWQCB (REGION 4)*
LEAD AGENCY CONTACT: *JENNY AU*
LEAD AGENCY CASE NUMBER: *0050*
RESPONSIBLE PARTY:
SUBSTANCE RELEASED:
RECENT DTW:
STATUS: *Case Closed*

SPILLS

SEARCH ID: 29 **DIST/DIR:** 0.00 -- **MAP ID:** 27

NAME: MARINA PACIFICA MALL
ADDRESS: 6300 E. PACIFIC COAST HWY
LONG BEACH CA 90803
CONTACT:

REV: 01/03/07
ID1: G_SLT43209207
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

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LEAD AGENCY: *LOS ANGELES RWQCB (REGION 4)*
LEAD AGENCY CONTACT: *REBECCA CHOU*
LEAD AGENCY CASE NUMBER: *0314*
RESPONSIBLE PARTY:
SUBSTANCE RELEASED:
RECENT DTW:
STATUS: *Case Closed*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SPILLS

SEARCH ID: 30 **DIST/DIR:** 0.00 -- **MAP ID:** 27

NAME: MARINA PACIFICA MALL
ADDRESS: 6300 PACIFIC COAST HIGHWAY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 01/03/02
ID1: SLC40314
ID2:
STATUS:
PHONE:

Staff: *RC*
Status: *NO FURTHER ACTION REQUIRED*
Substance: *TPH*

UST

SEARCH ID: 48 **DIST/DIR:** 0.00 -- **MAP ID:** 28

NAME: LONG BEACH MARINE BUREAU - 1 D/W JOOR
ADDRESS: 6201 MARINA DR
LONG BEACH CA 90803
Los Angeles
CONTACT: DAVID MC CARTY-FLEET SERVICES SUPERVISOR

REV: 04/14/00
ID1: LBCITY2501
ID2:
STATUS:
PHONE: (562)570-5410

Permit Number (if blank, not reported):
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: MUNICIPALITY
Square Feet: 0
Class:
Inspection Date:
Comments:
06/25/97 PORTER- ELECTRONIC MONITORING CERTIFIED (RONAN X76S-AV-IS) 04/13/95 HAYS- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 11/03/88 SWENSON- MARINE 88 INSTALLED 500 JOOR W/O

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 46 **DIST/DIR:** 0.00 -- **MAP ID:** 29

NAME:	CITY OF LB-ALAMITOS BAY MARINA-5 S/W FG	**REV:**	04/14/00
ADDRESS:	0227 MARINA DR	**ID1:**	LBCITY632
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	UNOCAL CORPORATION (213)941-9492	**PHONE:**	(310)594-0888

Permit Number (if blank, not reported): 00100
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 1/23/97
Leak Test: 1/23/97
Facility Type: MARINE FUELING
Square Feet: 400
Class: B1
Inspection Date: 8/1/1900
Comments:
08/01/00 SWENSON- FINAL INSPECTION OK OF CROSSOVER PIPE INSTALLED BY TAIT ENV PROJECT 305489 (SO DIESEL CAN OPERATE OFF BOTH TANKS) 11/30/98 PORTER- ISSUED 1998 COMPLIANCE STICKER 05797 TO W.WALKER 01/23/97 PORTER- ELECTRONIC MONITOR CERTIFIED (RONAN X76-LVCS) 05/30/96 SWENSON- FINAL INSPECTION OK (INSTALLED API RONAN LINE LEAK TANK GAUGE OVERFILL/OVERSPILL POSITIVE SHUT-DOWN D/W PIPING ECOLOGY B0X FOR DISPENSERS) PROJ. 192437 K.E.CURTIS CONST. (805)499-0428 (TIM) 04/28/95 HAYS- NO A and B FORMS and WRMP; FINANCIAL RESPONSIBILITY OK 01/00/87 SWENSON- DIRTY-RWQCB LEAD 02/00/86 SWENSON- UNOCAL 5 TANKS (2 10M DIESEL 10M 89 GAS 6M 92 GAS 4M 50-1 PREMIX) S/W FIBERGLASS FINAL REPORT OK HARDING LAWSON

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 69 **DIST/DIR:** 0.01 NE **MAP ID:** 30

NAME:
ADDRESS: 6363 E PACIFIC COAST HWY
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 04/06/01
ID1: LBCITY5921
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
03/19/56 SWENSON- COAST EQUIP INST 2 2M FOR CITY OF L.B. (DUMP) NO INFO ON REMOVAL IF ANY. IS THIS WHERE MARINA PACIFICA IS NOW?

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

SWL

SEARCH ID: 33 **DIST/DIR:** 0.00 -- **MAP ID:** 30

NAME: CITY DUMP and SALVAGE NO. 1
ADDRESS: 6363 PACIFIC COAST HIGHWAY
LONG BEACH CA
Los Angeles
CONTACT:

REV: 07/03/00
ID1: WMUD4 190025NUR
ID2:
STATUS:
PHONE:

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID : *56-110*
NPDES ID :
Region: *4*
Edit Date: *1/26/95*
Last Edit: *JHMJHMJHM*

Waste Discharger Facility: *No*

Sub Chapter 15 Facility: *No*
Solid Waste Assessment Test Site: *Yes*
Toxic Pits Cleanup Act Facility: *No*
RCRA Facility: *No*
Department of Defense Facility: *No*
Municipal Solid Waste Facility: *No*

Total WMUS at Facility: *1*
Facility Open to the Public: *No*
Facility Type:
SIC 1 and SIC 2: */*

Primary Waste Type:
Secondary Waste Type:
Tons Per Day: *0*
Complexity:

LAND OWNER INFORMATION

Land Owner: *BIXBY RANCH COMPANY*
Department:
Contact and Phone: *,*
Land Owner Address: *523 WEST 6TH STREET, LOS ANGELES, CA 90014*

AGENCY INFORMATION

Agency Name: *CITY DUMP AND SALVAGE*
Department:
Agency Contact and Phone: *,*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID : *4 190025NUR-01*
WMU Status: *CEASE DISCHARGE*
WMU Size in Acres: *7*
Year WMU Will Reach Capacity:
Close Plan: *0*
Avg Depth to Groundwater: *18*
Primary Liner Present: *0*

SOLID WASTE ASSESSMENT TEST PROGRAM INFORMATION (SWAT) (blank = not reported)

Site Name: *CITY DUMP and SALVAGE NO. 1*
Site Rank: *3*
Leak to Surface Water: *U*

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 33 **DIST/DIR:** 0.00 -- **MAP ID:** 30

NAME: CITY DUMP and SALVAGE NO. 1
ADDRESS: 6363 PACIFIC COAST HIGHWAY
LONG BEACH CA
Los Angeles
CONTACT:

REV: 07/03/00
ID1: WMUD4 190025NUR
ID2:
STATUS:
PHONE:

Leak to Ground: *U*
Leak to Vandose Zone: *U*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 35 **DIST/DIR:** 0.00 -- **MAP ID:** 31

NAME: BELMONT SHORES MOBILE HOME ESTATES
ADDRESS: 6230 E MARINA VIEW DR/6261 EAST PCH
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 08/24/00
ID1: SWIS19-AK-5009
ID2:
STATUS: CLOSED
PHONE:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *To Be Determined*
Closure Date:
Closure Type:
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage:
Permitted Disposal Acreage:
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Original Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *None*

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

SWL

SEARCH ID: 36 **DIST/DIR:** 0.00 -- **MAP ID:** 32

NAME:	CITY DUMP and SALVAGE 2	**REV:**	06/07/07
ADDRESS:	7001-7199 PCH NORTH OF SAN GABRIEL RIVER	**ID1:**	SWIS19-AK-5017
	LONG BEACH CA	**ID2:**	
	LOS ANGELES	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Residential,Industrial,Commercial*
GIS Source for LAT and LONG: *Map*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *To Be Determined*
Program Type
Closure Date:
Closure Type:
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage:
Permitted Disposal Acreage:
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Original Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *Quarterly*

SITE OWNER INFORMATION:

Owner: *Bixby Ranch Co*
Owner Phone: *3104931475*
Owner Address: *3010 Old Ranch Parkway 100*

Target Property: ALAMITOS BAY MARINA REHABILITATION **JOB:** TSY0701
LONG BEACH CA 90803

SWL

SEARCH ID: 37 **DIST/DIR:** 0.00 -- **MAP ID:** 33

NAME: CITY DUMP and SALVAGE NO. 2
ADDRESS: 6501 PACIFIC COAST HIGHWAY
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 07/03/00
ID1: WMUD4 190019NUR
ID2:
STATUS:
PHONE:

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID : *60-89*
NPDES ID :
Region: *4*
Edit Date:
Last Edit:

Waste Discharger Facility: *No*

Sub Chapter 15 Facility: *No*
Solid Waste Assessment Test Site: *Yes*
Toxic Pits Cleanup Act Facility: *No*
RCRA Facility: *No*
Department of Defense Facility: *No*
Municipal Solid Waste Facility: *No*

Total WMUS at Facility: *1*
Facility Open to the Public: *No*
Facility Type:
SIC 1 and SIC 2: */*

Primary Waste Type:
Secondary Waste Type:
Tons Per Day: *0*
Complexity:

LAND OWNER INFORMATION

Land Owner: *BIXBY RANCH COMPANY*
Department:
Contact and Phone: *,*
Land Owner Address: *523 WEST 6TH STREET, LOS ANGELES, CA 90014*

AGENCY INFORMATION

Agency Name: *CITY DUMP and SALVAGE*
Department:
Agency Contact and Phone: *,*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID : *4 190019NUR-01*
WMU Status: *CEASE DISCHARGE*
WMU Size in Acres:
Year WMU Will Reach Capacity:
Close Plan: *0*
Avg Depth to Groundwater: *10*
Primary Liner Present: *0*

SOLID WASTE ASSESSMENT TEST PROGRAM INFORMATION (SWAT) (blank = not reported)

Site Name: *CITY DUMP and SALVAGE NO. 2*
Site Rank: *3*
Leak to Surface Water: *U*

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 37 **DIST/DIR:** 0.00 -- **MAP ID:** 33

NAME: CITY DUMP and SALVAGE NO. 2
ADDRESS: 6501 PACIFIC COAST HIGHWAY
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 07/03/00
ID1: WMUD4 190019NUR
ID2:
STATUS:
PHONE:

Leak to Ground: *U*
Leak to Vandose Zone: *U*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 38 **DIST/DIR:** 0.00 -- **MAP ID:** 34

NAME: CITY DUMP SALVAGE 1 DS
ADDRESS: 6363 PACIFIC COAST HWY LOYNES DR.
LONG BEACH CA 90740
ORANGE
CONTACT:

REV: 08/24/00
ID1: SWIS19-AK-0006
ID2:
STATUS: CLOSED
PHONE:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Pre-regulations*
Closure Date:
Closure Type:
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *None*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 39 **DIST/DIR:** 0.00 -- **MAP ID:** 35

NAME: CITY DUMP SALVAGE 3 D.S.
ADDRESS: 6364 PACIFIC COAST HWY
LONG BEACH CA 90806
LOS ANGELES
CONTACT:

REV: 08/24/00
ID1: SWIS19-AK-0008
ID2:
STATUS: CLOSED
PHONE:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *To Be Determined*
Closure Date:
Closure Type:
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *None*

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 71 **DIST/DIR:** 0.00 -- **MAP ID:** 36

NAME:
ADDRESS: 6201 BAY SHORE AVE
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/06/01
ID1: LBCITY5649
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
02/01/85 MARSHALL- MOINE RMVD 5 (7.5M 5M 2 4M 2.5M) CHRISMAN S LANDING 03/12/57 SWENSON- H.DAVIDSON INST 5 (7.5M 5M 2 4M 2.5M) CHRISMAN S

RCRANLR

SEARCH ID: 9 **DIST/DIR:** 0.00 -- **MAP ID:** 37

NAME: LONG BEACH MAINT YARD CITY OF
ADDRESS: 205 MARINA DR.
LONG BEACH CA 90803
CA037
CONTACT: RICHARD W STEINHAUS

REV: 6/6/06
ID1: CAD982035412
ID2:
STATUS: NLR
PHONE: 3104219431 3120

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

71394 - FITNESS AND RECREATIONAL SPORTS CENTERS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SPILLS

SEARCH ID: 27 **DIST/DIR:** 0.01 NE **MAP ID:** 38

NAME: J S CLEANERS and LAUNDRY
ADDRESS: 6481 PACIFIC COAST HIGHWAY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 01/03/02
ID1: SLC40841
ID2:
STATUS:
PHONE:

Staff: *AS*
Status: *SITE ASSESSMENT*
Substance: *VOCs*

SPILLS

SEARCH ID: 28 **DIST/DIR:** 0.01 NE **MAP ID:** 38

NAME: J S CLEANERS and LAUNDRY
ADDRESS: 6481 EAST PACIFIC COAST HWY
LONG BEACH CA
CONTACT:

REV: 01/03/07
ID1: G_SL2044X1602
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

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LEAD AGENCY: *LOS ANGELES RWQCB (REGION 4)*
LEAD AGENCY CONTACT: *ADNAN SIDDIQUI*
LEAD AGENCY CASE NUMBER: *0841*
RESPONSIBLE PARTY: *Bixby Ranch Co.*
SUBSTANCE RELEASED: *VOC*
RECENT DTW:
STATUS: *Case Closed*

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 11 **DIST/DIR:** 0.01 NE **MAP ID:** 39

NAME: EXXON
ADDRESS: STATION 7-3047 6401 E PACIFIC COAST HWY
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 11/29/90 0
ID1: 188341
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 11/29/1990 **TIME OF SPILL:** 1200

PRODUCT RELEASED (1): DIESEL
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: RP INVESTIGATING AND WILL CLEANUP
RELEASE DETECTION: LINE LEAK FOUND WHEN INVESTIGATING POOR PUMP RATE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 188341
TYPE OF DISCHARGER: PRIVATE CITIZEN
NAME OF DISCHARGER: EXXON
ADDRESS: P.O. BOX 19649
IRVINE CA 92713-

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 44 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME:	CHEVRON STATION 202015	**REV:**	01/01/94
ADDRESS:	6401 PACIFIC COAST	**ID1:**	TISID-STATE29258
	LONG BEACH CA 90803	**ID2:**	
	Los Angeles	**STATUS:**	ACTIVE
CONTACT:		**PHONE:**	

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 25 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME:
ADDRESS: 6401 EAST PACIFIC COAST HWY / CROSS WITH 2ND ST AT
LONG BEACH CA
Los Angeles
CONTACT:

REV:
ID1: 562139
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: GASOLINE: AUTOMOTIVE (4.23G PB/G **QUANT:** 10 GALLONS

LOCATION: 6401 EAST PACIFIC COAST HWY / CROSS WITH 2ND ST AT THE MOBIL STATIO
CITY: **REPORTED:** 12/17/97

SOURCE: UNKNOWN **MEDIUM:** WATER
VEHICLE PULLED AWAY FROM THE PUMP WITH THE NOZZLE STILL IN THE CAR.
CAUSE: UNKNOWN

ACT: TURNED OFF THE PUMP/CALLER DOES NOT KNOW IF THEY WERE ABLE TO ST
BY:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 15 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: MOBIL OIL
ADDRESS: 6401 EAST PACIFIC COAST HWY - STATION 11BT7
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 1/19/96
ID1: 487121
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 1/19/1996 **TIME OF SPILL:** 1000

PRODUCT RELEASED (1): HYDROCARBONS
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: MOBIL OIL TO C/U
RELEASE DETECTION: SERVICE STATION SOIL SAMPLE REVEALED SUSPECTED CONTAMINATION
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 487121 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MOBIL OIL
ADDRESS: 1099 EAST LOS ANGELES AVE.
SIMI VALLEY CA 93065-

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 61 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME:	MOBIL-BT7-FRAN DLR-CORP.SITE-4 D/W OC	**REV:**	04/14/00
ADDRESS:	6401 E PACIFIC COAST HWY	**ID1:**	LBCITY2431
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	MOBIL OIL CORP.	**PHONE:**	(310)316-6727

Permit Number (if blank, not reported): 20406
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test: 7/7/1907
Leak Test:
Facility Type: GAS STATION
Square Feet: 1900
Class: B-1, H-4
Inspection Date: 7/31/96
Comments:
06/29/00 SWENSON- ELECTRONIC MONITORING (TLS-350) and LLD S CERTIFIED 11/17/98 PORTER- ISSUED 1998 COMPLIANCE STICKER 05772 TO G.SMITH 09/24/96 SWENSON- ENV ENG REMOVED 2 (500 RECOVERED FUEL JOOR 285 OIL/WATER SEPARATOR PROJ 219832 STEVE TURNER DELTA ENV SAMPLING TO DEL MAR ANALYTICAL (714)261-1022 04/29/96 PORTER- NO WRMP; A and B FORMS FINANCIAL RESPONSIBILITY OK 04/11/95 JOHNSON- NOW CONST INSTALLED 4 10M O-C PROJECT 187918 04/04/95 SWENSON- NOW CONST REMOVED 5 (3 10M GAS 10M DSL 1M W/O) PROJECT 187415. FLOATING PRODUCT. J.HANNANEY (HEMC) SAMPLING 10/18/90 SWENSON- PETRO BUILDERS REMOVED 3X9X4 CLARIFIER 11/01/86 SWENSON- DIRTY-RWQCB LEAD

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 10 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: EXXON
ADDRESS: 6401 E. PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 5/16/90 0:
ID1: 167621
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 5/16/1990 **TIME OF SPILL:** 1230

PRODUCT RELEASED (1): DIESEL
QUANTITY (1): 0
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN:
RELEASE DETECTION: UNKNOWN QUANTITY LEAK FOUND DURING INSPECTION
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 167621
TYPE OF DISCHARGER: PUBLIC UTILITY
NAME OF DISCHARGER: EXXON
ADDRESS: 6401 E. PACIFIC COAST HWY
LONG BEACH CA 90803-

DUN and BRADSTREET :

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 14 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: MOBIL ENV HOTLINE
ADDRESS: 6401 EAST PACIFIC COAST HWY
LONG BEACH CA
Los Angeles
CONTACT:

REV: 6/30/95
ID1: 475501
ID2:
STATUS: FIXED FACILITY
PHONE:

SPILL INFORMATION
DATE OF SPILL: 6/30/1995 **TIME OF SPILL:** 2200

PRODUCT RELEASED (1): GASOLINES:STRAIGHT RUN
QUANTITY (1): 240
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE
DUMPING: YES **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: C/U BY UNITED PUMPING CO
RELEASE DETECTION: MOBIL SERVICE STATION DELIVERY TRUCK OVERFILLED REPORTING PARTY UNSURE IF PRODUCT ENTERED A WATERWAY PRODUCT HAS BEEN COMPLETELY CLEANED UP AT THIS TIME
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 475501 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MOBIL ENV HOTLINE
ADDRESS:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 12 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: EXXON USA
ADDRESS: 6401 EAST PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 9/8/92
ID1: 284931
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 9/8/1992 **TIME OF SPILL:** 1900

PRODUCT RELEASED (1): HYDRAULIC FLUID
QUANTITY (1): 45
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: POSSIBLE GROUNDWATER

SPILL INFORMATION
DATE OF SPILL: 9/8/1992 **TIME OF SPILL:** 1900

PRODUCT RELEASED (1): HYDRAULIC FLUID
QUANTITY (1): 45
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: POSSIBLE GROUNDWATER

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: SOIL CONTAMINATION. FURTHER SITE INVESTIGATION NEEDED
RELEASE DETECTION: LEAKING UST

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 12 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: EXXON USA
ADDRESS: 6401 EAST PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 9/8/92
ID1: 284931
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 284931
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: EXXON USA
ADDRESS: 6401 EAST PACIFIC COAST HWY
LONG BEACH CA 90803-
DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	YES
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: SOIL CONTAMINATION. FURTHER SITE INVESTIGATION NEEDED
RELEASE DETECTION: LEAKING UST
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 284931
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: EXXON USA
ADDRESS: 6401 EAST PACIFIC COAST HWY
LONG BEACH CA 90803-
DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 13 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: MOBIL
ADDRESS: 6401 E. PACIFIC COAST HWY
LONG BEACH CA
Los Angeles
CONTACT:

REV: 6/30/95
ID1: 475510
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 6/30/1995 **TIME OF SPILL:** 2218

PRODUCT RELEASED (1): GASOLINES:STRAIGHT RUN
QUANTITY (1): 300
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: STORM DRAIN

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** YES
UNKNOWN: NO

ACTIONS TAKEN: MOBIL TO C/U
RELEASE DETECTION: MOBIL DRWER RESPONSIBLE FOR RELEASE DID NOT EXPLAIN CAUSE OF RELEASE TO FD
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 475510 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: MOBIL
ADDRESS:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 4 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: EXXON STA NO 73047
ADDRESS: 6401 E PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 6/6/06
ID1: CAD981381049
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
6401 E PACIFIC COAST HWY
LONG BEACH CA 90803

PHONE: 2134926240

UNIVERSE INFORMATION:

NAIC INFORMATION

4471 - GASOLINE STATIONS

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

LUST

SEARCH ID: 80 **DIST/DIR:** 0.01 NE **MAP ID:** 40

NAME: EXXON 7-3047 (FORMER)
ADDRESS: 6401 PACIFIC COAST HWY E
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701717
ID2:
STATUS: REMEDIAL ACTION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *JAMES LEIST*
ADDRESS OF RESPONSIBLE PARTY: *3700 W. 190TH ST., TPT 2-4*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030016*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *REMEDIAL ACTION*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *FP VE*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *SEL*
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1986-12-31 00:00:00*
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1995-06-30 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *1995-06-30 00:00:00*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *2004-05-11 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported): *1999-06-09 00:00:00*
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *2007-01-16 00:00:00*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported): *1988-04-06 00:00:00*
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1988-04-06 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *1996-08-01 00:00:00*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *750,000*
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *1*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 16 **DIST/DIR:** 0.01 NE **MAP ID:** 41

NAME:	TANK FARM	**REV:**	12/31/04
ADDRESS:	6301 EAST PACIFIC COAST HWY	**ID1:**	NRC-710444
	LONG BEACH CA	**ID2:**	
	LOS ANGELES	**STATUS:**	FIXED
CONTACT:	UNKNOWN	**PHONE:**	5624640368

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 1/13/2004 2:24:05 PM **DATE COMPLETE:** 1/13/2004 2:34:24 PM
CALL TAKER: NXR7436 **CALL TYPE:** INC

RESPONSIBLE PARTY: UNKNOWN
PHONE 1: 5624640368
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: TERMO COMPANY
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: 3275 CHERRY AVE.
LONG BEACH CA 90813

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: CALLER STATED THAT MATERIAL RELEASED FROM A TANK FARM FROM AN UNKNOWN SOURCE WHICH RELEASED ONTO THE GROUND.

INCIDENT TYPE:	FIXED	**INCIDENT CAUSE:**	UNKNOWN
INCIDENT DATE:	1/13/2004 9:56:00 AM	**INCIDENT DATE DESC:**	DISCOVERED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
AIRCRAFT TYPE:		**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	OTHER	**POWER GEN FACILITY:**	N
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**GRADE CROSSING:**	N
LOCATION SUBDIVISION:		**RAILROAD MILEPOST:**	
TYPE VEHICLE INVOLVED:		**CROSSING DEVICE TYPE:**	
DEVICE OPERATIONAL:	Y		
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 16 **DIST/DIR:** 0.01 NE **MAP ID:** 41

NAME:	TANK FARM	**REV:**	12/31/04
ADDRESS:	6301 EAST PACIFIC COAST HWY	**ID1:**	NRC-710444
	LONG BEACH CA	**ID2:**	
	LOS ANGELES	**STATUS:**	FIXED
CONTACT:	UNKNOWN	**PHONE:**	5624640368

TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	SOIL
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	U
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	FISH and GAME and HEALTH DEPT
ST AGENCY RPT NUM:	NO REPORT	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	CLEAR	**AIR TEMPERATURE:**	74
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: CONTRACTOR HAS BEEN HIRED

EMPL FATALITY:		**PASS FATALITY:**	

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 16 **DIST/DIR:** 0.01 NE **MAP ID:** 41

NAME:	TANK FARM	**REV:**	12/31/04
ADDRESS:	6301 EAST PACIFIC COAST HWY	**ID1:**	NRC-710444
	LONG BEACH CA	**ID2:**	
	LOS ANGELES	**STATUS:**	FIXED
CONTACT:	UNKNOWN	**PHONE:**	5624640368

COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: CALLER HAD NO FURTHER INFORMATION.

MATERIAL INFORMATION

CHRIS CODE:	UNK	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO
NAME OF MATERIAL:	OIL AND WATER		
AMOUNT OF MATERIAL:	200 BARREL(S)		
AMOUNT IN WATER:			

CHRIS CODE:	OIL	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO
NAME OF MATERIAL:	OIL: CRUDE		
AMOUNT OF MATERIAL:	40 BARREL(S)		
AMOUNT IN WATER:			

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 64 **DIST/DIR:** 0.01 NE **MAP ID:** 42

NAME:	VACANT (DAVE S MARINA CHEVRON)	**REV:**	04/14/00
ADDRESS:	6301 WESTMINSTER AVE	**ID1:**	LBCITY3065
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	
CONTACT:	CHEVRON USA INC. (213)694-7452	**PHONE:**	(310)594-4094

Permit Number (if blank, not reported): 07129
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test:
Leak Test:
Facility Type: VACANT
Square Feet: 0
Class:
Inspection Date:
Comments:
01/11/95 SWENSON- RWQCB SAYS CLEAN CONTACT MS.MINDEVALLI (213)266-7660 03/09/92 SWENSON- DIRTY-RWQCB LEAD
10/14/91 GALINDO- RD BUILDERS REMOVED 4 (2 10M 5M 1M) CHEVRON

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 2 **DIST/DIR:** 0.01 NE **MAP ID:** 42

NAME:	DAVES MARINA CHEVRON	**REV:**	6/6/06
ADDRESS:	6301 WESTMINSTER AVE	**ID1:**	CAD981657109
	LONG BEACH CA 90802	**ID2:**	
	LOS ANGELES	**STATUS:**	SGN
CONTACT:	ENVIRONMENTAL MANAGER	**PHONE:**	2135944094

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
6301 WESTMINSTER AVE
LONG BEACH CA 90802

PHONE: 2135944094

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803
JOB: TSY0701

LUST

SEARCH ID: 79 **DIST/DIR:** 0.01 NE **MAP ID:** 42

NAME: CHEVRON 9-0016
ADDRESS: 6301 WESTMINSTER AVE
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701725
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *CHEVRON*
ADDRESS OF RESPONSIBLE PARTY: *PO BOX 2833, LA HABRA 90632-2833* *C*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030098*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED: *SUBSURFACE MONITORING*
DATE DISCOVERED (blank if not reported): *1987-10-16 00:00:00*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *CONTAINMENT BARRIER - INSTALL VERTICAL DIKE TO BLOCK HORIZONTAL MOVEMENT OR CONTAINMENT*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1989-01-12 00:00:00*
REVIEW DATE (blank if not reported): *1995-01-11 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1989-01-12 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1995-01-11 00:00:00*
REPORT DATE (blank if not reported): *1987-10-16 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 45 **DIST/DIR:** 0.01 NE **MAP ID:** 42

NAME: CHEVRON STATION 9-0016
ADDRESS: 6301 WESTMINSTER
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 01/01/94
ID1: TISID-STATE29457
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803
JOB: TSY0701

UST

SEARCH ID: 72 **DIST/DIR:** 0.07 SW **MAP ID:** 43

NAME:
ADDRESS: 5800 E 2ND ST
LONG BEACH CA 90803
Los Angeles
CONTACT:
REV: 04/06/01
ID1: LBCITY5438
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

CITY OF LONG BEACH UNDERGROUND STORAGE TANKS LIST INFORMATION
As reported by the responsible agency, there are currently no details associated with this record.

UST

SEARCH ID: 63 **DIST/DIR:** 0.08 SW **MAP ID:** 44

NAME: TEMP CLOSURE-MARINA TEXACO - 6 S/W STEEL
ADDRESS: 5788 E 2ND ST
LONG BEACH CA 90803
Los Angeles
CONTACT: POLLY RIDGEWAY, JEAN PEYTON and JO ELLEN B
REV: 04/14/00
ID1: LBCITY1628
ID2:
STATUS:
PHONE: (562)439-0884

Permit Number (if blank, not reported): 08145
Tank In Compliance with UST Regulations: T (TRUE)
Tank Test:
Leak Test:
Facility Type:
Square Feet: 0
Class:
Inspection Date: 7/6/1900
Comments:
09/08/00 SWENSON- RECEIVED UST CLOSURE REPORT FROM ENVIRONMENTAL PROFILES INC. 493-2190 (MATT WALKER) 07/06/00 SWENSON- MOINE REMOVED 10M GAS PROJECT 289752 06/29/00 SWENSON- MOINE BROS REMOVED 5 (2 4M and 6M GAS 6M DIESEL and 500 W/O) PROJECT 289752. NO SOIL SAMPLING REQUIRED (RWQCB LEAD) 12/18/98 HAYS- NEW AandB FORMS WRMP and FINANCIAL RESPONSIBILITY OK. TEMPORARY CLOSURE APPROVED (NEW ADDRESS FOR THIS SITE: 5790 E.2ND ST) 05/22/98 SWENSON- RWQCB RESPONSE TO GROUNDWATER MONITORING and FREE PRODUCT REMOVAL REPORT 04/17/97 SWENSON- RWQCB ID 908030034 UST CLEANUP FUND CLAIM 4226 10/31/96 SWENSON- BEP SITE MAP SHOWS 6 TANKS (10M 2 6M 2 4M 550 W/O). BELIEVE 6/1/76 and 9/22/86 ENTRIES BELOW ARE NOT CORRECT. CAN T FIND ANY EVIDENCE OF 5580 E. 02ND ST EVER BEING A TANK SITE 12/12/94 PORTER- A and B FORMS WRMP AND FINANCIAL RESPONSIBILITY OK 03/13/87 SWENSON- DIRTY-RWQCB LEAD 09/22/86 SWENSON- HMMP OK WAYNE PERRY (6 S/W STEEL TANKS) 09/22/86 SWENSON- HMMP OK 5 (2 4M 2 6M GAS/DSL 550 W/O) WAYNE PERRY 01/11/82 SWENSON- L.BLAIN INSTALLED 10M STEEL DIESEL TEXACO 06/01/76 SWENSON- MANESS REMOVED 3 (2 6M 280 W/O) 5580 E.02ND?? 02/14/61 SWENSON- J.W.MARSHALL REMOVED 4 (2.5M 2M 1M 280 W/O) AND INSTALLED 3 (2 4M and 6M)

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

LUST

SEARCH ID: 81 **DIST/DIR:** 0.08 SW **MAP ID:** 44

NAME: G and M OIL 17
ADDRESS: 5788 002ND ST E
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701719
ID2:
STATUS: REMEDIAL ACTION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *POLLY ANN RIDGEWAY*
ADDRESS OF RESPONSIBLE PARTY: *3245 E. 1ST ST.*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030034*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported): *1987-04-09 00:00:00*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *REMEDIAL ACTION*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *REMOVE FREE PRODUCT-REMOVE FLOATING PRODUCT FROM WATER TABLE*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *SEL*
DATE OF ENFORCEMENT (blank if not reported): *2001-07-17 00:00:00*

ENTER DATE (blank if not reported): *1987-08-05 00:00:00*
REVIEW DATE (blank if not reported): *2001-06-26 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1990-04-06 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *1990-04-06 00:00:00*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1997-10-21 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported): *1992-05-14 00:00:00*
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *1999-07-15 00:00:00*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported): *1987-04-09 00:00:00*
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1987-04-09 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration): *1965-01-01 00:00:00*
MTBE GROUNDWATER CONCENTRATION (parts per billion): *2100*
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *1*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: *C*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 47 **DIST/DIR:** 0.08 SW **MAP ID:** 44

NAME: GandM OIL CO. 17
ADDRESS: 5788 2ND
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 01/01/94
ID1: TISID-STATE29478
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

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Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 21 **DIST/DIR:** 0.09 SW **MAP ID:** 45

NAME:
ADDRESS: 5767 E. 2ND ST.
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 12/31/06
ID1: NRC-790349
ID2:
STATUS: MOBILE
PHONE:

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 3/9/2006 11:17:28 AM **DATE COMPLETE:** 3/9/2006 11:21:06 AM
CALL TAKER: **CALL TYPE:** INC

RESPONSIBLE PARTY:
PHONE 1:
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY:
ORGANIZATION TYPE: PRIVATE CITIZEN

ADDRESS:
LONG BEACH CA

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: 5 GALLONS OF GASOLINE RELEASED FROM CAR DUE TO EQUIPMENT FAILURE ONTO THE STREET.

INCIDENT TYPE:	MOBILE	**INCIDENT CAUSE:**	EQUIPMENT FAILURE
INCIDENT DATE:	3/9/2006 6:40:00 AM	**INCIDENT DATE DESC:**	OCCURRED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
AIRCRAFT TYPE:		**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:		**POWER GEN FACILITY:**	UNKNOWN
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	UNKNOWN
PIPELINE TYPE:		**DOT REGULATED:**	UNKNOWN
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	NO
PIPELINE COVERED:	UNKNOWN	**GRADE CROSSING:**	NO
LOCATION SUBDIVISION:		**RAILROAD MILEPOST:**	
TYPE VEHICLE INVOLVED:		**CROSSING DEVICE TYPE:**	
DEVICE OPERATIONAL:	YES		
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	NO
TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	UNKNOWN

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 21 **DIST/DIR:** 0.09 SW **MAP ID:** 45

NAME:
ADDRESS: 5767 E. 2ND ST.
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 12/31/06
ID1: NRC-790349
ID2:
STATUS: MOBILE
PHONE:

TANK REGULATED:	UNKNOWN	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	NO	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	UNKNOWN
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	NO	**FIRE EXTINGUISHED:**	UNKNOWN
ANY EVACUATIONS:	NO	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	NO	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	NO
NUMBER FATALITIES:		**ANY DAMAGES:**	NO
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	NO
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	NO	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	NO
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	NO
TRACK CLOSED:	NO	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	GROUND
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	NO
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:	8449	**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	PARTLY CLOUDY	**AIR TEMPERATURE:**	60
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	UNKNOWN	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: HEALTH DEPT ON SCENE

EMPL FATALITY:		**PASS FATALITY:**	
COMMUNITY IMPACT:	NO	**WIND SPEED UNITS:**	

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 21 **DIST/DIR:** 0.09 SW **MAP ID:** 45

NAME:
ADDRESS: 5767 E. 2ND ST.
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 12/31/06
ID1: NRC-790349
ID2:
STATUS: MOBILE
PHONE:

EMPLOYEE INJURIES:
OCCUPANT FATALITY:
ROAD CLOSURE UNITS:
SHEEN SIZE UNITS:
FED AGENCY NOTIFIED:
SHEEN SIZE LENGTH:
SHEEN SIZE WIDTH:
OFFSHORE: N
RELEASE RATE UNIT:

PASSENGER INJURIES:
CURRENT SPEED UNITS:
TRACK CLOSURE UNITS:
STATE AGENCY NOTIFIED: FIRE DEPT
NEAREST RIVER MILE MARK:
SHEEN SIZE LENGTH UNITS:
SHEEN SIZE WIDTH UNITS:
DURATION UNIT:
RELEASE RATE RATE:

ADDITIONAL INFO: NONE

MATERIAL INFORMATION

CHRIS CODE: GAS
UN NUMBER:

CASE NUMBER: 000000-00-0
REACHED WATER: NO

NAME OF MATERIAL: GASOLINE: AUTOMOTIVE (UNLEADED)
AMOUNT OF MATERIAL: 5 GALLON(S)
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

VEHICLE NUMBER: 5KMN662
VEHICLE FUEL CAPACITY:
AMOUNT OF CARGO ON BOARD:
CARRIER LICENSED: U
MOBILE TYPE: PASSENGER CAR
VEHICLE MAKE:

TRAILER NUMBER:
CARGO CAPACITY:
HAZMAT CARRIER: U
NONCOMPLIANCE WITH HAZMAT: U
VEHICLE YEAR:
VEHICLE MODEL:

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 73 **DIST/DIR:** 0.11 SW **MAP ID:** 46

NAME:
ADDRESS: 5735 E 2ND ST
LONG BEACH CA 90803
Los Angeles
CONTACT:

REV: 04/06/01
ID1: LBCITY5437
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

CITY OF LONG BEACH UNDERGROUND STORAGE TANKS LIST INFORMATION
As reported by the responsible agency, there are currently no details associated with this record.

RCRAGN

SEARCH ID: 3 **DIST/DIR:** 0.14 SE **MAP ID:** 47

NAME: DOVER SALES CO RandB ENTERPRISES
ADDRESS: 333 FIRST STREET
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 6/6/06
ID1: CAD981572357
ID2:
STATUS: SGN
PHONE:

SITE INFORMATION

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

OTHER

SEARCH ID: 40 **DIST/DIR:** 0.16 SE **MAP ID:** 48

NAME: FRMR EXXONMOBIL SEAL BCH SEPARATION CTR
ADDRESS: 101 MARINA DRIVE
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 07/18/05
ID1: CAL30550002
ID2:
STATUS: PROPERTY/SITE REFERRED TO ANOT
PHONE:

OTHER SITE NAMES (blank below = not reported by agency)
FRMR EXXONMOBIL SEAL BCH SEPARATION CTR

UNOCAL STORAGE LEASE PROPERTIES

GENERAL SITE INFORMATION
File Name (if different than site name):

Status: *PROPERTY/SITE REFERRED TO ANOTHER AGENCY*
AWP Site Type: *1248 - LOCAL CLEANUP AGREEMENTS*
NPL Site: *N*
Fund:
Status Date: *04262001*
Lead: *COUNTY*
Staff:
DTSC Region and RWQCB : *CYPRESS*
Branch: *SO CAL - CYPRESS*
RWQCB:
Site Access:
Groundwater Contamination:
Number of Sources Contributing to Contamination at the Site:

DTSC COMMENTS REGARDING THIS SITE (blank below = not reported by agency)
Comments Date:
: *DTSC received an SB 1248 Notification from the County of Orange Hazardous Materials Management Section for their oversight of a site investigation/remedial action at the Former ExxonMobil Seal Beach Separation Center and Unocal Storage Lease Properties.*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 6 **DIST/DIR:** 0.18 NE **MAP ID:** 49

NAME:	LONG BEACH USD-NAPLES ELEMENTARY	**REV:**	6/6/06
ADDRESS:	5537 THE TOLEDO	**ID1:**	CAD981419864
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	SGN
CONTACT:		**PHONE:**	

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
5537 THE TOLEDO
LONG BEACH CA 90803

PHONE: 2134265974

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 7 **DIST/DIR:** 0.19 NE **MAP ID:** 50

NAME:	MCFARLAND ENERGY	**REV:**	6/6/06
ADDRESS:	6433 WESTMINSTER	**ID1:**	CAD981160310
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	SGN
CONTACT:	REX HINOYOSA	**PHONE:**	3105989955

SITE INFORMATION

CONTACT INFORMATION: REX HINOYOSA
6433 WESTMINSTER
LONG BEACH CA 90803

PHONE: 3105989955

UNIVERSE INFORMATION:

NAIC INFORMATION

211111 - CRUDE PETROLEUM AND NATURAL GAS EXTRACTION
211111 - CRUDE PETROLEUM AND NATURAL GAS EXTRACTION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

UST

SEARCH ID: 76 **DIST/DIR:** 0.19 NE **MAP ID:** 51

NAME:
ADDRESS: 5661 THE TOLEDO
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/06/01
ID1: LBCITY5988
ID2:
STATUS: DEAD FILE BY AGENCY
PHONE:

Facility Type:
Square Feet:
Class:
Inspection Date:
Comments:
09/01/70 SWENSON- JOHN DODD REMOVED 4 (1M 3 550) BOB ZIETAN. INSTALL?

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803
JOB: TSY0701

LUST

SEARCH ID: 83 **DIST/DIR:** 0.30 SW **MAP ID:** 52

NAME: TEXACO SERVICE STATION FORMER
ADDRESS: 5470 002ND ST E
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701718
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *TEXACO REFINING and MARKETING*
ADDRESS OF RESPONSIBLE PARTY: *10 UNIVERSAL CITY PLAZA, UNIVERSAL CITY, CA 91608*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030025*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *PUMP AND TREAT GROUND WATER- GENERALLY EMPLOYED TO REMOVE DISSOLVED CONTAMINANTS. EXCAVATE AND DISPOSE*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1986-12-31 00:00:00*
REVIEW DATE (blank if not reported): *1997-04-07 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1988-01-07 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1996-12-12 00:00:00*
REPORT DATE (blank if not reported): *1986-12-31 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

NFRAP

SEARCH ID: 1 **DIST/DIR:** 0.31 NE **MAP ID:** 53

NAME:	WHALER S COVE HOMEOWNERS	**REV:**	4/11/07
ADDRESS:	6053 LOYNES DRIVE	**ID1:**	CAD983670589
	LONG BEACH CA 90803	**ID2:**	0904864
	LOS ANGELES	**STATUS:**	NFRAP-N
CONTACT:		**PHONE:**	

DESCRIPTION:

ACTION/QUALITY	AGENCY/RPS	START/RAA	END

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

LUST

SEARCH ID: 78 **DIST/DIR:** 0.37 SE **MAP ID:** 54

NAME: ARCO 6066
ADDRESS: 490 PACIFIC COAST
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 04/24/07
ID1: T0605900372
ID2:
STATUS: REMEDIAL ACTION
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *86UT206*
RESPONSIBLE PARTY: *BOBBY LU*
ADDRESS OF RESPONSIBLE PARTY: *6 CENTERPOINTE DRIVE*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *083000462T*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY: *0*
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *TANK*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1987-01-14 00:00:00*
HOW LEAK WAS STOPPED: *CLOSE TANK*
STOP DATE (blank if not reported): *9999-09-09 00:00:00*
STATUS: *REMEDIAL ACTION*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *SEL*
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported): *1986-11-14 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported): *1987-01-14 00:00:00*
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported): *1987-03-11 00:00:00*
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1999-01-26 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported): *2000-06-01 00:00:00*
DATE REMEDIAL ACTION UNDERWAY (blank if not reported): *2002-09-03 00:00:00*
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported):
REPORT DATE (blank if not reported): *1987-01-26 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *YES*
MTBE CLASS: *

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 34 **DIST/DIR:** 0.40 NE **MAP ID:** 55

NAME: HAYNES GENERATING STATION
ADDRESS: 6801 WESTMINSTER AVE
LONG BEACH CA 90803
LOS ANGELES
CONTACT: FAZI MOFIDI

REV: 07/03/00
ID1: WMUD4B193500002
ID2:
STATUS: ACTIVE
PHONE: 2133670280

WMUDS FACILITY INFORMATION (blank = not reported)

Regional ID :
NPDES ID : *CA0000353*
Region: *4*
Edit Date:
Last Edit:

Waste Discharger Facility: *Yes*

Sub Chapter 15 Facility: *No*
Solid Waste Assessment Test Site: *No*
Toxic Pits Cleanup Act Facility: *Yes*
RCRA Facility: *No*
Department of Defense Facility: *No*
Municipal Solid Waste Facility: *No*

Total WMUS at Facility: *1*
Facility Open to the Public: *No*
Facility Type: *IND*
SIC 1 and SIC 2: *4911 /*

Primary Waste Type: *DESIGNATED: COOLING WATER: CONTACT*
Secondary Waste Type:
Tons Per Day: *0*
Complexity: *CATEGORY A - Any major NPDES facility, any non-NPDES facility (particularly those with toxic wastes) that would be a major if dischrge was made to surface or ground waters, or any Class I disposal site. Includes any small-volume complex facility (particul*

LAND OWNER INFORMATION

Land Owner:
Department:
Contact and Phone: *,*
Land Owner Address: *, ,*

AGENCY INFORMATION

Agency Name: *LOS ANGELES CITY OF DWP*
Department:
Agency Contact and Phone: *FAZI MOFIDI, 2133670280*

WASTE MANAGEMENT UNIT INFORMATION (blank = not reported)

WMU ID : *4B193500002-01*
WMU Status:
WMU Size in Acres:
Year WMU Will Reach Capacity:
Close Plan: *0*
Avg Depth to Groundwater: *0*
Primary Liner Present: *0*

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

SPILLS

SEARCH ID: 101 **DIST/DIR:** 6.64 NW **MAP ID:** 56

NAME: DEPT OF TRANSPORTATION DISTRICT 7 PROJECT DEV B
ADDRESS: 2100 PACIFIC COAST HWY
LONG BEACH CA
CONTACT:

REV: 01/03/07
ID1: G_SL2048R1707
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *LOS ANGELES RWQCB (REGION 4)*
LEAD AGENCY CONTACT: *STEVEN HARIRI*
LEAD AGENCY CASE NUMBER: *0894*
RESPONSIBLE PARTY: *Caltrans*
SUBSTANCE RELEASED: *PET*
RECENT DTW:
STATUS: *Case Closed*

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 95 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: NB 710 NORTH OF PACIFIC COAST HWY
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 8/23/90 0:
ID1: 179263
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 8/23/1990 **TIME OF SPILL:** 0720

PRODUCT RELEASED (1): DIESEL FUEL
QUANTITY (1): 250
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** YES
UNKNOWN: NO

ACTIONS TAKEN: CLEANUP BY CALTRANS
RELEASE DETECTION: TRUCK WENT OVER CENTER DIVIDER AND PUNCTURED SADDLE TANK
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 179263 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 96 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: CLARK and PACIFIC COAST HWY TO SB ON TERMINAL ISLAND
LONG BEACH CA
Los Angeles
CONTACT:

REV: 4/10/96
ID1: 512946
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION

DATE OF SPILL: 4/10/1996 **TIME OF SPILL:** 0348

PRODUCT RELEASED (1): DIESEL FUEL
QUANTITY (1): 100
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE:

CAUSE OF RELEASE

DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: CITY USED KITTY LITTER , TO SOAK UP DRIBBLES ON ROADWAY. C/U BY LONG BEACH PUBLIC SERVICE.
RELEASE DETECTION: ROADWAY TRUCK FROM OHIO PACIFIC EXPRESS LEAKED FUEL FROM ONE SADDLE TANK ALONG ROUTE ENDING IN LOS ANGELES.
MISC. NOTES: Previous Case : 96-3418

DISCHARGER INFORMATION

DISCHARGER ID: 512946
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:
DUN and BRADSTREET :

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 97 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: MARINA PACIFICA MALL/6378 E PAC COASTHWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 2/23/91
ID1: 205675
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 2/23/1991 **TIME OF SPILL:** 0500

PRODUCT RELEASED (1): UNKNOWN
QUANTITY (1): 0
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

SPILL INFORMATION
DATE OF SPILL: 2/23/1991 **TIME OF SPILL:** 0500

PRODUCT RELEASED (1): UNKNOWN
QUANTITY (1): 0
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: NO **FIXED FACILITY:** YES
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: NONE

CAUSE OF RELEASE
DUMPING: YES **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: NO ACTION
RELEASE DETECTION: QUANTITY = 6 - 55 GAL DRUMS SOILS N.O.S. 58.5 SCL-6 DRUMS MARKED DRUMS ABANDONED ON

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 97 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: MARINA PACIFICA MALL/6378 E PAC COASTHWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 2/23/91
ID1: 205675
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

TRADERS JOE S PLACE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 205675
TYPE OF DISCHARGER:
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	YES	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: NO ACTION
RELEASE DETECTION: QUANTITY = 6 - 55 GAL DRUMS SOILS N.O.S. 58.5 SCL-6 DRUMS MARKED DRUMS ABANDONED ON TRADERS JOE S PLACE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 205675
TYPE OF DISCHARGER:
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 98 **DIST/DIR:** NON GC **MAP ID:**

NAME: YANKOVIC AND SONS
ADDRESS: NORTH SEA BERTHED AT BRAVO 5
LONG BEACH CA
Los Angeles
CONTACT:

REV:
ID1: 525886
ID2:
STATUS: MARINE VESSEL (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: **TIME OF SPILL:** 0445

PRODUCT RELEASED (1): BUNKER FUEL
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	NO	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: UNKNOWN

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: C/U BY RP
RELEASE DETECTION: ACCIDENTAL RELEASE DURING FUEL TRANSFER
MISC. NOTES: ADDITIONAL NOTIFIED: USCG/TOXICS Previous Case : 97-0258 Previous Case : 97-0258 Previous Case : 97-0734

DISCHARGER INFORMATION
DISCHARGER ID: 525886 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: YANKOVIC AND SONS
ADDRESS:
CA

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 99 **DIST/DIR:** NON GC **MAP ID:**

NAME:
ADDRESS: 690 NORTH STUDEBAKER
LONG BEACH CA
LOS ANGELES
CONTACT: CAVLIN NICHOL

REV: 12/31/05
ID1: NRC-762820
ID2:
STATUS: FIXED
PHONE: 5627282056

SITE INFORMATION

THIS INFORMATION WAS OBTAINED FROM THE NATIONAL RESPONSE CENTER

DATE RECEIVED: 6/20/2005 3:19:08 PM **DATE COMPLETE:** 6/20/2005 3:26:59 PM
CALL TAKER: KWC2316 **CALL TYPE:** INC

RESPONSIBLE PARTY: CAVLIN NICHOL
PHONE 1: 5627282056 PRIMARY
PHONE 2:
PHONE 3:

RESPONSIBLE COMPANY: PACIFIC ENERGY PARTNERS
ORGANIZATION TYPE: PRIVATE ENTERPRISE

ADDRESS: 5900 CHERRY AVE
LONG BEACH CA 90805

SOURCE: TELEPHONE

INCIDENT INFORMATION

INCIDENT DESCRIPTION: THE CALLER IS REPORTING A RELEASE OF UNKNOWN OIL ONTO THE GROUND AND INTO A SECONDARY CONTAINMENT AREA FROM A STORAGE TANK DUE TO EQUIPMENT FAILURE.

INCIDENT TYPE:	FIXED	**INCIDENT CAUSE:**	EQUIPMENT FAILURE
INCIDENT DATE:	6/19/2005 6:00:00 PM	**INCIDENT DATE DESC:**	DISCOVERED
DISTANCE FROM CITY:		**DISTANCE UNITS:**	
DIRECTION FROM CITY:		**LOCATION SECTION:**	
LOCATION TOWNSHIP:		**LOCATION RANGE:**	
AIRCRAFT TYPE:		**AIRCRAFT MODEL:**	
AIRCRAFT ID:		**AIRCRAFT FUEL CAPACITY:**	
AIRCRAFT FUEL CAPACITY UNITS:		**AIRCRAFT FUEL ON BOARD:**	
AIRCRAFT FUEL ON BOARD UNITS:		**AIRCRAFT SPOT NUMBER:**	
AIRCRAFT HANGER:		**AIRCRAFT RUNWAY NUM:**	
ROAD MILE MARKER:		**BUILDING ID:**	
TYPE OF FIXED OBJECT:	OTHER	**POWER GEN FACILITY:**	N
GENERATING CAPACITY:		**TYPE OF FUEL:**	
NPDES:		**NPDES COMPLIANCE:**	U
PIPELINE TYPE:		**DOT REGULATED:**	U
PIPELINE ABOVE GROUND:	ABOVE	**EXPOSED UNDERWATER:**	N
PIPELINE COVERED:	U	**GRADE CROSSING:**	N
LOCATION SUBDIVISION:		**RAILROAD MILEPOST:**	
TYPE VEHICLE INVOLVED:		**CROSSING DEVICE TYPE:**	
DEVICE OPERATIONAL:	Y		
DOT CROSSING NUMBER:		**BRAKE FAILURE:**	N

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 99 **DIST/DIR:** NON GC **MAP ID:**

NAME:
ADDRESS: 690 NORTH STUDEBAKER
LONG BEACH CA
LOS ANGELES
CONTACT: CAVLIN NICHOL

REV: 12/31/05
ID1: NRC-762820
ID2:
STATUS: FIXED
PHONE: 5627282056

TANK ABOVE GROUND:	ABOVE	**TRANSPORTABLE CONTAINER:**	U
TANK REGULATED:	U	**TANK REGULATED BY:**	
TANK ID:		**CAPACITY OF TANK:**	
CAPACITY OF TANK UNITS:		**ACTUAL AMOUNT:**	
ACTUAL AMOUNT UNITS:		**PLATFORM RIG NAME:**	
PLATFORM LETTER:		**LOCATION AREA ID:**	
LOCATION BLOCK ID:			

DESCRIPTION OF TANK:

OCSG NUMBER:		**OCSP NUMBER:**	
STATE LEASE NUMBER:		**PIER DOCK NUMBER:**	
BERTH SLIP NUMBER:		**CONTIN RELEASE TYPE:**	
INITIAL CONT RELEASE NUM:		**CONT RELEASE PERMIT:**	
ALLISION:	N	**TYPE OF STRUCTURE:**	
STRUCTURE NAME:		**STRUCT OPERATIONAL:**	U
AIRBAG DEPLOYED:		**DATE NORMAL SERVICE:**	
SERVICE DISRUPT TIME:		**SERVICE DISRUPT UNITS:**	
TRANSIT BUS FLAG:		**CR BEGIN DATE:**	
CR END DATE:		**CR CHANGE DATE:**	
FIRE INVOLVED:	N	**FIRE EXTINGUISHED:**	U
ANY EVACUATIONS:	N	**NUMBER EVACUATED:**	
WHO EVACUATED:		**RADIUS OF EVACUATION:**	
ANY INJURIES:	N	**NUMBER INJURED:**	
NUMBER HOSPITALIZED:		**ANY FATALITIES:**	N
NUMBER FATALITIES:		**ANY DAMAGES:**	N
DAMAGE AMOUNT:		**AIR CORRIDOR CLOSED:**	N
AIR CORRIDOR DESC:		**AIR CLOSURE TIME:**	
WATERWAY CLOSED:	N	**WATERWAY DESC:**	
WATERWAY CLOSURE TIME:		**ROAD CLOSED:**	N
ROAD DESC:		**ROAD CLOSURE TIME:**	
CLOSURE DIRECTION:		**MAJOR ARTERY:**	N
TRACK CLOSED:	N	**TRACK DESC:**	
TRACK CLOSURE TIME:		**MEDIA INTEREST:**	NONE
MEDIUM DESC:	LAND	**ADDTL MEDIUM INFO:**	SECONDARY CONTAINMENT
BODY OF WATER:		**TRIBUTARY OF:**	
NEAREST RIVER MILE MARK:		**RELEASE SECURED:**	Y
EST DUR OF RELEASE:		**RELEASE RATE:**	
TRACK CLOSE DIR:		**ST AGENCY ON SCENE:**	
ST AGENCY RPT NUM:		**OTHER AGENCY NOTIFIED:**	
WEATHER CONDITIONS:	SUNNY	**AIR TEMPERATURE:**	
WIND SPEED:		**WIND DIRECTION:**	
WATER SUPPLY CONTAM:	U	**SHEEN SIZE:**	
SHEEN COLOR:		**DIR OF SHEEN TRAVEL:**	
SHEEN ODOR DESCRIPTION:		**WAVE CONDITION:**	
CURRENT SPEED:		**CURRENT DIRECTION:**	
WATER TEMPERATURE:			

DESC OF REMEDIAL ACTION: CLEAN UP UNDERWAY

EMPL FATALITY: **PASS FATALITY:**

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 99 **DIST/DIR:** NON GC **MAP ID:**

NAME:		**REV:**	12/31/05
ADDRESS:	690 NORTH STUDEBAKER	**ID1:**	NRC-762820
	LONG BEACH CA	**ID2:**	
	LOS ANGELES	**STATUS:**	FIXED
CONTACT:	CAVLIN NICHOL	**PHONE:**	5627282056

COMMUNITY IMPACT:	N	**WIND SPEED UNITS:**	
EMPLOYEE INJURIES:		**PASSENGER INJURIES:**	
OCCUPANT FATALITY:		**CURRENT SPEED UNITS:**	
ROAD CLOSURE UNITS:		**TRACK CLOSURE UNITS:**	
SHEEN SIZE UNITS:		**STATE AGENCY NOTIFIED:**	
FED AGENCY NOTIFIED:		**NEAREST RIVER MILE MARK:**	
SHEEN SIZE LENGTH:		**SHEEN SIZE LENGTH UNITS:**	
SHEEN SIZE WIDTH:		**SHEEN SIZE WIDTH UNITS:**	
OFFSHORE:	N	**DURATION UNIT:**	
RELEASE RATE UNIT:		**RELEASE RATE RATE:**	

ADDITIONAL INFO: THE CALLER HAD NO ADDITIONAL INFORMATION

MATERIAL INFORMATION

CHRIS CODE:	OUN	**CASE NUMBER:**	000000-00-0
UN NUMBER:		**REACHED WATER:**	NO

NAME OF MATERIAL: UNKNOWN OIL
AMOUNT OF MATERIAL: 5 GALLON(S)
AMOUNT IN WATER:

OTHER MATERIAL INFORMATION

MOBILE DETAILS INFORMATION

TRAIN INFORMATION

VESSEL INFORMATION

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 100 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: SAN GABRIEL RIVER ABOVE WESTMINSTER ST
SEAL BEACH CA 90740
Orange
CONTACT:

REV: 9/28/93
ID1: 343375
ID2:
STATUS: UNKNOWN (EPA REGIONS)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 9/28/1993 **TIME OF SPILL:** 1311

PRODUCT RELEASED (1): UNKNOWN FOAM/OIL
QUANTITY (1): 0
UNITS (1): OTH

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** YES
WATER: YES **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: SAN GABRIEL RIVER

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** YES
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: NONE
RELEASE DETECTION: POSSIBLY EDISON PLANT IN LONG BEACH UNKNOWN SOURCE/CAUSE
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 343375 **DUN and BRADSTREET :**
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SPILLS

SEARCH ID: 102 **DIST/DIR:** NON GC **MAP ID:**

NAME: TEXACO USA-BRYANT LEASE
ADDRESS: 7000 PACIFIC COAST HIGHWAY
SEAL BEACH CA 90740
CONTACT:

REV: 01/03/02
ID1: SLC40014
ID2:
STATUS:
PHONE:

Staff: *MC*
Status: *NO FURTHER ACTION REQUIRED*
Substance:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 94 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNKNOWN
ADDRESS: LONG BEACH BLVD AT PACIFIC COAST HWY
LONG BEACH CA
Los Angeles
CONTACT:

REV: 1/30/96
ID1: 486823
ID2:
STATUS: UNKNOWN (NRC)
PHONE:

SPILL INFORMATION
DATE OF SPILL: 1/30/1996 **TIME OF SPILL:** 1351

PRODUCT RELEASED (1): TRANSMISSION FLUID
QUANTITY (1): 5
UNITS (1): GAL

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: STORM DRAIN

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	YES
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: C/U BY LONG BEACH TRANSIT TO C/U
RELEASE DETECTION: CITY BUS LEAK FROM CITY BUS,-1-1.5 GAL. IN STORM DRAIN CATCH BASIN
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 486823
TYPE OF DISCHARGER: UNKNOWN
NAME OF DISCHARGER: UNKNOWN
ADDRESS:

DUN and BRADSTREET :

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

SWL

SEARCH ID: 108 **DIST/DIR:** NON GC **MAP ID:**

NAME: STUDEBAKER/LOYNES DISPOSAL SITE
ADDRESS: LOYNES DR and NORTH STUDEBAKER RD
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 01/19/05
ID1: SWIS19-AK-0002
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Residential,Open Space - Nonirrigated,Commercial*
GIS Source for LAT and LONG: *Map*

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Residential,Open Space - Nonirrigated,Commercial*
GIS Source for LAT and LONG: *Map*

SITE ACTIVITY INFORMATION:

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Permitted*
Closure Date:
Closure Type:
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *Annual*

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Permitted*
Closure Date:
Closure Type:
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 108 **DIST/DIR:** NON GC **MAP ID:**

NAME: STUDEBAKER/LOYNES DISPOSAL SITE
ADDRESS: LOYNES DR and NORTH STUDEBAKER RD
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 01/19/05
ID1: SWIS19-AK-0002
ID2:
STATUS: CLOSED
PHONE:

Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *Annual*

SITE OWNER INFORMATION:

SITE OWNER INFORMATION:

Owner: *Bixby Ranch Co*
Owner Phone: *3104931475*
Owner Address: *3010 Old Ranch Parkway 100*

Owner: *Bixby Ranch Co*
Owner Phone: *3104931475*
Owner Address: *3010 Old Ranch Parkway 100*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SPILLS

SEARCH ID: 103 **DIST/DIR:** NON GC **MAP ID:**

NAME: TEXACO USA-BRYANT LEASE
ADDRESS: 7000 PACIFIC COAST HWY
SEAL BEACH CA 90740
CONTACT:

REV: 01/03/07
ID1: G_SLT4301311
ID2:
STATUS:
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD GEOTRACKER SLIC DATABASE

Please note that some SLIC data previously provided by the State Water Resources Control Board via the Regional Boards is not currently provided by the agency in the new GEOTRACKER format. To ensure that our data is as complete as possible we have retained the original Regional Boards SLIC records as well as loaded all GEOTRACKER SLIC listings. GEOTRACKER records are distinguished by an initial G at the start of the ID.

LEAD AGENCY: *LOS ANGELES RWQCB (REGION 4)*
LEAD AGENCY CONTACT: *MANJULIKA CHAKRABARTI*
LEAD AGENCY CASE NUMBER: *0014*
RESPONSIBLE PARTY:
SUBSTANCE RELEASED:
RECENT DTW:
STATUS:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 106 **DIST/DIR:** NON GC **MAP ID:**

NAME: LOYNES/BIXBY DISPOSAL SITE
ADDRESS: LOYNES DR and BIXBY VILLAGE DR
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 08/24/00
ID1: SWIS19-AK-0003
ID2:
STATUS: CLOSED
PHONE:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Permitted*
Closure Date:
Closure Type:
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *None*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 109 **DIST/DIR:** NON GC **MAP ID:**

NAME: WHALERS COVE/CITY SALVAGE 1 and 2
ADDRESS: 6251 PCH/6001-6083 LOYNES DR
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 08/24/00
ID1: SWIS19-AK-5016
ID2:
STATUS: CLOSED
PHONE:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *To Be Determined*
Closure Date:
Closure Type:
Permitted Throughput with Units: *0*
Permitted Capacity with Units: *0*
Remaining Capacity with Units (landfills only): *0*
Permitted Total Acreage: *0*
Permitted Disposal Acreage: *0*
Last Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Original Tire Inspection Count: *0*
Last Tire Inspection Count Date:
Inspection Frequency: *None*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

NFRAP

SEARCH ID: 86 **DIST/DIR:** NON GC **MAP ID:**

NAME:	DOW CHEMICAL CO SEAL BEACH PLT	**REV:**	4/11/07
ADDRESS:	PACIFIC COAST HWY	**ID1:**	CAD980817589
	SEAL BEACH CA 90740	**ID2:**	0902082
	ORANGE	**STATUS:**	NFRAP-N
CONTACT:		**PHONE:**	

DESCRIPTION:

ACTION/QUALITY	AGENCY/RPS	START/RAA	END

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

RCRACOR

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NAVAL WEAPONS STATION SEAL BEACH	**REV:**	6/6/06
ADDRESS:	800 SEAL BEACH BLVD. N45W	**ID1:**	CA0170024491
	SEAL BEACH CA 90740	**ID2:**	
	ORANGE	**STATUS:**	CA
CONTACT:	STANLEY LANDAAS	**PHONE:**	5626267356

SITE INFORMATION

CONTACT INFORMATION: SUNDERLAND STUART
SEAL BEACH BLVD.
SEAL BEACH CA 90740

PHONE: 2135947273

UNIVERSE INFORMATION:

NAIC INFORMATION

332993 - AMMUNITION (EXCEPT SMALL ARMS) MANUFACTURING
92811 - NATIONAL SECURITY
336415 - GUIDED MISSILE AND SPACE VEHICLE PROPULSION UNIT AND PROPULSION UNIT PARTS MANUFACTURING
332995 - OTHER ORDNANCE AND ACCESSORIES MANUFACTURING
22132 - SEWAGE TREATMENT FACILITIES
33991 - JEWELRY AND SILVERWARE MANUFACTURING
71399 - ALL OTHER AMUSEMENT AND RECREATION INDUSTRIES
811111 - GENERAL AUTOMOTIVE REPAIR
92811 - NATIONAL SECURITY
92811 - NATIONAL SECURITY
92811 - NATIONAL SECURITY

ENFORCEMENT INFORMATION:

AGENCY:	S - STATE	**DATE:**	8/27/1997
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	4/30/1992
TYPE:	310 - FINAL 3008(A) COMPLIANCE ORDER		
AGENCY:	S - STATE	**DATE:**	5/12/2000
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	8/11/1987
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	5/6/1991
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	1/29/1992
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	1/28/1994
TYPE:	120 - WRITTEN INFORMAL		

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Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

RCRACOR

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NAVAL WEAPONS STATION SEAL BEACH	**REV:**	6/6/06
ADDRESS:	800 SEAL BEACH BLVD. N45W	**ID1:**	CA0170024491
	SEAL BEACH CA 90740	**ID2:**	
	ORANGE	**STATUS:**	CA
CONTACT:	STANLEY LANDAAS	**PHONE:**	5626267356

AGENCY:	E - EPA	**DATE:**	6/16/1988
TYPE:	820 - EPA TO STATE ADMINISTRATIVE REFERRAL		
AGENCY:	E - EPA	**DATE:**	3/10/1990
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	9/9/1996
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	11/29/1995
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	11/29/1995
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	4/29/1994
TYPE:	510 - CIVIL ACTION FOR COMPLIANCE		
AGENCY:	S - STATE	**DATE:**	6/19/1995
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	9/20/1988
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	1/28/1994
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	9/9/1996
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	8/27/1997
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	8/11/1987
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	5/6/1991
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	3/10/1990
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	9/20/1988
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	E - EPA	**DATE:**	6/16/1988
TYPE:	820 - EPA TO STATE ADMINISTRATIVE REFERRAL		
AGENCY:	S - STATE	**DATE:**	1/29/1992
TYPE:	120 - WRITTEN INFORMAL		
AGENCY:	S - STATE	**DATE:**	4/30/1992
TYPE:	310 - FINAL 3008(A) COMPLIANCE ORDER		

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

RCRACOR

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NAVAL WEAPONS STATION SEAL BEACH	**REV:**	6/6/06
ADDRESS:	800 SEAL BEACH BLVD. N45W	**ID1:**	CA0170024491
	SEAL BEACH CA 90740	**ID2:**	
	ORANGE	**STATUS:**	CA
CONTACT:	STANLEY LANDAAS	**PHONE:**	5626267356

AGENCY: S - STATE **DATE:** 4/29/1994
TYPE: 510 - CIVIL ACTION FOR COMPLIANCE

AGENCY: S - STATE **DATE:** 6/19/1995
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 5/12/2000
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** E - EPA
DETERMINED: 3/31/1988 **DETERMINED BY:** E - EPA
CITATION: 270
VIOLATION NUMBER: 0001 **RESPONSIBLE:** S - STATE
DETERMINED: 6/19/1987 **DETERMINED BY:** S - STATE
CITATION: 270
RESOLVED: 10/21/1988
TYPE: TSD-OTHER REQUIREMENTS (OVERSIGHT)

RESOLVED: 9/14/1987
TYPE: TSD-OTHER REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0002 **RESPONSIBLE:** E - EPA
DETERMINED: 12/5/1989 **DETERMINED BY:** E - EPA
CITATION: 268 ALL
VIOLATION NUMBER: 0002 **RESPONSIBLE:** S - STATE
DETERMINED: 1/29/1992 **DETERMINED BY:** S - STATE
CITATION: 268 ALL
RESOLVED: 4/15/1990
TYPE: TSD-LAND BAN REQUIREMENTS

RESOLVED: 8/24/1994
TYPE: TSD-LAND BAN REQUIREMENTS

VIOLATION NUMBER: 0003 **RESPONSIBLE:** E - EPA
DETERMINED: 12/5/1989 **DETERMINED BY:** E - EPA
CITATION: 268.7
VIOLATION NUMBER: 0003 **RESPONSIBLE:** S - STATE
DETERMINED: 1/29/1992 **DETERMINED BY:** S - STATE
CITATION: 270
RESOLVED: 4/15/1990
TYPE: GENERATOR-LAND BAN REQUIREMENTS

RESOLVED: 8/24/1994
TYPE: TSD-OTHER REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0004 **RESPONSIBLE:** S - STATE
DETERMINED: 1/29/1992 **DETERMINED BY:** S - STATE
CITATION: 264.70-77.E
VIOLATION NUMBER: 0004 **RESPONSIBLE:** E - EPA

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

RCRACOR

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NAVAL WEAPONS STATION SEAL BEACH	**REV:**	6/6/06
ADDRESS:	800 SEAL BEACH BLVD. N45W	**ID1:**	CA0170024491
	SEAL BEACH CA 90740	**ID2:**	
	ORANGE	**STATUS:**	CA
CONTACT:	STANLEY LANDAAS	**PHONE:**	5626267356

DETERMINED:	12/5/1989	**DETERMINED BY:**	E - EPA
CITATION:	270		
RESOLVED:	4/15/1990		
TYPE:	TSD-OTHER REQUIREMENTS (OVERSIGHT)		
RESOLVED:	8/24/1994		
TYPE:	TSD-OTHER REQUIREMENTS (OVERSIGHT)		
VIOLATION NUMBER:	0005	**RESPONSIBLE:**	E - EPA
DETERMINED:	2/25/1991	**DETERMINED BY:**	E - EPA
CITATION:	270		
VIOLATION NUMBER:	0005	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	264.50-56.D		
RESOLVED:	6/30/1995		
TYPE:	TSD-OTHER REQUIREMENTS (OVERSIGHT)		
RESOLVED:	6/6/1991		
TYPE:	TSD-OTHER REQUIREMENTS (OVERSIGHT)		
VIOLATION NUMBER:	0006	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	262.40-43.D		
RESOLVED:	6/30/1995		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		
VIOLATION NUMBER:	0007	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	262.30-34.C		
RESOLVED:	6/30/1994		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		
VIOLATION NUMBER:	0008	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	262.50-60		
RESOLVED:	6/30/1994		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		
VIOLATION NUMBER:	0009	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	262.20-23.B		
RESOLVED:	6/30/1994		
TYPE:	GENERATOR-ALL REQUIREMENTS (OVERSIGHT)		
VIOLATION NUMBER:	0010	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	268.7		
RESOLVED:	6/30/1995		
TYPE:	GENERATOR-LAND BAN REQUIREMENTS		
VIOLATION NUMBER:	0011	**RESPONSIBLE:**	S - STATE
DETERMINED:	1/28/1994	**DETERMINED BY:**	S - STATE
CITATION:	262.10-12.A		

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

RCRACOR

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NAVAL WEAPONS STATION SEAL BEACH	**REV:**	6/6/06
ADDRESS:	800 SEAL BEACH BLVD. N45W	**ID1:**	CA0170024491
	SEAL BEACH CA 90740	**ID2:**	
	ORANGE	**STATUS:**	CA
CONTACT:	STANLEY LANDAAS	**PHONE:**	5626267356

RESOLVED: 6/30/1995
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0012 **RESPONSIBLE:** S - STATE
DETERMINED: 6/19/1995 **DETERMINED BY:** S - STATE
CITATION: 262.50-60
RESOLVED: 6/19/1995
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0013 **RESPONSIBLE:** S - STATE
DETERMINED: 11/29/1995 **DETERMINED BY:** S - STATE
CITATION: 262.50-60
RESOLVED: 11/29/1995
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0014 **RESPONSIBLE:** S - STATE
DETERMINED: 9/9/1996 **DETERMINED BY:** S - STATE
CITATION: 264.10-18.B
RESOLVED: 10/15/1996
TYPE: TSD-OTHER REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0015 **RESPONSIBLE:** S - STATE
DETERMINED: 9/9/1996 **DETERMINED BY:** S - STATE
CITATION: 262.30-34.C
RESOLVED: 10/15/1996
TYPE: GENERATOR-ALL REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0016 **RESPONSIBLE:** S - STATE
DETERMINED: 8/27/1997 **DETERMINED BY:** S - STATE
CITATION: 264.10-18.B
RESOLVED: 8/27/1997
TYPE: TSD-OTHER REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0017 **RESPONSIBLE:** S - STATE
DETERMINED: 8/27/1997 **DETERMINED BY:** S - STATE
CITATION: 270
RESOLVED: 11/20/1997
TYPE: TSD-OTHER REQUIREMENTS (OVERSIGHT)

VIOLATION NUMBER: 0200 **RESPONSIBLE:** S - STATE
DETERMINED: 5/11/2000 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 6/8/2000
TYPE: TSD-OTHER REQUIREMENTS

CORRECTIVE ACTION INFORMATION

CA EVENT: 1/14/1993 CA075HI - CA PRIORITIZATION-HIGH CA PRIORITY

CA EVENT: 11/8/2004 CA725YE - HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE

CA EVENT: 3/9/2001 CA725NO - HUMAN EXPOSURES CONTROLLED DETERMINATION-FACILITY DOES

- Continued on next page -

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

RCRACOR

SEARCH ID: 87 **DIST/DIR:** NON GC **MAP ID:**

NAME:	NAVAL WEAPONS STATION SEAL BEACH	**REV:**	6/6/06
ADDRESS:	800 SEAL BEACH BLVD. N45W	**ID1:**	CA0170024491
	SEAL BEACH CA 90740	**ID2:**	
	ORANGE	**STATUS:**	CA
CONTACT:	STANLEY LANDAAS	**PHONE:**	5626267356

NOT MEET DEFINITION

CA EVENT: 3/9/2001 CA750NO - RELEASE TO GW CONTROLLED DETERMINATION-FACILITY DOES NOT MEET DEFINITION

CA EVENT: 4/8/1993 CA225NR - STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION

CA EVENT: 5/1/1998 CA650 - STABILIZATION CONSTRUCTION COMPLETED

CA EVENT: 6/4/1998 CA725NO - HUMAN EXPOSURES CONTROLLED DETERMINATION-FACILITY DOES NOT MEET DEFINITION

CA EVENT: 6/4/1998 CA750NO - RELEASE TO GW CONTROLLED DETERMINATION-FACILITY DOES NOT MEET DEFINITION

CA EVENT: 8/3/1993 CA150 - RFI WORKPLAN APPROVED

CA EVENT: 8/3/1993 CA300 - CMS WORKPLAN APPROVED

CA EVENT: 9/24/1991 CA100 - RFI IMPOSITION

CA EVENT: 9/24/1991 CA600SR - STABILIZATION MEASURES IMPLEMENTED-PRIMARY MEAS IS SOURCE REMOVL and/OR TRT

HAZARDOUS WASTE INFORMATION:

Methyl ethyl ketone
Tetrachloroethylene
Trichloroethylene
The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a to
The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane
Silver
Reactive waste
Ignitable waste
Hydrogen sulfide (OR) Hydrogen sulfide H2S
Corrosive waste
The following spent non-halogenated solvents: cresols, cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-hal
Chromium
Cadmium
Benzene
Barium
Lead

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

RCRAGN

SEARCH ID: 88 **DIST/DIR:** NON GC **MAP ID:**

NAME:	ALAMITOS BAY PARTNERSHIP	**REV:**	6/6/06
ADDRESS:	S/PCH N/MARINA DR W/STUDEBAKER	**ID1:**	CAD982053266
	LONG BEACH CA 90803	**ID2:**	
	LOS ANGELES	**STATUS:**	SGN
CONTACT:	ENVIRONMENTAL MANAGER	**PHONE:**	2134715426

SITE INFORMATION

CONTACT INFORMATION: ENVIRONMENTAL MANAGER
S/PCH N/MARINA DR W/STUDEBAKER
LONG BEACH CA 90803

PHONE: 2134715426

UNIVERSE INFORMATION:

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

ERNS

SEARCH ID: 89 **DIST/DIR:** NON GC **MAP ID:**

NAME: C.U. CHEMICAL CORP
ADDRESS: PACIFIC CONTAINER TERM PIER 247
LONG BEACH CA
LOS ANGELES
CONTACT:
REV: 10/22/92
ID1: 289316
ID2:
STATUS: MARINE- RELEASED FROM A MARINE
PHONE:

SPILL INFORMATION
DATE OF SPILL: 10/22/1992 **TIME OF SPILL:** 2249

PRODUCT RELEASED (1): NITROMETHANE
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: INSIDE CONTAINERS

SPILL INFORMATION
DATE OF SPILL: 10/22/1992 **TIME OF SPILL:** 2249

PRODUCT RELEASED (1): NITROMETHANE
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED
AIR: NO **GROUNDWATER:** NO
LAND: YES **FIXED FACILITY:** NO
WATER: NO **OTHER:** NO
WATERBODY AFFECTED BY RELEASE: INSIDE CONTAINERS

CAUSE OF RELEASE
DUMPING: NO **EQUIPMENT FAILURE:** NO
NATURAL PHENOMENON: NO **OPERATOR ERROR:** NO
OTHER CAUSE: NO **TRANSP. ACCIDENT:** NO
UNKNOWN: NO

ACTIONS TAKEN: DRUMS ARE BEING INSPECTED INDIVIDUALLY FOR LEAKS AND RE STOWED
RELEASE DETECTION: CALLER REPORTED THE DESCOVERY OF A SECOND CONTAINER HOLDING 66 DRUMS REFERENCED IN

- Continued on next page -

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 89 **DIST/DIR:** NON GC **MAP ID:**

NAME: C.U. CHEMICAL CORP
ADDRESS: PACIFIC CONTAINER TERM PIER 247
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 10/22/92
ID1: 289316
ID2:
STATUS: MARINE- RELEASED FROM A MARINE
PHONE:

NRC REPORT NO.141631 /NUMBER OF LEAKING DRUMS UNKNOWN
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 289316
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: C.U. CHEMICAL CORP
ADDRESS:
DUN and BRADSTREET :

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	NO
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: DRUMS ARE BEING INSPECTED INDIVIDUALLY FOR LEAKS AND RE STOWED
RELEASE DETECTION: CALLER REPORTED THE DESCOVERY OF A SECOND CONTAINER HOLDING 66 DRUMS REFERENCED IN NRC REPORT NO.141631 /NUMBER OF LEAKING DRUMS UNKNOWN
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 289316
TYPE OF DISCHARGER: PRIVATE ENTERPRISE
NAME OF DISCHARGER: C.U. CHEMICAL CORP
ADDRESS:
DUN and BRADSTREET :

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 90 **DIST/DIR:** NON GC **MAP ID:**

NAME: OIL FIELD TRUCKING CO.
ADDRESS: PACIFIC COAST HWY AND OBISPO AVE
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 4/26/90 0:
ID1: 465477
ID2:
STATUS: HIGHWAY RELATED
PHONE:

SPILL INFORMATION
DATE OF SPILL: 4/26/1990 **TIME OF SPILL:** 1915

PRODUCT RELEASED (1): UNKNOWN MATERIAL
QUANTITY (1): 0
UNITS (1): UNK

PRODUCT RELEASED (2):
QUANTITY (2):
UNITS (2):

PRODUCT RELEASED (3):
QUANTITY (3):
UNITS (3):

MEDIUM/MEDIA AFFECTED

AIR:	NO	**GROUNDWATER:**	NO
LAND:	YES	**FIXED FACILITY:**	NO
WATER:	NO	**OTHER:**	NO

WATERBODY AFFECTED BY RELEASE: STORM DRAIN

CAUSE OF RELEASE

DUMPING:	NO	**EQUIPMENT FAILURE:**	NO
NATURAL PHENOMENON:	NO	**OPERATOR ERROR:**	YES
OTHER CAUSE:	NO	**TRANSP. ACCIDENT:**	NO
UNKNOWN:	NO		

ACTIONS TAKEN: NO ACTION TAKEN TO CALLER S KNOWLEDGE/OSC REQUESTED LB FD TO INVEST. INCIDENT
RELEASE DETECTION: REPORTS SAW A TANK TRUCK WITH 4 MEN IN IT DUMPING SOMETHING HOT THROUGHA DRAIN
MISC. NOTES:

DISCHARGER INFORMATION
DISCHARGER ID: 465477 **DUN and BRADSTREET :**
TYPE OF DISCHARGER:
NAME OF DISCHARGER: OIL FIELD TRUCKING CO.
ADDRESS:

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 91 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNION OIL
ADDRESS: ALAMEDOS BAY MARINA DRIVE
LONG BEACH CA
LOS ANGELES
CONTACT:

REV:
ID1: 170776
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

UST

SEARCH ID: 111 **DIST/DIR:** NON GC **MAP ID:**

NAME: MOBIL OIL CO
ADDRESS: 101 PACIFIC COAST
LONG BEACH CA
Los Angeles
CONTACT:

REV: 01/01/94
ID1: TISID-STATE28423
ID2:
STATUS: ACTIVE
PHONE:

UST HISTORICAL DATA

This site was listed in the FIDS Zip Code List as a UST site. The Office of Hazardous Data Management produced the FIDS list. The FIDS list is an index of names and locations of sites recorded in various California State environmental agency databases. It is sorted by zip code and as an index, details regarding the sites were never included.

The UST information included in FIDS as provided by the Office of Hazardous Data Management was originally collected from the SWEEPS database. The SWEEPS database recorded Underground Storage Tanks and was maintained by the State Water Resources Control Board (SWRCB). That agency no longer maintains the SWEEPS database and last updated it in 1994. The last release of that 1994 database was in 1997.

Oversight of Underground Storage Tanks within California is now conducted by Certified Unified Program Agencies referred to as CUPA s. There are approximately 102 CUPA s and Local Oversight Programs (LOP s) in the State of California. Most are city or county government agencies. As of 1998, all sites or facilities with underground storage tanks were required by Federal mandate to obtain certification by designated UST oversight agencies (in this case, CUPA s) that the UST/s at their location were upgraded or removed in adherence with the 1998 RCRA standards.

Information from the FIDS/SWEEPS lists were included in this report search to help identify where underground storage tanks may have existed that were not recorded in CUPA databases or lists collected by Track Info Services. This may occur if a tank was removed prior to development of recent CUPA UST lists or never registered with a CUPA.

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 105 **DIST/DIR:** NON GC **MAP ID:**

NAME: LA COUNTY FLOOD CONTROL DUMP
ADDRESS: SW WESTMINSTERAVE AND HWY 1 (PCH)
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 06/07/07
ID1: SWIS19-AK-5008
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Open Space - Irrigated,Commercial*
GIS Source for LAT and LONG: *Map*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Pre-regulations*
Program Type
Closure Date: *12/31/1962*
Closure Type: *Estimated*
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage:
Permitted Disposal Acreage:
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Original Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *Annual*

SITE OWNER INFORMATION:

Owner: *Vickers II, Ms. / Pacific Coast Homes*
Owner Phone:
Owner Address: *1999 Avenue of the Stars*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 93 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNK
ADDRESS: ARCHIE S MARINA PAC COAST HWY
LONG BEACH CA
Los Angeles
CONTACT:

REV:
ID1: 75074
ID2:
STATUS: UNKNOWN
PHONE:

CERCLIS (Y/N):

MAT: OIL **QUANT:** 0 OTHER

LOCATION: ARCHIE S MARINA PAC COAST HWY
CITY: **REPORTED:** 12/20/88

SOURCE: UNKNOWN **MEDIUM:** WATER
QT=100YD SQUARE CONTINOUS FLO
CAUSE: UNKNOWN

ACT:
BY:

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

SWL

SEARCH ID: 107 **DIST/DIR:** NON GC **MAP ID:**

NAME: SITE 6A - BOAT DISPOSAL
ADDRESS: NORTH SEASIDE AVE. (621-967)
LONG BEACH CA
LOS ANGELES
CONTACT:

REV: 06/07/07
ID1: SWIS19-AK-5038
ID2:
STATUS: CLOSED
PHONE:

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name:
GIS Source for LAT and LONG: *Map*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Unpermitted*
Program Type
Closure Date:
Closure Type:
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage:
Permitted Disposal Acreage:
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Original Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *None*

SITE OWNER INFORMATION:

Owner: *US Dept Of Navy-Long Beach*
Owner Phone: *5629802720*
Owner Address: *Terminal Beach*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

OTHER

SEARCH ID: 110 **DIST/DIR:** NON GC **MAP ID:**

NAME: KAYO OIL
ADDRESS: 16305 PACIFIC COAST HWY
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 07/01/99
ID1: ORCO_GW_86UT1
ID2:
STATUS:
PHONE:

ORANGE COUNTY GROUNDWATER CLEANUP LIST INFORMATION

Case Type:
Contract Status:
Fund:
Substance Code: *12035 - 8006619*
Description: *WASTE OIL - GASOLINE*
Lead Refferal: *N*
Enforcement:
Date Closed: *06-19-87*

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

LUST

SEARCH ID: 112 **DIST/DIR:** NON GC **MAP ID:**

NAME: CHEVRON-ALAMITOS BAY PARTNERSH
ADDRESS: PACIFIC COAST HWY
LONG BEACH CA 90803
LOS ANGELES
CONTACT:

REV: 04/24/07
ID1: T0603701722
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *REGIONAL BOARD*
REGIONAL BOARD: *04*
LOCAL CASE NUMBER:
RESPONSIBLE PARTY: *ALAMITOS BAY PARTNERSHIP*
ADDRESS OF RESPONSIBLE PARTY: *100 WILSHIRE BLVD,SUITE 1325, SANTA MONICA, CA 90401*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *908030061*
CASE TYPE: *OTHER*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *SUBSURFACE MONITORING*
DATE DISCOVERED (blank if not reported):
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1987-09-08 00:00:00*
REVIEW DATE (blank if not reported): *1989-04-25 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1988-04-07 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1994-09-22 00:00:00*
REPORT DATE (blank if not reported): *1987-04-28 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

LUST

SEARCH ID: 113 **DIST/DIR:** NON GC **MAP ID:**

NAME: KAYO OIL
ADDRESS: 16305 PACIFIC COAST
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 04/24/07
ID1: T0605900157
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *86UT001*
RESPONSIBLE PARTY: *UNK UNK*
ADDRESS OF RESPONSIBLE PARTY: *16305 PACIFIC COAST HWY*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *083000206T*
CASE TYPE: *UNDEFINED*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY: *0*
LEAK CAUSE: *UNKNOWN*
LEAK SOURCE: *UNKNOWN*
HOW LEAK WAS DISCOVERED: *TANK CLOSURE*
DATE DISCOVERED (blank if not reported): *1965-01-01 00:00:00*
HOW LEAK WAS STOPPED: *CLOSE TANK*
STOP DATE (blank if not reported): *9999-09-09 00:00:00*
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported):
REVIEW DATE (blank if not reported):
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1987-06-19 00:00:00*
REPORT DATE (blank if not reported): *1965-01-01 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803 **JOB:** TSY0701

LUST

SEARCH ID: 114 **DIST/DIR:** NON GC **MAP ID:**

NAME: SEAL BEACH GENERATING STATION
ADDRESS: 1ST ST
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 04/24/07
ID1: T0605900263
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *88IC049*
RESPONSIBLE PARTY: *LOS ANGELES D.W.P.*
ADDRESS OF RESPONSIBLE PARTY: *P.O. BOX 111, LOS ANGELES, CA 90051*
SITE OPERATOR:
WATER SYSTEM:

CASE NUMBER: *083000336T*
CASE TYPE: *SOIL ONLY*
SUBSTANCE LEAKED: *HEATER FUEL*
SUBSTANCE QUANTITY:
LEAK CAUSE: *STRUCTURE FAILURE*
LEAK SOURCE: *TANK*
HOW LEAK WAS DISCOVERED: *NO DESCRIPTION*
DATE DISCOVERED (blank if not reported): *1986-07-11 00:00:00*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency): *EXCAVATE AND DISPOSE-REMOVE CONTAMINATED SOIL AND DISPOSE IN APPROVED SITE*
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency):
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1987-06-10 00:00:00*
REVIEW DATE (blank if not reported): *1987-04-15 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported):
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1987-04-15 00:00:00*
REPORT DATE (blank if not reported): *1986-07-11 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *0*
MTBE TESTED: *NOT REQUIRED TO BE TESTED*
MTBE CLASS: *

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803
JOB: TSY0701

LUST

SEARCH ID: 115 **DIST/DIR:** NON GC **MAP ID:**

NAME: STATE LANDS COMMISSION
ADDRESS: PACIFIC COAST HWY
SEAL BEACH CA 90740
ORANGE
CONTACT:

REV: 04/24/07
ID1: T0605900594
ID2:
STATUS: CASE CLOSED
PHONE:

RELEASE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

Please note that some data previously provided by the State Water Resources Control Board in the LUSTIS database is not currently being provided by the agency in the most recent edition. Incidents that occurred after the year 2000 may not have much information. Field headers with blank information following after should be interpreted as unreported by the agency.

LEAD AGENCY: *LOCAL AGENCY*
REGIONAL BOARD: *08*
LOCAL CASE NUMBER: *88IC69*
RESPONSIBLE PARTY: *STATE LANDS COMMISSION*
ADDRESS OF RESPONSIBLE PARTY: *1807 13TH STREET, SACRAMENTO, CA 95814*
SITE OPERATOR: *DEDRICK, CLARE*
WATER SYSTEM:

CASE NUMBER: *083000751T*
CASE TYPE: *SOIL ONLY*
SUBSTANCE LEAKED: *GASOLINE*
SUBSTANCE QUANTITY:
LEAK CAUSE:
LEAK SOURCE:
HOW LEAK WAS DISCOVERED:
DATE DISCOVERED (blank if not reported): *1986-02-21 00:00:00*
HOW LEAK WAS STOPPED:
STOP DATE (blank if not reported):
STATUS: *CASE CLOSED*
ABATEMENT METHOD (please note that not all code translations have been provided by the reporting agency):
ENFORCEMENT TYPE (please note that not all code translations have been provided by the reporting agency): *CLOS*
DATE OF ENFORCEMENT (blank if not reported):

ENTER DATE (blank if not reported): *1988-02-17 00:00:00*
REVIEW DATE (blank if not reported): *1988-02-17 00:00:00*
DATE OF LEAK CONFIRMATION (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN WAS SUBMITTED (blank if not reported):
DATE PRELIMINARY SITE ASSESSMENT PLAN BEGAN (blank if not reported):
DATE POLLUTION CHARACTERIZATION PLAN BEGAN (blank if not reported): *1988-02-17 00:00:00*
DATE REMEDIATION PLAN WAS SUBMITTED (blank if not reported):
DATE REMEDIAL ACTION UNDERWAY (blank if not reported):
DATE POST REMEDIAL ACTION MONITORING BEGAN (blank if not reported):
DATE CLOSURE LETTER ISSUED (SITE CLOSED) (blank if not reported): *1989-11-21 00:00:00*
REPORT DATE (blank if not reported): *1988-01-08 00:00:00*

MTBE DATA FROM THE CALIFORNIA STATE WATER RESOURCES CONTROL BOARD LUSTIS DATABASE

MTBE DATE(Date of historical maximum MTBE concentration):
MTBE GROUNDWATER CONCENTRATION (parts per billion):
MTBE SOIL CONCENTRATION (parts per million):
MTBE CNTS: *0*
MTBE FUEL: *1*
MTBE TESTED: *SITE NOT TESTED FOR MTBE. INCLUDES UNKNOWN AND NOT ANALYZED*
MTBE CLASS: *

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

ERNS

SEARCH ID: 92 **DIST/DIR:** NON GC **MAP ID:**

NAME: UNK
ADDRESS: SHORELINE MARINA
LONG BEACH CA
LOS ANGELES
CONTACT:

REV:
ID1: 109908
ID2:
STATUS: UNKNOWN
PHONE:

THERE ARE NO DETAILS AVAILABLE FOR THIS SITE

Environmental FirstSearch
Site Detail Report

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

SWL

SEARCH ID: 104 **DIST/DIR:** NON GC **MAP ID:**

NAME:	CITY DUMP AND SALAVAGE 1and3	**REV:**	06/07/07
ADDRESS:	PACIFIC COAST HIGHWAY AT LOYNES DRIVE	**ID1:**	SWIS19-AK-5003
	LONG BEACH CA	**ID2:**	
	LOS ANGELES	**STATUS:**	CLOSED
CONTACT:		**PHONE:**	

SITE OPERATOR INFORMATION:

Operator:
Operator Address:
Permit Date:
Permit Status:
Land Use Name: *Urban,Residential,Park,Golf Course,Commercial*
GIS Source for LAT and LONG: *GPS*

SITE ACTIVITY INFORMATION:

Activity: *Solid Waste Disposal Site*
Accepted Waste:
Operational Status: *Closed*
Regulatory Status *Unpermitted*
Program Type
Closure Date: *12/31/1956*
Closure Type: *Estimated*
Permitted Throughput with Units:
Permitted Capacity with Units:
Remaining Capacity with Units (landfills only):
Permitted Total Acreage:
Permitted Disposal Acreage:
Last Tire Inspection Count:
Last Tire Inspection Count Date:
Original Tire Inspection Count:
Last Tire Inspection Count Date:
Inspection Frequency: *Quarterly*

SITE OWNER INFORMATION:

Owner: *Alamitos Bay Partnership c/c Owners*
Owner Phone: *8185760737*
Owner Address: *The Jacmar Company*

Environmental FirstSearch Descriptions

NPL: ***EPA*** NATIONAL PRIORITY LIST - The National Priorities List is a list of the worst hazardous waste sites that have been identified by Superfund. Sites are only put on the list after they have been scored using the Hazard Ranking System (HRS), and have been subjected to public comment. Any site on the NPL is eligible for cleanup using Superfund Trust money.
A Superfund site is any land in the United States that has been contaminated by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.
FINAL - Currently on the Final NPL
PROPOSED - Proposed for NPL

NPL DELISTED: ***EPA*** NATIONAL PRIORITY LIST Subset - Database of delisted NPL sites. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.
DELISTED - Deleted from the Final NPL

CERCLIS: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM (CERCLIS)- CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL.
PART OF NPL- Site is part of NPL site
DELETED - Deleted from the Final NPL
FINAL - Currently on the Final NPL
NOT PROPOSED - Not on the NPL
NOT VALID - Not Valid Site or Incident
PROPOSED - Proposed for NPL
REMOVED - Removed from Proposed NPL
SCAN PLAN - Pre-proposal Site
WITHDRAWN - Withdrawn

NFRAP: ***EPA*** COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY INFORMATION SYSTEM ARCHIVED SITES - database of Archive designated CERCLA sites that, to the best of EPA's knowledge, assessment has been completed and has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.
NFRAP – No Further Remedial Action Plan
P - Site is part of NPL site
D - Deleted from the Final NPL
F - Currently on the Final NPL
N - Not on the NPL
O - Not Valid Site or Incident
P - Proposed for NPL
R - Removed from Proposed NPL
S - Pre-proposal Site
W – Withdrawn

RCRA COR ACT: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
RCRAInfo facilities that have reported violations and subject to corrective actions.

RCRA TSD: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM

TREATMENT, STORAGE, and DISPOSAL FACILITIES. - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that treat, store, dispose, or incinerate hazardous waste.

RCRA GEN: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM GENERATORS - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities that generate or transport hazardous waste or meet other RCRA requirements.
LGN - Large Quantity Generators
SGN - Small Quantity Generators
VGN – Conditionally Exempt Generator.
Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List) facilities.

RCRA NLR: ***EPA*** RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM SITES - Database of hazardous waste information contained in the Resource Conservation and Recovery Act Information (RCRAInfo), a national program management and inventory system about hazardous waste handlers. In general, all generators, transporters, treaters, storers, and disposers of hazardous waste are required to provide information about their activities to state environmental agencies. These agencies, in turn pass on the information to regional and national EPA offices. This regulation is governed by the Resource Conservation and Recovery Act (RCRA), as amended by the Hazardous and Solid Waste Amendments of 1984.
Facilities not currently classified by the EPA but are still included in the RCRAInfo database. Reasons for non classification:
Failure to report in a timely matter.
No longer in business.
No longer in business at the listed address.
No longer generating hazardous waste materials in quantities which require reporting.

Federal IC / EC: ***EPA*** BROWNFIELD MANAGEMENT SYSTEM (BMS) - database designed to assist EPA in collecting, tracking, and updating information, as well as reporting on the major activities and accomplishments of the various Brownfield grant Programs.
FEDERAL ENGINEERING AND INSTITUTIONAL CONTROLS- Superfund sites that have either an engineering or an institutional control. The data includes the control and the media contaminated.

ERNS: ***EPA/NRC*** EMERGENCY RESPONSE NOTIFICATION SYSTEM (ERNS) - Database of incidents reported to the National Response Center. These incidents include chemical spills, accidents involving chemicals (such as fires or explosions), oil spills, transportation accidents that involve oil or chemicals, releases of radioactive materials, sightings of oil sheens on bodies of water, terrorist incidents involving chemicals, incidents where illegally dumped chemicals have been found, and drills intended to prepare responders to handle these kinds of incidents. Data since January 2001 has been received from the National Response System database as the EPA no longer maintains this data.

Tribal Lands: ***DOI/BIA*** INDIAN LANDS OF THE UNITED STATES - Database of areas with boundaries established by treaty, statute, and (or) executive or court order, recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority. The Indian Lands of the United States map layer shows areas of 640 acres or more, administered by the Bureau of Indian Affairs. Included are Federally-administered lands within a reservation which may or may not be considered part of the reservation.

State/Tribal Sites: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at

properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
CORTESE LIST-Pursuant to Government Code Section 65962.5, the Hazardous Waste and Substances Sites List has been compiled by Cal/EPA, Hazardous Materials Data Management Program. The CAL EPA Dept. of Toxic Substances Control compiles information from subsets of the following databases to make up the CORTESE list:
1. The Dept. of Toxic Substances Control; contaminated or potentially contaminated hazardous waste sites listed in the CAL Sites database. Formerly known as ASPIS are included (CALSITES formerly known as ASPIS).
2. The California State Water Resources Control Board; listing of Leaking Underground Storage Tanks are included (LTANK)
3. The California Integrated Waste Management Board; Sanitary Landfills which have evidence of groundwater contamination or known migration of hazardous materials (formerly WB-LF, now AB 3750).
Note: Track Info Services collects each of the above data sets individually and lists them separately in the following First Search categories in order to provide more current and comprehensive information: CALSITES: SPL, LTANK: LUST, WB-LF: SWL

State Spills 90: ***CA EPA*** SLIC REGIONS 1 - 9- The California Regional Water Quality Control Boards maintain report of sites that have records of spills, leaks, investigation, and cleanups.

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** SWIS SOLID WASTE INFORMATION SYSTEM-The California Integrated Waste Management Board maintains a database on solid waste facilities, operations, and disposal sites throughout the state of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites. For more information on individual sites call the number listed in the source field..
Please Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.
WMUDS-The State Water Resources Control Board maintained the Waste Management Unit Database System (WMUDS). It is no longer updated. It tracked management units for several regulatory programs related to waste management and its potential impact on groundwater. Two of these programs (SWAT & TPCA) are no longer on-going regulatory programs as described below. Chapter 15 (SC15) is still an on-going regulatory program and information is updated periodically but not to the WMUDS database. The WMUDS System contains information from the following agency databases: Facility, Waste Management Unit (WMU), Waste Discharger System (WDS), SWAT, Chapter 15, TPCA, RCRA, Inspections, Violations, and Enforcement's.
Note: This database contains poor site location information for many sites in the First Search reports; therefore, it may not be possible to locate or plot some sites in First Search reports.
ORANGE COUNTY LANDFILLS LIST- A list maintained by the Orange County Health Department.

State/Tribal LUST: ***CA SWRCB/COUNTY*** LUSTIS- The State Water Resources Control Board maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks. Information for this database is collected from the states regional boards quarterly and integrated with this database.
SAN DIEGO COUNTY LEAKING TANKS- The San Diego County Department of Environmental Health maintains a database of sites with confirmed or unconfirmed leaking underground storage tanks within its HE17/58 database. For more information on a specific file call the HazMat Duty Specialist at phone number listed in the source information field.

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** ABOVEGROUND STORAGE TANKS LISTING-The Above Ground Petroleum Storage Act became State Law effective January 1, 1990. In general, the law requires owners or operators of AST's with petroleum products to file a storage statement and pay a fee by July 1, 1990 and every two years thereafter, take specific action to prevent spills, and in certain instances implement a

groundwater monitoring program. This law does not apply to that portion of a tank facility associated with the production oil and regulated by the State Division of Oil and Gas of the Dept. of Conservation.
SWEEPS / FIDS STATE REGISTERED UNDEGROUND STORAGE TANKS- Until 1994 the State Water Resources Control Board maintained a database of registered underground storage tanks statewide referred to as the SWEEPS System. The SWEEPS UST information was integrated with the CAL EPA's Facility Index System database (FIDS) which is a master index of information from numerous California agency environmental databases. That was last updated in 1994. Track Info Services included the UST information from the FIDS database in its First Search reports for historical purposes to help its clients identify where tanks may possibly have existed. For more information on specific sites from individual paper files archived at the State Water Resources Control Board call the number listed with the source information.
INDIAN LANDS UNDERGROUND STORAGE TANKS LIST- A listing of underground storage tanks currently on Indian Lands under federal jurisdiction. California Indian Land USTS are administered by US EPA Region 9.
CUPA DATABASES & SOURCES- Definition of a CUPA: A Certified Unified Program Agency (CUPA) is a local agency that has been certified by the CAL EPA to implement six state environmental programs within the local agency's jurisdiction. These can be a county, city, or JPA (Joint Powers Authority). This program was established under the amendments to the California Health and Safety Code made by SB 1082 in 1994.
A Participating Agency (PA) is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A Designated Agency (DA) is an agency that has not been certified by the CUPA but is the responsible local agency that would implement the six unified programs until they are certified.
Please Note: Track Info Services, LLC collects and maintains information regarding Underground Storage Tanks from majority of the CUPAS and Participating Agencies in the State of California. These agencies typically do not maintain nor release such information on a uniform or consistent schedule; therefor, currency of the data may vary. Please look at the details on a specific site with a UST record in the First Search Report to determine the actual currency date of the record as provided by the relevant agency. Numerous efforts are made on a regular basis to obtain updated records.

State/Tribal IC: ***CA EPA*** DEED-RESTRICTED SITES LISTING- The California EPA's Department of Toxic Substances Control Board maintains a list of deed-restricted sites, properties where the DTSC has placed limits or requirements on the future use of the property due to varying levels of cleanup possible, practical or necessary at the site.

State/Tribal VCP: ***CA EPA*** SMBRPD / CAL SITES- The California Department of Toxic Substances Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
The SMBRPD displays information in six categories. The categories are:
1. CalSites Properties (CS)
2. School Property Evaluation Program Properties (SCH)
3. Voluntary Cleanup Program Properties (VCP)
4. Unconfirmed Properties Needing Further Evaluation (RFE)
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type VC. Each Category contains information on properties based upon the type of work taking place at the site. The VC category contains only those properties undergoing voluntary investigation and/or cleanup and which are listed in the Voluntary Cleanup Program.

RADON: ***NTIS*** NATIONAL RADON DATABASE - EPA radon data from 1990-1991 national radon project collected for a variety of zip codes across the United States.

State Permits: ***CA COUNTY*** SAN DIEGO COUNTY HE17 PERMITS- The HE17/58 database tracks establishments issued permits and the status of their permits in relation to compliance with federal, state, and local regulations that the County oversees. It tracks if a site is a hazardous waste generator, TSD, gas station, has underground tanks, violations, or unauthorized releases. For more information on a specific file call the HazMat Duty Specialist at the phone number listed in the source information field.
SAN BERNARDINO COUNTY HAZARDOUS MATERIALS PERMITS- Handlers and Generators Permit Information Maintained by the Hazardous Materials Division.

State Other: ***CA EPA/COUNTY*** SMBRPD / CAL SITES- The California Department of Toxic Substances

Control (DTSC) has developed an electronic database system with information about sites that are known to be contaminated with hazardous substances as well as information on uncharacterized properties where further studies may reveal problems. The Site Mitigation and Brownfields Reuse Program Database (SMBRPD), also known as CalSites, is used primarily by DTSC's staff as an informational tool to evaluate and track activities at properties that may have been affected by the release of hazardous substances.
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4. Unconfirmed Properties Needing Further Evaluation (RFE)
Please Note: FirstSearch Reports list the above sites as DB Type (STATE).
5. Unconfirmed Properties Referred to Another Local or State Agency (REF)
6. Properties where a No Further Action Determination has been made (NFA)
Please Note: FirstSearch Reports list the above sites as DB Type (OTHER).
Each Category contains information on properties based upon the type of work taking place at the site. For example, the CalSites database is now one of the six categories within SMPBRD and contains only confirmed sites considered as posing the greatest threat to the public and/or the potential public school sites will be found within the School Property Evaluation Program, and those properties undergoing voluntary investigation and/or cleanup are in the Voluntary Cleanup Program.
LA COUNTY SITE MITIGATION COMPLAINT CONTROL LOG- The County of Los Angeles Public Health Investigation Compliant Control Log.
ORANGE COUNTY INDUSTRIAL SITE CLEANUPS- List maintained by the Orange County Environmental Health Agency.
RIVERSIDE COUNTY WASTE GENERATORS-A list of facilities in Riverside County which generate hazardous waste.
SACRAMENTO COUNTY MASTER HAZMAT LIST-Master list of facilities within Sacramento County with potentially hazardous materials.
SACRAMENTO COUNTY TOXIC SITE CLEANUPS-A list of sites where unauthorized releases of potentially hazardous materials have occurred.

Environmental FirstSearch Database Sources

NPL: ***EPA*** Environmental Protection Agency

Updated quarterly

NPL DELISTED: ***EPA*** Environmental Protection Agency

Updated quarterly

CERCLIS: ***EPA*** Environmental Protection Agency

Updated quarterly

NFRAP: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA COR ACT: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA TSD: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA GEN: ***EPA*** Environmental Protection Agency.

Updated quarterly

RCRA NLR: ***EPA*** Environmental Protection Agency

Updated quarterly

Federal IC / EC: ***EPA*** Environmental Protection Agency

Updated quarterly

ERNS: ***EPA/NRC*** Environmental Protection Agency

Updated semi-annually

Tribal Lands: ***DOI/BIA*** United States Department of the Interior

Updated annually

State/Tribal Sites: ***CA EPA*** The CAL EPA, Depart. Of Toxic Substances Control

Phone: (916) 323-3400

Updated quarterly/when available

State Spills 90: ***CA EPA*** The California State Water Resources Control Board

Updated when available

State/Tribal SWL: ***CA IWMB/SWRCB/COUNTY*** The California Integrated Waste Management Board
Phone:(916) 255-2331
The State Water Resources Control Board
Phone:(916) 227-4365
Orange County Health Department

Updated quarterly/when available

State/Tribal LUST: ***CA SWRCB/COUNTY*** The California State Water Resources Control Board
Phone:(916) 227-4416
San Diego County Department of Environmental Health

Updated quarterly/when available

State/Tribal UST/AST: ***CA EPA/COUNTY/CITY*** The State Water Resources Control Board
Phone:(916) 227-4364
CAL EPA Department of Toxic Substances Control
Phone:(916)227-4404
US EPA Region 9 Underground Storage Tank Program
Phone: (415) 972-3372
ALAMEDA COUNTY CUPAS:
* County of Alameda Department of Environmental Health
* Cities of Berkeley, Fremont, Hayward, Livermore / Pleasanton, Newark, Oakland, San Leandro, Union
ALPINE COUNTY CUPA:
* Health Department (Only updated by agency sporadically)
AMADOR COUNTY CUPA:
* County of Amador Environmental Health Department
BUTTE COUNTY CUPA
* County of Butte Environmental Health Division (Only updated by agency biannually)
CALAVERAS COUNTY CUPA:
* County of Calaveras Environmental Health Department
COLUSA COUNTY CUPA:
* Environmental Health Dept.
CONTRA COSTA COUNTY CUPA:
* Hazardous Materials Program
DEL NORTE COUNTY CUPA:
* Department of Health and Social Services
EL DORADO COUNTY CUPAS:
* County of El Dorado Environmental Health - Solid Waste Div (Only updated by agency annually)
* County of El Dorado EMD Tahoe Division (Only updated by agency annually)
FRESNO COUNTY CUPA:
* Haz. Mat and Solid Waste Programs
GLENN COUNTY CUPA:
* Air Pollution Control District
HUMBOLDT COUNTY CUPA:
* Environmental Health Division
IMPERIAL COUNTY CUPA:
* Department of Planning and Building
INYO COUNTY CUPA:
* Environmental Health Department

KERN COUNTY CUPA:
* County of Kern Environmental Health Department
* City of Bakersfield Fire Department
KINGS COUNTY CUPA:
* Environmental Health Services
LAKE COUNTY CUPA:
* Division of Environmental Health
LASSEN COUNTY CUPA:
* Department of Agriculture
LOS ANGELES COUNTY CUPAS:
* County of Los Angeles Fire Department CUPA Data as maintained by the Los Angeles County Department of Public Works
* County of Los Angeles Environmental Programs Division
* Cities of Burbank, El Segundo, Glendale, Long Beach/Signal Hill, Los Angeles,Pasadena, Santa Fe Springs, Santa Monica, Torrance, Vernon
MADERA COUNTY CUPA:
* Environmental Health Department
MARIN COUNTY CUPA:
* County of Marin Office of Waste Management
* City of San Rafael Fire Department
MARIPOSA COUNTY CUPA:
* Health Department
MENDOCINO COUNTY CUPA:
* Environmental Health Department
MERCED COUNTY CUPA:
* Division of Environmental Health
MODOC COUNTY CUPA:
* Department of Agriculture
MONO COUNTY CUPA:
* Health Department
MONTEREY COUNTY CUPA:
* Environmental Health Division
NAPA COUNTY CUPA:
* Hazardous Materials Section
NEVADA COUNTY CUPA:
* Environmental Health Department
ORANGE COUNTY CUPAS:
* County of Orange Environmental Health Department
* Cities of Anaheim, Fullerton, Orange, Santa Ana
* County of Orange Environmental Health Department
PLACER COUNTY CUPAS:
* County of Placer Division of Environmental Health Field Office
* Tahoe City
* City of Roseville Roseville Fire Department
PLUMAS COUNTY CUPA:
* Environmental Health Department
RIVERSIDE COUNTY CUPA:
* Environmental Health Department
SACRAMENTO COUNTY CUPA:
* County Environmental Mgmt Dept, Haz. Mat. Div.
SAN BENITO COUNTY CUPA:
* City of Hollister Environmental Service Department
SAN BERNARDINO COUNTY CUPAS:
* County of San Bernardino Fire Department, Haz. Mat. Div.
* City of Hesperia Hesperia Fire Prevention Department
*City of Victorville Victorville Fire Department
SAN DIEGO COUNTY CUPA:
* The San Diego County Dept. of Environmental Health HE 17/58
SAN FRANCISCO COUNTY CUPA:
* Department of Public Health
SAN JOAQUIN COUNTY CUPA:
* Environmental Health Division

SAN LUIS OBISPO COUNTY CUPAS:
* County of San Luis Obispo Environmental Health Division
* City of San Luis Obispo City Fire Department
SAN MATEO COUNTY CUPA:
* Environmental Health Department
SANTA BARBARA COUNTY CUPA:
* County Fire Dept Protective Services Division
SANTA CLARA COUNTY CUPAS:
* County of Santa Clara Hazardous Materials Compliance Division
* Santa Clara County Central Fire Protection District (Covers Campbell, Cupertino, Los Gatos, & Morgan Hill)
* Cities of Gilroy, Milpitas, Mountain View, Palo Alto, San Jose Fire, Santa Clara, Sunnyvale
SANTA CRUZ COUNTY CUPA:
* Environmental Health Department
SHASTA COUNTY CUPA:
* Environmental Health Department
SIERRA COUNTY CUPA:
* Health Department
SISKIYOU COUNTY CUPA:
* Environmental Health Department
SONOMA COUNTY CUPAS:
* County of Sonoma Department Of Environmental Health
* Cities of Healdsburg / Sebastopol, Petaluma, Santa Rosa
STANISLAUS COUNTY CUPA:
* Department of Environmental Resources Haz. Mat. Division
SUTTER COUNTY CUPA:
* Department of Agriculture
TEHAMA COUNTY CUPA:
* Department of Environmental Health
TRINITY COUNTY CUPA:
* Department of Health
TULARE COUNTY CUPA:
* Environmental Health Department
TUOLUMNE COUNTY CUPA:
* Environmental Health
VENTURA COUNTY CUPAS:
* County of Ventura Environmental Health Division
* Cities of Oxnard, Ventura
YOLO COUNTY CUPA:
* Environmental Health Department
YUBA COUNTY CUPA:

Updated quarterly/annually/when available

State/Tribal IC: ***CA EPA*** The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

State/Tribal VCP: ***CA EPA*** The California EPA Department of Toxic Substances Control.

Updated Updated quarterly/annually/when available

RADON: ***NTIS*** Environmental Protection Agency, National Technical Information Services

Updated periodically

State Permits: ***CA COUNTY*** The San Diego County Depart. Of Environmental Health
Phone:(619) 338-2211
San Bernardino County Fire Department

Updated quarterly/when available

State Other: ***CA EPA/COUNTY*** The CAL EPA, Depart. Of Toxic Substances Control
Phone: (916) 323-3400
The Los Angeles County Hazardous Materials Division
Phone: (323) 890-7806
Orange County Environmental Health Agency
Phone: (714) 834-3536
Riverside County Department of Environmental Health, Hazardous Materials Management Division
Phone:(951) 358-5055
Sacramento County Environmental Management Department

Updated quarterly/when available

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

Street Name	Dist/Dir	Street Name	Dist/Dir
1st St	0.15 SE	Isthmus	0.25 NW
2nd St	0.23 SE	Laguna Ct	0.22 NW
54th Pl	0.12 NW	Laguna Pl	0.00 --
55th Pl	0.00 --	Lido Ln	0.01 SW
56th Pl	0.00 --	Majorca Cir	0.09 NW
57th Pl	0.00 --	Malaga Ct	0.09 NW
58th Pl	0.00 --	Marina Dr	0.01 SE
59th Pl	0.00 --	Marina Pacifica Dr	0.00 --
60th Pl	0.00 --	N Ancona Dr	0.14 SW
61st Pl	0.00 --	N Angelo Walk	0.00 --
62nd Pl	0.00 --	N Attica Dr	0.00 --
63rd Pl	0.00 --	N Campo Dr	0.13 SW
64th Pl	0.00 --	N Cordova Walk	0.00 --
65th Pl	0.00 --	N Corinthian Walk	0.12 NE
66th Pl	0.00 --	N Florence Walk	0.04 NE
67th Pl	0.00 --	N Geneva Walk	0.02 NE
68th Pl	0.00 --	N Ginevra Walk	0.02 SW
69th Pl	0.00 --	N Giralda Walk	0.13 NE
70th Pl	0.00 --	N Loreta Walk	0.05 SW
71st Pl	0.00 --	N Marina Dr	0.00 --
Ancona Dr	0.04 SW	N Novara Dr	0.09 SW
Attica Dr	0.10 SW	N Palermo Walk	0.03 NE
Avalon Ct	0.22 NW	N Rafael Walk	0.01 SW
Balboa Pl	0.00 --	N Ravenna Dr	0.00 --
Bay Shore Ave	0.03 NW	N San Remo Dr	0.11 SW
Blue Cavern Point	0.25 NW	N Savona Walk	0.00 --
Boathouse Ln	0.02 NW	N Sea Isle Dr	0.02 NE
Cadiz Ln	0.20 NW	N Sicilian Walk	0.07 NE
Capri Ct	0.19 NW	N Siena Dr	0.20 NE
Caravel Way	0.23 SE	N Studebaker Rd	0.00 --
Central Ave	0.20 SE	N Syracuse Walk	0.01 SW
Central Way	0.19 SE	N Treasure Island Dr	0.02 NE
Claremont Ave	0.12 NW	N Treasure Island Ln	0.07 NE
Claremont Pl	0.20 NW	N Via Di Roma Walk	0.06 NE
Coastline Dr	0.23 SE	N Virgil Walk	0.07 NE
Cordoba Ct	0.09 NW	N Vista del Golfo Wa	0.06 NE
Corsair Way	0.23 SE	Naples Ave	0.11 SW
Corsica Cir	0.20 NW	Naples Ln	0.15 NE
Corso Di Napoli	0.06 NE	Napoli Ct	0.08 NW
Corso Di Oro	0.00 --	Neapolitan Ln WEST	0.06 NE
Costa del Rey	0.09 NW	NORTH Ancona Dr	0.14 SW
Costa del Sol Way	0.03 NW	NORTH Angelo Walk	0.00 --
Cottonwood Ln	0.08 SE	NORTH Attica Dr	0.00 --
Dana Pl	0.00 --	NORTH Campo Dr	0.13 SW
Dory Way	0.17 SE	NORTH Cordova Walk	0.00 --
E 1st St	0.17 NW	NORTH Corinthian Wal	0.12 NE
E 2nd St	0.00 --	NORTH Florence Walk	0.04 NE
E Appian Way	0.00 --	NORTH Geneva Walk	0.02 NE

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

Street Name	Dist/Dir	Street Name	Dist/Dir
E Bayshore Walk	0.00 --	NORTH Ginevra Walk	0.02 SW
E Campo Walk	0.06 SW	NORTH Giralda Walk	0.13 NE
E Corso Di Napoli	0.01 NE	NORTH Loreta Walk	0.05 SW
E Division St	0.21 NW	NORTH Marina Dr	0.00 --
E Lido Ln	0.09 NE	NORTH Novara Dr	0.09 SW
E Lucia Walk	0.17 NE	NORTH Palermo Walk	0.03 NE
E Marina Dr	0.00 --	NORTH Rafael Walk	0.01 SW
E Naples Canal	0.08 NE	NORTH Ravenna Dr	0.00 --
E Naples Ln	0.13 NE	NORTH San Remo Dr	0.11 SW
E Naples Plz	0.05 SW	NORTH Savona Walk	0.00 --
E Neapolitan Ln	0.10 NE	NORTH Sea Isle Dr	0.02 NE
E Ocean Blvd	0.00 --	NORTH Sicilian Walk	0.07 NE
E Pacific Coast Hwy	0.00 --	NORTH Siena Dr	0.20 NE
E Paoli Way	0.03 NW	NORTH Studebaker Rd	0.00 --
E Riviera Walk	0.25 NE	NORTH Syracuse Walk	0.01 SW
E Saint Irmo Walk	0.21 NE	NORTH Treasure Islan	0.02 NE
E San Marco Way	0.00 --	NORTH Treasure Islan	0.07 NE
E Sorrento Dr	0.01 SW	NORTH Via Di Roma Wa	0.06 NE
E the Toledo	0.15 NE	NORTH Virgil Walk	0.07 NE
E Vesuvian Walk	0.18 NE	NORTH Vista del Golf	0.06 NE
E Vista St	0.22 NW	Ocean Ave	0.13 SE
EAST 1st St	0.17 NW	Pacific Coast Hwy	0.01 NE
EAST 2nd St	0.00 --	Parsons Landing	0.19 NW
EAST Appian Way	0.00 --	Perugia Walk	0.04 SW
EAST Bayshore Walk	0.00 --	Prince Island	0.02 NW
EAST Campo Walk	0.06 SW	Rafael Walk	0.08 SW
EAST Corso Di Napoli	0.01 NE	Regatta Way	0.10 SE
EAST Division St	0.21 NW	Riversea Rd	0.08 SE
EAST Lido Ln	0.09 NE	Rivo Alto Canal	0.09 NE
EAST Lucia Walk	0.17 NE	Salta Verde Point	0.07 NW
EAST Marina Dr	0.00 --	San Marco Dr	0.00 --
EAST Naples Canal	0.08 NE	Santa Ana Ave	0.20 NW
EAST Naples Ln	0.13 NE	Schooner Way	0.17 SE
EAST Naples Plz	0.05 SW	Seaside Walk	0.02 SW
EAST Neapolitan Ln	0.10 NE	Seville Ct	0.15 NW
EAST Ocean Blvd	0.00 --	Smugglers Cv	0.02 NW
EAST Pacific Coast H	0.00 --	Spinnaker Bay Dr	0.02 NW
EAST Paoli Way	0.03 NW	Spinnaker Way	0.08 SE
EAST Riviera Walk	0.25 NE	Surf Pl	0.25 SE
EAST Saint Irmo Walk	0.21 NE	The Colonnade Canal	0.12 NE
EAST San Marco Way	0.00 --	The Toledo	0.00 --
EAST Sorrento Dr	0.01 SW	Tivoli Dr	0.16 SW
EAST the Toledo	0.15 NE	Torbuk Ct	0.04 NW
EAST Vesuvian Walk	0.18 NE	Treasure Island Ln	0.06 NE
EAST Vista St	0.22 NW	Venetia Dr	0.17 NE
Electric Ave	0.16 SE	Welcome Ln	0.08 SE
Galleon Way	0.17 SE	Westminster Ave	0.00 --
Garibaldi Ln	0.10 NE	Whites Landing	0.13 NW

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

Target Property: ALAMITOS BAY MARINA REHABILITATION
LONG BEACH CA 90803

JOB: TSY0701

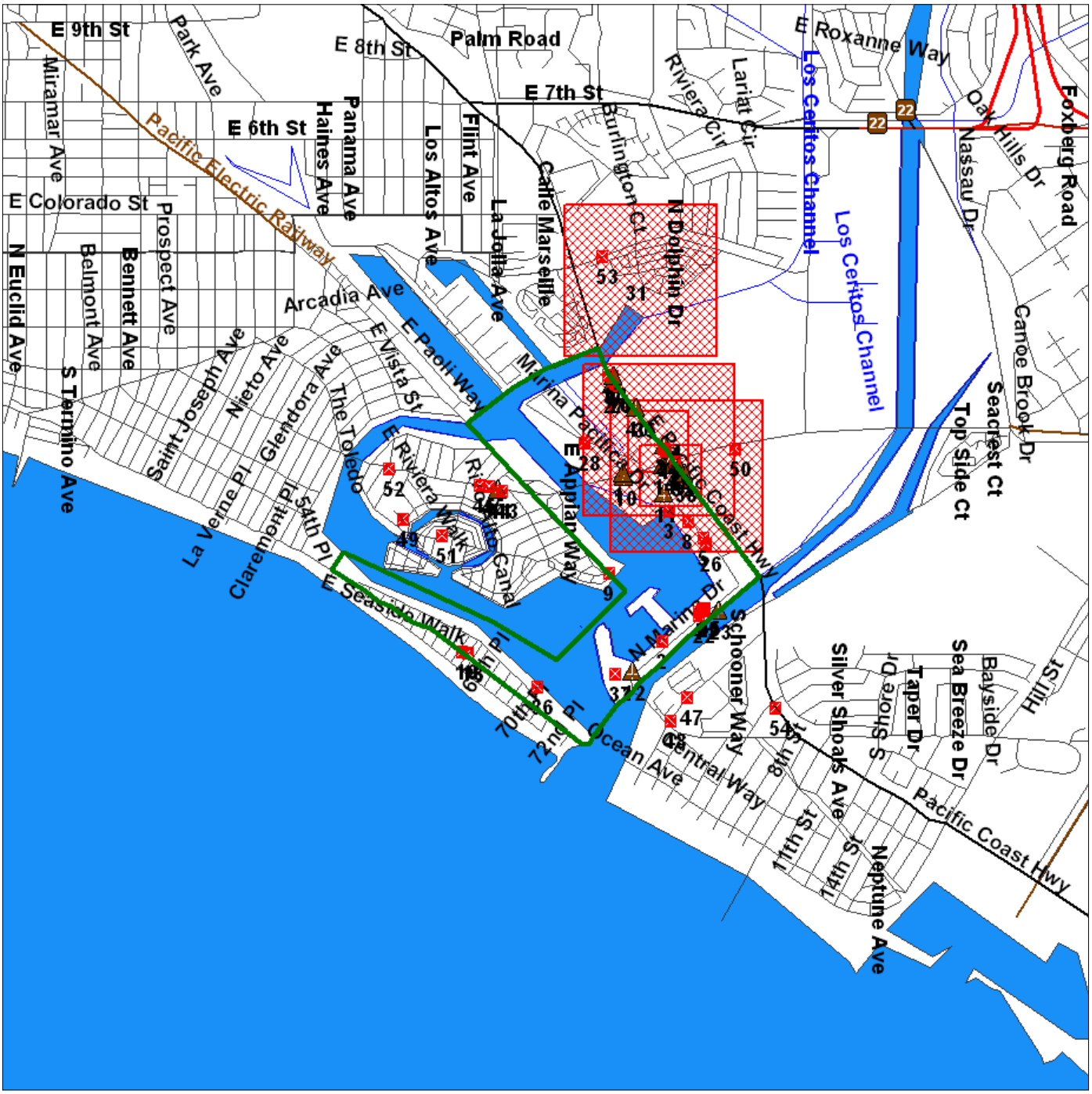
Street Name	Dist/Dir	Street Name	Dist/Dir
Ginevra Walk	0.06 SW		
Ionia Walk	0.17 NE		

Environmental FirstSearch

1 Mile Radius from Area

Single Map:

ALAMITOS BAY MARINA REHABILITATION, LONG BEACH CA 908



Source: U.S. Census TIGER Files

Area Polygon .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Environmental FirstSearch

1 Mile Radius from Area

ASTM-05: NPL, RCRACOR, STATE

ALAMITOS BAY MARINA REHABILITATION, LONG BEACH CA 908

Source: U.S. Census TIGER Files

Area Polygon .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

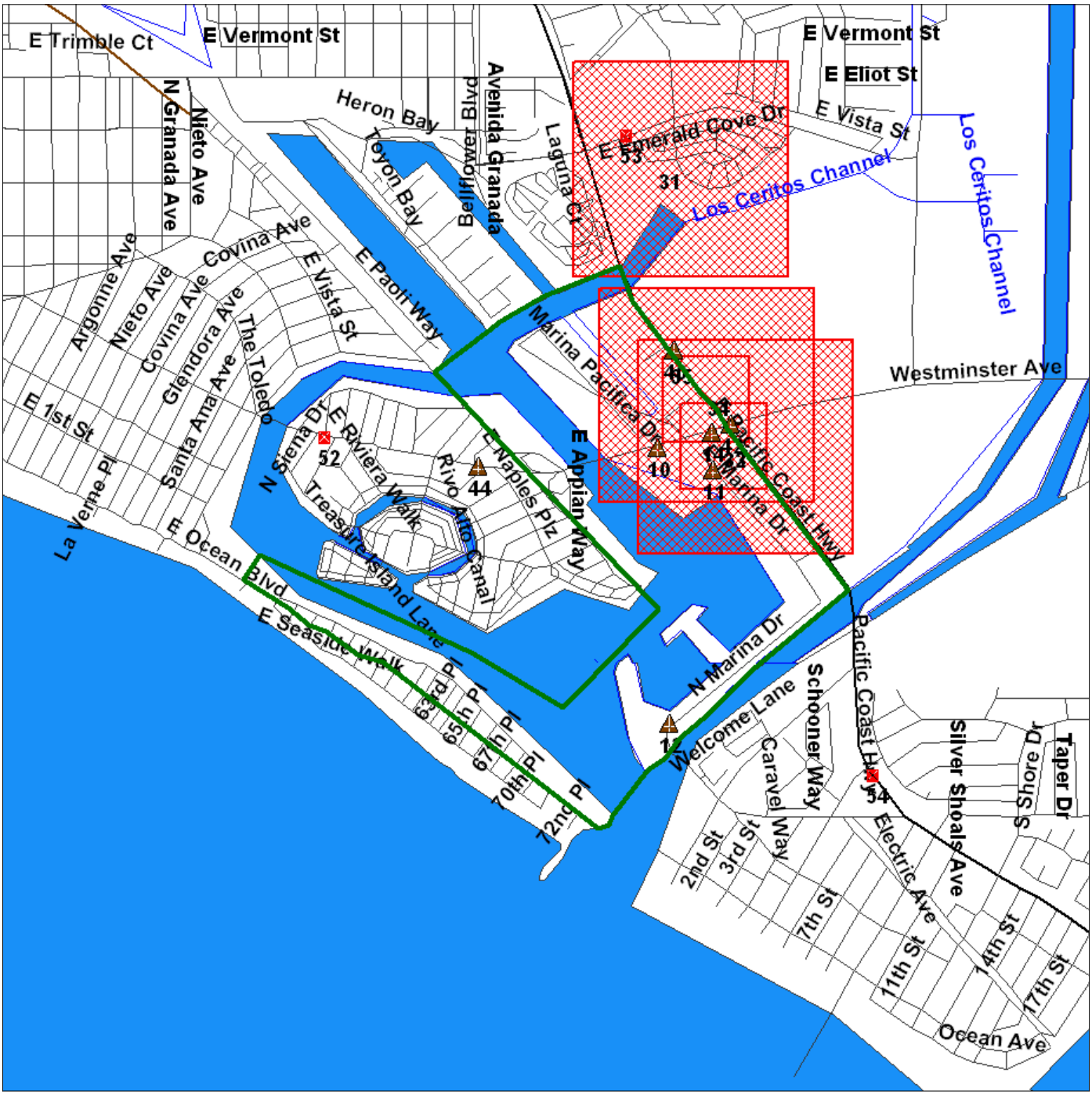
Railroads .....

Environmental FirstSearch

.5 Mile Radius from Area

ASTM-05: Multiple Databases

ALAMITOS BAY MARINA REHABILITATION, LONG BEACH CA 908



Source: U.S. Census TIGER Files

Area Polygon .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

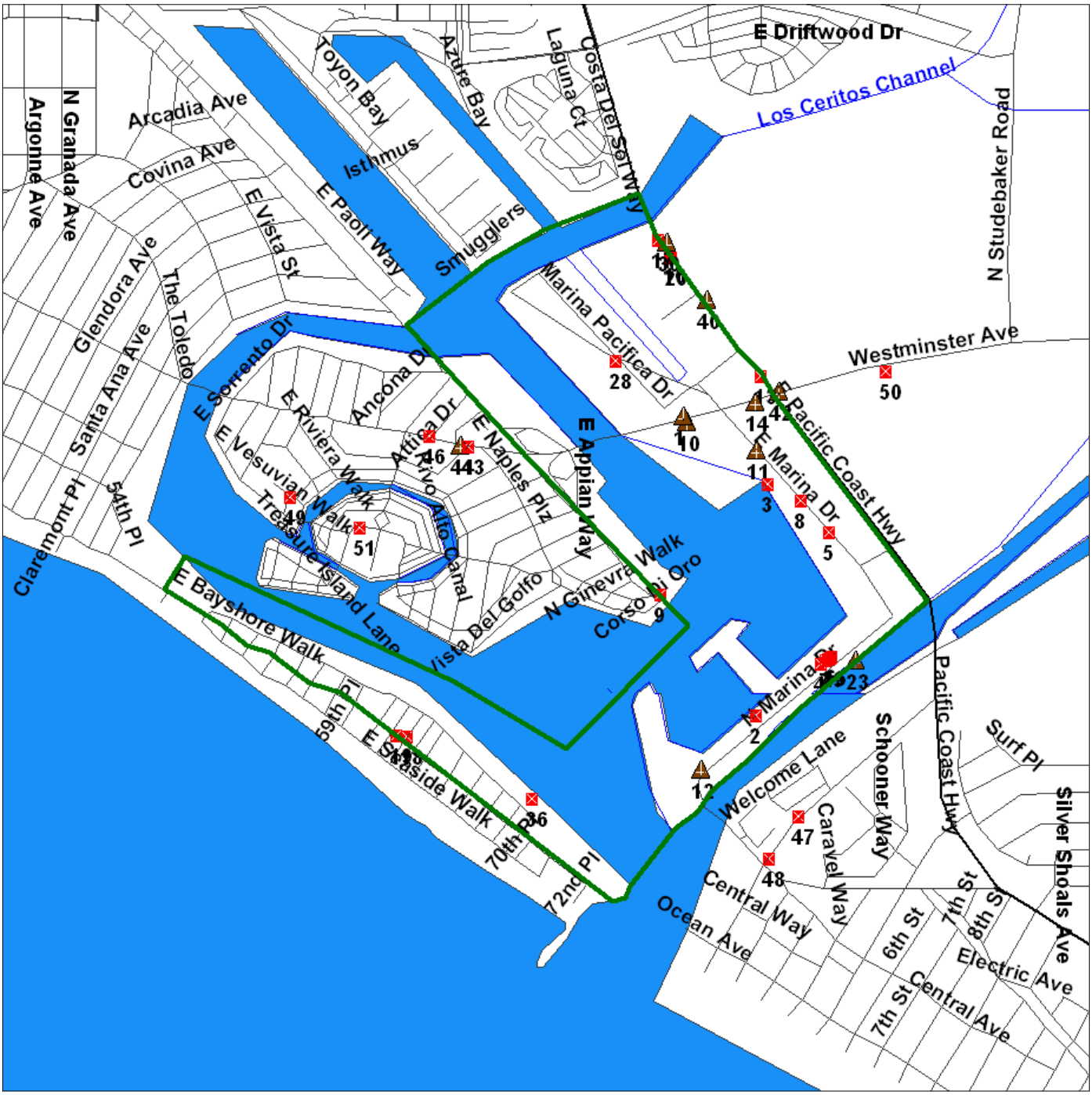
Railroads .....

Environmental FirstSearch

.25 Mile Radius from Area

ASTM-05: RCRAGEN, UST, PERMITS, OTHER

ALAMITOS BAY MARINA REHABILITATION, LONG BEACH CA 908



Source: U.S. Census TIGER Files

Area Polygon .....

Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

Triballand.....

Railroads .....

Environmental FirstSearch

.12 Mile Radius from Area

ASTM-05: SPILLS90, ERNS, RCRANLR

ALAMITOS BAY MARINA REHABILITATION, LONG BEACH CA 908

Source: U.S. Census TIGER Files

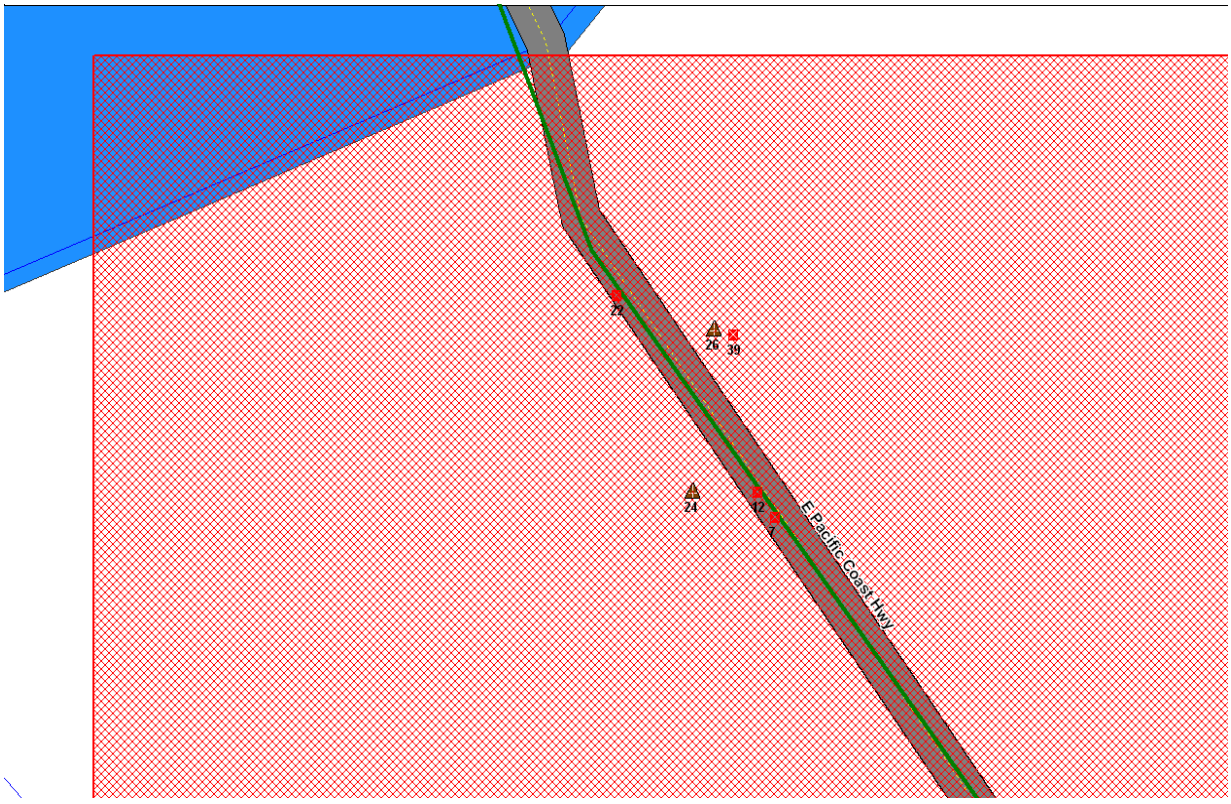
Area Polygon .....

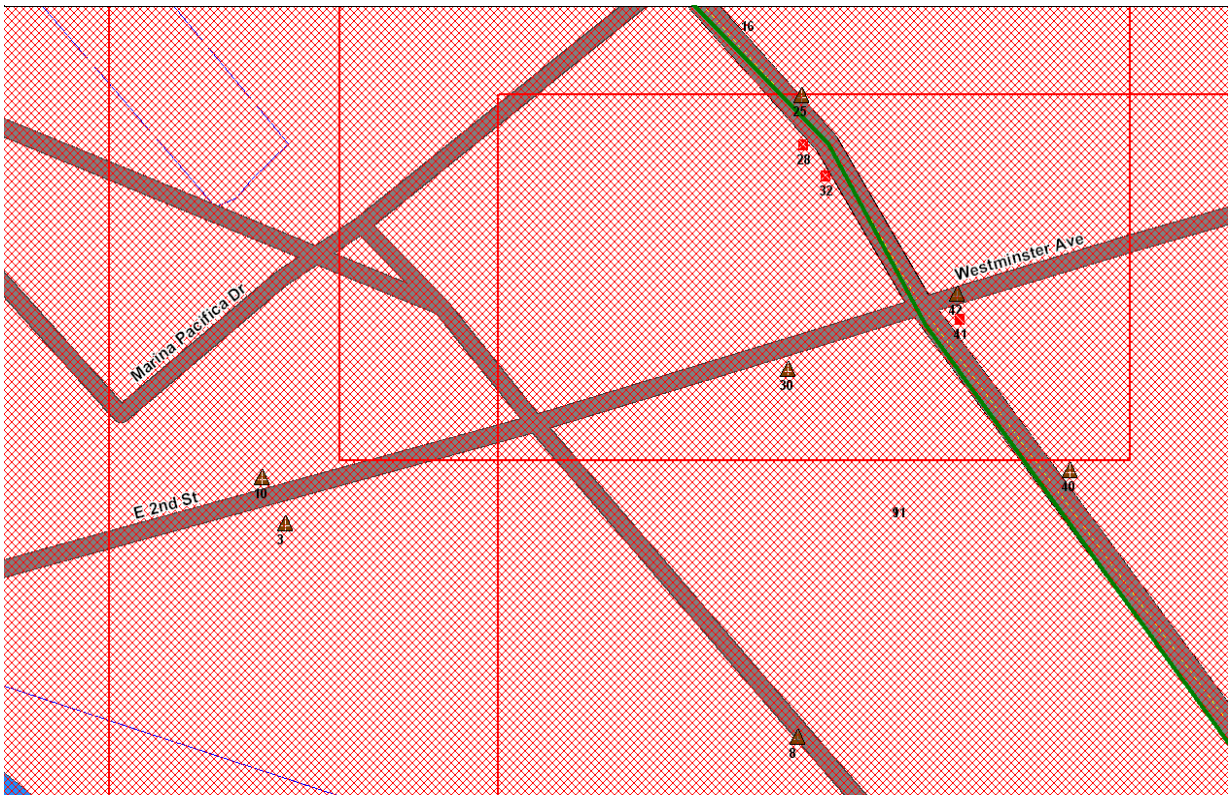
Identified Site, Multiple Sites, Receptor .....

NPL, DELNPL, Brownfield, Solid Waste Landfill (SWL), Hazardous Waste

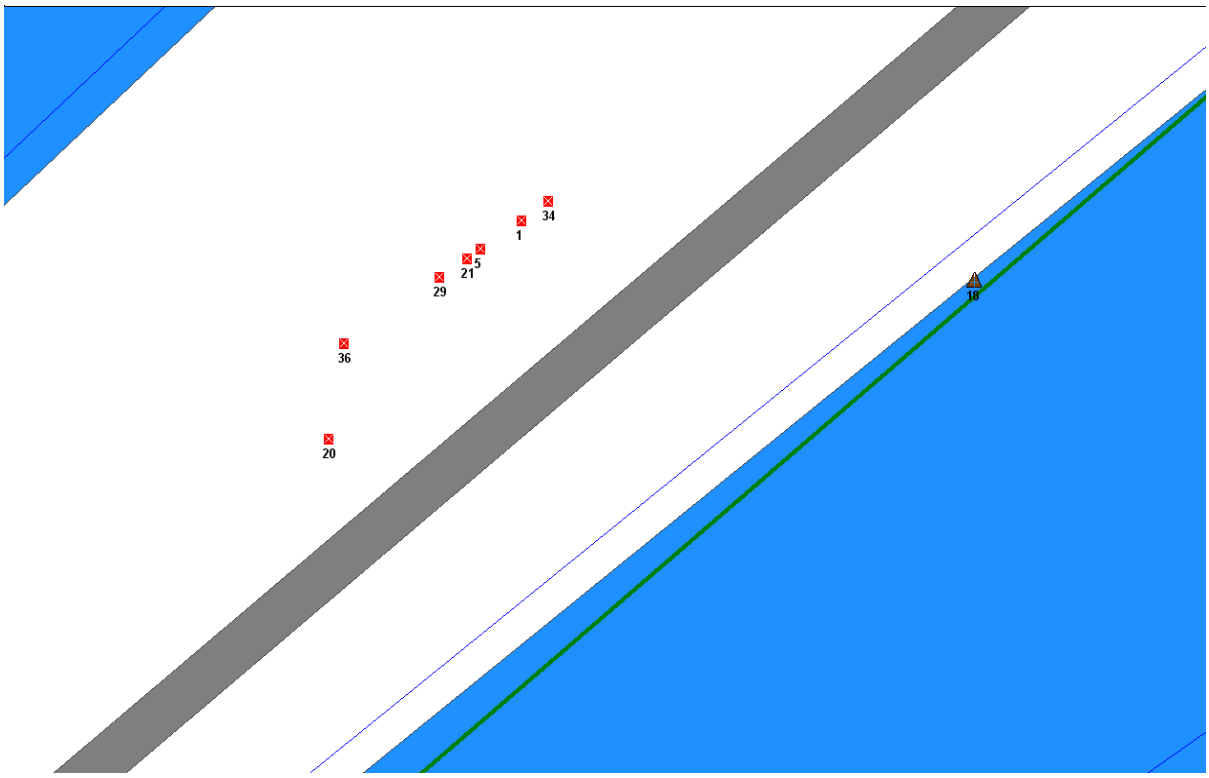
Triballand.....

Railroads .....


22
26
39
24
12
1
E Pacific Coast Hwy


16
25
28
32
Westminster Ave
42
41
30
Marina Pacific Dr
E 2nd St
10
3
40
31
8

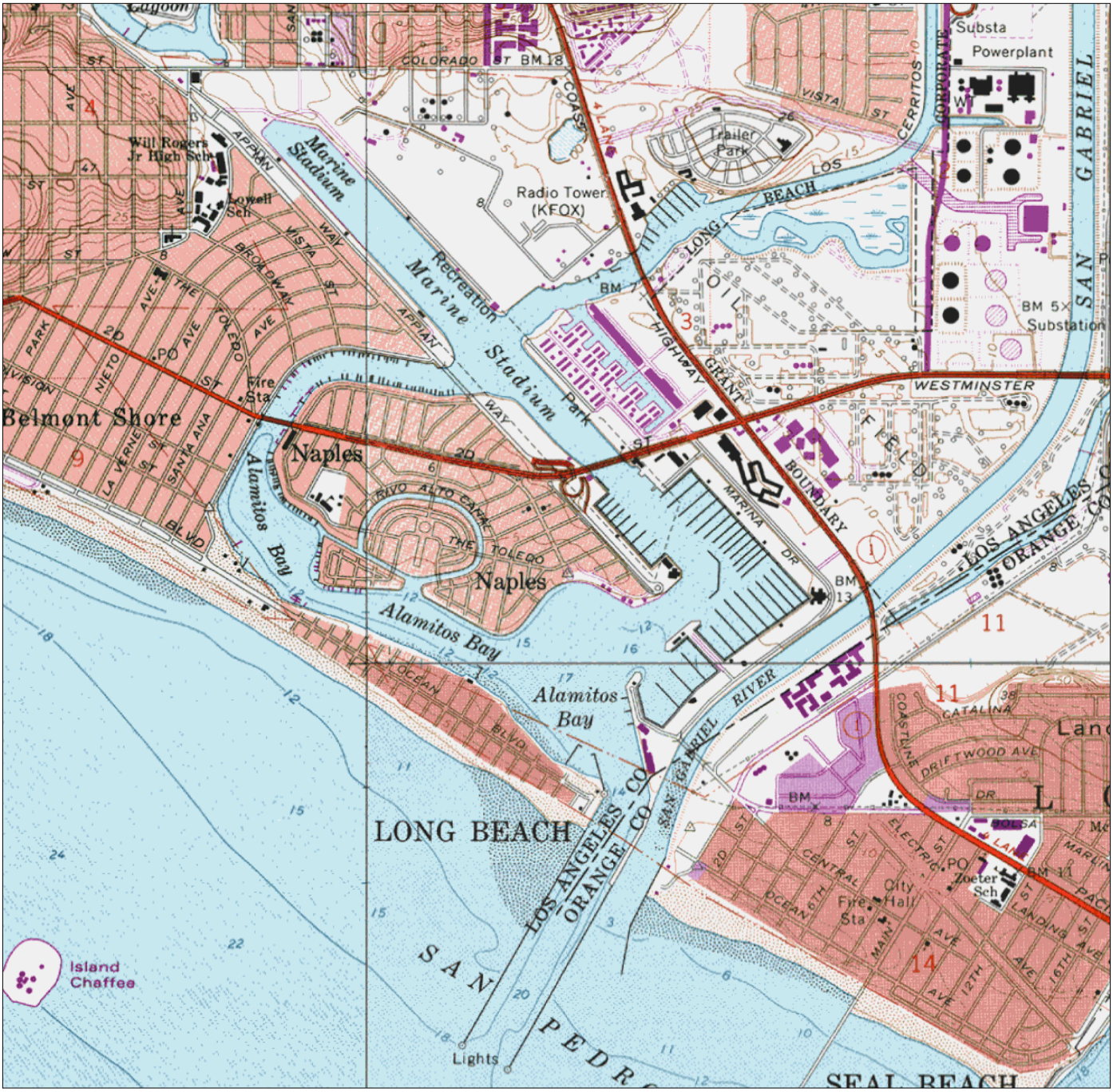

N Ancona Dr
N Ravenna Dr
N Attica Dr
San Marco Dr
E San Marco Way
E Appian Way
E 2nd St
E Campo Walk
N Loreta Walk
E Naples Plz
46
45
44
43


34
1
5
21
29
36
20
18

Site Location Map

Topo : 1.25 Mile Radius from Area

ALAMITOS BAY MARINA REHABILITATION, LONG BEACH CA 90803



SOURCE: SCANNED USGS TOPOGRAPHIC QUADRANGLES
SCANNED BY MAPTECH AND USGS
DISTRIBUTED AUGUST, 2005.

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

0 825 1,650 3,300 4,950 6,600 Feet

Data Supplied by: MAPTECH

Prepared by FirstSearch Technology Corporation 06-27-07

JOB NO. TSY0701

Map Name: LOS ALAMITOS | Date Created: 1964 | Date Revised: 1981

Map Reference Code: 33118-G1-TF-024 | Contour Interval: 5 feet

FIGURE NO. 1

APPENDIX H

ALAMITOS BAY MARINA MASTER PLAN

ALAMITOS BAY

MASTER PLAN

Adopted by the

Alamitos Bay Master Plan

Steering Committee

On

July 11, 2001

The following recommendations are made with regard to water use in Alamitos Bay:

- Due to significant safety and visibility concerns, slips protruding further into the Bay in Basin 1 and Basin 2 should not be included in the marina rebuild.

- The current ratio of “boat length to slip length” overhang rules should be retained for the rebuild of the marina.

- The City should make a guarantee to the current slip renters that they will not be displaced as part of a rebuild, except within the Alamitos Bay Marina.

- A policy should be instituted to accommodate the slip renters whose boats may be shorter than the available length of the newly constructed slips, so that slip rates will reflect boat length, not slip length.

- The current marine safety/fire vessel slips should be reconfigured and enhanced in order to accommodate the dredge and docks now posing a channel narrowing eyesore under the Davis Bridge. If this is not possible, another parking for the dredge and supporting docks should be identified.

- No dry storage facility and hoist should be built in the marina parking lot on Marina Drive.

- The Marine Bureau should create a more visitor friendly policy for the marina by taking steps to assure that reasonable numbers of visitor slips be available at all times.

- As the Marina is rebuilt, it should be dredged to the original construction depth. If possible, the dredged material should be disposed of outside the Bay to prevent rapid refill.

- The width of the navigable channel should be maintained in all cases.

- In the reconstruction of the Marina, every effort should be made to preserve the use of as many existing pilings, head walls and sea walls as possible.

- All non-dockside mooring should continue to be prohibited.

- The care, custody and control of the new Marina should moved back to the Marine Bureau as an independent department.

- If the small boat storage facility is built on the north end of Basin 4, the facility should be a joint project of the Long Beach Yacht Club, the Sea Scouts and City of Long Beach. The storage facility should only be considered in the existing Sea Scout parking lot, and the height, width, and depth should be limited to minimum needs.

The following recommendations are made with regard to the land use in the Alamitos Bay area:

- It is the primary concern that an ongoing maintenance program be developed for the landscape (softscape).

- Boat owners rest rooms should be remodeled and brought up to current standards, and a separate rest room facility for the public should be added at each location.

- Appropriate and adequate lighting for beautification and safety should be included throughout the marina parking areas and along Marina Drive.

- City should maintain the existing berm along the bulkheads to include seating, cutout areas or terrace steps with trash bins and lighting.

- Trees presently in place should be kept in place.

- Regarding landscaping of Marina Drive, both sides should be developed with the addition of palm trees, shrubs, vines and accent lighting. All areas that are presently designed as “flower beds” are to be used.

- The existing fence along Marina Drive should be removed, if possible, or replaced with new fencing or shrubs.

- The planting areas in the parking lots that have been abandoned should be replaced using drought resistant trees and shrubs.

- The parking of recreational vehicles and unattached trailers in the Marina parking lots should be prohibited.

- The Exxon water-injection site should be developed. Consideration should be given to creating additional parking on the site. This additional parking will provide excess space, and thus the addition of a pocket or overview park area on the fuel dock road is highly recommended.

- The phased redevelopment of the Alamitos Bay Landing site should continue, including rehabilitation of the existing structures, the inclusion of office space and the inclusion of a boutique hotel/inn, if desired by the lessee. Any boutique hotel/inn that may be developed should be at the southernmost end of the property, and limited to 50 rooms or less. Height should be limited to 35 feet, and no height variances should be allowed. Any development should maintain appropriate view corridors and public access.

- A boutique hotel/inn at the southernmost portion of the Alamitos Bay Landing should be the only such hotel/inn within the entire Alamitos Bay Marina area.

- No other prohibited uses as defined in PD4 should be modified.

- Subarea 1 “approved uses” should be modified in section C to include as professional services “professional office space.”

The following recommendations are made with regard to the financial aspect of the Alamitos Bay Marina Master Plan:

- As a general statement, the marina and land areas of Alamitos Bay should be developed to enable their highest and best use, responding to market forces and the desires of the community, while remaining sensitive to the need for prudent management and consideration of the unique characteristics of the site.

- Construction should incorporate durable, high quality materials and workmanship utilizing contemporary design standards, and be completed at reasonable cost, incorporating new and/or existing infrastructure. The completed project should be functional and inviting, and meet the needs of users and lessees.

- Revenue generated for both land and water operations should compare favorably with similar facilities in the Southern California market. This may require reexamination of existing leases and rate structures.

- Revenue generated from Alamitos Bay facilities should be adequate to offset operating expenses, debt services, and capital improvement reserves, and should not be diverted to support activities not directly benefiting Alamitos Bay.

- The Marine Bureau is encouraged to adopt contemporary business reporting practices that will be available for review by lessees and the general public. Marine Bureau reports should include financial and statistical reports that provide readily available, informative, and useful information.

- The City should aggressively pursue State and Federal and private grant funds for development and maintenance of Marina.

APPENDIX I

NOISE STUDY DATA

Construction Sequence and Construction Equipment Usage				
Phase 1		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 4		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			**Construction equipment**	**[1]Potential running times**
Remove existing gangways 36-41, Docks 25-32			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	3 days---minimal use
Install new gangways 36-41, Docks 25-32			One diesel crane	8 days---minimal use
			One diesel powered pile driver for new piles	20 days---full time use4
Install temporary long dock			One diesel crane for new docks	3 days---minimal use
			One diesel powered pile driver for new piles	4 days---partial use
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	10 days---full time use[4]
Complete pile removal			One diesel crane for pile removal	10 days--partial use
Seawall and rip rap repair			One gas skiff (destination usage only)	4 days---minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	10 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage			
Phase 1A	**Phase Duration**	LB County Standard→Work days per month=22 days	
Marine Stadium	1.5 months	LB County Standard→Work Hrs per month=176hrs	
Eelgrass Mitigation Site		(176hrs/month X 6 months)=1056hrs/Phase	
Activity		**Construction equipment**	**[1]Potential running times**
Demolition		Loader	3 days---minimal use*
		Excavator	2 day---full time use
		Bobcat, Water truck	2 day—part time use
Reroute Utilities		Excavator, Bobcat	2 full days---minimal use
Excavation		Loader	4 days---full time use***
		Water Truck	8.5 days---minimal use***
		Excavator	8.5 days--full time use***
Salvage Stone		Loader, Excavator	5 full days---part-time use
Place new Stone-riprap construction		Loader, Excavator	1.5 days--part time use
Install new sidewalk		Loader	2 day---part time use
		Bobcat	5 full days---part-time use
		Water Truck	2 days--very minimal use
Haul Truck (off-site)		Diesel Dump Truck	585 Loads

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 2		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 1		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 1-4, Docks 1 & 2			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 1-4, Docks 1 & 2			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	17 days---full time use4
Dredge to -15'			One diesel clam bucket and a floating barge with a diesel tender	7 days—full time use[4]
Complete pile removal			One diesel crane for pile removal	12 days--full time use
Trucking to upland disposal site			20 tons per truck	718 Loads
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days–very minimal use
Two existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	4 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use–equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 3		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 1		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 5-9, Docks 3-5			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 5-9, Docks 3-5			One diesel crane	2 full days---minimal use
			One diesel powered pile driver for new piles	23 days---partial use[3]
Dredge to -12' and -15' Dredge to contaminated spoils (approx. 25504c.y.)			One diesel clam bucket and a floating barge with a diesel tender	14 days---full time use[4]
Trucking to upland disposal site			20 tons per truck	718 Loads
Complete pile removal			One diesel crane for pile removal	19 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 full days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 4		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 10-13, Docks 6-8			One diesel crane	2 days—minimal use[2]
			Two gas skiffs for dock removal	1 day--minimal use
Install new gangways 10-13, Docks 6-8			One diesel crane	2 days—minimal use
			One diesel powered pile driver for new piles	17 days—full time use[4]
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	5 days—full time use[4]
Complete pile removal			One diesel crane for pile removal	19 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days–very minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 days—full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 5		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			**Construction equipment**	**[1]Potential running times**
Remove existing gangways 18-22, Docks 13 & 14			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 18-22, Docks 13 & 14			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	7 days---full time use4
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	6.5 days—full time use[4]
Complete pile removal			One diesel crane for pile removal	6.5 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days–very minimal use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use–equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 6		**Phase Duration**	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			**Construction equipment**	**[1]Potential running times**
Remove existing gangways 16-17, Docks 11 & 12			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 16-17 Docks 11 & 12			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	3.5 days---full time use4
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	3 days---full time use[4]
Complete pile removal			One diesel crane for pile removal	4 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 full days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 7		**Phase Duration**	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			**Construction equipment**	**[1]Potential running times**
Remove existing gangways 14-15, Docks 9 & 10			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day—minimal use
Install new gangways 14-15, Docks 9 & 10			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	6 days—full time use4
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	3.5 days---full time use[4]
Complete pile removal			One diesel crane for pile removal	4.5 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

APPENDIX J

TRAFFIC IMPACT ANALYSIS

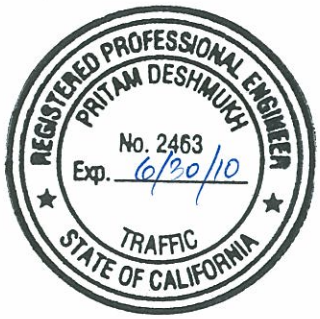
CONSTRUCTION TRAFFIC ANALYSIS

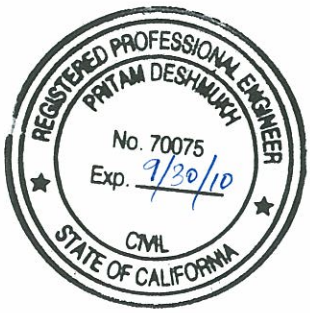
ALAMITOS BAY MARINA REHABILITATION PROJECT

LONG BEACH, CALIFORNIA

This traffic study has been prepared under the supervision of
Pritam Deshmukh, P.E.

Signed _____





LSA

October 2009

CONSTRUCTION TRAFFIC ANALYSIS

ALAMITOS BAY MARINA REHABILITATION PROJECT

LONG BEACH, CALIFORNIA

Submitted to:

City of Long Beach
Department of Parks, Recreation, and Marine
205 Marina Drive
Long Beach, California 90803

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

LSA Project No. TSY0701B

LSA

October 2009

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FIGURES

TABLES

APPENDIX

ALAMITOS BAY MARINA REHABILITATION PROJECT CONSTRUCTION TRAFFIC ANALYSIS

LSA Associates, Inc. (LSA) has prepared the following analysis to identify potential construction traffic impacts resulting from the Alamitos Bay Marina Rehabilitation project in the City of Long Beach (City). The project includes reconstruction and upgrading of the Alamitos Bay Marina (Marina) docks, slips, parking areas, and restrooms; none of which are anticipated to significantly affect existing traffic conditions. Implementation of the proposed project would result in the loss of 321 slips, and any changes in the patterns of use at the Marina are expected to be negligible as a result of the proposed rehabilitation. Therefore, the long-term traffic levels resulting from operation of the proposed project are not anticipated to significantly change. Although the proposed project itself would not generate new vehicle trips, implementation of the project would generate a temporary increase in traffic volumes during construction activities. The purpose of this report is to provide an analysis of potential construction traffic impacts to the local street network.

EXECUTIVE SUMMARY

The proposed Alamitos Bay Marina Rehabilitation project would renovate the existing Marina facilities in Basins 1 through 7 by providing upgraded Americans with Disabilities Act (ADA)-compliant facilities and the following: (1) maintenance dredging of the Marina basins to original design depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary; (4) completing dock and piling replacement; (5) replacing the pavement in the Marina parking lots; and (6) the construction of an approximately 600-foot (ft) long dock located adjacent to Basin 4 at the southeast corner of the Long Beach Yacht Club. The dock includes a 200 ft temporary section that would accommodate boaters during the renovations and would be removed upon project completion.

Based on preliminary analysis, dredging activities would require mitigation for potential impacts to marine eelgrass. The City has identified a site adjacent to the northeast shore of Marine Stadium to convert to an open space/habitat mitigation site (see Figure 2). This mitigation habitat area will therefore be analyzed as part of the project.

The project is anticipated to be completed in 12 phases over approximately 6 years and includes two construction staging areas: one located in the parking lot on Marina Drive near Basin 2; and one located in the parking lot on Marina Drive adjacent to the Marina Shipyard near Basin 3.

Based on the analysis herein, the addition of construction trips associated with the Alamitos Bay Marina Rehabilitation project would not exceed the capacities of the surrounding roadway network.

Basins 1 through 7 currently contain 1,967 slips. The proposed project includes construction of 1,646 slips, resulting in the loss of 321 slips. However, each of the existing 1,430 customers would continue to be provided with a boat slip after project implementation. The proposed project would exceed the City's parking requirement of 0.75 parking spaces per boat slip (i.e., 1,235 spaces for 1,646 slips)

with a parking supply of 2,524 spaces. Therefore, the project would not result in inadequate parking capacity.

INTRODUCTION

The City is considering a project that would renovate the existing Marina amenities and enhance the existing recreational boating facilities within Alamitos Bay. The project encourages boating use by providing upgraded ADA-compliant facilities, new docks and slips, upgraded restrooms, and dredged basins to ensure safe navigation. The Marina facilities are operated by the City of Long Beach Marine Bureau and are primarily accessible from Pacific Coast Highway (PCH) and 2nd Street. The Marina location is shown in Figure 1.

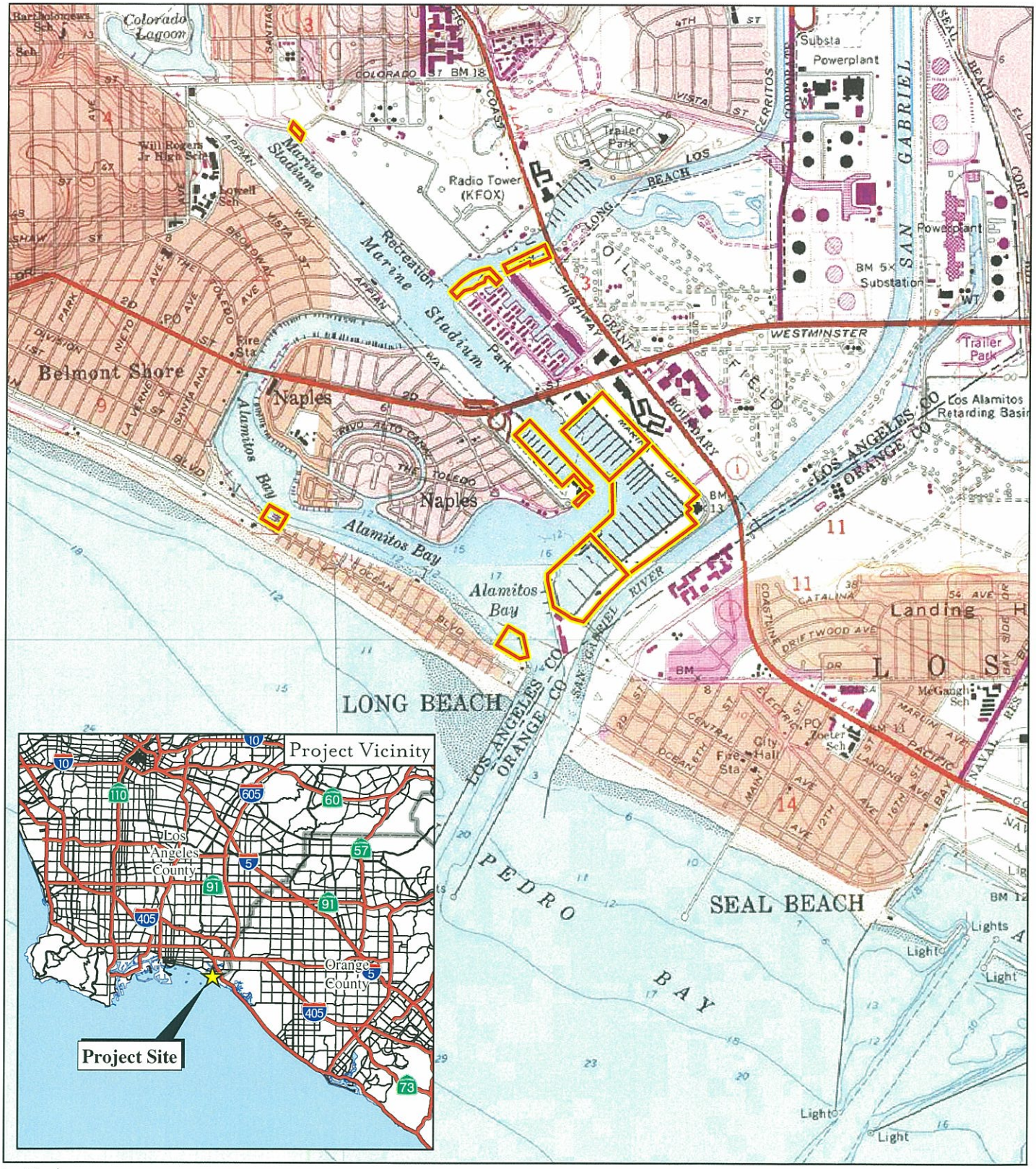
The Marina comprises eight basins; however, the proposed project includes renovations only to Basins 1 through 7. Basin 8 is not part of the project and it is not included in this analysis. The basin locations are illustrated in Figure 2. Basins 1 through 3 are located adjacent to Marina Drive south of 2nd Street; Basin 4 is located along Appian Way adjacent to the Long Beach Yacht Club on the southeast corner of Naples Island; Basin 5 is located adjacent to the Alamitos Bay Yacht Club on Ocean Boulevard; Basin 7 is located northwest of Basin 5 on Ocean Boulevard. Basin 6 comprises two separate areas known as Basin 6-North (Basin 6-N) and Basin 6-South (Basin 6-S). Basin 6-N is located adjacent to the Marina Pacifica Mall on PCH. Basin 6-S is located southwest of Basin 6-N at the northernmost end of Marina Pacifica Drive.

PROPOSED PROJECT IMPACTS

Construction Impacts

The construction operation for the Marina rehabilitation project is anticipated to last for a period of 72 months over 12 phases (approximately 6 months per phase). Each phase involves the removal/installation of gangways and docks, pile removal, seawall and riprap repair, dredging, restroom construction (either rehabilitation or new construction), rerouting of utilities, and parking lot repaving. Phase 1A includes excavation and construction of the open space/habitat mitigation site and will occur concurrently with Phase 1. The detailed construction sequence and equipment usage data for each of the 12 phases is provided in Appendix A. Construction staging areas would be located in one of two locations: one located in a parking lot on Marina Drive near Basin 2; and the second located in a parking lot on Marina Drive near Basin 3, adjacent to the Marina Shipyard.

Commercial and industrial waste resulting from construction, remodeling, repair, and demolition operations would be required to be transported by truck to be disposed of at Class III landfills such as the Puente Hills Landfill, which is the closest Class III landfill. Dredge materials from all Marina basins, except a portion of Basin 1, will be barged to an ocean disposal site (known as LA-2) and would not generate any truck trips. However, due to high levels of mercury discovered during preliminary sampling, approximately 25,504 cubic yards (cy) in Basin 1 will need to be trucked off site and disposed of at an approved landfill, confined aquatic disposal site, or upland confined disposal facility. The analysis prepared for the Environmental Impact Report (EIR) has assumed a worst-case scenario wherein the materials will be trucked to Kettleman Hills Hazardous Waste Facility, a commercial chemical/hazardous waste site located in Kings County, California.



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Project Locations

FIGURE 1

0 1000 2000

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SOURCE: USGS 7.5' QUAD - LONG BEACH ('81), LOS ALAMITOS ('81), SEAL BEACH ('81); CALIF.

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Alamitos Bay Marina Rehabilitation Project

Project Location Map

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Project Locations

0 400 800

FEET

SOURCE: DigitalGlobe (4/08); TBM (2008); City of Long Beach (2008, 1/09)

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FIGURE 2

Alamitos Bay Marina Rehabilitation Project

Alamitos Bay Marina Basin Locations

Construction materials would be delivered to one of the two construction staging areas. From there, the construction materials required for renovation of each basin would be loaded onto construction vessels and delivered via the waterway. Similarly, the dock systems would be craned into the water and floated to the appropriate basin during each phase. Therefore, delivery of construction materials would result in truck trips only to the staging areas and not to each individual basin.

Table A indicates the total number of construction truck trips during a typical phase, as well as truck trips for the open space/mitigation site and Phases 2 and 3, which require off-site trucking of Basin 1 dredge materials. The truck trips are based on construction phasing and implementation information provided by the City's Marina Rehabilitation Project Manager, TranSystems, and includes the following assumptions:

Table A: Construction Truck Trips by Phase

Project Phase	Delivery Trucks	Removal Trucks
Typical 6-month Phase (Phase 1, 4–12)		
Remove existing gangways, docks, and piles		9
Install new gangways, docks (inclusive of temporary dock), and piles	48	
Dredge Basin (no truck trips associated with dredging for these phases)		
Seawall repair, restroom and utility rehabilitations, and parking lot repaving	52	9
Total	**100**	**18**
Phase 1A (Open Space/Eelgrass Mitigation Site)		
Demolish and remove excavated materials		585
Total	**0**	**585**
Total, Phases 1 and 1A	**100**	**603**
Phase 2		
Remove existing gangways, docks, and piles		9
Install new gangways, docks (inclusive of temporary dock), and piles	48	
Dredge Basin 1, remove contaminated materials		718
Seawall repair, restroom and utility rehabilitations, and parking lot repaving	52	9
Total	**100**	**736**
Phase 3		
Remove existing gangways, docks, and piles		9
Install new gangways, docks (inclusive of temporary dock), and piles	48	
Dredge Basin 1, remove contaminated materials		718
Seawall repair, restroom and utility rehabilitations, and parking lot repaving	52	9
Total	**100**	**736**

- During each 6-month phase (approximately 26 weeks), a total of 52 general material deliveries occur, resulting in an average of 2 trucks (4 truck trips [2 inbound and 2 outbound]) per week.
- On average, the transport of the docking system requires 3 to 6 truck loads every other week for 6 to 8 weeks. This results in a maximum of 48 docking delivery trucks per phase, or an average of fewer than 2 trucks (4 truck trips) per week.

- Off-site hauling is anticipated to be 6 loads occurring 1 to 3 days during each phase. This results in 18 trucks (36 truck trips) per phase, or fewer than 2 trucks (4 truck trips) per week.
- The excavated materials from the open space/habitat mitigation site are based on a 20-ton truck and will require 585 trucks (1,170 truck trips).
- The removal of 25,504 cy of contaminated Basin 1 dredge material will occur over both Phases 2 and 3 of the proposed project and will require a total of 718 trucks per phase (1,436 truck trips).

Based on preliminary construction plans and information provided by the City of Long Beach Marine Bureau and TranSystems, approximately 32 construction workers will be on site per day during each phase of the project. These workers will add 64 daily passenger car trips (32 inbound in the morning and 32 outbound in the evening). Worker commute trips will not add a.m. or p.m. peak-hour trips to construction traffic because the workers will arrive on site by 7:00 a.m., before the 7:00 a.m.–9:00 a.m. peak period, and will depart by 4:00, prior to the 4:00 p.m.–6:00 p.m. peak period. Because Phase 1A will occur concurrently with Phase 1, the workers and vehicle trips are included in the estimated trips for Phase 1.

Because of their larger size and limited maneuverability, the roadway impact of a single truck with five axles is approximately equivalent to two passenger cars. Therefore, when calculating vehicle trips, each truck trip was assumed to have a passenger car equivalent (PCE) of two trips. Construction truck trips will be similar for most phases of the project, with the exception of the open space/habitat mitigation site and Phases 2 and 3. Based on the truck trips assumptions described above and included in Table A, a total of 118 trucks are expected during the typical 6-month (26-week) construction phase, resulting in an average of 4–5 trucks per week. Therefore, an average of one truck (2 truck trips [4 PCE]) per day, with a maximum of one truck trip (2 PCE) during the a.m. peak hour, is estimated to occur during a typical construction phase.

Construction truck trips associated with Phase 1A (the open space/habitat mitigation site) for excavation of soils and earth materials are estimated to total 585 truckloads over a duration of 1.5 months (33 days, applying the City of Long Beach County Standard of 22 work days per month), or an average of approximately 18 trucks (36 truck trips [72 PCE]) per day, with a maximum of 9 trucks (18 truck trips [36 PCE]) in the a.m. peak hour. None of these haul trips would occur during the p.m. peak-hour period of 4:00–6:00 p.m. since excavated materials would most likely be disposed of on the same day and would need to arrive at their destinations by early- to mid-afternoon. Similar to the other basins, no delivery truck trips would occur at this site; delivery of construction materials to this location would be via the waterway from one of the construction staging areas.

During Phases 2 and 3, the 1,435 truck trips required to remove contaminated dredge materials from Basin 1 would occur over 12 months (264 work days), resulting in an average of approximately 6 truck trips (12 PCE) per day occurring in the a.m. peak-hour period. Similar to a typical construction phase, additional general deliveries for Phases 2 and 3 are estimated to be one truck (2 truck trips [4 PCE]) per day, with a maximum of one truck trip (2 PCE) during the a.m. peak hour. The estimated daily trip generation for the project is presented in Table B.

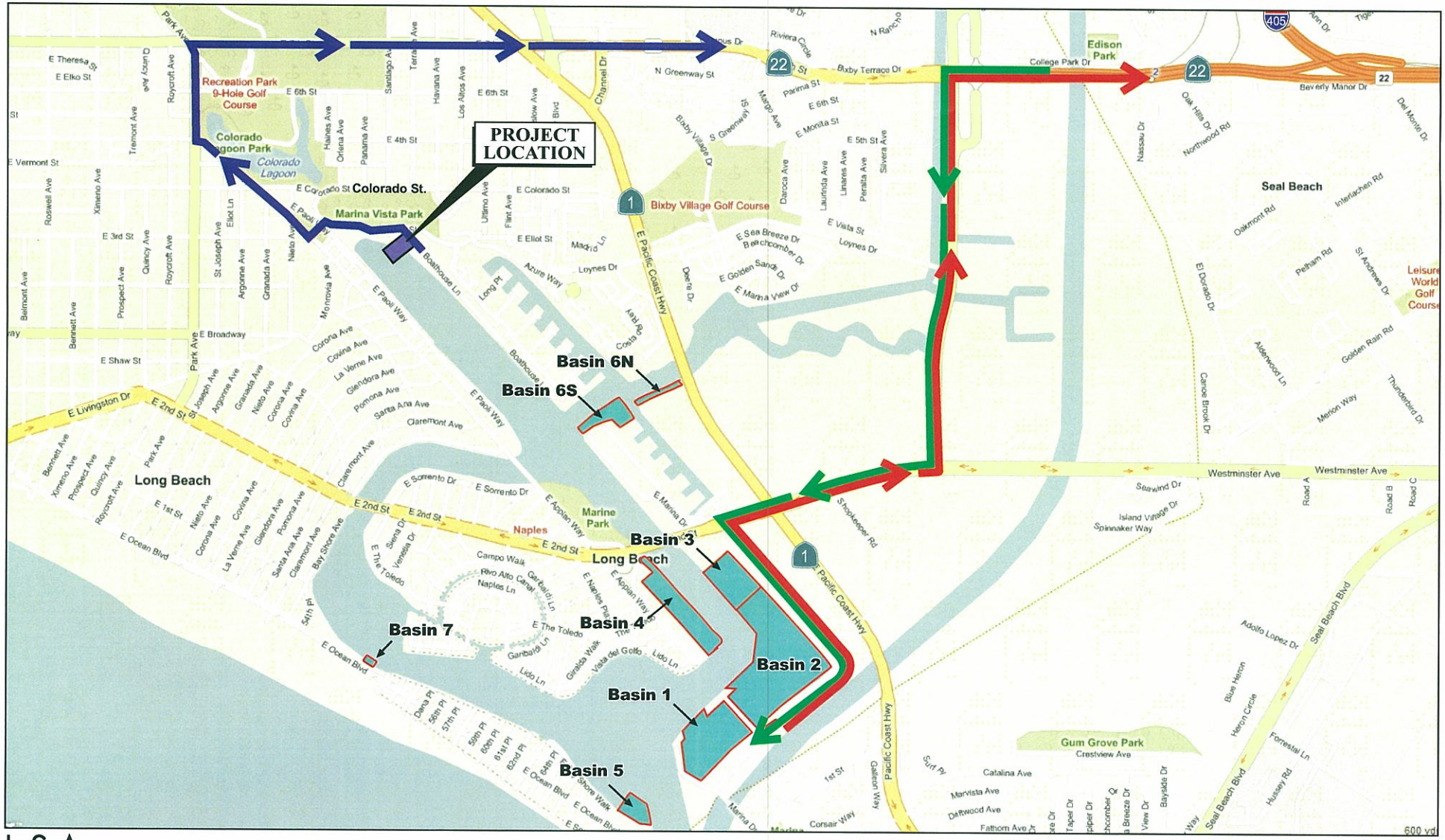
Table B: Project Trip Generation

Generator	Vehicle Trips			PCE Trips		
	ADT	AM Peak Hour	PM Peak Hour	ADT	AM Peak Hour	PM Peak Hour
Typical Phase (Phase 1, 4–12)						
Construction Workers[1]	64	N/A	N/A	64	N/A	N/A
Trucks	2	1	N/A	4	2	N/A
Total	**66**	**1**	**0**	**68**	**2**	**0**
Phase 1A – Habitat Mitigation Site						
Construction Workers	N/A	N/A	N/A	N/A	N/A	N/A
Trucks	**36**	**18**	N/A	**72**	**36**	N/A
Total	**36**	**18**	**0**	**72**	**36**	**0**
Phases 1/1A Combined	**102**	**19**	**0**	**140**	**38**	**0**
Phase 2						
Construction Workers	64	N/A	N/A	64	N/A	N/A
Trucks	14	7	N/A	28	14	N/A
Total	**78**	**7**	**0**	**92**	**14**	**0**
Phase 3						
Construction Workers	64	N/A	N/A	64	N/A	N/A
Trucks	14	7	N/A	28	14	N/A
Total	**78**	**7**	**0**	**92**	**14**	**0**

[1] Workers arrive by 7:00 a.m. and depart by 4:00 p.m. Trips are based on one person per vehicle
ADT = average daily traffic N/A = not applicable PCE = passenger car equivalent

Construction Haul Routes. The docking systems will be transported to the project site via delivery trucks from Dixon, California to Alamitos Bay and would travel south on Interstate 405 (I-405), west on State Route 22 (SR-22), south on Studebaker Road, west on 2nd Street, and then south on Marina Drive into the project site. The docking systems would be unloaded at one of the two staging areas off Marina Drive. The docking systems, as well as all other construction materials, will be delivered to the staging area and subsequently craned into the water and floated to the appropriate basin locations, as required by phase. It is assumed that trucks delivering general construction materials would enter the project area via a similar route, primarily utilizing Studebaker Road, 2nd Street, and Marina Drive. The locations of the basins and the corresponding construction routes are illustrated in Figure 3.

Demolition material and debris from gangways, docks, restrooms, and road debris will be transported by truck to be disposed of at Class III landfills such as the Puente Hills Landfill, which is the closest Class III landfill. Removal trucks destined for the Puente Hills Class III Landfill will initially leave the project site from one of the two staging areas located in the Marina parking lots on Marina Drive.



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- Project Area
- Open Space/Habitat Mitigation Site
- To Landfill Facilities
- From Concrete Float Facility
- Removal Truck Route

N

0 900 1,800

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FIGURE 3

Alamitos Bay Marina Rehabilitation Project EIR

Construction Haul Routes

SOURCE: Microsoft, Bing Maps, 2009

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Similar to the delivery of construction materials, construction debris from each phase will be taken via the waterway from the Basins to the construction staging area, where it will be loaded onto trucks for removal. The exceptions to this removal process are Basin 4 and the open space/habitat mitigation site. Due to the number of docks being removed from Basin 4, and because there is plenty of parking lot area available, construction debris from Basin 4 will be removed directly from the land side. Due to the amount of excavated earth material to be removed from the open space/habitat mitigation site, trucks will leave via the local street system. Construction trucks leaving the project site will be routed through the local street network as follows:

- Trucks from Basins 1–3 and Basins 5–7 will depart from the staging areas and be routed north on Marina Drive, east on 2nd Street, and north on Studebaker Road
- Trucks from Basin 4 will be routed north on Appian Way, east on 2nd Street, and north on Studebaker Road
- Trucks from the open space/habitat mitigation site will be routed west on Eliot Street, west on Colorado Street, north on Park Avenue, and east on Seventh Street

All removal trucks will continue out of the project area via SR-22 and then north on Interstate 605 (I-605). Removal trucks for the contaminated dredge materials from Basin 1 will use the same route as removal trucks from Basins 1–3, but will continue from I-605 to north on Interstate 5 (I-5) toward Kettleman City, California.

Based on the estimated trip generation presented in Table B, the construction activity during Phases 1/1A will add approximately 140 daily PCE trips. Based on these estimates, this is the most intense trucking phase of the project. As stated above, the truck trips associated with Phases 1/1A would travel two separate routes leaving the project area. Trucks associated with Phase 1 (Basin 4) would utilize Appian Way, 2nd Street, and Studebaker Road to SR-22. Trucks associated with Phase 1A would utilize Eliot Street, Colorado Street, Park Avenue, and 7th Street to SR-22. Delivery trucks coming to the project site would travel via Studebaker Road, 2nd Street, and Marina Drive. 7th Street and 2nd Street are designated as Major Arterials in the City's General Plan and Studebaker Road is designated as a Minor Arterial.. Appian Way, Eliot Street, Colorado Street, Park Avenue, and Marina Drive are Local and Collector Streets.

The addition of 68 daily PCE associated with Phase 1 is expected to be insignificant to traffic flows along Appian Way, 2nd Street, and Studebaker Road. The 72 daily PCE of Phase 1A is also expected to be insignificant to traffic flows along Eliot Street, Colorado Street, Park Avenue, and 7th Street.

The total construction-related trips of 140 are also expected to be insignificant to traffic flows along any of the roadways as described above. In addition, most truck trips would occur during the off-peak hours of the day, when ambient traffic is less. Therefore, construction of the proposed project would not cause an increase in traffic that is substantial in relation to the existing traffic load of the street system. In addition, construction traffic effects are temporary during the period of construction, and the number of construction workers and truck trips would vary depending on the specific construction activities. Although no adverse traffic impacts are anticipated, and no mitigation measures are required, several construction traffic recommendations are proposed in order to minimize the effects of construction traffic on the local roadway system.

Cumulative Traffic with Proposed Project Construction Traffic

According to the project schedule, Phase 1 will commence in 2011. Cumulative projects include any committed and/or approved developments in the project study area that will generate future vehicle trips. The following projects are included in the cumulative impacts analysis for the proposed project:

- Colorado Lagoon Restoration Project, currently under construction
- Second+PCH Mixed Use Commercial/Hotel/Residential Project
- Proposed Home Depot Project at Loynes Drive and Studebaker Road
- Termino Drain Project, various segments terminating at the northern end of Marine Stadium

Of the related projects, the Second+PCH Project and the Home Depot Project are the only ones located where there is a potential to affect some of the same streets as construction of the proposed project would. Because the proposed project is scheduled to begin in 2011 and be implemented over 6 years, it is possible that the construction activity for the proposed project and construction for one of the cumulative projects identified above may occur at the same time.

The Second+PCH Project is proposing to redevelop the approximately 10-acre (ac) site located at 2nd Street and PCH, currently developed with the Seaport Marina Hotel. The current plan proposes 192,000 square feet (sf) of retail, 20,000 sf of restaurant uses, a 100-room hotel, 325 condominium units, a Coastal Science Center, and a Community Theater.[1] Construction of the proposed Second+PCH would occur in close proximity to the primary construction activity for the proposed project, and adjacent to the trucks being routed to and from Marina Drive and 2nd Street.

Similarly, the proposed Home Depot Project site is located on Studebaker Road, which will be utilized by construction traffic coming to and leaving from the Marina project site.

Construction workers, equipment, and haul vehicles associated with these two projects may utilize the same haul routes as the proposed Marina project. Therefore, when combined, these projects have the potential to contribute to short-term construction traffic impacts. However, with implementation of the construction traffic recommendations discussed below, including the Construction Traffic Management Plan (which restricts trucks to no more than 19 during the a.m. peak hour for any one phase of the project, prohibits truck trips after 3:30 p.m., and requires that a minimum of one travel lane in each direction on Marina Drive and 2nd Street be open during construction activities), cumulative impacts would be reduced.

Nevertheless, should either the Second+PCH Project or the Home Depot Project be under construction at the same time as the proposed Marina Rehabilitation Project, implementation of the construction traffic control measure requiring the City of Long Beach Traffic Engineer to address the truck route and circulation effects of the Home Depot Project and/or the Second+PCH Project construction traffic is warranted to ensure that potential cumulative construction traffic is addressed. Implementation of this measure would ensure that cumulative construction impacts have a less than significant impact.

[1] http://www.secondandpch.com/

The proposed project would retain the existing marina recreation uses of the project site, and no intensification of uses would occur. Implementation of the Marina Rehabilitation Project would result in approximately 321 fewer slips, and no long-term operational traffic impacts are expected. Therefore, the traffic levels resulting from operation of the proposed project are not anticipated to change as a result of the proposed project, and no cumulative operational traffic impacts would occur.

PARKING

There are currently 1,430 customers in the Marina and 1,967 boat slips in Basins 1–7. The proposed project includes approximately 1,646 slips, resulting in the loss of approximately 321 slips. The City of Long Beach Zoning Ordinance requires that not less than 0.75 parking spaces per boat slip be maintained for noncommercial use boat slips. The 1,967 existing slips in the Marina require a minimum of 1,476 parking spaces. Currently there are 2,515 spaces in the Marina basin parking lots, which exceed the City's parking requirement by 1,039 spaces. The project will reduce the total number of slips in the Marina by 321, thereby requiring 241 fewer parking spaces, for a requirement of 1,235 spaces, as indicated in Table C. However, the proposed project improvements would result in the addition of 9 parking spaces, for a total supply of 2,524 spaces. Based on the proposed number of slips, 23 ADA-accessible parking spaces are required and will be provided. The overall number of spaces provided at project completion exceeds the City's requirements by 1,289 spaces, and impacts related to adequate parking are considered less than significant.

Table C: Alamitos Bay Marina Parking Requirements

	Number of Slips	Parking Required per City Code	Parking Provided	Net Difference Over Requirement
Existing Condition	1,967	1,476	2,515	+1,039
Proposed Project	1,646	1,235	2,524	+1,289

REQUIRED MITIGATION MEASURES AND/OR RECOMMENDATIONS

Based on the results of this analysis, the addition of construction traffic associated with the proposed project can occur without significantly impacting the surrounding roadway system. Therefore, mitigation is not required. Although no mitigation measures are required, several recommended construction traffic control recommendations are proposed in order to minimize the effects of construction traffic on the local roadway system.

- Prior to the issuance of demolition or building permits, the City of Long Beach (City) shall, under the direction of the City of Long Beach Traffic Engineer, design and implement a Construction Traffic Management Plan. The plan shall be designed by a registered Traffic Engineer and shall address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes. The plan shall identify the routes that construction vehicles will use to access the site, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas. The plan shall also restrict construction trucks to no more than 19 during the a.m. peak hour for any one phase of the project, prohibit truck trips after 3:30 p.m., and require that a minimum of one travel lane in each direction on Marina Drive and 2nd Street be kept open during construction activities. The plan shall also require the City to keep all haul routes clean and free of debris including, but not limited to, gravel and dirt.

- Prior to the issuance of demolition or building permits, the City of Long Beach shall, under the direction of the City of Long Beach Traffic Engineer, address the truck route and circulation effects of the Home Depot Project and/or the Second+PCH Project construction, should either of these projects be under construction in the vicinity of the project site during construction of the Alamitos Bay Marina Rehabilitation project. The coordination shall identify the construction routes, the hours of construction traffic, traffic controls and detours, and off-site vehicle staging areas, and address traffic control for any street closure, detour, or other disruption to traffic circulation and public transit routes.

CONCLUSIONS

Based on the analysis of the surrounding roadway network under existing and cumulative conditions, the addition of construction trips associated with the Alamitos Bay Marina Rehabilitation project would not cause an increase in traffic that is substantial in relation to the existing traffic load of the street system. In addition, construction traffic effects are temporary during the period of construction, and the number of construction workers and truck trips would vary depending on the specific construction activities. Although no adverse traffic impacts are anticipated and no mitigation measures are required, several recommendations have been made to minimize the effects of construction traffic on the local roadway system.

The reduction of 321 boat slips (from 1,967 existing slips to 1,646 proposed slips) would not significantly affect the existing 1,430 customers, as each customer would continue to be provided with a boat slip. With a parking supply of 2,524 spaces, the proposed project would exceed the City's requirement of 0.75 spaces per boat slip (i.e., 1,235 spaces for 1,646 slips). Therefore, the project would not result in inadequate parking capacity.

APPENDIX A

CONSTRUCTION SEQUENCE AND EQUIPMENT USAGE

Construction Sequence and Construction Equipment Usage				
Phase 1		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 4		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 36-41, Docks 25-32			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	3 days---minimal use
Install new gangways 36-41, Docks 25-32			One diesel crane	8 days---minimal use
			One diesel powered pile driver for new piles	20 days---full time use4
Install temporary long dock			One diesel crane for new docks	3 days---minimal use
			One diesel powered pile driver for new piles	4 days---partial use
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	10 days---full time use[4]
Complete pile removal			One diesel crane for pile removal	10 days--partial use
Seawall and rip rap repair			One gas skiff (destination usage only)	4 days---minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	10 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage			
Phase 1A	**Phase Duration**	LB County Standard→Work days per month=22 days	
Marine Stadium	1.5 months	LB County Standard→Work Hrs per month=176hrs	
Eelgrass Mitigation Site		(176hrs/month X 6 months)=1056hrs/Phase	
Activity		**Construction equipment**	**[1]Potential running times**
Demolition		Loader	3 days---minimal use*
		Excavator	2 day—full time use
		Bobcat, Water truck	2 day---part time use
Reroute Utilities		Excavator, Bobcat	2 full days---minimal use
Excavation		Loader	4 days---full time use***
		Water Truck	8.5 days---minimal use***
		Excavator	8.5 days--full time use***
Salvage Stone		Loader, Excavator	5 full days—part-time use
Place new Stone-riprap construction		Loader, Excavator	1.5 days--part time use
Install new sidewalk		Loader	2 day---part time use
		Bobcat	5 full days---part-time use
		Water Truck	2 days--very minimal use
Haul Truck (off-site)		Diesel Dump Truck	585 Loads

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 2		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 1		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 1-4, Docks 1 & 2			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 1-4, Docks 1 & 2			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	17 days---full time use4
Dredge to -15'			One diesel clam bucket and a floating barge with a diesel tender	7 days—full time use[4]
Complete pile removal			One diesel crane for pile removal	12 days--full time use
Trucking to upland disposal site			20 tons per truck	718 Loads
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use
Two existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	4 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use–equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage		
Phase 3	Phase Duration	LB County Standard→Work days per month=22 days
Basin 1	6 months	LB County Standard→Work Hrs per month=176hrs
		(176hrs/month X 6 months)=1056hrs/Phase

Activity	Construction equipment	[1]Potential running times
Remove existing gangways 5-9, Docks 3-5	One diesel crane	2 days---minimal use[2]
	Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 5-9, Docks 3-5	One diesel crane	2 full days---minimal use
	One diesel powered pile driver for new piles	23 days---partial use[3]
Dredge to -12' and -15` Dredge to contaminated spoils (approx. 25504c.y.)	One diesel clam bucket and a floating barge with a diesel tender	14 days---full time use[4]
Trucking to upland disposal site	20 tons per truck	718 Loads
Complete pile removal	One diesel crane for pile removal	19 days--full time use
Seawall and rip rap repair	One gas skiff (destination usage only)	3 days--very minimal use
Existing restroom to be demolished and replaced with new restroom;	One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 full days---full time use
Parking lot asphalt and upgrade utilities	One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 4		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 10-13, Docks 6-8			One diesel crane	2 days—minimal use[2]
			Two gas skiffs for dock removal	1 day--minimal use
Install new gangways 10-13, Docks 6-8			One diesel crane	2 days—minimal use
			One diesel powered pile driver for new piles	17 days—full time use[4]
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	5 days--full time use[4]
Complete pile removal			One diesel crane for pile removal	19 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 days--full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days—partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 5		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			**Construction equipment**	**[1]Potential running times**
Remove existing gangways 18-22, Docks 13 & 14			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 18-22, Docks 13 & 14			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	7 days---full time use4
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	6.5 days---full time use[4]
Complete pile removal			One diesel crane for pile removal	6.5 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 6		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 16-17, Docks 11 & 12			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 16-17 Docks 11 & 12			One diesel crane	2 days—minimal use
			One diesel powered pile driver for new piles	3.5 days---full time use4
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	3 days—full time use[4]
Complete pile removal			One diesel crane for pile removal	4 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days—very minimal use
Existing restroom to be demolished and replaced with new restroom;			One diesel backhoe, one front loader,one bobcat (gas or diesel)	3 full days---full time use
Parking lot asphalt and upgrade utilities			One diesel backhoe, one front loader,one bobcat (gas or diesel)	6 days--partial use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

Construction Sequence and Construction Equipment Usage				
Phase 7		Phase Duration	LB County Standard→Work days per month=22 days	
Basin 2		6 months	LB County Standard→Work Hrs per month=176hrs	
			(176hrs/month X 6 months)=1056hrs/Phase	
Activity			Construction equipment	[1]Potential running times
Remove existing gangways 14-15, Docks 9 & 10			One diesel crane	2 days---minimal use[2]
			Two gas skiffs for dock removal	1 day---minimal use
Install new gangways 14-15, Docks 9 & 10			One diesel crane	2 days---minimal use
			One diesel powered pile driver for new piles	6 days---full time use4
Dredge to -10'			One diesel clam bucket and a floating barge with a diesel tender	3.5 days---full time use[4]
Complete pile removal			One diesel crane for pile removal	4.5 days--full time use
Seawall and rip rap repair			One gas skiff (destination usage only)	3 days--very minimal use

Notes: [1]Potential running times- equipment operating at varying RPMs not to be assumed at high to full RPMs during use

[2]minimal use--equipment operating only on an as need basis

[3]partial use--equipment operating periodically during the day

[4]full time use--equipment operating 6-8 hrs. a day

FINAL
ENVIRONMENTAL IMPACT REPORT

ALAMITOS BAY MARINA REHABILITATION PROJECT
SCH NO. 2008041028

VOLUME III:
RESPONSE TO COMMENTS

Submitted to:

City of Long Beach
Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Prepared by:

LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614-4731
(949) 553-0666

LSA

December 2009

ENVIRONMENTAL IMPACT REPORT

ALAMITOS BAY MARINA REHABILITATION PROJECT

CITY OF LONG BEACH

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LSA Project No. TSY0701B

LSA

December 2009

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FIGURES

INTRODUCTION

This document comprises the Comments and Responses volume of the Final Environmental Impact Report (EIR) for the proposed Alamitos Bay Marina Rehabilitation Project. The purpose of this document is to respond to all comments received by the City of Long Beach (City) regarding the environmental information and analyses contained in the DEIR (DEIR).

As required by the California Environmental Quality Act (CEQA) Guidelines Section 15087, a Notice of Completion (NOC) of the DEIR for the Alamitos Bay Marina Rehabilitation Project was filed with the State Clearinghouse on October 8, 2009, and the Notice of Availability (NOA) of the DEIR was filed with the County Clerk on October 7, 2009.

The DEIR was circulated for public review for a period of 45 days, from October 8, 2009, to November 23, 2009. Copies of the DEIR were distributed to all Responsible Agencies and to the State Clearinghouse in addition to various public agencies, citizen groups, and interested individuals. Copies of the DEIR were also made available for public review at the City Department of Development Services, two area libraries, and on the internet.

Twenty comment letters were received during the public review period or immediately thereafter; one comment letter from the National Oceanic and Atmospheric Administration (NOAA) and one email from the California Department of Fish and Game (CDFG) were received after the close of the comment period. Twenty comment letters were received from members of the public, one letter from a federal agency, and one email from a State agency. A letter from the State of California, Governor's Office of Planning and Research (OPR), State Clearinghouse, confirming receipt of the DEIR was not received; however, included is a page from OPR's CEQAnet Database indicating that the DEIR was received on October 8, 2009.

Comments that address environmental issues are thoroughly responded to. Comments that (1) do not address the adequacy or completeness of the DEIR; (2) do not raise environmental issues; or (3) do request the incorporation of additional information not relevant to environmental issues do not require a response, pursuant to Section 15088(a) of the State CEQA Guidelines.

Section 15088 of the State CEQA Guidelines, Evaluation of and Response to Comments, states:

> a) The lead agency shall evaluate comments on environmental issues received from persons who reviewed the DEIR and shall prepare a written response. The lead agency shall respond to comments received during the

noticed comment period and any extensions and may respond to late comments.

b) The written response shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail, giving the reasons that specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice.

c) The response to comments may take the form of a revision to the draft EIR or may be a separate section in the final EIR. Where the response to comments makes important changes in the information contained in the text of the draft EIR, the lead agency should either:

   1. Revise the text in the body of the EIR; or
   2. Include marginal notes showing that the information is revised in the responses to comments.

Information provided in this Response to Comments document clarifies, amplifies, or makes minor modifications to the DEIR. No significant changes have been made to the information contained in the DEIR as a result of the responses to comments, and no significant new information has been added that would require recirculation of the document.

An Errata to the Draft EIR has been prepared to make minor corrections and clarifications to the DEIR as a result of comments received during the public review period. Therefore, this Response to Comments document, along with the proposed DEIR Errata , has been bound as Volume III and is included as part of the Final EIR for consideration by the Planning Commission prior to a vote to certify the Final EIR.

INDEX OF COMMENTS RECEIVED

The following is an index list of the members of the public that commented on the DEIR prior to the close of the public comment period or immediately thereafter. The comments received have been organized in a manner that facilitates finding a particular comment or set of comments. Each comment letter received is indexed with a number below.

FORMAT OF RESPONSES TO COMMENTS

Responses to each of the comment letters are provided on the following pages. The comment index numbers are provided in the upper right corner of each comment letter, and individual

points within each letter are numbered along the right-hand margin of each letter. The City's responses to each comment letter immediately follow each letter and are referenced by the index numbers in the margins. As noted in some of the responses, a DEIR Errata, with text revisions, has been prepared to provide corrections and clarifications to the DEIR. The Errata, along with the DEIR and the Response to Comments, comprises the Final EIR.

Comment Code	Signatory	Date
Federal		
F-1	National Marine Fisheries Service (NMFS)	11/30/2009
State		
S-1	Office of the State Clearinghouse, CEQAnet Database	11/11/2009
S-2	California Department of Fish and Game	12/1/2009
Public		
P-1	Laurence Goodhue	10/11/2009
P-2	Laurence Goodhue	10/11/2009
P-3	Laurence Goodhue	10/12/2009
P-4	Laurence Goodhue	10/16/2009
P-5	Laurence Goodhue	11/20/2009
P-6	Laurence Goodhue	11/20/2009
P-7	Laurence Goodhue	11/20/2009
P-8	Laurence Goodhue	11/20/2009
P-9	Laurence Goodhue	11/20/2009
P-10	Laurence Goodhue	11/22/2009
P-11	Laurence Goodhue	11/22/2009
P-12	Laurence Goodhue	11/19/2009
P-13	Laurence Goodhue	11/23/2009
P-14	Jim Kirk	10/22/2009
P-15	William T. Dalessi	10/23/2009
P-16	Bill Waterhouse	10/30/2009
P-17	Don and Judy Bogart	11/17/2009
P-18	William W. Lorbeer	11/19/2009
P-19	Michelle Mowery	11/23/2009
P-20	William Waterhouse	11/23/2209

COMMENTS AND RESPONSES

F-1

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

NOV 30 2009

Jill Griffiths
Advance Planning Officer
City of Long Beach Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Dear Ms. Griffiths:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Report (DEIR) for the City of Long Beach's proposed Alamitos Bay Marina Rehabilitation Project (Project). NMFS offers the following comments pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA), Marine Mammal Protection Act (MMPA), and the Endangered Species Act (ESA).

Proposed Project

Implementation of the project is expected to occur in 12 phases and should extend over approximately 6 years. The proposed project consists of a number of improvements to the basins 1 to 7 of the existing Alamitos Bay Marina. Specifically, the project includes the following: (1) dredging the Marina basins down to original design depths and/or original basin depths; (2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) completing dock and piling replacement; and (5) replacing the pavement in the Marina's parking lots. The project also includes the construction of an approximately 565-foot long dock located adjacent to Basin 4 at the southeast corner of the Long Beach Yacht Club. The long dock includes a 200 foot temporary section that would accommodate boaters during the renovations and would be removed upon project completion.

F-1-1

Magnuson-Stevens Fishery Conservation and Management Act Comments

Statutory and Regulatory Information

The MSA, as amended in the Magnuson-Stevens Reauthorization Act of 2006, establishes a national program to manage and conserve the fisheries of the United States through the development of federal Fishery Management Plans (FMPs), and federal regulation of domestic fisheries under those FMPs, within the 200-mile U.S. Exclusive Economic Zone ("EEZ"). 16 U.S.C. §1801 *et seq.* To ensure habitat considerations

F-1-2

F-1

receive increased attention for the conservation and management of fishery resources, the amended MSA required each existing, and any new, FMP to "describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 1855(b)(1)(A) of this title, minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat." 16 U.S.C. §1853(a)(7). Essential fish habitat (EFH) is defined in the MSA as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" 16 U.S.C. §1802(10). The components of this definition are interpreted at 50 C.F.R. §600.10 as follows: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

Pursuant to the MSA, each federal agency is mandated to consult with NMFS (as delegated by the Secretary of Commerce) with respect to any action authorized, funded, or undertaken, or proposed to be, by such agency that may adversely affect any EFH under this Act. 16 U.S.C. §1855(b)(2). The MSA further mandates that where NMFS receives information from a Fishery Management Council or federal or state agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be, by any federal or state agency would adversely effect any EFH identified under this Act, NMFS has an obligation to recommend to such agency measures that can be taken by such agency to conserve EFH. 16 U.S.C. §1855(4)(A). The term "adverse effect" is interpreted at 50 C.F.R. §600.810(a) as any impact that reduces quality and/or quantity of EFH and may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce quantity and/or quality of EFH. In addition, adverse effects to EFH may result from actions occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

F-1-2

In anticipation of an EFH consultation with the U.S. Army Corps of Engineers (Corps), NMFS is providing the following comments to the City. Ultimately, NMFS will likely determine that the proposed action would adversely affect EFH and will subsequently provide EFH conservation recommendations to the Corps. The comments we are now providing are intended to identify some of the anticipated effects to EFH and specific issues that require additional analysis for the upcoming EFH consultation with the Corps.

Action Area

The proposed Project occurs in EFH for various federally managed fish species within the Pacific Groundfish and Coastal Pelagics FMPs. In addition, the project occurs within the vicinity of estuarine and eelgrass habitats, which are considered habitat areas of particular concern (HAPC) for various federally managed fish species within the Pacific

F-1-3

F-1

Groundfish FMP. HAPC are described in the regulations as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPC are not afforded any additional regulatory protection under MSA; however, federal projects with potential adverse impacts to HAPC will be more carefully scrutinized during the consultation process.

F-1-3

Coastal Resources Management, Inc. mapped the distribution of eelgrass habitat within the vicinity of the Project in 2007. A total of 0.57 acres of eelgrass was located in the general vicinity of the project.

Effects to EFH

The proposed Project involves dredging Basins 2 to 7 to a target depth of -10 feet Mean Lower Low Water (MLLW); and Basin 1 to target depths of -12 to -15 feet MLLW. The estimated total volume of dredged material to be removed from the seven basins is approximately 287,120 cubic yards. Dredge materials from Marina Basins 2 through 7 and a portion of Basin 1 will be barged to the United States Environmental Protection Agency (EPA) designated offshore disposal site, known as LA-2, with material discharged via a dump barge. However, due to high levels of mercury discovered during preliminary sampling in Basin 1, approximately 25,504 cubic yards will need to be trucked off site and disposed of at an approved landfill, confined aquatic disposal site, or an upland confined disposal facility.

The environmental effects of dredging on EFH can include: (1) direct removal/burial of organisms; (2) turbidity/siltation effects, including light attenuation from turbidity; (3) contaminant release and uptake, including nutrients, metals, and organics; (4) release of oxygen consuming substances; (5) entrainment; (6) noise disturbances; and (7) alteration to hydrodynamic regimes and physical habitat. Of particular concern to NMFS is the direct impact to vegetated eelgrass habitat and potential eelgrass habitat. Based upon the 2007 eelgrass survey, approximately 1,373 square feet of vegetated eelgrass habitat would be impacted.

F-1-4

The City cites a NMFS letter in which we stated that the potential eelgrass habitat clause has been implemented only where "clear and convincing evidence is available that a given area is potential eelgrass habitat (e.g. previous eelgrass surveys documenting presence)". We cited previous eelgrass surveys documenting presence as an example of convincing evidence that a particular area is potential eelgrass habitat, but we also believe other factors could be used to determine potential eelgrass habitat. According to the analysis provided in the DEIR, approximately 1.47 acres of "depth-suitable" habitat will be impacted by dredging. However, the DEIR ultimately determined that this area is not potential eelgrass habitat because two recent surveys have not shown eelgrass presence. In contrast, based upon the information provided in the DEIR, the depth-suitable habitat also appears to have similar sediment, salinity, and circulation characteristics and is in close proximity to vegetated eelgrass habitat. Thus, NMFS believes that not all of the 1.47 acres of depth-suitable habitat should be dismissed as non-potential eelgrass habitat.

F-1

In anticipation of the EFH consultation with the Corps on the proposed project, NMFS recommends that the City coordinate with NMFS to characterize potential eelgrass habitat within the Project vicinity.

F-1-4

Based upon the preliminary analysis, the DEIR concludes that the dredging activities would require compensatory mitigation for potential impacts to eelgrass. The City has identified a site adjacent to the northeast shore of Marina Stadium to convert to an eelgrass habitat mitigation site. NMFS agrees that this site may be a feasible site for eelgrass mitigation. However, NMFS believes mitigation opportunities should continue to be explored along the Alamitos Bay Peninsula. Therefore, NMFS recommends that the City coordinate with NMFS and other interested resource agencies on additional mitigation opportunities. Moreover, given the multiple, but relatively small, impacts to eelgrass habitat from various coastal development projects in Alamitos Bay, NMFS recommends the City maximize the size of their mitigation area(s) to support the development of a mitigation bank. As you may know, the 2008 final federal rule on compensatory mitigation for losses of aquatic resources states that mitigation banks and/or in-lieu fee mitigation is often the environmentally preferable mitigation approach.

F-1-5

In addition to potential impacts to eelgrass habitat, NMFS is concerned by the potential adverse impacts associated with the dredging and disposal of contaminated sediments. As stated above, some of the dredged material has elevated mercury levels. The DEIR contains mitigation measures that require appropriate dredging permits be obtained and that appropriate best management practices (BMPs) be implemented. NMFS recommends that the City coordinate with the Southern California Dredged Material Management Team and the Contaminated Sediments Task Force to best determine the appropriate conditions and BMPs to utilize for the proposed project.

F-1-6

Another potential project concern is the spread of the invasive alga *Caulerpa taxifolia* from project activities. As you may be aware, this alga had been introduced to our coastline. Evidence of harm that can ensue as a result of an uncontrolled spread of the alga has already been seen in the Mediterranean Sea where it has destroyed local ecosystems, impacted commercial fishing areas, and affected coastal navigation and recreational opportunities. Although it is not known to be present within Alamitos Bay, it had been detected in two other locations in Southern California. If the invasive alga is present within the project area, the dredging activities would adversely affect EFH by promoting its spread and increasing its negative ecosystem impacts. NMFS supports the DEIR's inclusion of mitigation measure 4.3-7, which requires a pre-construction *Caulerpa* survey in accordance with the Caulerpa Control Protocol.

F-1-7

There are currently 1,967 existing boat slips in Marina Basins 1 through 7 that total approximately 476,839 square feet of overwater coverage. The shadow cast by an overwater structure affects both the plant and animal communities below the structure. Light is the single most important factor affecting aquatic plants. Light levels underneath overwater structures have been found to fall below threshold amount for the photosynthesis of diatoms, benthic algae, eelgrass, and associated epiphytes and other autotrophs. These photosynthesizers are an essential part of nearshore habitat and the

F-1-8

F-1

estuarine and nearshore food webs that support many species of marine and estuarine fishes.

In addition, fishes rely on visual cues for spatial orientation, prey capture, schooling, predator avoidance, and migration. The reduced-light conditions found under an overwater structure limit the ability of fishes, especially juveniles and larvae, to perform these essential activities. Shading from overwater structures may also reduce prey organism abundance and the complexity of the habitat by reducing aquatic vegetation and phytoplankton abundance. The proposed Project includes installation of 1,646 slips that total approximately 474,239 square feet of overwater coverage. Therefore, the proposed project would result in the loss of approximately 321 slips and a decrease of approximately 2,600 square feet of overwater coverage. This reduction in overwater coverage may increase the quality of EFH in the Project vicinity.

F-1-8

The proposed Project also involves the removal of approximately 808 existing piles and installation of 620 new piles to support the new dock system. It is not clear to NMFS what type of pilings will be removed. NMFS has concerns regarding the removal of creosote-treated wood pilings. Although the removal of creosote-treated pilings may ultimately be beneficial to EFH, there is a potential for adverse impacts associated with their removal. Polycyclic aromatic hydrocarbons (PAH) are the dominant class of compounds found in creosote. PAHs are released from wood treated with creosote and are known to cause cancer, reproductive anomalies, and immune dysfunction; to impair growth and development; and to cause other impairments in fish exposed to sufficiently high concentrations over periods of time. If creosote-treated pilings are removed, adverse effects to EFH may occur via the suspension of sediments, which may result in harmful levels of turbidity and release of contaminants contained in those sediments. Given the potential for adverse impacts to EFH, NMFS recommends that the City clarify the type of pilings that are proposed for removal. If creosote-treated piles are to be removed, NMFS recommends the City include measures to minimize the suspension of sediments and disturbance of the substrate when removing piles.

F-1-9

Marine Mammal Protection Act and Endangered Species Act Comments

The proposed action may result in effects to the following non ESA-listed marine mammal species: Pacific harbor seal (*Phoca vitulina richardii*), California sea lion (*Zalophus californianus*), bottlenose dolphin (*Tursiops truncatus*), and gray whale (*Eschrichtius robustus*). The ESA-listed species that may be affected are green sea turtles (*Chelonia mydas*)

Sounds introduced into the sea by man-made devices could have a deleterious effect on marine mammals by causing stress or injury, interfering with communication and predator/prey detection, and changing behavior. Acoustic exposure to loud sounds, may result in a temporary or permanent loss of hearing (termed a temporary or permanent threshold shift) depending upon the location of the marine mammal in relation to the source of the sound. NMFS is currently in the process of determining safety criteria (*i.e.*, guidelines) for marine species exposed to underwater sound. However, pending adoption

F-1-10

of these guidelines we have preliminarily determined, based on past projects, consultations with experts, and published studies, that 180 dB re 1 μPa_{RMS} (190 dB re 1 μPa_{RMS} for pinnipeds) is the impulse sound pressure level that can be received by marine mammals without injury. Marine mammals have shown behavioral changes when exposed to impulse sound pressure levels of 160 dB re 1 μPa_{RMS} and when exposed to continuous sound levels of 120 re 1 μPa_{RMS}. Currently, there are no similar data available on sound level effects and sea turtles, so NMFS is conservatively using the marine mammal guidelines as the standard for protecting sea turtles until more information becomes available.

The principal mechanism of potential effects to marine mammals from the proposed project is exposure to underwater sound generated by pile driving and dredging and vessel traffic. Although the DEIR states that the sound intensity produced, the area of noise reaching harassment noise levels, and the potential level of impact from pile-driving operations for the Alamitos Bay Marina project will be less than that of the Port of Los Angeles project, it is not clear from the document what the sound levels will be associated with project activities. NMFS recommends including sound pressure level measurements and the associated distances for those measurements. The DEIR also states that the initiation of pile driving could potentially result in a minor startle response from nearby marine mammals, and they would be expected to either move away from or avoid the immediate vicinity and that over time, marine mammals would acclimate to the noise. Please describe what is meant by "minor startle response." In addition, avoidance or acclimation is not considered a mitigation measure. The measured in-air sound exposure levels of a clamshell dredge are estimated to range between 75–88 A-weighted decibels (dBA) at 50 ft. Hauled out seals and sea lions have been observed flushing from dredging sites at a sound exposure level of less than 100 dBA, and it is possible that marine mammals may modify their behavior as a result of the noise produced by the dredging operations. The DEIR does not include mitigation or minimization measures to potential in-water impacts from dredging operations to marine mammals transiting through the project area.

F-1-10

Whales, seals, and sea lions are protected under the MMPA. Under the MMPA, with the exception for military readiness, it is illegal to "take" a marine mammal without prior authorization from NMFS. "Take" is defined as harassing, hunting, capturing, or killing, or attempting to harass, hunt, capture, or kill any marine mammal. "Harassment" is defined as any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild, or has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Although the DEIR states that marine mammals are not expected to occur within areas where noise reaches harassment levels and that therefore, an application for an Incidental Harassment Authorization will not be necessary, NMFS is not able to analyze the areas where the harassment noise levels for this project are with respect to where marine mammals occur, as that information was not provided in the DEIR. Thus, based on the information in the DEIR, NMFS is not able to recommend whether authorization under the MMPA is necessary, at this time.

F-1-11

Vessel traffic coming in and going out of Alamitos Bay (barges, tugs, work vessels) related to the proposed construction of the project and the dredging program would be transiting to and from offshore waters where California sea lion, Pacific harbor seal, California gray whale, bottlenose dolphin, and other marine mammals occur. Work vessels transiting to and from Alamitos Bay Marina could collide with marine mammals or sea turtles. The DEIR states that since marine mammals are mobile and are generally capable of avoiding boat traffic (especially at the slow speeds the proposed project vessels will be operating) and the vessel operators are also trained to recognize the presence of marine mammals and avoid collisions, the potential for adverse impacts due to vessel traffic would be reduced. Please describe how the vessel operators are trained to recognize the presence of marine mammals and avoid collisions and also if there will be a dedicated monitor onboard the vessels. If it is possible, please characterize the level of increased vessel traffic that may be associated with the construction activities.

F-1-12

NMFS would like to acknowledge the decision to use a biological monitor during construction activities in order minimize the potential impacts of the project on protected species such as sea turtles. We recommend that this monitor also document marine mammal activity in the project area during construction activities.

F-1-13

Further, in the event of a watercraft collision with a marine mammal or sea turtle, officials must immediately contact the NMFS Stranding Coordinator, Mr. Joseph Cordaro at (562) 980-4017.

Thank you for consideration of our comments. Please contact Monica DeAngelis at 562-980-3232 or Monica.DeAngelis@noaa.gov if you have any questions concerning our MMPA and ESA comments. If you have any questions regarding our EFH comments, please contact Bryant Chesney at 562-980-4037 or Bryant.Chesney@noaa.gov.

Sincerely,

Robert S. Hoffman
Assistant Regional Administrator
for Habitat Conservation Division

LATE LETTER FROM NATIONAL MARINE FISHERIES SERVICE (NMFS)

LETTER CODE: F-1

This letter was submitted after the close of the comment period. Pursuant to Public Resource Code Section 21092(d), the City is not required to respond to these late comments, but has chosen to do so.

RESPONSE F-1-1

The comment is introductory and states that the National Marine Fisheries Service (NMFS) has reviewed the DEIR for the Alamitos Bay Marina Rehabilitation Project. The proposed project description is repeated for clarification. The comment does not contain any substantive statements or questions about the DEIR or the analysis therein, and no further response is necessary.

RESPONSE F-1-2

The comment summarizes the statutory and regulatory basis of the Magnuson-Stevens Reauthorization Act of 2006, the Fishery Management Plans (FMPs) role to manage and conserve the fishery resources of the U.S., and the requirement that federal agencies consult with NMFS for actions that may adversely affect Essential Fish Habitats (EFH). The comment concludes by stating that EFH conservation recommendations will most likely be made to the U.S. Army Corps of Engineers (Corps) during future consultation on the project. The comment does not contain any substantive statements or questions about the DEIR or the analysis therein, and no further response is necessary.

RESPONSE F-1-3

The comment confirms that the proposed project is located within a general area designated as EFH by the Pacific Groundfish and the Coastal Pelagics FMPs, and that Coastal Resources Management (CRM) mapped 0.57 acres of eelgrass within the project vicinity in 2007. It should be noted that the 0.57 acres of eelgrass referred to in this comment includes areas in the project vicinity that will not be directly impacted by project activities. The total amount of eelgrass vegetation to be removed due to project dredging activities is 0.03 acre. The comment does not contain any substantive statements or questions about the DEIR or the analysis therein, and no further response is necessary.

RESPONSE F-1-4

The comment restates the proposed project's dredging activities, and states the effects that dredging can have on EFH. The comment expresses concern regarding the direct impacts to vegetated eelgrass habitat and potential eelgrass habitat. The NFMS comments that the 1.47 acres of depth-suitable habitat identified in the DEIR should not be dismissed as non-

potential eelgrass habitat and recommends that, in anticipation of the consultation with the Corps on the proposed project, the City coordinate with NMFS to characterize potential eelgrass habitat within the project vicinity.

The City intends to consult with the Corps and coordinate with NMFS as required during the permit process. The issue of potential habitat, as suggested in the comment, can be further discussed during the consultation process with the agencies. The conclusions contained in the DEIR regarding potential eelgrass habitat are summarized below.

Historically, there was no eelgrass present within the Marina basins, due to the original navigable depths required for the operation of the Marina. However, shoaling (the buildup of sediments) over the past 50 years since the original construction of the Marina has created water levels in the basins that are depth-suitable for eelgrass. This condition is due to the fact that no Basin-wide dredging has occurred in the Marina.

In order to determine whether any potential eelgrass habitat exists within the project boundaries, the amount of soft-bottom habitat was calculated for areas meeting the following conditions in the Alamitos Bay Marina: within the project's dredging footprint; with water depths less than -8 ft MLLW (depth-suitable); where no shading occurs; and fairways where eelgrass already exists but is currently unvegetated (Basins 2, 4, and 6). These factors were considered as the starting point to assess potential eelgrass habitat. These factors were recommended by the expert consulting team who provided technical advice during the preparation of the DEIR, including Rick Ware, a Marine Biologist with Coastal Resource Management, Inc., and Josh Burnham and Jennifer Pettis-Schallert from Anchor QEA, L.P. The area mapped under these parameters was calculated to be 1.47 ac. However, the expert opinion of the technical consultants is that the 1.47 ac. does not constitute potential eelgrass habitat for other reasons. Their conclusion is based on two marine surveys conducted for the project in 2007 and 2008. As the DEIR concluded, although each previously mapped area was still vegetated with eelgrass, there was no observable increase in areal cover, nor were there other areas in the Marina Basins where eelgrass had colonized. Therefore, because eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically have been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging. In the judgment of the City staff, the opinions of the technical consultants provide sufficient expertise for the City staff to rely upon their analysis that impacts to potential eelgrass habitat due to dredging activities are less than significant.

RESPONSE F-1-5

This comment states that NMFS agrees that the identified mitigation site adjacent to Marine Stadium may be a feasible site, but believes that opportunities along the Alamitos Peninsula should continue to be explored. NMFS believes this would maximize the potential size of the mitigation area to support development of an eelgrass mitigation bank, a preferable mitigation approach under compensatory mitigation rules. The City will continue to

coordinate with NMFS and the ACOE on feasible mitigation sites, including other areas along the Alamitos Bay Peninsula. The City appreciates the fact that NMFS finds that the proposed mitigation site may be feasible.

RESPONSE F-1-6
The comment expresses concern regarding the disposal of contaminated sediments. NMFS recommends that the City coordinate with the Southern California Dredged Material Management Team and the Contaminated Sediments Task Force.

As detailed in Mitigation 4.6-3, a Soil Management Plan shall be prepared for the project and will be reviewed by the Office of Environmental Health Hazard Assessment (OEHHA). OEHHA shall list any additional requirements, and shall oversee the implementation of the Workplan for compliance with local, State, and federal regulations. The purpose of this mitigation is to ensure that any additional sampling of contaminant material, or removal of such, shall be subject to the applicable regulations. The mitigation measure has been expanded to include coordination with the Southern California Dredged Material Management Team and the Los Angeles Region Contaminated Sediments Task Force.

RESPONSE F-1-7
The comment states that NMFS supports the inclusion of Mitigation Measure 4.3-7, which requires that a pre-construction *Caulerpa taxifolia* algae survey be conducted according to the NMFS Caulerpa Control Protocol. The comment is in support of DEIR Mitigation Measure 4.3-7, and no further response is necessary.

RESPONSE F-1-8
The comment confirms that the proposed project will result in a reduction of approximately 2,600 square feet (sf) of overwater coverage, and that this reduction may increase the quality of EFH in the project vicinity. The comment is consistent with the analysis contained in the DEIR that concluded "the reduction in dock surface area by 2,600 sf will have a beneficial impact on open water areas within the Marina basins by reducing the amount of shading and allowing a greater amount of light to reach and penetrate the water's surface". The comment does not contain any questions about the DEIR or the analysis therein, and no further response is necessary.

It should be noted that the identified 3,150 sf of permanent long dock surface water coverage was included in the overall project calculated totals which result in a post-project reduction of approximately 2,600 sf of dock surface area[1].

[1] Telephone conversation with Loni Adams on December 3, 2009 to clarify that the reduction of approximately 2,600 sf of dock over water coverage included the permanent portion of the long dock.

RESPONSE F-1-9

The comment questions whether the proposed project includes removal of any creosote-treated pilings due to the potential for adverse effects from such materials on EFH. The proposed project does not include the removal or disturbance of any creosote-treated pilings. Therefore, no further response is necessary.

RESPONSE F-1-10

The comment expresses concern regarding the effects of noise from construction activities on marine mammals. The comment requests further description of what is meant by the term "minor startled response" of marine mammals to noise. The comment states that the DEIR does not include additional mitigation or minimization measures for in-water dredging impacts to mammals transiting through the project area.

A minor startled response by a marine mammal (most likely a sea lion) would include swimming away from the source of dredging, from either the physical presence of the dredge equipment or sound/vibration detected by the animal that was produced from dredge equipment. No deleterious impacts would result from a minor startled response. Mitigation Measure 4.3-2 has been expanded to include measures to mitigate in-water dredging impacts to marine mammals transiting through the project area.

RESPONSE F-1-11

The comment states that, based on the information provided in the DEIR, NMFS is not able to determine at this time whether an Incidental Harassment Authorization under the Marine Mammal Protection Act will be required.

The DEIR concluded that marine mammals would likely leave the area of disturbance during piling and construction activities. Because sound generated from pile driving activities as a result of this project are low-level disturbances, marine mammals would not be injured or harassed. Most sound energy as a result of concrete and steel impact hammer pile driving is concentrated at the in the low sensitivity range of hearing frequencies for most marine mammal species, with most energy concentrated below 1 kHz (JASCO 2006). Source levels will also be relatively low for this project because small concrete piles - instead of steel piles - will be used for project activities. In addition, pile jetting will be used wherever practicable.

Although source levels associated with pile driving in Alamitos Bay have not been measured, sound propagation of even very intense sounds is generally restricted to short distances in shallow bays and estuaries, such as Alamitos Bay. This is due to sound scattering associated with environmental features present in bays such as shallow water, high turbidity, and soft substrate. Therefore, sounds from impact hammer pile driving are likely to attenuate to background noise levels at short distances from the project location.

As a comparison, the pile-driving noise levels estimated for the LA Marine Terminal Project determined that marine mammals could experience noise approaching harassment levels (160 dB re 1μPa_{RMS}) at around 330 ft from the pile driving. However, that study accounted for the use of 48- to 54-inch steel piles and the power of the large hammer that would be required to drive them. The proposed Alamitos Bay Marina project requires significantly smaller 15-inch concrete production piles (and not steel piles) and therefore the sound intensity produced, the area of noise reaching harassment noise levels, and the potential level of impact from pile-driving operations for the Alamitos Bay Marina project will be less than that of the Port of Los Angeles project. The DEIR concluded that harassment noise levels will be localized to the immediate area of construction activity; the harassment levels would not approach nearly the same distance (330 feet) as the LA Marine terminal project.
The City intends to consult with the Corps and coordinate with NMFS as required during the permit process. As part of the Corps permitting process, a technical memo will be prepared to further detail the potential for acoustic impacts to marine mammals and sea turtles. In the judgment of the City staff, implementation of DEIR Mitigation Measures 4.3-1 and 4.3-2 would ensure that sound effects on marine mammals due to construction activities are less than significant.

RESPONSE F-1-12
The comment asks for further description of how vessel operators are trained to recognize the presence of marine mammals and avoid collisions. The comment further requests characterization of the increased vessel traffic associated with project construction activities.

Vessel operators will be instructed by a qualified marine biologist on the goals of the Marine Mammal Protection Act (1972) and the need to avoid a "take" of a marine mammal. "The term 'take' means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. Feeding is prohibited." "The term 'harassment' means any act of pursuit, torment, or annoyance which: injures or has the potential to injure a marine mammal or marine mammal stock in the wild; or disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding or sheltering to a point where such behavior patterns are abandoned or significantly altered." (NOAA website, www.noaa.gov)

Vessel operators will be trained in the identification of common marine mammals in the study area using a power-point presentation and summary sheets that describe the species that have a potential to be within the Alamitos Bay and nearshore project area. An informational handbook and photos will be provided to vessel operators that can be easily used by vessel operators and the crews of the vessels. During initial vessel operations in Alamitos Bay and offshore areas, a qualified marine biologist shall accompany the vessel operator to advise and assist in the avoidance of marine mammals.

Vessels moving to and from the project site within Alamitos Bay, as well as within the Marina Basins, will be slow-moving in order to comply with speed limits within Alamitos

Bay (5 mph) and also due to the restricted amount of space for construction vessels within the basin fairways. As vessels approach and leave Alamitos Bay, vessel operators will maintain a slow speed which will assist in preventing collisions with marine mammals. Documentation from the Pacific LA Marine LLC Crude Oil Terminal Project EIR within the Port of Los Angeles (Modifications to the Draft SEIS/SEIR – 3.3 Biological Resources Pacific L.A. Marine Terminal LLC Crude Oil Terminal Final SEIS/SEIR November 2008) indicate that while vessel speed may not be the only factor in ship/whale collisions, data indicate that collisions are more likely to occur when ships are traveling at speeds of 14 knots or greater. This strongly suggests that ships going slower than 14 knots are less likely to collide with large whales. As a result, NOAA Fisheries recommends that speed restrictions in the range of 10-13 knots be used, where appropriate, feasible, and effective, in areas where "reduced speed is likely to reduce the risk of ship strikes and facilitate whale avoidance". (NOAA undated). The City will continue to coordinate with NMFS and the Corps during the permitting process regarding feasible measures to reduce the impacts on marine mammals, including vessel speed restrictions while transiting to and from the project site.

In the judgment of the City staff, implementation of DEIR Mitigation Measures 4.3-1 and 4.3-2 would ensure that effects on marine mammals due to construction activities are less than significant.

RESPONSE F-1-13

The comment acknowledges the use of a biological monitor during construction activities and recommends that the monitor document marine mammal activity in the project area during construction activities. The comment further advises that the NMFS Stranding Coordinator must be immediately contacted in the event of a watercraft collision with a marine mammal or sea turtle. The comment is in support of DEIR Mitigation Measures 4.3-1, 4.3-2 and 4.3-4, requiring the presence of a biological monitor during construction activities and no further response is necessary. Mitigation Measure 4.3-2 has been expanded to include the required notification of the NMFS Stranding Coordinator in the event of a watercraft collision with a marine mammal or sea turtle.

Alamitos Bay Marina Rehabilitation Project

City	Cross Street	Document Type	Description	Date Received	
Long Beach	East 2nd Street and Pacific Coast Highway	Draft EIR	The proposed project would renovate the existing Marina facilities in Basins 1 through 7 by providing upgraded ADA-compliant facilities and the following: 1) maintenance dredging of the Marina basins to original design depths; 2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; 3) repairing the sea wall where necessary; 4) complete dock and piling replacement; and 5) replacing the pavement in the Marina's parking lots. The project also includes the construction of an approximately 600-foot long dock located adjacent to Basin 4 at the southeast corner of the Marina's parking lots. The project also includes creation of a habitat area to mitigate for potential impacts to eelgrass.	10/8/2009	S-1-1
Long Beach	East 2nd Street and East Pacific Coast Highway	Notice of Preparation	The proposed project would renovate the existing Marina facilities in Basins 1 through 7 by providing upgraded ADA-compliant facilities and the following: 1) maintenance dredging of the Marina basins to original design depths; 2) replacing and/or upgrading 13 restrooms along with their associated water and sewer laterals; 3) repairing the sea wall where necessary; 4) complete dock and piling replacement; and 5) replacing the pavement in the Marina's parking lots. The project also includes the construction of an approximately 600-foot long dock located adjacent to Basin 4 at the southeast corner of the Marina's parking lots. The project also includes creation of a habitat area to mitigate for potential impacts to eelgrass.	5/11/2009	S-1-2
Long Beach	East 2nd Street and East Pacific Coast Highway	Mitigated Negative Declaration	The proposed project is the renovation of the existing Alamitos Bay Marina facilities. The project would provide upgraded Americans with Disabilities Act (ADA) compliant facilities, upgraded restrooms, and would dredge the basins to ensure safe navigation. The proposed project consists of a number of improvements to the existing Marina and includes the following: (1) dredging the Marina basin seafloors down to original design depths; (2) replacing and/or upgrading 13 restrooms and their associated water and sewer lines; (3) repairing the sea wall where necessary to reestablish the rock revetment along the slope to the basin floor; (4) complete dock and piling replacement resulting in 1,647 slips; and (5) replacing the pavement in the parking lots. The existing marina contains 1,997 slips. The project will result in a loss of approximately 350 slips. Based on discussions with Coastal Commission staff and a survey of the existing Marina users, the City proposed slip mix reflects a marina that contains 23% of slips 25 feet and less (20s and 25s), 39% of slips 30 feet and less (20s, 25s, and 30s), 58% of slips 35 feet and less (20s, 25s, 30s, and 35s), and 82% of slips 40 feet and less.	4/4/2008	S-1-3

CEQAnet HOME | NEW SEARCH

STATE OF CALIFORNIA, GOVERNOR'S OFFICE OF PLANNING AND RESEARCH, STATE CLEARINGHOUSE

LETTER CODE: S-1

RESPONSE S-1-1

The informational page is from the State of California, Governor's Office of Planning and Research, State Clearinghouse's online CEQAnet Database. The database provides information regarding processing of environmental documents pursuant to the California Environmental Quality Act (CEQA). This notation indicates that the DEIR was received by State Clearinghouse on October 8, 2009.

The comment does not contain any substantive statements or questions about the DEIR or the analysis therein. Therefore, no further response is necessary.

RESPONSE S-1-2

This notation indicates that the Notice of Preparation for the DEIR was received by State Clearinghouse on May 11, 2009.

The comment does not contain any substantive statements or questions about the DEIR or the analysis therein. Therefore, no further response is necessary.

RESPONSE S-1-3

This notation indicates that a Mitigated Negative Declaration (MND)) was submitted to the State Clearinghouse on April 4, 2008. The MND was circulated for public review and comment from April 4, 2008 to May 5, 2008. During the IS/MND public review period, questions were raised by agencies regarding the proposed mitigation measures for project impacts to marine biological resources (specifically, to eelgrass). Therefore, due to an abundance of caution, and because there were unresolved issues related to agency comments, the City proceeded with preparation of an Environmental Impact Report (EIR).

The comment does not contain any substantive statements or questions about the DEIR or the analysis therein. Therefore, no further response is necessary.

S-2

"Loni Adams"
<ladams@dfg.ca.gov>

12/01/2009 05:17 PM

To <Jill.Griffiths@longbeach.gov>
cc <Bryant.Chesney@noaa.gov>
bcc
Subject Alamitos Bay Rehab. Project DEIR, Preliminary Comments from DFG

Dear Ms. Griffiths:

The Department of Fish and Game (Department) has finished reviewing the Draft Environmental Impact Report (DEIR) that you submitted to us in October 2009 regarding the Alamitos Bay Rehabilitaion Project.

The Department is a Trustee Agency under the California Environmental Quality Act (CEQA) (CEQA Guidelines §15386). The CEQA guidelines require that project related physical changes in the existing environment be analyzed and that when any such impacts are significant that these impacts be avoided, and/or mitigated to less than significant levels. The Department has the following comments, concerns and recommendations. S-2-1

The Department does not agree with the DEIR conclusion given for potential eelgrass habitat and concurs with NOAA's comments in that the 1.47 acres of depth-suitable habitat should not be dismissed as not a potential eelgrass habitat, therefore, denying responsibility for any further mitigation. The Department recommends a more refined scientific investigation and analysis of the 1.47 acres as it relates to potential eelgrass habitat. S-2-2

The proposed eelgrass mitigation area discussed in the DEIR appears to be a potentially viable location, although other locations could be explored that have larger area for potential mitigation banking opportunities as NOAA also points out in their comments. However, the Department is concerned about the type of monitoring and land use in the future that should be addressed in the final EIR. Specifically, how would the City ensure that the proposed mitigation area will always be reserved for open space marine habitat and how would it be maintained and monitored in the future to ensure productive and good quality habitat? A long term monitoring plan appears to be appropriate for the chosen mitigation area along with possible deeded land restrictions. S-2-3

The Department reserves the right to modify or change the above determinations based on additional findings or other pertinent information concerning the above mentioned project. As always, Department personnel are available to discuss our concerns, comments, and recommendations in greater detail. To arrange for discussion, please contact Ms. Loni Adams, Environmental Scientist, at (858) 627-3985 or ladams@dfg.ca.gov. S-2-4

Sincerely,

Loni Adams
Environmental Scientist
California Department of Fish and Game
4949 Viewridge Ave.
San Diego, CA 92123

LATE EMAIL FROM CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG) LETTER CODE: S-2

This email was submitted after the close of the comment period. Pursuant to Public Resource Code Section 21092(d), the City is not required to respond to these late comments, but has chosen to do so.

RESPONSE S-2-1

The comment is introductory and contains information regarding the California Department of Fish and Game's (CDFG) role as a Trustee Agency under CEQA, and states they have reviewed the DEIR for the Alamitos Bay Marina Rehabilitation Project. The comment does not contain any substantive statements or questions about the DEIR or the analysis therein, and no further response is necessary.

RESPONSE S-2-2

The comment states that CDFG does not agree the DEIR conclusion regarding potential eelgrass habitat, and that they concur with NOAA's comments (as contained in Comment Letter F-1, included herein). The comment recommends a more refined analysis of the 1.47 acres of depth-suitable habitat. Please see Response F-1-4.

To summarize, the DEIR calculated the amount of soft-bottom habitat for areas meeting the following conditions in the Alamitos Bay Marina: within the project's dredging footprint; in water depths less than -8 ft MLLW; where no shading occurs; and fairways where eelgrass already exists but which are currently unvegetated (Basins 2, 4, and 6). These factors were considered as the starting point to assess potential eelgrass habitat. These factors were recommended by the expert consulting team who provided technical advice during the preparation of the DEIR, including Rick Ware, a Marine Biologist with Coastal Resource Management, Inc., and Josh Burnham and Jennifer Pettis-Schallert from Anchor Environmental. The area mapped under these parameters was calculated to be 1.47 ac. However, the expert opinion of the technical consultants is that the 1.47 ac. does not constitute potential eelgrass habitat for other reasons. Their conclusion is based on two marine surveys conducted for the project in 2007 and 2008. As the DEIR concluded, although each previously mapped area was still vegetated with eelgrass, there was no observable increase in areal cover, nor were there other areas in the Marina Basins where eelgrass had colonized. Therefore, because eelgrass has not increased in cover or colonized in any other areas, and because eelgrass would not historically have been expected to occur in the Marina due to the depths required to maintain navigation, no potential eelgrass habitat is considered to be present within the areas impacted by proposed dredging.

RESPONSE S-2-3

The comment states that the proposed mitigation area as identified in the DEIR appears to be a viable location, but that other areas could have potentially larger mitigation banking opportunities. Further, CDFG questioned how the site's long term use as open space marine habitat could be maintained and monitored. Please see Response F-1-5.

As explained in Response F-1-5, the DEIR includes Mitigation Measure 4.3-2, requiring implementation of an Eelgrass Mitigation Plan to mitigate any direct losses to eelgrass at a ratio of 1.2:1 in compliance with the Southern California Eelgrass Mitigation Policy (SCEMP) requirement. Additionally, the Mitigation Measure requires that a qualified biologist shall monitor the successful establishment of the eelgrass mitigation site for a period of 5 years, in accordance with the SCEMP. Due to the construction and expense required to change in the use of the site from landside storage to open space water habitat, it is not anticipated that this area would be used for any other purpose in the future. In addition, the open space water habitat will complement the adjacent nature trail which extends along the northern terminus of Marine Stadium. The City is pleased that CDFG finds that the proposed mitigation site appears to be viable. The monitoring of the site, once implemented, is required in the mitigation. The CDFG finding that a long-term monitoring plan appears to be appropriate for the chosen mitigation area is appreciated. The City will coordinate with CDFG to ensure implementation of the mitigation area is properly completed and monitored.

RESPONSE S-2-4

The comment is a concluding statement, reserving CDFG's right to modify their comments, and providing contact information for the appropriate CDFG personnel. The comment does not contain any substantive statements or questions about the DEIR or the analysis therein, and no further response is necessary.

 P-1

From: Administrator [cacrewood2@fastmail.fm]
Sent: Sunday, October 11, 2009 9:01 AM
To: chief.ham@verizon.net; jim@intercat.com; john_nunn@cox.net; j.vanblom@verizon.net; jdbogart@self-serv.net; acdupont4@gmail.com
Cc: Ken Pauley
Subject: Fwd: INTEGRITY AND TRUST ARE NOT EXACTLY THE WORDS THE DISTRICT ATTORNEY AND OTHERS MIGHT USE WHEN.....
LET US GET A FLYER PREPARED:HAND OUT AT THE HEAD OF THE CHARLES ALERTING ALL TO THESE GUYS.....

Begin forwarded message:

> **From:** Administrator <cacrewood2@fastmail.fm>
> **Date:** October 11, 2009 8:54:44 AM PDT
> **To:** irvine@lsa-assoc.com
> **Subject: INTEGRITY AND TRUST ARE NOT EXACTLY THE WORDS THE DISTRICT ATTORNEY AND OTHERS MIGHT USE WHEN.....**
>
> READING THE JUNK SCIENCE REFERENCED IN LSA'S EIR RE ALAMITOS BAY MARINA REHABILITATION PROJECT
> WILL CLICK OVER A DRAFT COPY SENT TO THE GOOD JILL GRIFFITH,,,
>
> WHAT LSA NEEDS TO HAVE COMPLETED BY 10:00 AM MODAY MORNING
> PICK UP ALL COPIES OF THE EIR WHICH WAS DELIVERED TO CITY OF LONG BEACH
> POSTED TODAY ON YOUR WEB THAT YOU ARE RECALLING THE ENTIRE DOCUMENT
> PENDING A PROFESSIONAL REVIEW AS WELL AS REGULATORY AGENCIES
>
> RETURN ANY MONIES PAID TO YOU BY THE CITY PENDING THE REVIEW.

P-1-1

Laurence B. Goodhue
(323)474 4446

LAURENCE GOODHUE

LETTER CODE: P-1

RESPONSE P-1-1

The comment requests that all copies of the DEIR be recalled. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. Opinions regarding the DEIR consultant will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

P-2

Administrator
<cacrewood2@fastmail.fm
>

10/11/2009 12:08 AM

To jill.griffiths@longbeach.gov
cc
bcc
Subject Fwd: EIR:DYI THERE ARE 45 DAY FROM OCT TO RESPOND; BELOW IS THE DRAFT OF WHAT WILL SENT BY ME TO JILL---WHO-KEEP IN MIND DID

JILL:In case I drop dead between now and when I will get you a perfected copy(spell checked)....here with is the draft---so that you understand the direction these
comments are taking:

THE SUMMARY AND RECOMMENDATIONS SET FORTH IN
VOLUME II
appendix D
PAGE 27
PARAGRAPH ONE---LINE 6-7

P-2-1

ARE;
FALSE
UNTRUE
AT WAR WITH MAPS DEPICTING THE COURSE

IN SUM;THE CONCLUSIONS RELATIVE TO THE LOCATION OF THE COURSE IS:---JUNK SCIENCE....

THE END OF THE COURSE IS NOT WAS NOT ON A LINE DOWN THE MIDDLE OF THE SECOND STREET BRIDGE
de facto page 26 FIGURE 5---IS THE MAP OF THE COURSE
THAT MAP SHOWS THE START OF THE COURSE--AND THE REQUIRED 200 FEET(course measurements are in meters--)
is well -well south of the 2nd Street Bridge....
Those that did the surveying work for the Historic Designation informed me that the start of the course---was on a line that
extended down the middle of Angelo Walk!!!!

P-2-2

Begin forwarded message:

> From: Administrator <cacrewood2@fastmail.fm>
> Date: October 10, 2009 10:44:05 PM PDT
> To: chief.ham@verizon.net, jim@intercat.com, jdbogart@self-serv.net,
> j.vanblom@verizon.net, john_nunn@cox.net, acdupont4@gmail.com
> Cc: krik.kokorian@presstelegram.com
> Subject: EIR:DYI THERE ARE 45 DAY FROM OCT TO RESPOND; BELOW IS THE
> DRAFT OF WHAT WILL SENT BY ME TO JILL---WHO-KEEP IN MIND DID
>
> NOT AUTHOR ANY OF THE "DATA:HER TALS IS TO COLLECT THE DATA AND
> PUBLISH.....THEN PRESENT IT TO VARIOUS CITY COMMISSIONS AS IT WORKS
> THROUGH THE PROCESS" MY MONDAY E MAIL WILL VEAL WITH
>

P-2-3

P-2

> BUT ONE SUBJECT....WITH THE REST TO FOLLOW UPON DISECETTING THE
> ENTIRE OPUS....WILL BE ADDRESSED; HERE WITH IS THE ESSENCE OF THE
> DRAFT:
>
> JILL:
>
> Let me take a moment an thank you for your continuing hard and
> professional work in gathering together the data contained in the EIR.
> There is full
> recognition that your are not responsible for the data submitted by
> others---including the JUNK SCIENCE that is intermixed with some
> credible
> data--and CERTAINLY HELPFUL AND INSTRUCTIVE PHOTOS AND DRAWINGS,
> which obviously those responsible for the JUNK SCIENCE
> never bothered to read or comprehend.
>
> Indeed so sloppy are some of the conclusions, it will be my request
> that the City seek a refund for such junk science;
>
> TO WIT:
>
> 1. Volume II)TWO) TECHNICAL APPENDICES;
> From PROJECT DESCRIPTION
> Aerial Photos 1928-2008: WAS APPARENTLY NOT-not READ OR
> STUDIED...by.....
> those responsible for production of PAGE 4.4.1
> immediately-following page(of text)4.4.7 IOF VOLUME I(ONE)
>
> The latter depicts IN RED what it would like the public to are the
> BOUNDARIES OF THE CURRENT MARINE STADIUM/
> You will not the southern end of the red boundary is at the Davies
> Bridge
>
> It will be left up to the DISTRICT ATTORNEY TO DETERMINE HOW
> EXTENSIVE THIS ATTEMPTED FRAUD IS....but for now
> Turn back to Volume II-de facto page 26 A APPENDIX D-as in
> DAVID....Note Figure 5----SHOWIG THE 1932 COURSE....
> Your attention is called to the street marked the TOLEDO---not a far
> waddle from the Mayor's home!!!!!
>
> Though it is obvious there is no depiction of a bridge---BECAUSE
> there was none then-but one can clearly see:
> 1. The intersecting cross channel; the end of the stadium at that
> time. the start line; with the contractually required
> 200 feet south of the start.
>
> 2. The Scale reflecting distances, markings denoting
> 500,1000,1500,finish.
>
> EVEN HOMER SIMSON could conclude where the bridge currently is....
> THUS THE HISTORIC COURSE GOES WELL BEYOND THE BRIDGE TO POINT ON A
> LINE THAT WOULD
> EXTEND FROM THE MIDDLE OF DE ANGELO WALK-ACROSS THE CHANNEL----to a
> point that is near
> the R or D in the Boat Yard sign--at the---of all places A BOAT YARD.
>
> The waters flowing south of the Davies Bridge--to the above line are
> protected by Ctty and Land Marks Preservation
> statues as noted in the ERI==and will be commented on in a separate
> e-mailing comment by month end.
>

P-2-3

P-2-4

P-2

> However, let me address the protected waters flow from the above
> Angelo Walk line to---the brass marker in the
> concrete---a few feet south of the top of the current LBYC long dock
> ramp.
>
> In continuos use since from the time the lands behind the Toledo were
> dredged connecting the Marine Stadium with
> Alamitos Bay: those course and waters have been and or are used 365
> days a year for small recreational boating as
> well as for:
>
>
> 1.!968,1976 United States Olympic Rowing Trials.
> 2. College as well as Junior and Senior High School Rowing Crews
>
> IT HAS BEEN A BONIFIED SMALL BOATING FACILITY IN CONTINUOS SINCE IT
> WAS CREATED and therefore
> may not be. reduced or eliminated as a matter of STATE COASTAL LAW
>
> What the above brings into sharp focus is t the BAD FAITH, DECEPTION,
> DISHONESTY EMBRACED BY THE
> SENIOR CITY MANAGEMENT;
> Robert Foster Mayor
> Pat West City Manager
> Phil Hester Director of Parks Recreation and Marine
> Councilman Gary De Long
>
> All of the above were fully aware of the above, were presented the
> public records which confirmed the
> locations and dimensions of the waters at issue.
>
> Note this data will also be placed before the Chair and Ranking
> members of the House and Senate Committes
> that have purview over the COE and USCG--given the waters at issue are
> part of the Inland Waters Ways of
> the United States.
>
> LBG
>
>
>

P-2-4

LAURENCE B. GOODHUE

LETTER CODE: P-2

RESPONSE P-2-1

The comment states that conclusion in DEIR Appendix D (page 27, paragraph 1) relative to the location of the course is false and untrue.

The statement from the referenced text states "As it is defined in the City's Municipal Code (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West), Marine Stadium proper extends northwest from the centerline of the Second Street Bridge, and therefore will not be affected by the project's proposed Marina improvements." This statement refers to the Marine Stadium boundaries per the City's designation of it as a local historic resource, and is not a definition of the original rowing course.

Impacts to Marine Stadium (CHL No. 1014) were discussed and the resource was evaluated per CEQA guidelines. As the cultural resources assessment (Appendix D) states, modifications to the stadium by the City since 1955 resulted not only in the construction of the Second Street Bridge, but also in the filled area that exists between the Colorado Lagoon and Marine Stadium. The course still retains 2000 meters of straight water, the standard sprint distance for national and international rowing. However, the boundaries of Marine Stadium have been modified from its original configuration during the 1932 Olympics. n further support of these facts as presented in the DEIR, Marine Stadium was eliminated from consideration for the 1984 Olympics due to the construction of the Second Street Bridge.

The boundaries of Marine Stadium as they are reported in the assessment were not determined based on convenience, but by using the City Municipal Code definition (16.08.150 Marine Stadium East; 16.08.160 Marine Stadium West), which states that the stadium ends at the Second Street Bridge. Because this is the official definition of the limits of Marine Stadium, using other definitions would be arbitrary. It is also important to note that City engineers attempted to plot the boundaries of Marine Stadium using the "description of metes and bounds" obtained from the application for historic landmark status. The results show the description to be erroneous. It does not delineate Marine Stadium but another area to the south.

No attempt has been made to "change the historic landmark's boundaries". Rather, every attempt was made to determine the boundaries beyond any doubt. Because there are no mapped boundaries contained in the application, there is no recourse but to use the boundaries the City has designated in their Municipal Code. This was confirmed in a conversation with the Office of Historic Preservation, where it was stated that the City designation would be the most applicable for planning purposes. In the judgment of the City staff, the DEIR provides sufficient analysis to conclude that impacts to historic resources are less than significant.

It should be noted that waters extending from Marine Stadium and beyond the Second Street Bridge still provide 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing. The original rowing course as constructed for the 1932 Olympics contained four lanes (see Draft EIR Figure 4.4.2). With project implementation, four lanes would still be available for use in rowing competitions and practices.

RESPONSE P-2-2

The comment states that the end of the course is not on a line down the middle of the Second Street Bridge. See Response P-2-1, which clarifies that the DEIR discussion regarding the boundary at the Second Street Bridge refers to the boundary of Marine Stadium a locally Designated Historic Resource, and is not implied to represent either the start or finish lines of the original rowing course.

RESPONSE P-2-3

The comment is introductory and restates the commenter's opinion that the DEIR contains junk science. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. Opinions regarding the DEIR consultant will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-2-4

The comment erroneously accuses the authors of the DEIR of fraudulently representing the boundaries of Marine Stadium. The comment further accuses City staff and representatives of deception and dishonesty regarding the dimensions of the body of water. See Response P-2-1, which clarifies that the DEIR discussion regarding the boundary at the Second Street Bridge refers to the boundary of Marine Stadium, a locally Designated Historic Resource, and was not intended to represent either the start or finish lines of the original rowing course. The commenter's additional opinions regarding the City staff and representatives will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

P-3

Re Fwd Fwd FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY MARINE REBUILD PLAN.txt
From: commonsense-sayssavthefence@fastmail.fm [cacrewood8@fastmail.fm]
Sent: Monday, October 12, 2009 8:19 AM
To: pat.west@longbeach.gov; mayor@longbeach.gov;
pat.conway@longbeach.gov; phil.hester@longbeach.gov;
mark.sandoval@longbeach.gov; district3@longbeach.gov;
jandra.longbeach.gov
Cc: larry.allison@presstelegram.com; doug.krikorian@presstelegram.com;
letters@districtweekly.com; editor@longbeachcomber.com; Ken Pauley
Subject: Re: Fwd: Fwd: FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY
MARINE REBUILD PLAN

On Mon, 12 Oct 2009 08:03 -0700,
"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
wrote:
>
>
>
> ----- Original message -----
> From: "Administrator" <cacrewood2@fastmail.fm>
> To: "Administrator" <cacrewood8@fastmail.fm>
> Date: Mon, 12 Oct 2009 07:51:26 -0700
> Subject: Fwd: FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY MARINE
> REBUILD PLAN;
>
>
>
> Begin forwarded message:
>
> > From: Administrator <cacrewood2@fastmail.fm>
> > Date: October 12, 2009 7:50:20 AM PDT
> > To: Administrator <cacrewood2@fastmail.fm>, Administrator
> > <cacrewood8@fastmail.fm>
> > Cc:
> > pat.west@longbeach.gov;mayor@longbeach.gov;district3@longbeach.gov;
> > phil.hester@longbeach.gov;mark.sandoval.gov.pat.conway@longbeach.gov
> > , larry.allison@presstelegram.com, editor@longbeachcomber.com,
> > info@HollywoodOS.com, dave@thedistrictweekly.com
> > Subject: Re: FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY
> > MARINE REBUILD PLAN;
> >
> >
> > On Oct 12, 2009, at 7:47 AM, Administrator wrote:
> >
> >> There is full appreciation of the fact. the 3.5 inch OPUS might
> >> have been released without catching errors-so seminal that it
> >> renders the entire product void of value---BUT BUT, HAVING BEEN SO
> >> RELEASED,THE LIGHTS OF THE NATIONAL STAGE ARE NOW FOCUSED DIRECTLY
> >> ,ON THE,OH SO DISCONNECTED AND OH SO TROUBLED MANAGEMENT,TO SEE HO
> >> MANY HOURS IT TAKE THEM TO:
> >>
> >> 1.Re call all copies.
> >> 2. Remove it from the web
> >> 3. Fire the consultant
> >> 4. Request a refund.
> >>
> >>
> >> BELOW YOU WILL FIND A DRAFT MEMO SENT TO THE GOOD GILL GRIFFITH
> >>
> >> When reviewing this later this morning with the staff;s of the
> >> Secretary of the Army and the Commandant of the United States Coast
> >> Guard-some of who are well schooled on the location (some even

P-3-1

Re Fwd Fwd FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY MARINE REBUILD PLAN.txt

> >> rowed here;)--and know very well that the Davies Bridge is
> >> well-well south of the STARTING POINT of the protected course at
> >> issue...AND HAVE BEEN MADE AWARE OF THE FACT THAT IT IS JUST A
> >> SHORT WADDLE FROM THE MAYOR'S HOME TO SAID POINT---ON A POINT
> >> BETWEEN THE DAVIES BRIDGE AND THE LBYC-WHICH THE MAYOR FREQUENTS
> >> REGULARLY VISITS.
> >>
> >> They also will take note of the well established surge damage that
> >> has plagued the downtown Marina---and will see the folly of
> >> replicating such in Alamitios Bay which would surely follow were
> >> the proposed Long Dock be installed. Unlike Long Beach the
> >> referenced staffs are well schooled in matters marine-and marine
> >> safety--even their bean counters!!!
> >>
> >>
> >>
> >>
> >> Begin forwarded message:
> >>
> >>> From: Administrator <cacrewood2@fastmail.fm>
> >>> Date: October 11, 2009 12:11:38 AM PDT
> >>> To: jill.griffiths@longbeach.gov
> >>> Subject: correction.....: EIR:DYI THERE ARE 45 DAY FROM OCT TO
> >>> RESPOND; BELOW IS THE DRAFT OF WHAT WILL SENT BY ME TO
> >>> JILL---WHO-KEEP IN MIND DID
> >>>
> >>>
> >>>
> >>> Begin forwarded message:
> >>>
> >>>> From: Administrator <cacrewood2@fastmail.fm>
> >>>> Date: October 11, 2009 12:07:09 AM PDT
> >>>> To: jill.griffiths@longbeach.gov
> >>>> Subject: Fwd: EIR:DYI THERE ARE 45 DAY FROM OCT TO RESPOND; BELOW
> >>>> IS THE DRAFT OF WHAT WILL SENT BY ME TO JILL---WHO-KEEP IN MIND
> >>>> DID
> >>>>
> >>>> JILL:In case I drop dead between now and when I will get you a
> >>>> perfected copy(spell checked)....here with is the draft---so that
> >>>> you understand the direction these comments are taking:
> >>>>
> >>>> THE SUMMARY AND RECOMMENDATIONS SET FORTH IN VOLUME II appendix
> >>>> D PAGE 27 PARAGRAPH ONE---LINE 6-7
> >>>>
> >>>> ARE;
> >>>> FALSE
> >>>> UNTRUE
> >>>> AT WAR WITH MAPS DEPICTING THE COURSE
> >>>>
> >>>> IN SUM;THE CONCLUSIONS RELATIVE TO THE LOCATION OF THE COURSE
> >>>> IS:---JUNK SCIENCE....
> >>>>
> >>>>
> >>>>
> >>>>
> >>>>
> >>>> jill note correction.....START OF THE COURSE.....(not the
> >>>> end)--sorry as you can see the day has not been short-
> >>>>
> >>>>
> >>>> THE START--THE START.... OF THE COURSE IS NOT WAS NOT ON A LINE
> >>>> DOWN THE MIDDLE OF THE SECOND STREET BRIDGE de facto page 26
> >>>> FIGURE 5---IS THE MAP OF THE COURSE THAT MAP SHOWS THE START OF

P-3-1

P-3-2
Duplicate

Re Fwd Fwd FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY MARINE REBUILD PLAN.txt
> >>>> THE COURSE--AND THE REQUIRED 200 FEET(course measurements are in
> >>>> meters--) is well -well south of the 2nd Street Bridge....
> >>>> Those that did the surveying work for the Historic Designation
> >>>> informed me that the start of the course---was on a line that
> >>>> extended down the middle of Angelo Walk!!!!
> >>>>
> >>>> Begin forwarded message:
> >>>>
> >>>>> From: Administrator <cacrewood2@fastmail.fm>
> >>>>> Date: October 10, 2009 10:44:05 PM PDT
> >>>>> To: chief.ham@verizon.net, jim@intercat.com,
> >>>>> jdbogart@self-serv.net, j.vanblom@verizon.net,
> >>>>> john_nunn@cox.net, acdupont4@gmail.com
> >>>>> Cc: krik.kokorian@presstelegram.com
> >>>>> Subject: EIR:DYI THERE ARE 45 DAY FROM OCT TO RESPOND; BELOW IS
> >>>>> THE DRAFT OF WHAT WILL SENT BY ME TO JILL---WHO-KEEP IN MIND DID
> >>>>>
> >>>>> NOT AUTHOR ANY OF THE "DATA:HER TALS IS TO COLLECT THE DATA AND
> >>>>> PUBLISH.....THEN PRESENT IT TO VARIOUS CITY COMMISSIONS AS IT
> >>>>> WORKS THROUGH THE PROCESS" MY MONDAY E MAIL WILL VEAL WITH
> >>>>>
> >>>>> BUT ONE SUBJECT....WITH THE REST TO FOLLOW UPON DISECETTING THE
> >>>>> ENTIRE OPUS....WILL BE ADDRESSED; HERE WITH IS THE ESSENCE OF
> >>>>> THE
> >>>>> DRAFT:
> >>>>>
> >>>>> JILL:
> >>>>>
> >>>>> Let me take a moment an thank you for your continuing hard and
> >>>>> professional work in gathering together the data contained in
> >>>>> the EIR. There is full recognition that your are not responsible
> >>>>> for the data submitted by others---including the JUNK SCIENCE
> >>>>> that is intermixed with some credible data--and CERTAINLY
> >>>>> HELPFUL AND INSTRUCTIVE PHOTOS AND DRAWINGS, which obviously
> >>>>> those responsible for the JUNK SCIENCE never bothered to read or
> >>>>> comprehend.
> >>>>>
> >>>>> Indeed so sloppy are some of the conclusions, it will be my
> >>>>> request that the City seek a refund for such junk science;
> >>>>>
> >>>>> TO WIT:
> >>>>>
> >>>>> 1. Volume II)TWO) TECHNICAL APPENDICES;
> >>>>> From PROJECT DESCRIPTION
> >>>>> Aerial Photos 1928-2008: WAS APPARENTLY NOT-not READ OR
> >>>>> STUDIED...by.....
> >>>>> those responsible for production of PAGE 4.4.1
> >>>>> immediately-following page(of text)4.4.7 IOF VOLUME I(ONE)
> >>>>>
> >>>>> The latter depicts IN RED what it would like the public to are
> >>>>> the BOUNDARIES OF THE CURRENT MARINE STADIUM/
> >>>>> You will not the southern end of the red boundary is at the
> >>>>> Davies Bridge
> >>>>>
> >>>>> It will be left up to the DISTRICT ATTORNEY TO DETERMINE HOW
> >>>>> EXTENSIVE THIS ATTEMPTED FRAUD IS....but for now Turn back to
> >>>>> Volume II-de facto page 26 A APPENDIX D-as in DAVID....Note
> >>>>> Figure 5----SHOWIG THE 1932 COURSE....
> >>>>> Your attention is called to the street marked the TOLEDO---not
> >>>>> a far waddle from the Mayor's home!!!!!
> >>>>>
> >>>>> Though it is obvious there is no depiction of a
> >>>>> bridge---BECAUSE there was none then-but one can clearly see:

P-3-2
Duplicate

Re Fwd Fwd FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY MARINE REBUILD PLAN.txt
> >>>>> 1. The intersecting cross channel; the end of the stadium at
> >>>>> that time. the start line; with the contractually required
> >>>>> 200 feet south of the start.
> >>>>>
> >>>>> 2. The Scale reflecting distances, markings denoting
> >>>>> 500,1000,1500,finish.
> >>>>>
> >>>>> EVEN HOMER SIMSON could conclude where the bridge currently
> >>>>> is....
> >>>>> THUS THE HISTORIC COURSE GOES WELL BEYOND THE BRIDGE TO POINT
> >>>>> ON A LINE THAT WOULD
> >>>>> EXTEND FROM THE MIDDLE OF DE ANGELO WALK-ACROSS THE
> >>>>> CHANNEL----to a point that is near
> >>>>> the R or D in the Boat Yard sign--at the---of all places A
> >>>>> BOAT YARD.
> >>>>>
> >>>>> The waters flowing south of the Davies Bridge--to the above
> >>>>> line are protected by Ctty and Land Marks Preservation
> >>>>> statues as noted in the ERI==and will be commented on in a
> >>>>> separate e-mailing comment by month end.
> >>>>>
> >>>>> However, let me address the protected waters flow from the
> >>>>> above Angelo Walk line to---the brass marker in the
> >>>>> concrete---a few feet south of the top of the current LBYC long
> >>>>> dock ramp.
> >>>>>
> >>>>> In continuos use since from the time the lands behind the Toledo
> >>>>> were dredged connecting the Marine Stadium with Alamitos Bay:
> >>>>> those course and waters have been and or are used
> >>>>> 365 days a year for small recreational boating as well as for:
> >>>>>
> >>>>>
> >>>>> 1.!968,1976 United States Olympic Rowing Trials.
> >>>>> 2. College as well as Junior and Senior High School Rowing Crews
> >>>>>
> >>>>> IT HAS BEEN A BONIFIED SMALL BOATING FACILITY IN CONTINUOS SINCE
> >>>>> IT WAS CREATED and therefore may not be. reduced or eliminated
> >>>>> as a matter of STATE COASTAL LAW
> >>>>>
> >>>>> What the above brings into sharp focus is t the BAD FAITH,
> >>>>> DECEPTION, DISHONESTY EMBRACED BY THE SENIOR CITY MANAGEMENT;
> >>>>> Robert Foster Mayor Pat West City Manager Phil Hester Director
> >>>>> of Parks Recreation and Marine Councilman Gary De Long
> >>>>>
> >>>>> All of the above were fully aware of the above, were presented
> >>>>> the public records which confirmed the locations and dimensions
> >>>>> of the waters at issue.
> >>>>>
> >>>>> Note this data will also be placed before the Chair and Ranking
> >>>>> members of the House and Senate Committes that have purview over
> >>>>> the COE and USCG--given the waters at issue are part of the
> >>>>> Inland Waters Ways of the United States.
> >>>>>
> >>>>> LBG
> >>>>>
> >>>>>
> >>>>>
> --
>
> cacrewood8@fastmail.fm
>
--

P-3-2
Duplicate

P-3

Re Fwd Fwd FATALLY FLAWED JUST RELEASED EIR FOR ALAMITOS BAY MARINE REBUILD PLAN.txt
cacrewood8@fastmail.fm

P-3-2
Duplicate

LAURENCE B. GOODHUE

RESPONSE P-3-1

The comment is introductory and informs the City that the comments contained within will be discussed with the staffs of the Secretary of the Army and the U.S. Coast Guard. The comment further references surge damage at the Downtown Marina and states that the proposed long dock is folly. The City staff is not aware of any damage in the Shoreline (downtown) Marina due to surge in the last ten years. Further, the water movement patterns are very different in the two Marinas, with Shoreline Marina being located on the inter harbor, while Alamitos Bay Marina is inside an inlet, within a protected bay off the ocean. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the DEIR consultant will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-3-2

The comment is a forwarded duplicate of Letter P-2. See Responses P-2-1 through P-2-4.

P-4

"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>

10/16/2009 10:44 AM

Please respond to commonsense-sayssavethefence@fastmail.fm

To Jill.Griffiths@longbeach.gov

cc

bcc

Subject Fwd: FOLLOW UP ON TODAY'S PLANNING COMMISION MEEETING:::COMMENTS RE:NEEDFOR DREDGING UNDER CITY'S ROWING CENTER DOCK

Sorry-spelled your first name wrong in first:

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: gill.griffiths@longbeach.gov, derek.burnham@longbeach.gov, michael_mais@longbeach.gov
Date: Fri, 16 Oct 2009 00:14:32 -0700
Subject: FOLLOW UP ON TODDAY'S PLANNING COMMISION MEEETING:::COMMENTS RE:NEED FOR DREDGING UNDER CITY'S ROWING CENTER DOCK

It was not my intent to speak to the agenda item re the Baha Marina. My presence today was prompted by a late night call last evening brining the item to my attention..Having been immersed in the OPUS EIR for the Alamitos Bay Marina,time precluded getting inside the Baha item. My sense from the call last evening was the item would move forward as it did.However,just to make sure...it occurred to me,it would be best to attend to make sure.Had my thinking been otherwise certainly you, Derek Burnham and Mike Mais would have been given a heads up.

P-4-1

Frankly speaking it was not until the moment your clear power point slide hit
the screen-that idea- of addressing the similar problem the City's Rowing Center Dock is facing-now in a pronounced state(as the axioms and theorems of Copernicus and Galielo march in formation portending,what
yet again will be an unkind December for the circa 91'X24" wooden dock-visa
a via the accumulation of that which under the dock--which mirrors what is under the docks at the Baha Marina.

The location of the rowing center dock is at the cross roads of the Marine
Stadium and the Cerritos Channel.That dock is first in harms way in terms
of what the currents,tides and winds bring from North-and West.

You and the Commission are invited to drive down Boathouse Lane to the Rowing Center.Check out the dock===as well as the Rowing Center.(5:00AM-11:00 AM---3:15 PM=to 7-8-9 PM),Would suggest checking tide schedule to see when lowest tide is so that you get a sense.--FYI--a call to the Port
will get you their tide schedule for the year.It is an excellent resource
with a lot of good data(pocket size)--free.

December and June have the lowest tides.At those times the frame of the dock is really strained....skate boarders would like it.The end result:
1.Planks weaken.

P-4

2.Planks split.
3.A leg slips through the jagged splintered wood on the City Dock.
4.John Q public comes down late at night;slips;stumbles into the hole...

Having dealt with the permitting agencies since 1981 on this very issues as well as a full range of other issues my experience is that there should
be no problem getting a permit be it on a 911 or regular one.

Indeed,they welcome permit applications.Command authorities indeed encourage
such.It separates the responsible from the otherwise.Most of them are very
very familiar with the Marine Stadium and the Rowing Center and its Dock.
Many have rowed from it.They know the frequency of the build up.The absence of
a permits sends signals they would rather not see and do injury to the currency
of the City in such matters.

Hence the suggestion since the City is going to the Coastal Commission and others-
present both at the same time.

P-4-1

TURNING NOW FOR A MOMENT TO THE VERY ENCOURAGING COMMENT BY THE PLANNING COMMISSION
CHAIR HAS THE MARINA RE BUILD ON THEIR RADAR--they are not to be envied!!!!

If you would be so kind to forward this in your next mailing to the Commission it is
hoped they will find the following suggestions helpful in getting their arms and mind
around the OPOUS.

Though all should read line for line each of the varied sections Executive Summaries:

1.Consider dividing the body of work among the full Commission;approaching it from this
stand point.
a.Assign sections to groups of two;who will be the Commission point people on the
given area or section=prepared to respond to any questions asked by public.
b.Having a study or dry run session in committee or public.

P-4-2

2.Important tech point in managind and working though the hard copy:
1.Open Volume I--open and extend all fold outs;excellent instructive,informative aerial
photographs--fold out to circa 8x14.You will find you will want to flip back and forth-
from page to page--checking...re checking....it makes it a lot easier flip the whole stack
then, it is to unfold,re fold,unfold several times.

DO NOT BEGIN TO READ UNTIL YOU HAVE DONE THE ABOVE FOR VOLUME II

So informative are some of the photos that you will want to make copies;retain forever more

P-4

P-4-2

as a reference just for your own edification-worth framing.

The MAC;which has a new Chair(the good Brad White is now in Seattle===and the Mayor finally
got on the ball,at least on this one point!!! and filled two of the vacancies) will hold a special
meeting for further public input October 22:Wilson High Aud.6:30PM.

There have been three or four previous meetings.At the meeting in late summer when the Manager of
the Marine Bureaus asked for a up or down vote because he wanted to proceed with the plan.The CHAIR
SAID NO!!!!!!"

P-4-3

"We have been discussing this in committee and because we have found no member of the public
that supports this plan(as presented) we have decided to have more meetings"

One MAC member said:.".Let us have another meeting:

Chair responded "NO!!!" We should have two more.One at perhaps Rogers and one in the City Council
Chambers---I want to see if there is anyone in the public that supports the plan!!!"

MY VIED IS THE PLANNING COMMISSION WILL FIND:

There is near if not 100% agreement to upgrade that which has fallen into disrepair
Re built existing or new---as long as it does not enlarge the EXISTING FOOTPRINT.

FREELY TRANSLATED:
1.Do not impregnate the existing water fairways with slips.
2.No new and extended long dock.
3.The failed concept of eliminating smaller slips;making one large slip to hold two boats=
is a devious and dubious attempt to reduce the number of smaller boats to make room for
larger boats---IN THIS A SMALL BOAT MARINA.

P-4-4

The only person that supports the ENLARGE FOOTPRINT IS
L.A non boater.
2.Uncertified in matters of aquatic and marine safety.

Those that see the public safety issues which the plan's only proponent FAILS to see or
appreciate include:
1.Sailors of various size boats--including larger ones--some in LBYC
2.Paddle Boarders
3.Power boaters.
4.Kyackers
5.Windsurfers
6.Marine Engineers.
7.Marina Operators.

1-7 all see that the enlarged foot print is a marine safety issue of the first order

P-4

NOTE:While as mentioned the photos are an excellent and should be retain..some of the
conclusions drawn by the consultants are dubious-if not junk science IN MY VIEW....
AND HAVE BEEN REFERRED TO CITY ATTY TO CHECK OUT AND PERFECT IF NEED BE.

P-4-4

--

cacrewood8@fastmail.fm

--

cacrewood8@fastmail.fm

LAURENCE GOODHUE

RESPONSE P-4-1
The comment references a City Planning Commission meeting not related to the Alamitos Bay Marina DEIR or project. The comment does not contain any substantive comments or questions about the analysis in the DEIR and no further response is necessary.

RESPONSE P-4-2
The comment is instructional on how the Planning Commission should read the DEIR and suggests dividing the sections among the members and advises that all 11x17 pages should be fully opened prior to reading. The comment does not contain any substantive comments or questions about the analysis in the DEIR and no further response is necessary.

RESPONSE P-4-3
The comment references conversations at the Marine Advisory Committee meetings regarding the number of meetings to be held regarding the Alamitos Bay Marina Rebuild project. The comment does not contain any substantive comments or questions about the analysis in the DEIR and no further response is necessary.

RESPONSE P-4-4
The comment is critical of the proposed project design and restates the opinion that the conclusions by consultants are junk science. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. Opinions regarding the DEIR consultant will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

P-5

From: commonsense-sayssavthefence@fastmail.fm [cacrewood8@fastmail.fm]
Sent: Friday, November 20, 2009 10:14 AM
To: Ken Pauley
Subject: HARD COPY INCLUDING EXHIBITS USPO TO LSA NOVEMBER 19,2009--THIS VERSION HAS SOME SPELL CHECK OCTOBER 20,2009: COMES NOW THESE COMMENTS ON THE DRAFT EIR RELEASED ON OCTOBER 8,2009FOR:PROPOSED ALAMITOS BAY MARINA BAY MARINA REHABILITATION PROJECT:

This,occasion would seem to be appropriate and proper for asserting as a principle,in which the rights and interests of all who use these inland water ways of the United States are involved,that said waters are not to be considered or used for any other purpose than: active transit or permitted racing of of recreational boating activities, or practicing relating thereto.In so stating it is noted and embraced that some stake holders(those engaging in motorized boat racing might offer financial prizes).Umbrage is not taken over such offerings. Indeed,the presence of such has been a fixture in this venue,created for the rowing events of the Xth Olympiad and have co existed,in harmony,with all stake holders since the opening of the venue.

P-5-1

It is therefore owed,in the interest of amicable relations and candor existing among and between all,including convening authorities,to hold: impregnating said transit waterways with docks or slips can be viewed in no other light than as an impedement to common sense,maritime safety--and as a manifestation of an unfriendly disposition-toward all other stakeholders,including those who have come on line since the Xth Olympiad,who presence is acknowledged,appreciateed, encouraged by and welcomed as long as they stay within pre existing foot print.

EXECUTIVE SUMMARY

1.All comments,concerns and objections raised and set forth in the draft DEIR are renewed.
2.Attached to this working draft are:
A.Copies of working notes complied in 1931 from the City of Long Beach so titled:

P-5-2

LOCATION OF PROPOSED
Start & Finish Line
at Olympic Rowing Course
G(or 6)-56167 (it is unknown to me if it is a G

P-5

or 6-but my sense
is the City Surveyors of today can discern such
from the rest of data

West Notes
Frigon ^(with a-across the top of the^
Morton Chain- Feb,11 1932
Ehrhardt "

It would appear to me the above might have been a then work in
progress vis a via a date of
Apr 26 32.

In addition to the lexicon of surveyors there are actual sketches of
both the FINISH and
START with the position of the street Toledo.

THE THRUST OF THAT CONTAINED IN #2---goes to establish and confirm
that the START LINE OF
THE 1932 OLYMPIC WAS AS IS DEPICTED IN THE DRAWINGS IN THE DRAFT
EIR-which was brought into
issue by the consultant's statement in the text following the
DRAWINGS the start was at a
on a point which ran across the water on a line that is where the
Davies Bridge now stands.

P-5-2

The world's foremost authority of the subject,ARCHIMEDES,demonstrates
with mathematical certainty,
the start could not have been at the Davies Bridge.The course would
have run out of aqua at circa
the 1700 meter mark;boats-at the then given stroke rate,run aground,
impaled on a barb wire
fence-and or run aground at Colorado Street.

It is my understanding the City of Long Beach is working to determine
what needs to be done to
perfect what ever mis communication in records led the consultants to
declare war on ARCHIMEDES.

3. Though it would appear the Manager of the Marine Bureau now has an

an and understanding
of the City and State Land Mark Statues whose aegis prohibits
impregnation of the 2000 meter course-
it would appear he still fails to understand:

P-5-3

A.The aegis applies also to the water ways within the venue in chief
particularly
the water-fair ways which are used for transit into and out of the
2000 meeter race course as
as well as the waters of Alamitios Bay which are used for
additional practice and training as so
referenced in the moving paperwork for the Land Mark Statues.

B.Perhaps more striking is the aegis which flows from the California
Coastal Act which prohibits
elimination, reduction or removal of facilities designed to support
recreational small boating
activities.

P-5-4

C.Said water ways(A & B) are not a PARKING LOT for boats!!!!!!

4. The proposed Long Dock with a water line circa but 70 feet shorter
than the United States Virgina

P-5-5

P-5

Class Submarine;one third the water line of RMS Queen Mary;so long that
if it has wheels,Laura Richardson
would be driving it,rendering as much damage as the press reports the Representative does to her
neighborhood.Said damage would be to the marine habitat impacted by loss of sun light.

P-5-5

More to the point:The very existence of the groin across from the LBYC points to the lack of
maritime issues such as,current,surge,tides,wakes wind.Boats using the said long dock would suffer
the same ravages of nature the boats in Basin Three would were they not protected by the groin.

P-5-6

Given the amount of PUBLIC WATERS THE LONG DOCK WOULD CONSUME--IT RAISES SERIOUS QUESTIONS
VISA VIA THE NATURE OF THE PRIVATE CLUB---no matter how commendable its mission.

5. The area targeted for mitigation at the entrance to Boathouse Lane is spoken for;currently used
for dry boat storage and small boating support components.Said terra firma.

IT SHOULD BE NOTED THE SUPPLY DEMAND CRUNCH OF DRY STORAGE SPACE IS BROUGHT INTO VERY SHARP-
VERY SHARP FOCUS BY:

P-5-7

A.The looming -but yet to be determined- sale date the City's Oil Property lot-on the east side of
Boat House Lane.That lot has been used for dry boat storage--INCLUDING THE 12 Rowing Shell Trailers
as well as boats from other stakeholders--as well as City Marina equipment.

B.The rulings of the California Coastal Commission-continuing and enhancing its protections
for dry boat storage et al.

6. Folly of the dubious double proposed double slips for basin 4 is underscored by the continuing
problems such double slips continue to present in the downtown marina.

P-5-8

7. The good people of LBYC must step up to the plate and take ownership of the good job they have
done and recognize that their INN is full.They must plan for establishing a base in the downtown
Marina for their boat parking lots. They can not T bone their boats into the transit water ways
EXCEPT ON THE DATES FOR SPECIAL EVENTS---WHICH ALL STAKEHOLDERS WELCOME AND SUPPORT AND WILL GLADLY
ADJUST TO FOR THE DURATION OF THE SPECIAL EVENT.

P-5-9

THUS CONCLUDES THE EXECUTIVE SUMMARY OF MY CONCERNS RELATIVE TO PLANS SET FORTH IN THE DEIR

NOW AS TO THE ELEPHANT IN THE ROOM

THE SPECTER OF THE ENTIRE PLAN BEING REJECTED BY THE COURTS

P-5-10

The currency of the conclusions,data,projections,statements set

P-5

forth by the Marine
Bureau contained in the DEIR,are highly suspect-as are any set
forth by the those of
any consultants--to the extent the latter rely upon any data from
the Marine Bureau.

As indicated in my comments in the DEIR of October 8,2009,a review
of the public
record strongly suggests there is a culture of
deceit,deception,lies running unchecked
which most would view as the indication of the presences of a
congenital,habitual,
pathological or polished liar more than taints the currency of
information flowing
from the Marine Bureau.

It is striking to note that pattern continues as evidence by the
public record of what
unfolded at the November 12,2009 Marine Advisory Commission which
is herewith attached
(in exhibits to this response).It is a clear case of,yet again the
Manager of the Marine
Bureau lying in an effort to push through his ENLARGED FOOT
PRINT--absence which the
plan could have,long ago been approved.

Additionally,an entirely new element has been injected by said
Marine Bureau Manager--
the attempted extortion of one stakeholder in an attempt to silence
another stakeholder
into approving the plan—which the latter,in addition to a wide
spectrum of stakeholders
had,with sound reason,steadfastly opposed.

P-5-10

In sum the Manager of the Marine Bureau advocated THROWING THE
WATER SKIING COMMUNITY
UNDER THE BUS by reducing their already limited access to limited
waters(cira 800 meters)
available to them but 9 hours a day and giving it to the rowing
community which has circa
six(6) miles of water 16 hours a day.

Equally disturbing a major PROCESS ISSUE unfolded at the November
12,2009 meeting:The MAC,without
public noticed decided to CANCEL a second special community
outreach meeting which it had at
its March 12,meeting decided to hold.(see attached exhibit-a well
well chronicled article by the
noted reporter Doug Krikorian of the Press Telegram.

Clearly the Marine Advisory Commission has not had the opportunity
to demonstrate it has the
capacity to render due diligence.Nor has the public been afforded
the opportunity to address
the issue--to the extent the Commission had decided at the March
12,2009 meeting was required
in order to allow the Commission to render an intelligent decision
involving a matter so
so seminal-so lasting.

All of the above are fertile grounds for a trier of fact to dis
allow the City's Work product;
remanding it back to day one and starting the process over as was
done in the Home Depot case.

P-5

P-5-10

THE ABOVE IS BEING E-MAILED TO CITY THIS AM
THE REFERENCED EXHIBITS WILL BE DELIVERED IN HARD COPY FORMAT GIVEN THE SIZE OF SOME OF THE
SURVEYING DRAWING AND NOTE SHEETS.

Laurence B.Goodhue
Long Beach
California

—

cacrewood8@fastmail.fm

—

cacrewood8@fastmail.fm

—

cacrewood8@fastmail.fm

LAURENCE GOODHUE

LETTER CODE: P-5

RESPONSE P-5-1
The comment is introductory and addresses concerns regarding the project design and various marina stakeholders. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-5-2
The comment erroneously states that the DEIR depicts the starting line for the 1932 Olympic rowing event was located at the Second Street Bridge. See Response P-2-1, which clarifies that the DEIR discussion regarding the boundary at the Second Street Bridge refers to the boundary of Marine Stadium a locally Designated Historic Resource, and is not intended to represent either the start or finish lines of the original rowing course.

RESPONSE P-5-3
The comment references landmark statues that protect the 2,000 meter rowing course, and is a comment on the extension of the docks into the waterways. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-5-4
The comment states that the California Coastal Act prohibits elimination, reduction or removal of recreational small boating facilities. As discussed in the DEIR Section 4.8, Land Use, the Coastal Act encourages and protects such facilities but does not preclude the reduction or elimination of those facilities. The Coastal Act policies state, "Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land (Section 30224)." In addition, Coastal Act Section 30234 states, "Facilities serving the commercial fishing and recreational boating industries shall be

protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided." Neither of these policies precludes the elimination or removal of facilities, but rather encourages the upgrading and increased recreational use of such facilities. One of the primary objectives of the proposed project, as stated in Section 3.3 of the DEIR, is to "Renovate and replace the deteriorating Marina facilities to expand recreational boating opportunities in keeping with the current and future demands of the boating public for larger slips". In the judgment of the City staff, the DEIR provides sufficient analysis to conclude that the project is consistent with Coastal Act policies. The commenter's opinions regarding the analysis in the DEIR will be made available to decision makers for their consideration.

RESPONSE P-5-5

The comment is a statement regarding the length of the proposed long dock. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-5-6

The comment states that boats using the proposed long dock would be affected by currents, surges and wakes, similar to boats located in Basin 3. The comment also questions the nature of the private Long Beach Yacht Club (LBYC). The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.-

RESPONSE P-5-7

The comment states that the proposed mitigation site is used for dry boat storage and references the sale of a lot adjacent to the street bordering the proposed mitigation site. The comment further states that the Coastal Commission protects dry boat storage. The comment erroneously states that the proposed mitigation site is in currently use for dry boat storage rented to the public. The site is used as impound storage area for City purposes and is not publically rented dry boat storage space.

RESPONSE P-5-8

The comment makes reference to problems with double slips proposed in Basin 4, but does not contain any substantive comments or questions about the analysis in the DEIR. The

commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-5-9

The comment is a statement regarding the LBYC and the storage of its member's boats. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-5-10

The comment states the entire plan will be subject to rejection by the courts. The comment criticizes the Marine Manger and the Marine Advisory Commission, and makes reference to an article in the Press telegram. The comment expresses several personal opinions and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project and City staff or representatives will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

P-6

From: commonsense-sayssavthefence@fastmail.fm [cacrewood8@fastmail.fm]
Sent: Friday, November 20, 2009 10:27 AM
To: Ken Pauley
Subject: Fwd: EXHIBIT FOR RESPONSE OF LAURENCE B. GOODHUE TO DRAFT DEIR ON MARINA REBUILD;GOES TO ISSUE OF LACK OF CURRENCY OF CITY POSITION

HARD COPY OF ALL SURVEYING DATA..some 11x17--should arrive in your office this day.
LBG (323) 474 4446
Thank you

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: robert.shannon@longbeach.gov, tom.reeves@longbeach.gov
Cc: larry.allison@presstelegram.com, paul.eakins@presstelegram.com, letters@thedistrictweekly.com
Date: Sat, 14 Nov 2009 20:51:33 -0800
Subject: SEE DRAFT LETTER TO LOS ANGELES COUNTY GRAND JURY AND CALIFORNIA STATE BAR:: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

NOTE TO CALIFORNIA STATE BAR:

Attached you will find a copy of a letter (e-mail) to the City Auditor for the City of Long Beach.
Please know that the entire pattern of the referenced corruption.deceit,dishonesty,strongly suggesting a culture that embraces and encourages what many would vies as congenital,habitual,pathological or polished liars.

All of the above-and what is listed below has unfolded before and brought to the attention of the Long Beach:
I.City Attorney.
2.City Prosecutor

If my understanding is correct tour august body granted them the right to hang out their shingle and practice law.

Among the questions the above-and that listed below gives rise to is:
I.Are they still allowed to practice law in this State.
2.Given the above-and what is list below-WHY?
3.Do you have any data relative to those within your body who have a propensity to succumbe to premature,prolonged senior moments.

P-6-1

Can your body recommend a credible retired Jurist** professor of Ethics or Law who might appear before our City Council and give a lecture on ethics and honesty which seems to so elude your licensees--with consequences as outlined in the attached letter to the City Auditor.

Respectfully.

Laurence B. Goodhue
Long Beach,
California
90803

**someone of the caliber of the late Justice Eagleson--who is probably turning in his grave at what is so hobbling our City.

---- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: laura.doud@longbeach.gov
Cc: cacrewood8@fastmail.fm

P-6

Date: Sat, 14 Nov 2009 20:11:27 -0800
Subject: DRAFT LETTER TO LOS ANGELES COUNTY GRAND JURY AND CALIFORNIA STATE BAR:: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

NOTE TO MS LAURA DOUD:CITY AUDITOR CITY OF LONG BEACH:

It will be my request to the above to agencies to investigate the reference culture of:
corruption;deceit;dishonesty outlined below.The reference patten has been been unfolding since December 21,2007—STARTING AT ONE HOUR BEFORE THE CRACK OF DAWN!!!!6:11AM!!!is when the first of this disturbing pattern of lies of Mr.Mark Sandoval began–well memorialized in his e-mail to the California Coastal Commission,

Circa 22 months later November 12,2009---Mr.Sandoval lies still continue---as a review of the public record and a well chronicled article in the Press Telegram's seasoned reporter Doug Krikorkian clearly reveal.

The above two bookend another series of five plus lies all captured in e-mails,letters,and on tape,including testimony at Planning Commmison-which as you know is given under oath!!!!!

All of these have been brought to the attention of City Council;Mayor Foster,City Manager Pat West;Director of PRM,Phil Hester.It should be noted Councilman Gary De Long was personally present at a community meeting when Mr.Sandoval lied--and like the Mayor was provided the copy of the e-mail that proved the lie of Mr. Sandoval.

The impact of the culture of such corruption of truth,deceit,lies which strongly suggest anyone engaging in, or embracing such. is a congenital,habitual,pathological,or
polished liar is brought
into sharp focus by the well reasoned mis trust the public has in the referenced public officials most recently manifested by the refusal of the public to pass the City's small parcel tax or the even smaller parcel tax by LBUSD.

Given,your limited resources my suggestion is the best course of action for your office is to let the Los Angeles County Grand Jury and California State Bar complete what ever review they elect to do and you focus on a complete review of the Marine Bureau-from top to bottom-with particular emphasis on the pending Alamitos Bay Marina Rebuild Plan:Let me suggest that your review include,but note be limited examination of:

P-6-1

I.All revenue streams.
2.Vacancy rates.
3.All expenditures.
4.Cost of any and all studies with correlative study the results of such.

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: commonsense-sayssavethefence@fastmail.fm, mayor@longbeach.gov, pat.west@longbeach.gov, phil.hester@longbach.gov, district3@longbeach.gov, larry.allsion@presstelegram.com, letters@thedistrictweekly.com, doug.krikorian@presstelegram.com
Date: Thu, 12 Nov 2009 22:07:32 -0800
Subject: Re: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

On Thu, 12 Nov 2009 20:18 -0800,
"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
wrote:
> November 12,2009 Marine Advisory Commission---he with a record of
> lying to-but not limited to I.The California Coastal Commission(in
> e-mail) 1.The City Council(letter) 3.Zoning Officer 4.Planning
> Commission(under oath on tape)
>
> LIED AGAIN TO THE MAC ON THE PUBLIC RECORD NOVEMBER 12,2009----
>
> IS IT ANY WONDER PEOPLE DID NOT PASS THE CITY'S PUNEY $104.00 parcel

P-6

> tax.
> IS IT ANY WONDER PEOPLE DOD NOT PASS THE LBUD"S $98.00 TAX:
>
> PEOPLE SEE WHAT FOSTER AND DE LONG EMBRACE AND STAND
> FOR—COGENITAL,HABITUAL,PATHOLOGICAL LYING THE MO OF THE CURRENT
> LEADERSHIP!!!!
>
>
>
> TO WIT:
>
> At the March 12,2009 Marine Advisory Commission held in the Main
> Dinning Room on the Second Floor of the LBJC--well chronicled by the
> Press Telegram's Doug Krikorian the following took place:
>
> Mr.Sandoval asked for a up or down vote on the dubious not well
> received Marina Re Build plan-whose details-were roundly rejected by a
> wide number of people on the full spectrum of the boating
> community-who supported the needed up grades and repairs of dock-which
> poor management had allowed to fall into dis
> repair---
> BUT WITH SOUND REASON OBJECTED TO AN ENLARGED FOOTPRINT IN THE
> WATER----during a special evening outreacvh meeting circa 10 days
> before held at the Pete Archer Rowing Center(that meeting was also
> well Chronicled by the Doug
> Krikorian)
>
> When Mr. Sandoval made his request on March 12,2009;The Chair,the good
> Mr. Brad Whyte folded his hands and said:
>
> "NO!!!"
>
> "We have been talking about this in committee and have decided we
> need more input.We
> need to find someone that supports this plan"
>
> A discussion ensued among the Commission has to how many more public
> out reach meetings
> there would be.Some member suggested one more meeting.The chair opined
> that at least two
> more were needed.The Commission voted and approved two more with
> date,location to be
> announced as soon as a venue could be determined.
>
> The Chair one would probably be held at Rogers and the second in City
> Council Chambers.
>
> The first of the two meetings location and date was announced in early
> fall--only to
> have to be rescheduled because staff did not do its
> homework.Unfortunately--some people
> did not get the notice of date change---and showed up on the
> previously announced date--and
> were scheduled to be out of town on October 22--the date of the first
> of the two outreach
> meetings the Commission had voted on to hold.
>
> Today,when reminded of the announcement and vote of the Commission ie
> there would be two more outreach meetings-MR.SANDOVAL DENIED SUCH
> FACTS-Stating MAC had decided on two more meeting PRIOR to the March
> 12 meeting held on the 2nd floor---where the Chair=in presence of
> the Press Telegram reporter-along with other in attendance REFUSED MR
> SADOVAL's REQUEST TO MOVE FORWARD WITH THE PLAN.
>

P-6-1

P-6

> The public record reflects the intent of the Commission was to hold
> two more meetings,specific location being suggested--one for each
> locations.THOUGH CERTAINLY THE LOCATIONS MIGHT BE SUBJECT TO
> CHANGE--the number may not....IT IS IMPORTANT TO NOTE EVEN AT
> TODDAY'S DAYTIME MEETING THE PUBLIC STATED TIME MEETINGS ARE ALL THAT
> MANY MAY ATTEND....
>
> KEEP IN MIND WE ARE TALKING ABOUT A PROJECT THAT WILL LAST FOR 50
> YEARS....ANOTHER 30 = days will not rock the boat....and will avoid
> the specter or being remanded back by the Courts--like Home
> Depot.....
>
> will in a moment click over thoughts relative to needed changes on
> the MAC
>
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> cacrewood8@fastmail.fm
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cacrewood8@fastmail.fm

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cacrewood8@fastmail.fm

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cacrewood8@fastmail.fm

P-6-1

LAURENCE GOODHUE

LETTER CODE: P-6

RESPONSE P-6-1

The comment is a letter to the Los Angeles County Grand Jury and the California State Bar questioning the ethics of several City staff and requesting a review of the Marine Bureau. The comment contains personal opinions and lists complaints and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

P-7

From: Administrator [cacrewood2@fastmail.fm]
Sent: Friday, November 20, 2009 12:50 PM
To: Ken Pauley
Cc: Jill.griffiths@longbeach.gov
Subject: NOTE RE HARD COPY EXHIBITS FOR DEIR ON LONG BEACH MARINA REBUILD PLAN WHICH SHOULD ARRIVE IN YOUR OFFICE TODAY:

On the Long Beach Surveyor's notes for 1932 Olympic Rowing Course
NOTE:RE: on one of the 8.5 x11" sheets ---the one stamped 322 PG 11(top right)

The Roadway sketched in there as it rounds and heads southward is labeled Marina Drive

That portion of what was then Marina Drive was renamed in the mid 1980's to Boathouse Lane

it was renamed because of the increasing number of commercial trucks from beer trucks, Fed EX; boat chandler's et al--looking for addresses on the portion of Marina Drive south of Davies Bridge--which was compounded by Marina Way-a few hundred feet east ---renamed also to----- Spinnaker Bay Drive....

P-7-1

The impact of the change was immediate with the updated Thomas Guide --said traffic dropped to zilch.....along Boathouse Lane.....

Apologize for not noting on the sheet yesterday----did not think of it until putting away the documents this am.

LAURENCE GOODHUE

LETTER CODE: P-7

RESPONSE P-7-1

The comment references surveyor's notes on an exhibit of the 1932 Olympic Rowing Course and states that a portion of Marina Drive was renamed to Boathouse Lane in the mid-1980s. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-8

"commonsense-sayssavthe fence@fastmail.fm" <cacrewood8@fastmail.fm>

To Jill.Griffiths@longbeach.gov

cc

bcc

Subject Fwd: NOVEMBER 20,2009: COMES NOW THESE COMMENTS-SANS PREFACE ON THE DRAFT EIR RELEASED ON OCTOBER 8,2009FOR:PROPOSED ALAMITOS BAY MARINA BAY MARINA REHABILITATION PROJECT:

11/20/2009 12:55 PM

Please respond to commonsense-sayssavethe fence@fastmail.fm

P R E F A C E

This,occasion would seem to be appropriate and proper for asserting as a principle,in which the rights and interests of all who use these inland water ways of the United States are involved,that said waters are not to be considered or used for any other purpose than: active transit or permitted racing of of recreational boating activities, or practicing relating thereto.In so stating it is noted and embraced that some stake holders(those engaging in motorized boat racing might offer financial prizes).Umbrage is not taken over such offerings. Indeed,the presence of such has been a fixture in this venue,created for the rowing events of the Xth Olympiad and have co existed,in harmony,with all stake holders since the opening of the venue.

P-8-1 Duplicate of P-5

It is therefore owed,in the interest of amicable relations and candor existing among and between all,including convening authorities,to hold: impregnating said transit waterways with docks or slips can be viewed in no other light than as an impedement to common sense,maritime safety--and as a manifestation of an unfriendly disposition-toward all other stakeholders,including those who have come on line since the Xth Olympiad,who presence is acknowledged,appreciated and welcomed.

SOME SPELL CHECK--NOTE THERE MIGHT BE A HALF PAGE BLANK SPACE BEFORE THE EXECUTIVE SUMMARY

P-8

EXECUTIVE SUMMARY

1. All comments, concerns and objections raised and set forth in the draft DEIR are renewed.
2. Attached to this working draft are:
   A. Copies of working notes complied in 1931 from the City of Long Beach so titled:

LOCATION OF PROPOSED
Start & Finish Line
at Olympic Rowing Course
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SURVEYING DRAWING AND NOTE SHEETS.

Laurence B.Goodhue
Long Beach
California

LAURENCE GOODHUE

LETTER CODE: P-8

RESPONSE P-8-1

Comment letter P-8 is a duplicate of Comment letter P-5. See Responses P-5-1 through P-5-10.

P-9

"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>

11/20/2009 02:42 PM

Please respond to commonsense-sayssavethefence@fastmail.fm

To commonsense-sayssavethefence@fastmail.fm, "Arturo Macias-Pedroza" <Arturo.Macias-Pedroza@longbeach.gov>, robert.shannon@longbeach.gov, karen.hester@longbeach.gov

cc Jill.Griffiths@longbeach.gov

bcc

Subject NOVEMBER 20,2009 NOTE TO ROBERT SHANNON--PRM IS STALLING....DOCS ARE NEEDED FOR EIR RESPONSE SEE NOTE BELOW CHECKING STATUS THIS DAT SHOULD BE READILY AVAILABLE FOR INSPECTION--SEE NOTE BELOW Public Records Act Request File No.: A09-03143

Yet again we are faced with a bad faith stall:all requested public records were central to the PRM and Marine
Bureau Budget as well as central to its plans for the rebuild:
OF PARTICULAR NOTE:
I. Number of and vacaby rates of Dry Boat Storage slots along Boathouse Lane and elsewhere.
2 Number of and vacancy rates of slips under the purview of the City
3.Revenues from all revenues streams except that from LBYC

Given the refusal of the PRM to make the above abalable,this is a formal request to extent the comment date for
rsponses to the Alamitos bay Marine Rebuild Project until 30 days after the City provides said documents for
inspection.

P-9-1

Said data is crucial in allowing for an informed and illegent decsion in terms of identifing any mitigation areas-which
has been and will continue to be brought into sharpt focus by last month's decision by Coastal Commission--which
elevalted the sancity of dry boat store slots and smaller boats.

Laurence B. Goodhue
USPO Box 14464
Long Beach
California
90803
9323) 474 4446

On Tue, 03 Nov 2009 11:41 -0800, "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm> wrote:
GOOD SIR;ALL THIS DATA SHOULD CERTAINLY BE AVAILABE FOR

INSPECTION;IT SURELY
WAS USED FOR WHATEVER BUDGET PROJECTIONS CITY MADE RE THE BUDGET IT JUST
ADOPTED.
COULD IT BE THAT THE DEPTS ARE STALLING....!!!!..DO WE HAVE YET ANOTHER ATTEMPTED
COVER UP:

LBG

On Wed, 30 Sep 2009 13:10 -0700, "Arturo Macias-Pedroza" <Arturo.Macias-Pedroza@longbeach.gov> wrote:

****
Arturo Macias-Pedroza
Records Coordinator
California Public Records Act Requests,
Subpoenas Duces Tecum & Pitchess Motions
Office of the Long Beach City Attorney
333 W. Ocean Blvd., 8th Floor
Long Beach, CA 90802

Direct Line: (562) 570-2292
Fax: (562) 570-2232

****

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cacrewood8@fastmail.fm

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cacrewood8@fastmail.fm

LAURENCE GOODHUE

LETTER CODE: P-9

RESPONSE P-9-1

The comment is a complaint regarding the availability of records for vacancy rates and revenues, and requests an extension to make comments on the Draft EIR. The City has made the requested records available. The comment is a personal opinion and does not contain any substantive comments or questions about the analysis in the DEIR. The commenter's opinions regarding the project will be forwarded to decision makers for their consideration. Because the comment does not address environmental issues, no further response is necessary.

P-10

"commonsense-sayssavthe fence@fastmail.fm" <cacrewood8@fastmail.fm>

To jill.griffiths@longbeach.gov
cc
bcc
Subject :NOVEMBER 22,2009: COMES NOW THESE FINAL REVISED COMMENTS AND PREFACE ON THE DRAFT EIR RELEASED ON OCTOBER 8,2009FOR:PROPOSED ALAMITOS BAY MARINA BAY MARINA REHABILITATION PROJECT:

11/22/2009 06:32 PM

Please respond to commonsense-sayssavethe fence@fastmail.fm

P R E F A C E

This,occasion would seem to be appropriate and proper for asserting as a principle,in which the rights and interests of all who use these inland water ways of the United States are involved,that said waters are not to be considered or used for any other purpose than facilitating active transit through and within said waters by those engaged in permitted recreational aquatic and boating activities;and practice relating thereto.

In so stating it is noted and embraced some (those engaging in motorized boat racing)might offer financial prizes).Umbrage is not taken over such offerings. Indeed,the presence of such has been a fixture in this venue,created for the rowing events of the Xth Olympiad and have co existed,in harmony,with all stake holders since the opening of the venue.

It is therefore owed,in the interest of amicable relations and candor existing among and between all,including convening authorities,to hold: impregnating said transit waterways with docks or slips can be viewed in no other light than as an impedement to common sense,maritime safety--and as a manifestation of an unfriendly disposition-toward all other stakeholders,including those who have come on line since the Xth Olympiad,who presence is appreciated acknowledged and welcomed-so long as their berthing does not impregnate transit water ways.

P-10-1 Duplicate

With grateful acknowledgment to James Monroe

EXECUTIVE SUMMARY

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P-10-1
Duplicate

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THE REFERENCED EXHIBITS WERE DELIVERED IN HARD COPY FORMAT ON FRIDAY NOVEMBER 20,2009 WITH HARD COPIES TO ISA ON NOVEMBER 20,2009
HARD COPY OF EXHIBITS WERE ALSO DELIVERED AND MAILED GIVEN 11X17 FORMAT

Laurence B.Goodhue
Long Beach
California

--

cacrewood8@fastmail.fm

--

cacrewood8@fastmail.fm

LAURENCE GOODHUE

LETTER CODE: P-10

RESPONSE P-10-1

Comment Letter P-10 is a duplicate of Comment Letter P-5. See Responses P-5-1 through P-5-10.

P-11

Administrator
<cacrewood2@fastmail.fm
>

11/22/2009 06:42 PM

To jill.griffiths@longbeach.gov
cc irvine@lsa-assoc.com
bcc
Subject FYI AND THANK YOU TO BOTH: APOLOGIZE FOR THE EARLIER UPDATES...FEEL FREE TO...

DELETE ANY DATA SUBMITTED BEFORE THIS DATE OF SUNDAY NOVEMBER 22,2009:

The only difference between the hard copies that you should now have in hand...

IS THE PREFACE--WHICH IS ATTACHED TO WHAT WAS SENT TO EACH OF YOU THIS EVENING.

P-11-1

LARRY GOODHUE
(323) 474 4446

(note JIll===not sure if the City's IT detectors sort out the obvious--one or to transmissions might---wander in
after being delayed due to my mis spelling of your first name==on those had used Gill---but caught in hour or so
and re sent correctly....

LAURENCE GOODHUE

LETTER CODE: P-11

RESPONSE P-11-1

The comment is a note regarding the preface attached to other submitted comment letters. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-12

Staples Copy Center #164

From: commonsense-sayssavthefence@fastmail.fm [cacrewood8@fastmail.fm] **Sent:** Thu 11/19/2009 11:12 AM

To: Staples Copy Center #164

Cc: Jill.Griffiths@longbeach.gov

Subject: COMES NOW THESE COMMENTS ON THE DRAFT EIR RELEASED ON OCTOBER 8,2009FOR:PROPOSED ALAMITIS BAY MARINA BAY MARINA REHABILITATION PROJECT:

Attachments:

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LSA
LSA ASSOCIATES, INC.
NOV 20
RECEIVED
IRVINE

LSA
LSA ASSOCIATES, INC.
NOV 20 2009
RECEIVED
IRVINE

This is a working draft,which will be herewith submitted.If time permits a revised version will be
submitted with complete spell check.The intent is to have this working draft in the hands of the consultant
as well as the City by close of business November 20,2009-absent no for sure what the weekend of November
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so seminal-so lasting.

All of the above are fertile grounds for a trier of fact to dis
allow the City's Work product;
remanding it back to day one and starting the process over as was
done in the Home Depot case.

P-12-1
Duplicate

THE ABOVE IS BEING E-MAILED TO CITY THIS AM
THE REFERENCED EXHIBITS WILL BE DELIVERED IN HARD COPY FORMAT GIVEN
THE SIZE OF SOME OF THE
SURVEYING DRAWING AND NOTE SHEETS.

Laurence B.Goodhue
Long Beach
California

--

cacrewood8@fastmail.fm

Staples Copy Center #164

From: commonsense-sayssavthefence@fastmail.fm [cacrewood8@fastmail.fm] **Sent:** Thu 11/19/2009 11:55 AM

To: Staples Copy Center #164

Cc: Gill.Griffiths@longbeach.gov

Subject: EXHIBIT FOR RESPONSE OF LAURENCE B. GOODHUE TO DRAFT DEIR ON MARINA REBUILD;GOES TO ISSUE OF LACK OF CURRENCY OF CITY POSITION

Attachments:

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: cacrewood8@fastmail.fm
Date: Sun, 15 Nov 2009 11:57:18 -0800
Subject: Fwd: SEE DRAFT LETTER TO LOS ANGELES COUNTY GRAND JURY AND CALIFORNIA STATE BAR:: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: robert.shannon@longbeach.gov, tom.reeves@longbeach.gov
Cc: larry.allison@presstelegram.com, paul.eakins@presstelegram.com, letters@thedistrictweekly.com
Date: Sat, 14 Nov 2009 20:51:33 -0800
Subject: SEE DRAFT LETTER TO LOS ANGELES COUNTY GRAND JURY AND CALIFORNIA STATE BAR:: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

NOTE TO CALIFORNIA STATE BAR:

Attached you will find a copy of a letter (e-mail) to the City Auditor for the City of Long Beach.
Please know that the entire pattern of the referenced corruption.deceit,dishonesty,strongly suggesting
a culture that embraces and encourages what many would vies as congenital,habitual,pathological or polished
liars.

All of the above-and what is listed below has unfolded before and brought to the attention of the Long
Beach:
l.City Attorney.
2.City Prosecutor

If my understanding is correct tour august body granted them the right to hang out their shingle and
practice law. .

Among the questions the above-and that listed below gives rise to is:
I.Are they still allowed to practice law in this State.
2.Given the above-and what is list below-WHY?
3.Do you have any data relative to those within your body who have a propensity to succumbe to
premature,prolonged senior moments.

Can your body recommend a credible retired Jurist** professor of Ethics or Law who might appear before our
City Council and give a lecture on ethics and honesty which seems to so elude your licensees--with
consequences as outlined in the attached letter to the City Auditor.

Respectfully.

Laurence B. Goodhue
Long Beach,
California
90803

**someone of the caliber of the late Justice Eagleson--who is probably turning in his grave at what
is so hobbling our City.

P-12-1
Duplicate

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: laura.doud@longbeach.gov
Cc: cacrewood8@fastmail.fm
Date: Sat, 14 Nov 2009 20:11:27 -0800
Subject: DRAFT LETTER TO LOS ANGELES COUNTY GRAND JURY AND CALIFORNIA STATE BAR:: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

NOTE TO MS LAURA DOUD:CITY AUDITOR CITY OF LONG BEACH:

It will be my request to the above to agencies to investigate the reference culture of:
corruption;deceit;dishonesty outlined below.The reference patten has been been unfolding
since December 21,2007---STARTING AT ONE HOUR BEFORE THE CRACK OF DAWN!!!!6:11AM!!!is when
the first of this disturbing pattern of lies of Mr.Mark Sandoval began--well memorialized
in his e-mail to the California Coastal Commission,

Circa 22 months later November 12,2009---Mr.Sandoval lies still continue---as a review of the
public record and a well chronicled article in the Press Telegram's seasoned reporter
Doug Krikorkian clearly reveal.

The above two bookend another series of five plus lies all captured in e-mails,letters,and on
tape,including testimony at Planning Commmison-which as you know is

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given under oath!!!!!

All of these have been brought to the attention of City Council;Mayor Foster,City Manager Pat
West;Director of PRM,Phil Hester.It should be noted Councilman Gary De Long was personally
present at a community meeting when Mr.Sandoval lied--and like the Mayor was provided the copy
of the e-mail that proved the lie of Mr. Sandoval.

The impact of the culture of such corruption of truth,deceit,lies which strongly suggest anyone
engaging in, or embracing such. is a congenital,habitual,pathological,or polished liar is brought
into sharp focus by the well reasoned mis trust the public has in the referenced public officials
most recently manifested by the refusal of the public to pass the City's small parcel tax or the
even smaller parcel tax by LBUSD.

P-12-2
Duplicate

Given,your limited resources my suggestion is the best course of action for your office is to let
the Los Angeles County Grand Jury and California State Bar complete what ever review they elect
to do and you focus on a complete review of the Marine Bureau-from top to bottom-with particular
emphasis on the pending Alamitos Bay Marina Rebuild Plan:Let me suggest that your review include,but
note be limited examination of:

I.All revenue streams.
2.Vacancy rates.
3.All expenditures.
4.Cost of any and all studies with correlative study the results of such.

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: commonsense-sayssavethefence@fastmail.fm, mayor@longbeach.gov, pat.west@longbeach.gov, phil.hester@longbach.gov, district3@longbeach.gov, larry.allsion@presstelegram.com, letters@thedistrictweekly.com, doug.krikorian@presstelegram.com
Date: Thu, 12 Nov 2009 22:07:32 -0800
Subject: Re: YET FURTHER PROOF OF THE FOSTER DE LONG CULTURE OF EMBRACING WHAT THE PUBLIC RECORDS STRONGLY SUGGESTS IS EITHER A CONGENITAL,HABITUAL OR PATHOLIGOCAL LIAR---see latest

On Thu, 12 Nov 2009 20:18 -0800,
"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>

wrote:
> November 12,2009 Marine Advisory Commission----he with a record of lying
> to-but not limited to
> l.The California Coastal Commission(in e-mail)
> 1.The City Council(letter)
> 3.Zoning Officer
> 4.Planning Commission(under oath on tape)
>
> LIED AGAIN TO THE MAC ON THE PUBLIC RECORD NOVEMBER 12,2009----
>
> IS IT ANY WONDER PEOPLE DID NOT PASS THE CITY'S PUNEY $104.00 parcel
> tax.
> IS IT ANY WONDER PEOPLE DOD NOT PASS THE LBUD"S $98.00 TAX:
>
> PEOPLE SEE WHAT FOSTER AND DE LONG EMBRACE AND STAND
> FOR---COGENITAL,HABITUAL,PATHOLOGICAL LYING THE
> MO OF THE CURRENT LEADERSHIP!!!!
>
>
>
> TO WIT:
>
> At the March 12,2009 Marine Advisory Commission held in the Main Dinning
> Room
> on the Second Floor of the LBJC--well chronicled by the Press Telegram's
> Doug Krikorian the following took place:
>
> Mr.Sandoval asked for a up or down vote on the dubious not well received
> Marina
> Re Build plan-whose details-were roundly rejected by a wide number of
> people
> on the full spectrum of the boating community-who supported the needed
> up grades
> and repairs of dock-which poor management had allowed to fall into dis
> repair---
> BUT WITH SOUND REASON OBJECTED TO AN ENLARGED FOOTPRINT IN THE
> WATER----during
> a special evening outreacvh meeting circa 10 days before held at the
> Pete Archer
> Rowing Center(that meeting was also well Chronicled by the Doug
> Krikorian)
>
> When Mr. Sandoval made his request on March 12,2009;The Chair,the good
> Mr. Brad Whyte
> folded his hands and said:
>
> "NO!!!"
>
> "We have been talking about this in committee and have decided we need
> more input.We
> need to find someone that supports this plan"
>
> A discussion ensued among the Commission has to how many more public
> out reach meetings
> there would be.Some member suggested one more meeting.The chair opined

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> that at least two
> more were needed.The Commission voted and approved two more with
> date,location to be
> announced as soon as a venue could be determined.
>
> The Chair one would probably be held at Rogers and the second in City
> Council Chambers.
>
> The first of the two meetings location and date was announced in early
> fall--only to
> have to be rescheduled because staff did not do its
> homework.Unfortunately--some people
> did not get the notice of date change---and showed up on the
> previously announced date--and
> were scheduled to be out of town on October 22--the date of the first
> of the two outreach
> meetings the Commission had voted on to hold.
>
> Today,when reminded of the announcement and vote of the Commission ie
> there would be two
> more outreach meetings-MR.SANDOVAL DENIED SUCH FACTS-Stating MAC had
> decided on two
> more meeting PRIOR to the March 12 meeting held on the 2nd
> floor---where the Chair=in presence
> of the Press Telegram reporter-along with other in attendance REFUSED
> MR SADOVAL's REQUEST TO
> MOVE FORWARD WITH THE PLAN.
>
> The public record reflects the intent of the Commission was to hold two
> more meetings,specific
> location being suggested--one for each locations.THOUGH CERTAINLY THE
> LOCATIONS MIGHT BE SUBJECT
> TO CHANGE--the number may not....IT IS IMPORTANT TO NOTE EVEN AT
> TODDAY'S DAYTIME MEETING THE PUBLIC
> STATED TIME MEETINGS ARE ALL THAT MANY MAY ATTEND....
>
> KEEP IN MIND WE ARE TALKING ABOUT A PROJECT THAT WILL LAST FOR 50
> YEARS....ANOTHER 30 = days will
> not rock the boat....and will avoid the specter or being remanded back
> by the Courts--like Home
> Depot.....
>
> will in a moment click over thoughts relative to needed changes on the
> MAC
>
>
>
> -- Sincerely, 1/19/09
>
> cacrewood8@fastmail.fm
>
--

cacrewood8@fastmail.fm

P-12-3

LAURENCE GOODHUE

LETTER CODE: P-12

RESPONSE P-12-1
The comment is a duplicate of Comment Letter P-5. See Responses P-5-2 through P-5-10.

RESPONSE P-12-2
The comment is a duplicate of Comment Letter P-6. See Response P-6-1.

RESPONSE P-12-3
The comment is a duplicate of text contained in Comment Letter P-6. See Response P-6-1.

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"commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>

11/23/2009 03:43 PM

Please respond to commonsense-sayssavethefence@fastmail.fm

To jill.griffiths@longbeach.gov
cc irvine@lsa-assoc.com
bcc
Subject FOOTNOTE TO EXHIBITS SUBMITTTED WITH COMMENTS TO DEIR FOR ALIMITOS BAY MARINA RE;BUILD PROJECT:SAID FOOT NOTE IS THE FORM OF:

1.The attached e-mail-to two members of the LBYC.
2.The complete March 13,2009 Press Telegram Artilce by the seasoned reporter Doug Krikorian transmitted to me by its City Editor.

Said exhibt goes to the isssue of lack of qulifications of Mr. Sandoval to properly asses maritime matters which is separate and distinct from the varisty of any of his statements-so void of foundation in truth.

P-13-1

Note to City and LSA:
You might want to insert this in NO.3 of the Executive Summary--label as D(after C).

Appreicate your assistance.
LBG
11/22/09

----- Original message -----
From: "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm>
To: frontdesk@lbyc.org
Date: Tue, 17 Nov 2009 06:29:19 -0800
Subject: PLEASE PASS ON TO MR.DREW SATARIANO AND MR RICHARD MILLER ;THANK YOU
Aside from noting the actions of the MAC and the comments by Sandoval that there would be two more
meetings...(the first of which was held on October 12,2009 at Wilson)...which means the second has yet
to be held....NOTE IF YOU WILL NEAR THE BOTTOM ON THE PORTION OF DOUG KRIKORIAN'S
very detailed account of the March 12,2009 MAC meeting--held on the SECOND floor of the LBYC(the
column segways into other sports item--and is included herewith because it came directly from PT in that
format)...

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Mark opines the narrowing of the channel is because..."I have other stakeholders to take care of like
the Dragon Boats"

It will be interesting to hear him explain to the Commandant of the United States Coast Guard and
Sec Army--how narrowing the channel helps the Dragon Boats!!!!!

Champman ,undoubtly is holding the presses so they can update their newest release

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with this
maraitime revelation---perhaps they will hold a book signing under the LBYC burgee !!!!

FYI: On another note:Unless the City Attorney has a problem with it,my view is Petert Hogenson
should not be barred from voting.The issues turn on public maritime and navigatioan considertions
and well established body data on nautical engineering dynamics involving,currents,surges,tides,
winds.Let him stand up,state to the world,his views on such.

P-13-2

LBG

----- Original message -----
From: "John Futch" <john.futch@presstelegram.com>
To: cacrewood8@fastmail.fm
Date: Mon, 16 Nov 2009 11:42:22 -0800
Subject: Krikorian

Long Beach Press-Telegram (CA)
March 13, 2009
Edition: MAIN
Section: SPORTS
Page: 1C

The Great Waterway Debate continues

Article Text:In **the** latest chapter of **the** Long Beach Rowers vs. Mark Sandoval in what has become known as **the Great** Alamitos Bay **Waterway Debate**, well, nothing of note can be reported except I found out that one member of **the** Marine Advisory Commission belongs to **the** Long Beach Yacht Club. "You're wasting your time coming here today," Sandoval told me before Thursday's 2:30 meeting got underway at **the** LBYC's second-story banquet room in which **the** Marine Advisory Commission was supposed to announce its non-binding recommendations about Sandoval's controversial $88 million (!!!) dream known stirringly as **the** Alamitos Bay Rebuild Project. "Why?" I wanted to know. "I believe **the** Marine Advisory Commission is going to have a couple of more public meetings before it makes a decision," he said. And, presto, Mark Sandoval turned out to be on target. **The** Marine Advisory Commission's chairman, a Mr. Bradley Whyte, announced that his august albeit pruned down body - it has only six members because **the** brilliant Long Beach mayor, Bob (Bananas) Foster, for some unfathomable reason has failed to fill three vacancies - would render a verdict after listening "to other stakeholders with views slightly different than that of **the** rowers." **The** other stakeholders, of course, are **the** big boaters like, well, Mr. Bradley

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Whyte, who has resided with his wife in a 42-foot yacht at **the** Shoreline Marina for **the** past 14 years. "Oh, I know where you stand on this issue," I kidded Mr. Whyte, an affable gentleman with a sense of humor befitting that of a salesman, which he is. "Oh no, I have a totally open mind on this issue," he asserted. "I'm a rower myself. You come to my boat, and you'll see a scull on it." Being a true investigative reporter, I do plan to take Mr. Whyte up on his offer, but I'll be sneaky and won't tell him when I'll show up just to make sure there really is a scull aboard his vessel. Mr. Whyte does admit, though, he would like a more fair and balanced turnout at **the** next public gatherings that haven't been scheduled, meaning he would like to hear from a lot of people who aren't angry about Sandoval's proposal to narrow **the waterway** between **the** Second Street Davies Bridge and **the** LBYC up to 35 feet, according to Sandoval's calculations, or 90 feet, according to **the** rowers' calculations. "But if narrowing **the waterway** and sticking a new dock besides **the** LBYC like Sandoval proposes eliminates rowers' lanes and poses serious safety issues, why narrow **the waterway**?" I asked Mr. Whyte. "I want to find out myself what impact it will have on **the waterway**," he replied. Good. I do, too, and just can't wait to attend **the** next two meetings of this thickening drama that was pretty tame Thursday compared to **the** tense atmosphere that pervaded in **the** first showdown staged last week at **the** Peter Archer Rowing Center. In that one, one person after another got up and informed Mark Sandoval in no uncertain terms that he was committing a heinous maritime disaster. This one was quite docile, as Mark Sandoval even showed he is quite an environmentalist, as he displayed a box overflowing with letters to his office that I'm sure weren't exactly praising his work. "Please, don't waste paper ... save **the** trees," he pleaded. "If you want to protest, do it through e-mail." I asked Bradley Whyte if there was anyone on his panel who belonged to **the** Long Beach Yacht Club, expecting no one to be since anyone who was would be in clear conflict of interest. But darned did one gentleman, a Mr. Peter Hogensen, raise his hand. "I didn't even know that," said Mr. Whyte. Should Peter Hogensen now recuse himself from this affair, since, after all, **the** Long Beach Yacht Club stands to benefit from Mark Sandoval's plan. I have no idea, although I must admit, even though Thursday's meeting was at **the** LBYC, **the** only side that was doing any protesting was that of **the** rowers. "Wouldn't it be nice after 20 years on **the** job that your legacy would be that you helped a lot of young kids in rowing?" one guy told Sandoval, whose extraordinarily poofed-up gray hair seemed to stand up even straighter at this comment. There were, as always, some unusual remarks from a few of **the** 40 or 50 people who were present, like **the** one from **the** lady wanting to know **the** status of kite-flying instruction on **the** beach and another one from a person saying **the** entire Alamitos Bay marinas should be down-sized. "Can't you do your project without narrowing **the waterway** between **the** Davies Bridge and **the** Yacht Club?" I asked Sandoval. "I have other stakeholders like dragon boaters that I have to pay attention to," he said. "This is just not about **the** rowers." Maybe so, but **the** rowers are **the** only ones so far to have articulated their position... No matter what unfolds in **the** Big West Tournament in which his team opens play tonight, Long Beach State coach Dan Monson already has done an extraordinary job of reviving **the** 49ers' men's basketball program. How will it do this weekend? "If we sustain our focus, I think we'll do well," says Monson. "If we don't we'll get beat. It's that simple." What isn't simple to explain has been **the** 49ers' tendency in recent weeks to lose their concentration, which they did in **the** agonizing closing

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moments of last Saturday's one-point loss (76-75) to UC Santa Barbara when they committed three turnovers in a row that resulted in their squandering a four-point lead. "We've played good enough in spurts, but we haven't been able to sustain it now for almost two months," says Monson. "We haven't won back-to-back games since **the** middle of January. "Why? I think it's a combination of things. One, youth (Monson starts four freshmen). Two, changing **the** culture of **the** program. It's a process and doesn't happen overnight. We haven't learned to go for **the** jugular yet. And, three, talent. There's just not that much separating us from our Big West opponents. Our margin of error is thin." Monson says he's warned his team what will happen if it continues its recent flameouts. "We're going to have to play hard and keep focused for 40 minutes," he says. "I told them if we don't and we let down for three or four minutes, our season will be over..." I have a hunch **the** 49ers will heed Dan Monson's warning, and will wind up winning **the** Big West Tournament... Mary Hegarty was a class act, and becomes **the** latest Long Beach State women's basketball coach unable to duplicate **the** success of Joan Bonvicini, who set a standard at **the** school that probably never again will be matched. Glenn McDonald and Dallas Bolla endured **the** same fate as Hegarty, who was informed **the** other day by Vic Cegles that her contract would not be renewed. You hate to see anyone lose a job in this tough financial climate, especially a person who worked at it as hard as Hegarty, whose teams have been plagued by injuries **the** past couple of bleak seasons... Gentleman Gene Rotondo, owner of Legends, claims his establishment has just put up **the** largest commercial non-theater TV screen in Southern California. "It's a 20 footer, and it's huge," says Rotondo proudly... Kobe Bryant has left me shaking my noggin in awe so many times across **the** years that it's become a routine event, but his 18-point fourth quarter eruption Wednesday night against Ron Artest and **the** Houston Rockets was something to behold... We all know Ron Artest is a kucklehead, but how stupid was it of him to ignite Kobe Bryant in that final quarter with his non-stop trash drivel?... Hope Phil Jackson continues to start Trevor Ariza, as he did against **the** Rockets and Thursday night against San Antonio, instead of **the** Teacher's Pet, Luke Walton... I'm going to rush out and buy **the** Manny Ramirez book so I can get his innermost thoughts on everyday life... I'm also waiting anxiously for Ned Colletti's book so I can find out how a guy can blow millions and millions of dollars for his boss - think Andruw Jones and Jason Schmidt - and still retain his job. Ol' Mustache Ned has become my new idol... Manny Pacquiao says he is willing to fight Juan Manuel Marquez for a third time - and it well might happen if Pacquiao gets past Ricky Hatton on May 2 in Las Vegas. Their previous matches were classics - **the** first a draw, **the** second a split decision to Pacquiao - and I'm sure another would be **the** same, since both men are at their peak. Marquez certainly was in his recent ninth-round knockout of tough Juan Diaz, and we all know what Pacquiao did to Oscar De La Hoya... **The** ol' Downey Flash, Johnny Ortiz, is picking Hatton to upset Pacquiao. "Hatton is a strong, natural 140-pounder who I think can smother Pacquiao **the** way he did Kostya Tszyu," says Ortiz, who thinks Pacquiao's impalement of De La Hoya was an aberration due to De La Hoya's dramatic weight loss... Rossmoor native Kevin (Brother of Dennis) Lamp says **the** big bash being staged Saturday night at Frisco's is for people from his old Los Alamitos neighborhood - and that **the** restaurant already has received 125 RSVPs. **The** Muhammad Ali impersonator and one-time Long Beach State pitcher says a band will play 1970s music, and **the** $35 fee will include

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dinner, soft drinks, dessert and an opportunity to listen to him talk. "We're hoping all the Rossmoor homeboys show up," says the 6-foot-4, 350-pound Lamp, who will emcee the event, meaning there will be hilarious moments of high camp... . Restaurateur Phil Trani reports his one-time summer intern chef, Mark Sanchez, is keeping his fingers crossed that he will be picked by the New York Jets in the upcoming NFL draft... Long Beach Boys & Girls executive director Don Rodriguez was in Sacramento Thursday with a Youth of the Year finalist, Poly High senior Linda Moy, whose name was jointly announced on the floor of the California State Capitol building by local politicians Alan Lowenthal and Bonnie Lowenthal. Moy was one of six to make it to Sacramento out of candidates who competed for the honor from 120 clubs around the state... Is there a fitter couple in Long Beach than the Olympic Rowing Couple, the Van Bloms, Joan and John, who are leading the charge against Mark Sandoval?...
doug.krikorian@presstelegram.com

P-13-4

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cacrewood8@fastmail.fm

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cacrewood8@fastmail.fm

----- Message from John Futch <john.futch@presstelegram.com> on Mon, 16 Nov 2009 11:42:22 -0800 -----

To: cacrewood8@fastmail.fm

Subject: Krikorian

Long Beach Press-Telegram (CA)
March 13, 2009
Edition: MAIN
Section: SPORTS
Page: 1C

P-13-5 Duplicate

The Great Waterway Debate continues

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doug.krikorian@presstelegram.com

----- Message from "commonsense-sayssavthefence@fastmail.fm" <cacrewood8@fastmail.fm> on Tue, 17 Nov 2009 06:29:19 -0800 -----

To: frontdesk@lbyc.org

Subject PLEASE PASS ON TO MR.DREW SATARIANO AND MR RICHARD MILLER ;THANK : YOU

Aside from noting the actions of the MAC and the comments by Sandoval that there would be two more
meetings...(the first of which was held on October 12,2009 at Wilson)...which means the second has yet
to be held....NOTE IF YOU WILL NEAR THE BOTTOM ON THE PORTION OF DOUG KRIKORIAN'S
very detailed account of the March 12,2009 MAC meeting--held on the SECOND floor of the LBYC(the
column segways into other sports item--and is included herewith because it came directly from PT in that
format)...

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Mark opines the narrowing of the channel is because..."I have other stakeholders to take care of like
the Dragon Boats"

It will be interesting to hear him explain to the Commandant of the United States Coast Guard and
Sec Army--how narrowing the channel helps the Dragon Boats!!!!!

Champman ,undoubtly is holding the presses so they can update their newest release with this
maraitime revelation---perhaps they will hold a book signing under the LBYC burgee !!!!

FYI: On another note:Unless the City Attorney has a problem with it,my view is Petert Hogenson
should not be barred from voting.The issues turn on public maritime and navigatioan considertions
and well established body data on nautical engineering dynamics involving,currents,surges,tides,
winds.Let him stand up,state to the world,his views on such.

LBG

----- Original message -----
From: "John Futch" <john.futch@presstelegram.com>
To: cacrewood8@fastmail.fm
Date: Mon, 16 Nov 2009 11:42:22 -0800
Subject: Krikorian

Long Beach Press-Telegram (CA)
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doug.krikorian@presstelegram.com

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cacrewood8@fastmail.fm

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P-13-5
Duplicate

not be renewed. You hate to see anyone lose a job in this tough financial climate, especially a person who worked at it as hard as Hegarty, whose teams have been plagued by injuries **the** past couple of bleak seasons... Gentleman Gene Rotondo, owner of Legends, claims his establishment has just put up **the** largest commercial non-theater TV screen in Southern California. "It's a 20 footer, and it's huge," says Rotondo proudly... Kobe Bryant has left me shaking my noggin in awe so many times across **the** years that it's become a routine event, but his 18-point fourth quarter eruption Wednesday night against Ron Artest and **the** Houston Rockets was something to behold... We all know Ron Artest is a kucklehead, but how stupid was it of him to ignite Kobe Bryant in that final quarter with his non-stop trash drivel?... Hope Phil Jackson continues to start Trevor Ariza, as he did against **the** Rockets and Thursday night against San Antonio, instead of **the** Teacher's Pet, Luke Walton... I'm going to rush out and buy **the** Manny Ramirez book so I can get his innermost thoughts on everyday life... I'm also waiting anxiously for Ned Colletti's book so I can find out how a guy can blow millions and millions of dollars for his boss - think Andruw Jones and Jason Schmidt - and still retain his job. Ol' Mustache Ned has become my new idol... Manny Pacquiao says he is willing to fight Juan Manuel Marquez for a third time - and it well might happen if Pacquiao gets past Ricky Hatton on May 2 in Las Vegas. Their previous matches were classics - **the** first a draw, **the** second a split decision to Pacquiao - and I'm sure another would be **the** same, since both men are at their peak. Marquez certainly was in his recent ninth-round knockout of tough Juan Diaz, and we all know what Pacquiao did to Oscar De La Hoya... **The** ol' Downey Flash, Johnny Ortiz, is picking Hatton to upset Pacquiao. "Hatton is a strong, natural 140-pounder who I think can smother Pacquiao **the** way he did Kostya Tszyu," says Ortiz, who thinks Pacquiao's impalement of De La Hoya was an aberration due to De La Hoya's dramatic weight loss... Rossmoor native Kevin (Brother of Dennis) Lamp says **the** big bash being staged Saturday night at Frisco's is for people from his old Los Alamitos neighborhood - and that **the** restaurant already has received 125 RSVPs. **The** Muhammad Ali impersonator and one-time Long Beach State pitcher says a band will play 1970s music, and **the** $35 fee will include dinner, soft drinks, dessert and an opportunity to listen to him talk. "We're hoping all **the** Rossmoor homeboys show up," says **the** 6-foot-4, 350-pound Lamp, who will emcee **the** event, meaning there will be hilarious moments of high camp... . Restaurateur Phil Trani reports his one-time summer intern chef, Mark Sanchez, is keeping his fingers crossed that he will be picked by **the** New York Jets in **the** upcoming NFL draft... Long Beach Boys & Girls executive director Don Rodriguez was in Sacramento Thursday with a Youth of **the** Year finalist, Poly High senior Linda Moy, whose name was jointly announced on **the** floor of **the** California State Capitol building by local politicians Alan Lowenthal and Bonnie Lowenthal. Moy was one of six to make it to Sacramento out of candidates who competed for **the** honor from 120 clubs around **the** state... Is there a fitter couple in Long Beach than **the** Olympic Rowing Couple, **the** Van Bloms, Joan and John, who are leading **the** charge against Mark Sandoval?...

doug.krikorian@presstelegram.com

P-13-5
Duplicate

LAURENCE GOODHUE

LETTER CODE: P-13

RESPONSE P-13-1
The comment is introductory and describes two attachments to a previous comment letter. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-13-2
The comment is introductory and states that an article from the Long Beach Press-Telegram is being forwarded. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-13-3
The comment is a forwarded copy of an article from the Long Beach Press-Telegram dated March 13, 2009. The article is reporter Doug Krikorian's account of a Marine Advisory Commission meeting held in March, 2009. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-13-4
The comment is the last half of the Long Beach Press-Telegram article dated March 13, 2009. This portion of the article is about the Big West Basketball Tournament and does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-13-5
Comment P-13-5 is a series of several duplicates of the Long Beach Press-Telegram article dated March 13, 2009. See Responses P-13-3 and P-13-4. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-14

"Ellen & Jim"
<lnandjimkirk@earthlink.net>

To <jill.griffiths@longbeach.gov>
cc
bcc
Subject FW: Alamitos Bay Marina Rehabilitation Project

10/22/2009 08:08 PM

Jill Griffiths, Advanced planning Officer

Jill,

I attended the meeting tonight at Wilson High School. I would like my comments considered for the rewrite of the EIR. I sent them earlier to Mark Sandoval and Gary DeLong.

Thank-you very much,

Jim Kirk
4825 East 6th St.
Long Beach, CA 90814

P-14-1

From: Ellen & Jim [mailto:lnandjimkirk@earthlink.net]
Sent: Thursday, October 22, 2009 5:15 PM
To: 'mark.sandoval@longbeach.gov'; 'Gary DeLong'
Subject: Alamitos Bay Marina Rehabilitation Project

Dear Sirs,

The purpose of this e-mail is to state my opinion on several aspects of the Alamitos Bay Marina Rehabilitation Project.

Please understand that my concerns are based on many years of boating on this bay. I am a member of and sail from Alamitos Bay Yacht Club. I am also a member of and row from Long Beach Rowing Association; and furthermore, I paddle my canoe in the Bay. In years past I have also windsurfed and swam in the bay.

Foremost in my concerns is that I do not want to lose water area by expanding any docks farther into the Bay.

P-14-2

Next, I am concerned about how the sea wall repairs will be done. I would like to see the seawalls repaired without piling rocks next to them. The wall within the ABYC basin was "repaired" by adding a pile of rocks at the base of the wall. That space used to be usable; boats were launched and moored there. That space is no longer usable. Now it collects trash.

P-14-3

I am in favor of the plans as I understand them for dredging, dock improvements as well as bathroom improvements.

P-14-4

Thank-you very much for your consideration,

Jim Kirk
4825 E 6th St
Long Beach, CA 90814

JIM KIRK

LETTER CODE: P-14

RESPONSE P-14-1
The comment is introductory and describes the commenter's familiarity with recreation in Alamitos Bay. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-14-2
The comment expresses concern regarding the loss of water area by the proposed expansion of the docks. The comment is a personal opinion regarding the proposed project's design and does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-14-3
The comment expresses concern regarding the repair of seawalls, and suggests that repairs be made without piling rocks next to the walls. The repairs to the seawalls include re-establishing the rock revetment that was an integral part of the original Marina design. A rock revetment is a standard design for waterside retaining walls and serves an engineering purpose as reinforcement to the structure.

The comment is an opinion regarding the proposed project's construction design and does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-14-4
The comment expresses support of the proposed project plans for dredging, dock and restroom improvements. The comment is an expression of support for the project and does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-15

RIEDMAN, DALESSI & DYBENS LLP
ATTORNEYS AT LAW

WILLIAM T. DALESSI
BRUCE A. DYBENS

FRED M. RIEDMAN (1903-1997)
FRED L. RIEDMAN (RETIRED)

SUITE 850
200 OCEANGATE
LONG BEACH, CALIFORNIA 90802-4335
TELEPHONE: (562) 436-5203
FACSIMILE: (562) 437-8225

October 23, 2009

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Blvd., 5th Floor
Long Beach, CA 90802

Dear Ms. Griffiths:

I am extremely sorry that I was unable to attend the Public Scoping Meeting held Thursday May 28, 2009.

I have a deep interest in the Long Beach Marina and those people who have the opportunity of using the marine waters since I was on the Long Beach City Council and participated in the development of the Marina. Obviously, this was many years ago. I have seen the development of the Marina over the years and its use by many types of activities. Certainly, human powered water craft users of all types have the right to use the Marina and I am happy to see them there.

I also served on the Marina Advisory Committee over the years and served as Commodore of Long Beach Yacht Club in 1966. I have seen the development of pleasure boating, both power and sail, become more and more important to the City of Long Beach by the activities of various yacht clubs operating in the Alamitos Bay area.

P-15-1

The Long Beach Yacht Club has brought great credit to the City of Long Beach by its activities in both power and sail and otherwise. The Long Beach Yacht Club has hosted so many activities that it would be difficult to have the space to list them at this point. One of the major events is the Congressional Cup which attracts the finest sailing participants worldwide and is viewed in many countries. This activity is made possible by the charitable organization which owns and operates the vessels which are sailed in that event.

The City of Long Beach receives international recognition as a result of this one event. In addition, there are any number of events involving Sabots and other small boats, which are promoted by the various yacht clubs operating within the Marina area.

RIEDMAN, DALESSI & DYBENS LLP
ATTORNEYS AT LAW

The long dock which has been proposed and with which you are familiar is a necessary addition to marine activities. Over the course of the year, the Long Beach Yacht Club is visited by yachtsmen from every part of the west coast and otherwise. There is really no other location for the long dock which would be suitable. In my opinion, due to serving on the Marina Advisory Committee and the Long Beach City Council and as Commodore of Long Beach Yacht Club, the proposed location and anticipated use of the long dock would have no significant impact on human powered water craft users. P-15-2

As far as aesthetics are concerned, people come to the Long Beach area and the Long Beach Yacht Club area to view yachting activities. In my opinion, the use of the long dock would provide significant interesting opportunities for non-boating citizens of Long Beach to observe all types of yachts, both power and sail, and to observe those who are involved in their operation. P-15-3

There is a substantial amount of open water which will remain available to all activity in the bay. I hope that you will give some consideration to the thoughts which I have expressed. P-15-4

Most cordially,

William T. Dalessi

William T. Dalessi
WTD:an

WILLLIAM DALESSI

LETTER CODE: P-15

RESPONSE P-15-1
The comment is introductory and describes the commenter's interest in Long Beach Marina due to his participation in the development of the Marina, and serving as a previous City Council member, on the Marine Advisory Committee and as a Commodore of the Long Beach Yacht Club. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-15-2
The comment expresses support for the proposed long dock and states the opinion that it would have no significant impact on human powered water craft users. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-15-3
The comment expresses the opinion that aesthetically, the proposed long dock would contribute to the public's ability to observe all types of yachting and boating activities. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-15-4
The comment is a conclusion stating that there is a substantial amount of open water that will remain available to all bay activities. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-16

Bill Waterhouse
<belshore@verizon.net>

10/30/2009 09:32 AM

To Jill Griffiths <Jill.Griffiths@longbeach.gov>
cc Mark Sandoval <Mark.Sandoval@longbeach.gov>
bcc
Subject Re: Alamitos Bay Marina Draft EIR

Jill, Mark -

Can I please have a copy of the new Marina design for Basin 4 that was shown at the October 22 meeting?

How does this new design affect the number and size of slips in Basin 4?

Also, at the meeting Mark indicated that the waiting list was one of the reasons for the proposed changes in slip sizes.

Can I please see a copy of the Alamitos Bay Marina waiting list, or some summary of the waiting list?

P-16-1

Finally, what is the current policy on obtaining a slip in Alamitos Bay Marina - are any slips still being held for the rebuild or are all of the currently existing empty slips available now for rental?

Thank you,

Bill Waterhouse

BILL WATERHOUSE

LETTER CODE: P-16

RESPONSE P-16-1

The comment is a request for information regarding the design and layout of the docks in Basin 4 as discussed at the October 22, 2009 public meeting. The comment also requests information regarding the Marina slip waitlist and policies. The City staff has provided the commenter with the requested documents. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

"Don Bogart"
<jdbogart@self-serv.net>

11/17/2009 05:12 PM

To <Jill.Griffiths@longbeach.gov>

cc "'Katrin Gleie'" <coachkatrin@gmail.com>, "'liza luna'" <lmluna@sbcglobal.net>, "'Jim Litzinger'" <jim@intercat.com>, "'AC du Pont'" <acdupont4@gmail.com>, "'John Nunn'" <john_nunn@cox.net>, "'Larry Hambleton'" <chief.ham@verizon.net>, "'Scott Renner'" <europasr2@yahoo.com>, "'John VanBlom'" <j.vanblom@verizon.net>, <twhinfrey@oriondsi.com>

bcc

Subject Alamitos Bay Marina Rehabilitation Project Draft Environmental Impact Report Comments

Dear Ms. Griffiths,
This e-mail is in response to your letter of October 8th about the subject comments being due to your office by November 23, 2009. Attached is a scanned copy of comments we are sending you by US Mail. If you have any questions, let us know.
Thank you.
Sincerely,

Don and Judy Bogart 2009-11-17 Marina Draft EIR.pdf

P-17

Judy and Don Bogart
5786 Campo Walk
Long Beach, CA 90803
November 18, 2009

Jill Griffiths, Advance Planning Officer
City of Long Beach Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Subject: Alamitos Bay Marina Rehabilitation Project Draft Environmental Impact Report

Dear Ms. Griffiths:

In accordance with your "Notice of Availability" letter dated October 8, 2009, and in addition to those we submitted to you on June 10, 2009, here are comments by section on the subject Draft Environmental Impact Report.

4.11.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS
No potentially significant impacts to recreational resources have been identified and no mitigation is required. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to recreational resources.

Comments:
Section 4.11 is entitled "Recreation" but mentions nothing about the significant impact the narrowing of Marine Stadium would have on youth athletics in Long Beach. Marine Stadium was built for rowing in 1932 and remains vital to high school, college, and adult team rowing. And beyond absorbing often otherwise misplaced youthful energy, rowing in the channel currently comprising Marine Stadium has provided opportunities to local youth that are unavailable elsewhere. Please see for an example, the November 9, 2009, Los Angeles Times article written by Eric Sondheimer about Rebeca Felix earning a scholarship to Stanford. And according to the story, Ms. Felix's route to higher education is not unique. Last year eleven girls used rowing as a means to college.
Narrowing the channel would impact training and competitions as fewer lanes would be available for the racecourse and for the space needed on the sides of the course for teams rowing to starting positions.

P-17-1

Should the environmental legacy our generation leaves to Long Beach Marina be a parking lot for more voluminous yachts or a commitment to the success of future generations of youth?

4.12.4.2 Potentially Significant Impacts
No potentially significant impacts were identified. Although no mitigation is required, Mitigation Measure 4.12-1 is included to ensure that construction traffic impacts associated with implementation of the project would be less than significant throughout each phase of the project.

Comments:
Section 4.12 is supposed to be about traffic, transportation and circulation but says nothing about the impacts on boat traffic and circulation of the proposed docks and tied-up boats extended into the existing open waterway. Docks extended into areas which are now open waterways will impact boat traffic, transportation and circulation. The narrowing of Marine Stadium would force power boat traffic from the Davies Launch Ramp and human powered traffic into narrower channels. Eastbound traffic would be squeezed at the approach to the Davies Bridge all the way out to the east end of the 2000 meter long Marine Stadium. This squeezing would continue around the corner and then southbound past the Long Beach Yacht Club toward the wider part of Alamitos Bay.

P-17-2

4.7.7 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS
Implementation of Mitigation Measures 4.7-1 through 4.7-7, described above, would reduce potential project and cumulative hydrology and water quality impacts to less than significant levels. Therefore, there are no significant unavoidable adverse impacts of the proposed project related to hydrology and water quality.

Comments:
A new dock is proposed in the north-south channel adjacent to the Long Beach Yacht Club. This channel is relatively narrow compared to the wider part of Alamitos Bay to the south. Much of this channel is bounded on both sides by seawalls so wakes and waves in this channel are reflected from seawalls rather than being dissipated. As a result the water in this channel is often rougher than the water anywhere else in Alamitos Bay. When a southerly wind is blowing the rough water is worse as wind and waves are funneled northward through this channel from the wider area of Alamitos Bay. This funneling action would be aggravated by the installation of a dock. With boats attached to this proposed dock the width of the channel would be decreased approximately 10%.
As the wind would run through this narrowed canyon of boats and seawalls the wind's speed could conceivably increase 10% with the wind's drag on the water increasing as the square of the wind's velocity. Larger wind waves would result and such waves increase the difficulties of navigating small human powered craft. This coupled with the new complexity of seeing and avoiding yachts rapidly northbound on the west side of this channel while obscured by the new dock and attendant boats would make the corner at the existing east-west dock and the proposed north-south dock a safety hazard for small boaters approaching from the west.

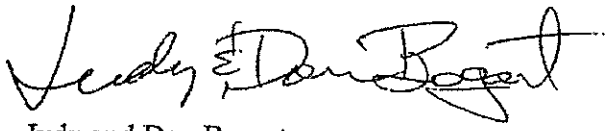
P-17-3

Before this north-south dock is approved, an analysis should be conducted on the resulting effects on waves in this channel. This analysis should be accompanied by simulated views at this corner showing the proposed dock and attached boats from the standpoints of a racing yacht approaching from the south and a human powered boat approaching from the west. Considering the effects of the wind and waves on the large boat and the abilities of the two navigators to see each other, a determination should be made to find out if the two boats would be able to see and then avoid each other.

P-17-3

If you have any questions, please feel free to contact us.

Sincerely,



Judy and Don Bogart

e-mail: jdbogart@self-serv.net
Home phone: 562 439-3119

DON AND JUDY BOGART

LETTER CODE: P-17

RESPONSE P-17-1

This comment states that EIR Section 4.11, Recreation, does not address the impact that narrowing the channel would have on Marine Stadium and youth athletics in Long Beach. The comment further states that narrowing the channel would result in fewer available recreational lanes. See Response P-2-1, which clarifies the boundaries of Marine Stadium as a locally Designated Historic Resource from north of the Second Street Bridge. However, it should be noted that waters extending from Marine Stadium and beyond the Second Street Bridge still provide 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing. The original rowing course as constructed for the 1932 Olympics contained four lanes (see DEIR Figure 4.4.2). With project implementation, four lanes would still be available for use in rowing competitions and practices.

As discussed in the DEIR, Section 4.11, the proposed project includes an extension of docks from Basins 3 and 4 into the Marina Channel that would result in a loss of 35 ft of the overall Channel width. Therefore, the encroachment from the project improvements would result in a final Marina Channel width of 295 ft., which is considered consistent with the Department of Boating and Waterways (DBAW) design guidelines for marina channels and is suitable for effective navigation. There is not anticipated to be any substantial effect on usefulness or recreational use of this channel based on the proposed width. Therefore, the DEIR concluded that the proposed extension of the docks would have a less than significant impact on boat traffic and recreation.

RESPONSE P-17-2

This comment states that EIR Section 4.12, Traffic and Circulation, does not address the boat and traffic circulation impacts from the proposed extension of the docks into existing channels. The comment further states that boat traffic from the Davies Launch Ramp would be forced into narrower channels. The project does not include any improvements in the waters adjacent to the Davies Launch Ramp and would therefore not have any effect on the width of the navigable waters near the launch ramp. See Response P-17-1 for clarification of the analysis regarding the narrowing of Marina Channel between Basins 3 and 4.

Based on the proposed preliminary design and layout, the existing long dock would be extended south and southwest around the around the bulkhead corner located adjacent to the Long Beach Yacht Club (LBYC). The existing channel width between the seawall along the LBYC and the channel seawall at Basin 2/Basin 3 is 404'. The proposed long dock would cause an overall reduction of 22' in the main channel. The final channel width would be approximately 382'. There is not anticipated to be any substantial effect on usefulness or recreational use of this channel based on the proposed width. Therefore, the Draft EIR

concluded that the proposed extension of the docks would have a less than significant impact on boat traffic and recreation.

RESPONSE P-17-3

The comment quotes the conclusion regarding significant impacts from EIR Section 4.7, Water Quality. However, the comment is actually a concern regarding the proposed extension of the long dock adjacent to the Long Beach Yacht Club and what wind wave effects could result from implementation of the dock. The comment requests that an analysis of waves in the channel be conducted and that a view analysis be provided to determine whether two approaching vessels could safely see and avoid each other.

As stated in the comment, portions of the Marina Channel are bound on both sides by seawalls. The area in the vicinity of the proposed long dock (and in fact the entire Alamitos Bay Marina) is located within a protected bay, protected from normal wave actions from the ocean. According to City officials, the only wave issue is from vessels travelling at speeds that are illegal. In a significant storm situation, boats tied along the proposed long dock would be moved to other locations; the long dock is not a permanent boat storage location but rather is intended to be used on a temporary basis during special events or by visitors to the Marina.

The comment erroneously states that the width of the channel would be deceased by 10 percent due to the long dock. The actual reduction is approximately 22 feet, or approximately 5.4 percent, as clarified in Response P-17-2.

The issue of boater safety and visibility is affected by many factors, including the design of the Marina facilities. The DEIR analyzed the proposed project's consistency with the California Department of Boating and Waterways' (DBAW) Small Craft Harbor Design Guidelines, since compliance with DBAW's design criteria would normally be sufficient for DBAW to approve any Marina design changes. The proposed project is consistent with DBAW Guidelines for interior channel design. Further, as stated in the DEIR, assuming that the design width of the Marina Channel exceeds all design standards, the safety of competing users is contingent upon common sense and rules of the road. The design of the proposed project has been assessed and all DBAW waterway minimum design requirements are met or exceeded. All recreational users in the Bay waters are responsible to be aware of the basic navigational rules (e.g., maintain a safe speed at all times so that action can be taken to avoid collisions; vessels under power should alter their course to starboard so that each will pass to the port side of each other; the sailing vessel that has the wind on the port side shall keep out of the way of the other; boats shall keep to the starboard side of narrow channels whenever safe and practicable; motorboats shall keep out of the way of sailing vessels or human-powered craft where courses involve the risk of collision).

The DEIR concluded that, because the proposed project's final design width is consistent with DBAW Marina design standards, safety effects resulting from the change in channel width associated with construction of the docks in Basins 3 and 4, and/or the extension of the long dock, are considered to be less than significant.

P-18

Wilbur W. Lorbeer
Lorbeer Equity Management
5320 East Second Street Suite 9
Long Beach, California 90803
(562)434-5785 (office) (562)438-9116

November 19, 2009

Jill Griffiths
Planning Bureau, Development Services
City of Long Beach
333 West Ocean Boulevard, 5th Floor
Long Beach, California 90802

Dear Ms. Griffiths:

The original Basin 4 design was developed in cooperation with the Marine Bureau and a committee of boat owners who moor their boats in Basin 4. It was important to these owners that they participate in the development and be informed of progress made. It is now our understanding that the Marine Bureau has changed the original plan and removed a number of slips that were once part of Basin 4 remodel plan.

It is estimated that due to the loss of these slips, income to the City will be reduced by approximately $50,000 annually, if not more.

P-18-1

It is irresponsible on the part of the Marine Department to pass up the opportunity to increase the revenues to the City due to the deletion of these slips.

I hope you will reconsider these changes as the potential income loss is very significant.

Sincerely,
Bud Lorbeer

WILBUR W. LORBEER

LETTER CODE: P-18

RESPONSE P-18-1

This comment expresses concern that any reduction in the proposed design of Basin 4 (fewer slips) would reduce City revenues and potential income related to the Marina. The comment does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-19

November 23, 2009

Jill Griffiths, Advance Planning Officer
City of Long Beach, Department of Development Services
333 West Ocean Boulevard, 5th Floor
Long Beach, CA 90802

Dear Ms. Griffiths:

I am writing in response to the **Draft Environmental Impact Report – Alamitos Bay Marina Rehabilitation Project.** I've had an opportunity to review the document and have a number of questions and concerns about the planned project and the DEIR. P-19-1

My primary concern with the project is the potential for the loss of additional waterway in Alamitos Bay. In 1999 The Alamitos Bay Master Plan recommended that, "The width of the navigable channel should be maintained in all cases." Yet since 1999, the City has taken waterway from Alamitos Bay through the implementation of multiple yacht slips near the Pacific Coast Highway Bridge, the addition of permanent docks to the City maintenance yard near the boat launch, and by allowing the ongoing permanent mooring of boats in the navigable channel near the Sea Scouts facility. P-19-2

The DEIR notes that the *No Build* option would be the least environmentally invasive and would take no additional waterway and even the *Reduced Project Alternative* would eliminate construction of the long dock and some slips in Basin 4. While I support the reconstruction of various boat slips and the creation of ADA access throughout the identified project areas, the permanent taking of existing waterways to create slip and dock space is akin to taking parklands to allow recreational vehicle parking. A scaled back version of the proposed project that would not take any of the existing waterways is the best option for all of the current waterway users – dragon boaters, kayakers, outrigger paddlers, rowers, paddle boarders, swimmers, fisherman, and all sailors – not just a relatively few members of the Long Beach Yacht Club or those sailboat owners leasing space in Basin 4 of Alamitos Bay. P-19-3

Sincerely,

Michelle Mowery
Long Beach, CA 90807

MICHELLE MOWERY

LETTER CODE: P-19

RESPONSE P-19-1
The comment is introductory and does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-19-2
The comment expresses concern regarding the loss of additional waterway in Alamitos Bay and references the Alamitos Bay Master Plan recommendations regarding maintaining the width of navigable channels. The comment is related to the project design and does not contain any substantive comments or questions about the analysis in the DEIR. However, all channel widths proposed by the project meet or exceed DBAW requirements, as reported in the DEIR and described in Response P-17-3.

RESPONSE P-19-3
The comment states a preference for a project alternative that would eliminate construction of the long dock and some slips in Basin 4. The comment will be transmitted to the decision makers for their consideration. The comment is related to the project design and does not contain any substantive comments or questions about the analysis in the DEIR. Because the comment does not address environmental issues, no further response is necessary.

P-20

HAND DELIVERED

November 23, 2009

Jill Griffiths, Advance Planning Officer
City of Long Beach Development Services
333 West Ocean Boulevard, 5th floor
Long Beach, CA 90802

Re: Comments on the DEIR for the Alamitos Bay Rehabilition Project

Dear Ms. Griffiths:

Attached please find my comments on the above-referenced DEIR. P-20-1

Please do not include my address in the EIR.

Thank you.

Very truly yours,

William L. Waterhouse

William L. Waterhouse

RECEIVED
NOV 23 2009
PLANNING BUREAU

P-20

Comments on the Draft Environmental Impact Report for the Alamitos Bay Marina Rehabilitation Project

I.
The Project Description in DEIR Fails to Fully Disclose the Elimination of *591* Small Boat Slips

The Notice of Preparation for this project did not disclose that any slips would be eliminated. The DEIR states that the new marina will have 321 fewer slips. DEIR p. 3-5. However, it does not disclose that a significant number of large slips to be added and that a *huge* number of small slips are to be eliminated by the proposed project. Instead of forthrightly disclosing in the DEIR text that a major shift to larger slips is proposed, the magnitude of this shift is seen only through careful analysis of the data provided in tables of the DEIR.

The DEIR acknowledges that during the 1999 Alamitos Bay Master Plan process it was found that: "Popular opinion was that *the Marina should continue to be recognized as a small craft marina* and as such should include slips as small as 20 ft." (DEIR p. 3-2, emphasis added.) The DEIR then states that city staff consulted with Coastal Commission staff around 1999 concerning appropriate slip mix for the rebuilt marina. The text then recites the various percentages of various size slips of the proposed marina without reference to the existing percentages. (*Ibid.*) As a result, the DEIR gives the impression that little change is proposed and that the marina will remain a "small craft marina." This is a false impression. In fact, *the project proposes an enormous decrease in 20 to 30 foot slips and a corresponding increase in larger slips.*

One has to calculate their own table from data from DEIR Table 3.B to fully understand the true magnitude of the drastic changes in slip mix that are proposed. These changes are summarized in the following table:

ALAMITOS BAY MARINA SLIP SIZES

	20'	25'	30'	35'	40'	45'	50'	55'	60'	70'	80'+
Existing	445	369	429	238	278	92	62	4	21	14	17
Proposed	165	242	245	312	368	112	133	4	37	12	16
Change	*(280)*	*(127)*	*(184)*	74	90	20	71	0	16	(2)	(1)
Slip Fee /month	$164	$257	$370	$471	$585	$689	$788	$930	$1014	$1262	$1535+

Source: Slip size from Table 3.B; current 2009 slip fees provided by ABM staff and attached hereto as Attachment A.

P-20-1

From the table above can it be seen that the proposed marina will eliminate 280 20' slips, 127 25' slips and 184 30' slips for a *total loss of 591 small slips* 30 feet and under, while adding 268 slips of 35 feet and larger. The DEIR text should have forthrightly disclosed this significant change away from a small boat marina. Because it does not, the project description does not accurately describe the true project.

Because larger slips occupy more space than small slips the overall number of slips available will be reduced by 321 slips, from 1,967 existing to 1,646 new slips. The DEIR asserts the reduction in slips is not an adverse impact on recreation because, through a two-year attrition program that has prohibited new marina customers owning small boats from occupying those slips proposed for elimination that have been vacated, the number of marina current marina customers has been reduced to only 1,430. (DEIR p. 3-6.) The DEIR states that current marina customers will be provided with a slip after the rebuild, even if the slip is too large for the boat. (DEIR p. 3-5). What is *not* explicitly acknowledged is that once current small-boat customers leave and their vacated larger slips are subsequently occupied by boats the size of the new slips, *new customers with small boats will not have a place in the new marina*.

P-20-1

"An accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185. The EIR should be revised to provide fair notice to recreational boaters that a large number of small slips are being eliminated and the project description should be recirculated for public comment.

II.
Reducing the Number of Small Slips Constitutes a Significant Adverse Impact Upon Recreational Opportunities

The DEIR finds no adverse impacts on recreation (DEIR pp. 1-79 - 1-80) even though the project will eliminate 591 small slips and a total of 321 slips overall. This conclusion of the DEIR misperceives the function of a public marina and coastal policy. As discussed more fully below, California Coastal Act statutory policy promotes "*increased* recreational boating use" *for all* (not merely serving current customers and aggressively emptying small slips though attrition) and especially seeks to protect "*lower cost* . . . recreational facilities."

By reducing the overall number of slips and greater reducing the number of inexpensive small boat slips, the current project design constitutes a significant adverse impact upon recreational boating. The EIR should be revised to disclose this impact and discuss measures to mitigate or avoid this impact.

A. The Proposed Slip Mix Will Not Serve the Existing Demand for Small Slips

P-20-2

Marina spokespersons have stated that the slip mix proposed for the rebuild is based upon the marina's waiting list. However, the summary sheet of the marina's waiting list obtained from ABM staff (and attached hereto as Attachment B) does not support the proposed slip mix. Instead, a review of current occupancy figures show a *greater demand for small slips and lesser demand for many of the larger slip sizes*.

A reasonable measure of demand for slips would be the current long-term occupancy + persons on the waiting list + boats occupying a slip on a month-to-month basis. The table below, taken from information on Attachment B, shows that *the proposed slip mix would not serve currently existing demand for 20', 25' or 30' slips - **a total shortfall of 308 small slips** - and would build 145 slips of 35' and 40' for which there is NO current demand shown on the waiting list:*

SLIP OCCUPANCY AND DEMAND BY SLIP SIZE

Slip Size	20'	25'	30'	35'	40'	45'	50'	55'	60'	70'	80'+
Occupied	180	186	364	222	238	87	85	1	15	12	14
Temporary	47	70	23	7	13	3	4	0	2	3	2
Waiting list	27	36	27	32	23	37	48	0	56	16	18
Total slip demand	**254**	**292**	**414**	261	274	127	137	1	73	31	34
Proposed slips	165	242	245	312	368	112	133	4	37	12	16
Unmet Demand	**89**	**50**	**169**	-	-	15	4	-	39	19	31
Excess slips	-	-	-	**51**	**94**	-	-	3	-	-	-

Source: "Slip Status, October 31, 2009" from ABM records attached hereto as Attachment B. ("Occupied" slips are leased on a long-term lease and guaranteed a slip after the rebuild. "Temporary" slips are month-to-month subject to termination at will and have no right to a slip after the rebuild under current marina policy. "Total slip demand" equals "Occupied" + "Temporary" + "Waiting List." "Excess slips" are slips for which there is no demand shown.)

P-20-2

The above data almost certainly understates the demand for small slips. It is notable that (for slips less than 90') *the longest wait* shown on the ABM waiting list *is for the 25' slips which have not been available since the year 2000*. Those seeking 20' slips have been waiting almost as long - *since 2003*. In contrast, the wait for 40', 45' and 50' slips has been shorter - since 2008, 2007 and 2006, respectively. Morover, seeing the long wait for the 20' and 25' slips has likely discouraged more new small boat owners from adding their names to the waiting list over time.

B. Small Boat Owners Have Been Actively Forced Out of the Marina Through an "Attrition Program" and the Demolition of Small Slips

Under the marina's two-year-old "attrition" program (see DEIR p. 3-6), marina staff has held back from long-term rental a total of 513 slips of 20', 25' and 30' length, while only 79 slips of sizes 35' and larger have been held back. (See ABM, "Held for Rebuild" line in "*Slip Status*, October 31, 2009.") Indeed, as a part of the "attrition" program, *189 of the 20' slips in Basin 2 already have been demolished*. As shown in the photo on Attachment C of these comments, slips #857 through #1046 on Gangways 23, 24 and 25 in Basin 2 have been demolished, leaving unused empty gangways.

P-20-3

This attrition program aimed squarely at smaller slips has almost certainly reduced the number of occupied small slips (and new additions to the small boat waiting list) far below that which

would have occurred if those small slips had been held open on an equal basis with the larger slips. In a recent interview with a local boating organization, Alamitos Bay Marina management admitted that small boat owners were being discouraged from locating in the marina and that the existing demand for 20' slips would not be met by the proposed slip mix:

Q. Why were the slips, and their revenue, ripped out of Basin 2 when it was obvious that the rebuild start was going to be delayed?

A: The fingers that were stripped were all 20-foot fingers. We moved all of the vessels on those docks to other parts of the marina so we could vacate those docks and create long docks, which will be used for storing displaced vessels during the rebuild. The reason we have so many 20-foot vacancies is because we are eliminating so many in the rebuild. To be specific, we had 445 20-foot slips in the marina. We have 186 filled with permanent customers. We will have only 165 20-foot slips after the rebuild, so at this point, we have 21 more 20-foot customers than we will have 20-foot slips. As a result, we are holding 20-foot slips open instead of permanently renting them and creating a larger differential. We do, however, rent all of the slips we are holding open on a temporary basis. At the present time, we are generating about $700,000 a year on the temporary slip rental program, which does help to keep the slips fees a little lower.

P-20-3

(Source: http://www.lbmboa.org/documents/SandovalQA.pdf, emphasis added).

It is important to note that the marina's slip fees were recently reformed to charge for slips on a square foot basis. As a result, the *cost of small slips decreased significantly* and the cost of larger slips increased significantly. One can reasonably assume that if the marina were to widely advertise these lower small slip rates, many more smaller 20' - 30' slips could be leased now and in a rebuilt marina and many more would now be on the marina's waiting list.

It is a violation of CEQA to begin implementation of a project prior to completion of CEQA review. See *Save Tara v. City of West Hollywood* (2008) 45 Cal.4th 116, (it was a CEQA violation to evict tenants prior to CEQA review of the proposed demolition of a residential building).

The EIR should be revised to disclose the 20' slips that have already been demolished and explain why it was appropriate to conduct this demolition and attrition program (with a corresponding loss of marina revenue from slip rents) prior to completion of the CEQA process, public review, or project approval. The EIR should include a discussion of mitigation measures for this demolition, as discussed below.

C. The Project Design Includes Only Power Boat Slips, Reducing the Number of Slips that Can be Constructed

P-20-4

The DEIR indicates that all slips will be built to DBAW *powerboat* standards, which require wider slips than the DBAW requirement for sailboat slips. From a walk through of Alamitos Bay Marina it appears that approximately 60% of the boats are sailboats. The EIR should be revised to analyze the number of slips that could be added in the footprint if half of the slips were sized for sailboats. This would mitigate the loss of slips from the proposed project.

III.
The DEIR Fails to Adequately Analyze Impacts Upon Other Small Boaters and the Historic Olympic Rowing Course

A. The Traffic Section Only Analyzes Minimum Channel Widths Needed for Navigation, Not the Dimensions Needed for a Competitive Rowing Course

The DEIR fails to acknowledge the public controversy concerning the proposed expansion of the marina footprint that will impact the competitive rowing course used in the 1932 Olympics, used for training for other Olympics and currently used today for rowing practice and competitions. The enlarged marina footprint as shown in the DEIR would result in a narrowing of the channel and loss of open water for all boaters, including canoeists, kayakers, powerboats and sailboats, as well as competitive rowers.

Although this controversy over the competitive rowing course has been the subject of a number of *seriatim* private meetings between marina staff and various stakeholders, at least one public meeting, and press coverage, *the DEIR fails to discuss it at all*. Instead, the DEIR buries the issue in the "traffic" section of the DEIR, explaining only that the marina will still meet the minimum DBAW navigation standards for *channel width*. DEIR p. 4.12-9. P-20-5

Plainly minimum DBAW standards are *not* the issue. *The issue is whether the new marina design will prevent continued use of the standard 2,000 meter rowing course of Marine Stadium*. This 2,000 meter rowing course was used in the 1932 Olympics. A modified 2,000 meter course (modified because the north end of Marine Stadium had been filled in) was used for the rowing and canoeing trials for the 1968 Olympics. The DEIR contains no discussion of the 2,000 meter rowing course or how the project will impact the rowing course.

B. The Historic Resources Section of the DEIR Avoids Discussion of Rowing Course Impacts by Improperly Redefining Marine Stadium Boundaries

The DEIR refused to discuss impacts on the the 2,000 meter rowing course in the cultural/ historic resources discussion on grounds the rowing course purportedly "retains no original integrity and does not contribute to the [historic] eligibility of Marine Stadium." DEIR p. 4.4-6. The DEIR reaches this conclusion based upon the 1955 construction of the Second Street bridge over the rowing course. The DEIR asserts that the bridge construction irretrievably changed the rowing course and destroyed its historic integrity. DEIR p. 4.4-5. Therefore, the historic resources discussion in the DEIR omits any discussion of project impacts upon the rowing course south of the Second Street Bridge.

However, in the Cultural/Historic Resources Report in Appendix D of the DEIR the reader learns that in 1992, *decades after construction of the bridge*, the Long Beach City Council, through adoption of Resolution C-25635, *designated the Marine Stadium rowing course as a California Historical Landmark*. See Appedix D of the appendices to the DEIR. The documentation supporting the City Council's historic designation stated, in relevant part: "When updating the venue for the subsequent [1968] Olympic Trials, there was a modification in the site which *shifted the starting line from what is now the second street bridge to its present position, near the Long Beach Yacht Club*." See "*Historic Resources Inventory*" in Appendix D of the DEIR P-20-6

appendices. Thus, the historic designation plainly included recognition of the reconfigured rowing course south of the Second Street Bridge and abutting Basin 4.

Finding it an inconvenient fact that the historic Marine Stadium rowing course boundaries protruded into the project area of the marina rebuild, the EIR consultant *actively sought to change the boundaries of official state landmark designation* of the Marine Stadium rowing course. See DEIR Appendix D, pp. 21-22. The EIR consultant asserted that the historic boundaries were not "clearly defined" in the historic application and that Long Beach Municipal Code definitions (plainly adopted for other purposes) should be substituted for the historic boundaries adopted by the City Council. (*Ibid.*)

This discussion in DEIR Appendix D simply ignores the quote above from the historic application recognizing that the rowing course had been moved south of the Second Street Bridge near the Long Beach Yacht Club. It also ignored the fact that the City Council's 1992 resolution designating the historic landmark status *included the boundaries of Marine Stadium as defined through a legal description of metes and bounds*. An EIR consultant cannot properly trump such an official City Council resolution officially defining the Marine Stadium boundaries - - the Council plainly meant to include the *entire* rowing course in its designation. The EIR consultant's action attempting to change the historic landmark's boundaries constitutes project advocacy and creates improper bias in the cultural/historic analysis.

P-20-6

The EIR should be revised show the Marine Stadium historic boundaries as adopted by the City Council. It should provide a complete review of impacts upon the Marine Stadium 2,000 meter competitive rowing course and an analysis of how the Basin 4 components of the proposed project that protrude into the existing channel would impact the rowing course. Because this analysis was improperly excluded from the DEIR by the EIR consultant it should be recirculated for public review and comment.

C. The New "Compromise" Plan for Basin 4 Requires Public Review

The ABM staff held a public meeting on the rowing course impacts issue on October 22, 2009. At this meeting members of the general public learned of various prior meetings between the marina staff, rowing interest groups, and the Long Beach Yacht Club concerning the Yacht Club's desire to expand its slips and long dock into existing open water in the channel. Rowing groups had asserted that allowing the Yacht Club to construct new slips and a long dock that would protrude into the channel would obstruct competitive rowing events. At the October 22nd meeting it was learned that a proposed compromise plan had been negotiated between these two conflicting interest groups and marina staff. A new design for Basin 4 (occupied by boats owned by members of the Long Beach Yacht Club) was shown on a screen that memorialized the compromise and showed changes in the extent that new Basin 4 slips and the new long dock would protrude into the channel. *This new design is not included in the DEIR and the project description of the DEIR is inadequate for that reason*.

P-20-7

In the public comment period of the October 22 meeting, it became apparent that a number of rowers were not satisfied with the compromise plan and did not want any change to the existing current marina footprint abutting the channel. It also became apparent that the interests of casual small boaters, including the large great number of kayakers and other small boaters who use this channel to circumnavigate Naples Island, apparently had been left out of the private meetings where the proposed Basin 4 compromise was negotiated.

Plainly, this key issue should have been discussed in the DEIR. The EIR must be revised to show the 2,000 meter rowing course and the new Basin 4 proposed "compromise" design. It should show the dimensions of the new marina plan and discuss whether there are any conflicts between use of the 2,000 meter course, the concurrent use of the channel by other (non-rowing) boaters during competitive rowing events, and the marina design. This new analysis should be provided for additional public comment.

P-20-7

IV.
The Proposed Project Does Not Comply with Coastal Act Policies

A. Relevant Provisions of the California Coastal Act

The following statutory provisions of the California Public Resources Code will govern the Coastal Commission's review of this proposed project:

Section 30210 of the Coastal Act states:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and *recreational opportunities shall be provided for all the people* consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse. (Italics added.)

P-20-8

Section 30213 of the Coastal Act states:

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. (Italics added.)

Section 30224 of the Coastal Act states:

Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land. (Italics added.)

Section 30234 of the Coastal Act states:
Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and *recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided.*
Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry. (Italics added.)

In Table 4.A the DEIR finds that the proposed project complies with these and other Coastal Act policies. As discussed below, it does not.

B. The Proposed Slip Mix Eliminates Lower Cost Recreational Facilities

The DEIR wholly ignores the economic impacts of the proposed elimination of 591 small slips on boaters, including the low- or average-income boater. The discussion should have been included in an analysis of compliance with Coastal Act Section 30213, requiring the provision and protection of "*lower cost* recreational facilities." However, this is the *entire text* of the discussion of Section 30213 that appears in the DEIR:

"The proposed project includes renovations to several publicly accessed areas and walkways within the Marina. In addition, the project does not remove or preclude the use of passive recreational activities currently available in the Marina, such as sightseeing, and ensures that public access to low-cost recreational facilities is protected and enhanced. Therefore, the proposed project is consistent with Coastal Act Section 30213." DEIR p. 4.8-14.

Thus the DEIR fails to even broach the subject of the costs of boating and whether the proposed project will reduce the availability of "lower cost recreational opportunities."

The costs of boating by boat size have been estimated below by sampling from current classified ads in two local boating periodicals (attached hereto as Attachments D and E). As shown in the table below, the costs of an entry level (18 to 25 foot) boat is relatively affordable. However, as boat sizes increase, the cost of boating escalates exponentially. Moving from a 26'-30' to a 31'-35' sailboat increases the purchase cost by about 70%. A power boater making a similar size increase finds purchase costs, on average, more than double. New boats, of course, are often many multiples of the used boat costs shown below. Slip fees also increase rapidly with slip size, as shown below:

P-20-8

ESTIMATED COST OF USED BOATS

Length (ft)	Average Asking Price		Slip Fee
	Sail	Power	
18 - 25	$7,500	$17,000	$164.45 (20') / $256.95 (25')
26 - 30	$24,750	$28,000	$370.00 (30')
31 - 35	$41,900	$60,000	$471.60 (35')
36 - 40	$60,200	$122,000	$584.65 (40')
41 - 50	$133,000	$172,000	$688.55 (45') / $787.90 (50')

Source: Calculated from classified ads, Nov. 13-26, 2009 ***The Log***, pp. 49-50 (Attachment D); Flying Cloud Yachts classified ad in Dec. 2009 ***Yachts for Sale***, pp. 22-23 (Attachment E; slip fee schedule provided by Alamitos Bay Marina staff (Attachment A).

Raising the costs of boating and reducing the number of small boat slips conflicts directly with California Coastal Act Section 30213 policy: "Lower cost visitor and recreational facilities shall

be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred."

Decreasing the number of overall slips conflicts with Coastal Act Section 30224 policy that promotes additional slips: "Increased recreational boating use of coastal waters shall be encouraged . . . by . . . providing additional berthing space in existing harbors . . . ."

The proposed project does not conform with either of these policies. The proposed project only enhances recreational opportunities for for larger sailboats and powerboats by creating additional larger slips. It reduces the recreational opportunities for all other boaters by reducing the overall number of slips and greatly reducing the number of small slips. These conflicts between the proposed project and Coastal Act policies must be fully acknowledged and discussed in the EIR.

The stated justification in the DEIR for the change of slip mix is essentially that City staff had discussed appropriated slip mix with Coastal Commission staff *around 10 years ago*. (See DEIR pp. 3-5, 4.11-3.) Whatever Coastal Commission policy may have existed 1999 is no longer relevant. Only last month the Coastal Commission modified the plan for the proposed Dana Point Marina renovation, including a "no net loss" of slips policy or, if that was infeasible, a loss of *no more than 155 slips*. Moreover, the Commission required for Dana Point that the *average slip length not exceed 32 feet*. (See *The Log*, Oct. 16-29, 2009, p. 19.) The instant Alamitos Bay proposal eliminates 321 slips and increases the average size of Alamitos Bay slips from the current 31.25 feet to 35.8 feet after the rebuild, well above the limits imposed by the Coastal Commission at Dana Point.

P-20-8

Attachment B provides slip sizes for all three of the City of Long Beach municipal marinas. This proposed project, combined with the Downtown and Rainbow Marinas, would reduce the number of slips sized 30' and under available in all Long Beach municipal marinas from 49% to 37%. If only 165 20' slips are built in the new Alimitos Bay marina, then 20' slips would constitute *only 5% of all slips* in the three Long Beach municipal marinas because there are no longer *any* 20' slips in the Downtown or Rainbow marinas. Similarly this project would result in a reduction of the number of 25' slips to *only 8% of all slips* in the three Long Beach marinas -- there are only nine 25' slips in the Shoreline Marina and none in Rainbow Harbor. These small boat slip percentages do not meet the needs of small boat owners in the Long Beach area, including lower-income boaters. Boaters generally start with a small boat and then, after time and growth in income, then often buy a bigger boat. Where will the next generation of boaters come from if slips for entry-level boats are no longer available?

C. Were the 189 Twenty Foot Slips Demolished Without Permits?

As discussed above, 189 of the 445 20' slips in the Alamitos Bay Marina have been demolished in order to permanently remove 20' boats, leaving empty gangways. A review of Coastal Commission agendas posted on the Internet does not reveal any application for, or the granting of, any Coastal Development Permit for this demolition activity.

P-20-9

Did the City obtain City permits for this demolition?

Did the City obtain Coastal Development permits for this demolition?

If not, why not?

V.
The DEIR Fails to Adequately Discuss GHG Impacts

A. The Failure to Quantify GHG Boat and Auto Emissions

The DEIR concludes states the project will have a less than significant cumulative impact as a result of greenhouse gases (GHGs) emitted by boats berthed at the marina because no additional boats or slips would be added. DEIR p. 4.2-43. It is unclear how the DEIR reaches this conclusion, because in an earlier discussion it is admitted that the project will result in larger boats, but the EIR consultant then *refuses to quantify* operational emissions, asserting:

"[I]t would be speculative to forecast the usage patterns or engine efficiencies of the larger boats, similar to trying to predict the types of cars that utilize a given parking lot or the length of time that they would be parked. Therefore, it is too speculative to indicate that the change in the number or size of Marina slips would result in a change in contributions to GHG emissions, either positive or negative." DEIR p. 4.2-37

As the EIR consultant knows (or should now), it is quite possible to calculate reasonable estimates of the emissions from boats and cars. EPA, CARB and SCAQMD do this type of analysis all the time. The construction emission calculations included in Appendix B of this DEIR are far more complicated than any quantification of boating emissions would have been.

If the marina were to be rebuilt using the *same slip mix*, with no increase in larger slips, then it could be permissible to conclude that the project will have no GHG impacts and omit quantification of those emissions. However, the proposed project results in many more large boats than presently operate at the marina. With more large boats, it can be reasonably assumed that overall operational emissions in the marina will increase, just as replacing small cars with a slightly smaller number of SUVs would be expected to result in greater emissions.

P-20-10

The EIR should be revised to include a reasonable quantitative estimate of operational emissions from boats and cars.

In order to reduce future operational emissions, the EIR should include discussion of mitigation measures that would reduce future operational emissions of GHG gases. For example, the marina staff should consider giving preferences on the waiting list and/or reduced slip fees for boats with lower emissions, including but not limited to:

- electric boats (e.g. Duffys)
- clean diesel powerboats and sailboats
- small powerboats and sailboats with clean 4-stroke outboards
- boats with diesel-electric or other low-emissions propulsion systems

The EIR should discuss these and other mitigation measures for operational GHG emissions.

Finally, Assembly Bill 32 requires an 80% reduction in 1990 GHG levels by 2050 in California. Recreational boating needs to be a part of these GHG reductions. This marina project is designed for at least a 40-50 year life, if not longer. The marina should include policies that will reduce GHG emissions over time. How does the marina rebuild design allow for future compliance with AB 32 goals?

B. Green Design Elements Should Be Included in the Restroom Design

The project includes renovation of 13 marina restrooms. These restrooms should be designed to LEEDS standards. In addition, because the Southern California climate is so mild, the restrooms should be designed to utilize natural light and a have a large amount of natural ventilation. The existing restrooms in the marina, with tiny windows and little ventilation waste large amounts of energy when the heating systems are turned on in the winter and become stifling in the summer. It should be possible to eliminate natural gas powered air and water heating systems in the new restrooms with passive solar design and solar water heating systems. Ample windows that can be opened for maximum ventilation would make the restrooms much more comfortable in the summer. White roofs on the restrooms would reduce the albedo. The EIR should include discussion of these measures to reduce energy consumption and GHG emissions from use of the restrooms.

P-20-11

VI.
The Discussion of Pile Driving Noise Impacts Should Be Expanded

The DEIR indicates that in the marina rebuild 808 piles will be removed and will be replaced by 620 new piles. DEIR p. 3-7. The EIR does not provide any discussion of why all of the piles must be replaced. The EIR should be revised to explain whether any existing piles can be reused, or if not, why not.

The DEIR states that pile driving will cause significant noise impacts to residences near the marina. DEIR p. 4-9-10. Some residences are as close as 100' from the construction area. DEIR p. 4-7. However, the noise impact section of the DEIR fails to provide a map of the residences affected, a description of the duration of the noise impacts, or a diagram showing the contours of the noise impacts. Such information is normally provided in EIRs when significant noise impacts are found.

P-20-12

The EIR should be revised to provide a diagram showing the areas within significant noise impact contours from pile driving and the duration (in number of days) that the noise will be experienced from the pile driving activity. The mitigation listed in the DEIR -- restricting operations before 7 am and after 7 pm -- may not be sufficient where residences are located very close to the pile driving. More restrictive noise mitigation should be discussed.

VII.
The EIR Should Be Revised to Include a Better Alternative Project that Mitigates the Loss of Small Boat Slips

The EIR should be revised to include discussion of two project design alternatives to mitigate the loss of the 591 small boat slips.

P-20-13

The first alternative is obvious and now should be included in the EIR:

- a rebuild of the marina with the *current slip mix*, while meeting ADA and other relevant new requirements.

The EIR also should be revised to include a second alternative:

- a rebuild of the marina with a mix of slightly larger slips, complying with all ADA and other requirements, with the loss of small slips mitigated by *creation of an equal number of substitute dry boat storage spaces for small 20', 25' and 30' boats*.

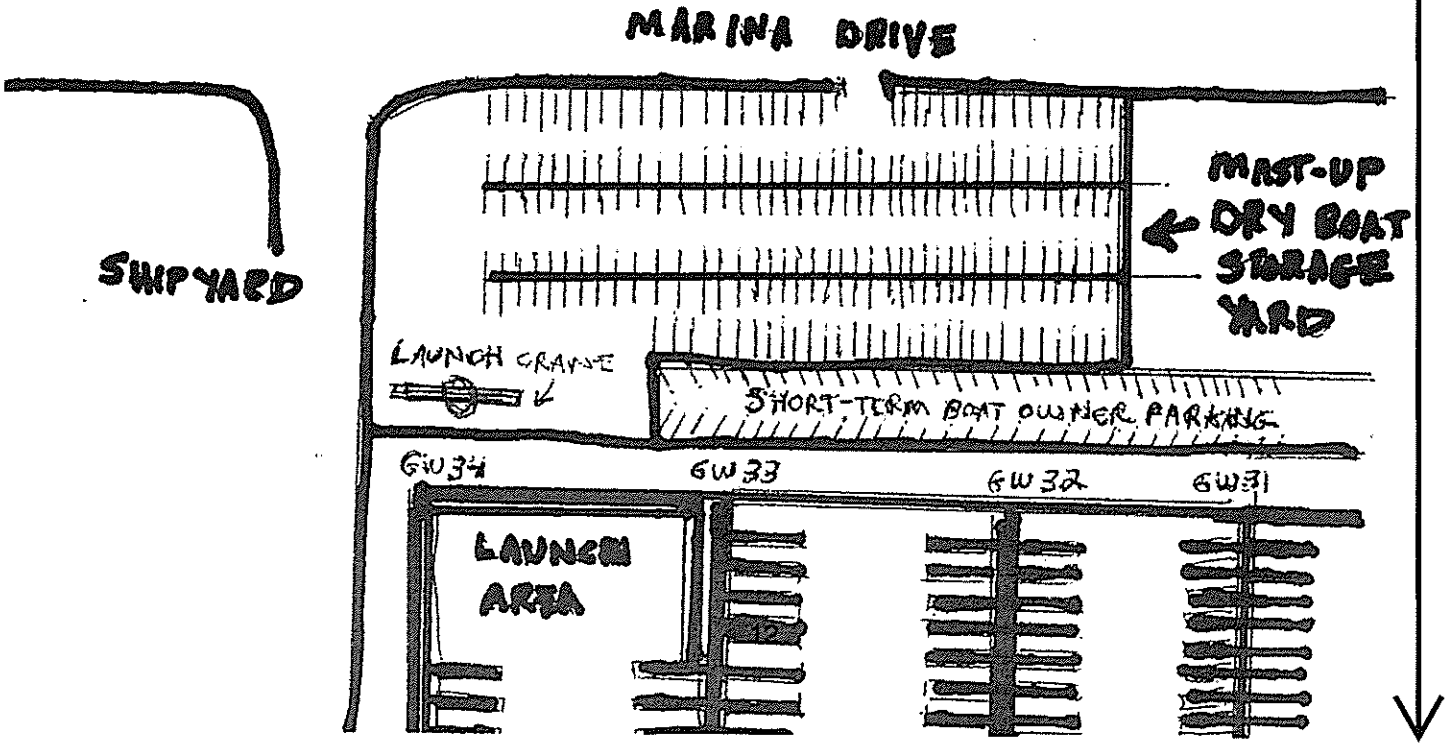
Dry storage could be created to replace any small slips eliminated in the rebuild. The creation of substitute dry storage would respond to the mandate of Coastal Act Section 30234 which provides, in relevant part that, that "[e]xisting . . . *recreational boating harbor space shall not be reduced unless . . . adequate substitute space has been provided*." (Italics added.) Provision of this dry storage could help mitigate the premature demolition of the 189 20' slips and elimination of 25' and 30' slips in the rebuild.

The recent Coastal Commission review of the Dana Point Marina rebuild indicated there is a strong demand for dry storage in Southern California. The March 11, 2009 *"Marina del Rey Slip Sizing Study"* prepared by Noble Consultants similarly found that "[*t*]*he use of dry boat storage should be maximized* throughout Marina del Rey" because more boats of 30' and under were being placed on trailers and dry storage could be used to still meet demand for small boats. (See: http://beaches.co.la.ca.us/BandH/DeptInfo/MdRSlipPricingreport032309.pdf, pp. 1-3, italics added.) The Long Beach municipal marinas are somewhat unique among Southern California marinas in their failure to provide any substantial areas for dry storage. This should be remedied in the marina rebuild if small slips are to be eliminated.

As noted in the DEIR, the marina has large areas of surplus parking. Part of this excess parking area could be utilized to provide new dry storage for sailboats. The parking area adjacent to the Naples Shipyard would be a prime location for such a dry storage area. The Shipyard could be contracted to operate the launching crane (or cranes). This new dry storage area, located south of the Second Street Bridge, would allow sailboats to have mast-up storage. A conceptual design for this dry storage area is shown in the rough diagram below:

P-20-13

CONCEPTUAL PLAN FOR MAST-UP DRY STORAGE AREA



A second dry storage area for small power boats (that are not constrained by the height of the Second Street Bridge) could be located by expanding the existing storage yard in Marine Stadium. In the unlikely situation that the demand for replacement dry storage proved to be lower than the number of small slips that are being eliminated, the dry storage area could be easily down-sized. (This is not true of the ugly stacked dry storage building concept discussed and rejected in the DEIR.)

P-20-13

The provision of dry storage would have air quality benefits because many trailer-towing trips would be eliminated, reducing air emissions by towing vehicles. Adding new dry storage areas would mitigate the loss of slips for small boaters, increase City project revenues and promote Coastal Act policies.

The EIR should be revised to include discussion of this alternative.

Thank you for your consideration of these comments.

Very truly yours,

Dated: November 21, 2009

William L. Waterhouse

LONG BEACH MARINA SLI

Slip Size	2009 Fee
20	164.45
25	256.95
30	370.00
35	471.60
40	584.65
45	688.55
50	787.90
55	929.50
60	1,014.00
70	1,262.90
80	1,534.70
90	1,829.30
100	2,146.70
110	2,487.00
120	2,850.10

ATTACHMENT A

Slip Status
October 31, 2009

SLIP SIZE	20-Feet	25-Feet	30-Feet	35-Feet	40-Feet	45-Feet	50-Feet	55-Feet	60-Feet	70-Feet	80-Feet	TOTAL
SHORELINE MARINA:												
Current Slips	0	9	503	436	387	144	77	1	35	0	0	1,592
Filled Currently	0	7	488	415	378	142	74	1	31	0	0	1,536
Held for Guest/Impounds	0	0	14	16	9	0	2	0	1	0	0	42
Available	**0**	**2**	**1**	**5**	**0**	**2**	**1**	**0**	**3**	**0**	**0**	**14**
RAINBOW MARINA:												
Current Slips	0	0	45	13	19	10	0	0	0	0	2	89
Filled Currently	0	0	41	13	17	10	0	0	0	0	2	83
Held For Guest	0	0	4	0	2	0	0	0	0	0	0	6
Available	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
ALAMITOS BAY MARINA:												
Current Slips	445	369	429	238	278	94	90	1	21	15	16	1,996
Filled Currently	180	186	364	222	238	87	85	1	15	12	13	1,403
Held For Rebuild	265	183	65	16	40	7	5	0	5	3	3	592
Available	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
TOTAL ALL MARINAS												
Current Slips****	445	378	977	687	684	248	167	2	56	15	18	3,677
Filled Currently	180	193	893	650	633	239	159	2	46	12	15	3,022
Held for Rebuild	265	183	65	16	40	7	5	0	5	3	3	592
Held for Guest/Impound	0	0	18	16	11	0	2	0	1	0	0	48
Available	**0**	**2**	**1**	**5**	**0**	**2**	**1**	**0**	**4**	**0**	**0**	**15**
Waiting List*	**27**	**36**	**27**	**32**	**23**	**37**	**48**	**0**	**56**	**16**	**7**	**309**
Waiting List Date	**Aug-03**	**Sep-00**	**Jun-09**	**Jun-04**	**Jul-08**	**Dec-07**	**May-06**		**Jun-03**	**Aug-02**	**Nov-02**	
ABM Proposed New**	**165**	**242**	**245**	**312**	**368**	**112**	**133**	**4**	**37**	**12**	**5**	**1,635**
Temporary Slips Assigned ***	**47**	**70**	**23**	**7**	**13**	**3**	**4**	**0**	**2**	**3**	**1**	**173**

*There are an additional 11 customers on the waiting list for 90' vessels and larger, waiting list date Dec-87

** Also, 4ea 90', 4ea 100', 2ea 110' and 1ea 120' slips, for a total of 1646 slips. These numbers are from the 30% plans.

*** There is one (1) additional Temporary Slip assignment of a 100' Vessel

**** There is one (1) additional 100' slip in the current ABM configuration, which is filled.

ATTACHMENT B

ATTACHMENT C

TO PLACE AN AD CALL 800-887-1615

CLASSIFIED

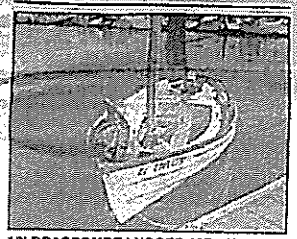
Dinghies & Inflatables

14' AB, 2005: Center console, 50hp Evinrude. In excellent condition. $7,500. Call: (626)590-6123.

AVON OCEAN LIFERAFT
Packed September 2008. 8 person. Unused. In San Diego at South Western Yacht Club. $2,500. (602)510-0990

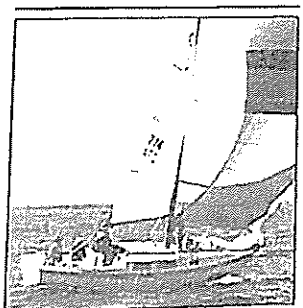
Sailboats

DONATE
VESSELS • VEHICLES • LAND
501C3 YOUTH CHARITY
1-888-650-1212



18' DRASCOMBE LUGGER 1974: Yawl, varnished spars, white hull, 6hp Suzuki, trailer. $6,950. (619)275-7593

MARINA OWNED BOATS
20' CAL, 23' CORONADO, 24' CAL, 24' ISLANDER, 25' COLUMBIA, 26' BALBOA.
SOLID BOATS AT LOW PRICES.
Slips available.
(310)830-5621, L.A. Harbor
www.leewardbaymarina.com



25' CAL-25, 1967: Great family boat. Good condition. Lots of sails. Large cockpit. Cruiser/racer. 6HP. Reduced to $2,500/obo. Dick: (619)222-0341

25' YAMAHA, 1978: Yanmar diesel, tabernacle mast, trailer, 2 sets of sails including new mylar racing set, head w/holding tank, new upholstery, Baja ready! $12,000. (619)804-0675

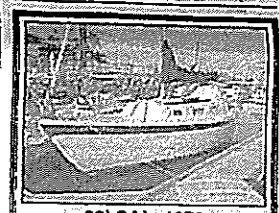
26' MACGREGOR POWERSAILER, 2001
50hp Nissan, bimini, cockpit seats, roller furling. All lines lead to cockpit. Almost new. $15,000/obo.
(858)695-6470

Sailboats

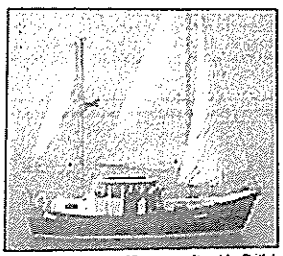
26' CONTESSA, 1976
"Horizon" is a Full Keel Offshore Cruiser bought and outfitted for single handed transpac (SHTP). Most about completely redone. I can't begin to list it all but go here to see everything with 20 pictures: *http://www.boats.com* and search for Contessa. Then scroll down to my Contessa 26 which says for sale by private owner - Richard Hillman. $29,500. (714)914-1451

27' CORONADO, 1973
Excellent condition. 10.8hp Tohatsu outboard, $2,377.
27' BAYLINER BUCCANEER, 1975
8hp 2000 Nissan outboard, $2,222. (310)834-9595

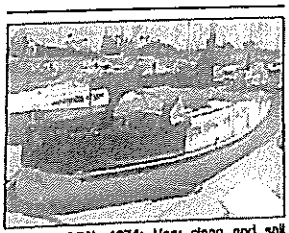
CAL 2-27, 1977
18hp Evinrude. New bottom 6/08. $4,995 or best offer. Call (760)744-2839.



29' CAL, 1973
Clean, ready to sail, Atomic-4 gas, furling jib, GPS, Avon dinghy with Evinrude 4hp motor. $7,900.
(760)702-3846



30' FISHER, 1976: The rare all cabin British motorsailer yacht. New Yanmar, new North Sails, absolutely Bristol. $79,500. WILL-SHELTON.COM. (619)616-9209

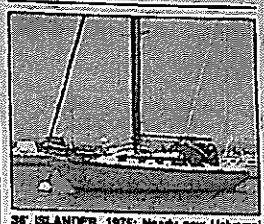


32' ERICSON, 1974: Very clean and sail ready. Reliable inboard Atomic 4. See at Yachtworld.com. $13,500. (619)995-8464

The Log Classifieds
WORK! CALL 1-800-887-1615

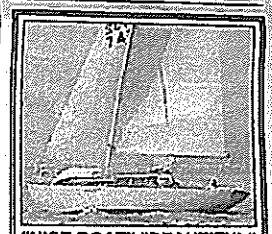
Sailboats

CAL-34: Atomic-4, new engine instruments, new Hawkins roller-furling, new deck paint. In good condition. C.Y. Marina, Wilmington. Reduced: $12,500. (626)433-6558

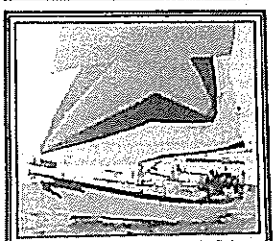


36' ISLANDER, 1975: Nearly new Universal diesel. Roller furling both sails. Many extras. At Newport Beach. $32,500. (760)704-1136, frostyfoster@yahoo.com

36' CATALINA, 1988: Beautiful boat. Interior still looks new. Recent diesel rebuild, roller reefing jib. Shelter Island slip may be transferable if desired. Make reasonable offer above $50,000. (858)583-9725



"NICE BOAT" "BEAUTIFUL" "GORGEOUS" "WOW!"
heard too often to count. Experience admiration, character, distinction, heritage, adventure, and community. Own, enjoy, and conserve a wooden sailboat. Details at *www.sailk38.com* or call (916)847-9084 or (510)260-1743



38' DOWN EAST, 1979
Classic offshore cruiser in sparkling condition. New electronics, Lofrans windlass & 300' chain rode. $59,900.
(949)493-9589

40' LANCER AFT-COCKPIT, 1982: New Volvo 55hp, saildrive, headliner, refrigerator & freezer, roller-furler, fuel & water tanks, batteries, bottom. $39,900. (714)390-1188

Sailboats

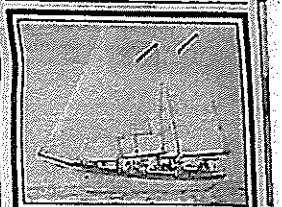
40' HUNTER LEGEND, 1986: New Harken furler, Yanmar diesel, dodger, bimini, electronics, dinghy. ROOMY, nice and fast. $78,000. Broker/Owner. (619)665-1748

HUNTER 40.5 LEGEND, 1993
Baja ready. New furling, boom and sail in 2007. Radar, chart plotter, autopilot, watermaker. $114,000. (661)747-0184

41' MORGAN OUTISLAND, 1972: Center cockpit, 2 heads, new Yanmar, 5 sails, refrigerator, watermaker, radar, autopilot, anchor winch. $59,500. (661)548-9603

44' BENETEAU, 1998: GPS, radar, chartplotter, full instruments, generator, watermaker, refrigerator, electric winch, electric heads, autopilot. Too much to list. $119,000. (310)861-3748

45' BENETEAU 45FS, 1991: The first $100,000 wins! GPS/Plotter, Radar, Cuisinière (2008), 3 cabins/3 heads, feathering prop, galvanic isolator, Xantrex charger/inverter, stereo, spin w/pole (559)696-9653



78' TEAK SCHOONER, 1971
Spacious salon, 4 cozy cabins, sleeps 11. New diesel engine and generator. Furuno Radar and GPS/Plotter. Icom VHF, SSB, Watermaker, Current survey. Reduced to: $299,000.
(805)291-2352

Powerboats

ATTACHMENT D (1 of 2)

TO PLACE AN AD CALL 800-887-1615 **CLASSIFIED** TO PLACE AN AD CALL 800-887-1615

Trailerable Boats

18' BOSTON WHALER, 2003: Ventura with 115hp EFI Mercury engine. Great condition, well maintained, lake useage. $15,000. (714)840-5920

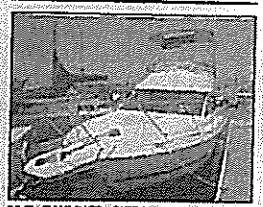
Powerboats

DONATE
VESSELS • VEHICLES • LAND
BBB 501C3 YOUTH CHARITY
1-888-650-1212

18' BOSTON WHALER OUTRAGE, 1982
1998 Evinrude 150hp, only 78hrs. Tandem-axle heavy-duty trailer. Dry storage. Excellent condition. $13,995. (310)544-1848

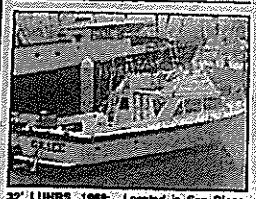
18' MONTEREY BOW RIDER, 1999
Original (Senior Citizen) owner. Great shape. Professionally maintained. Full details: www.usedboats.com, quick-view M#136898, $8,995. (949)631-7301

21' DUFFY, 2003
In excellent condition with low hours. Professionally maintained. Slip is not included. $15,000/obo. (949)637-2301

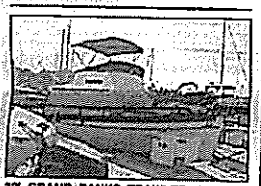


28.5' BAYLINER CIERA, 2002: Flybridge, beautiful condition. Bait tank, radar, GPS, new bottom paint. Located Redondo Beach, CA. Owner is motivated. Reduced: $39,999. Call Mark: (310)801-0833

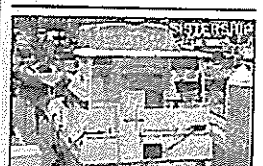
MONTEREY 295 MID-CABIN, 1996: Twin Volvo V8's, genset, new camper canvas, radar/GPS, more. Loaded! Looks, shows new. $29,950/obo, must sell. (310)897-8584



32' LUHRS, 1989: Located in San Diego. Priced at $15,000. Call Michael @ (619)222-4255



32' GRAND BANKS TRAWLER, 1972: Almost finished project, interior needing completion. New American Marine diesel engine, tanks, 4-blade prop & shaft, wiring w/8 batteries, canvas, Vacuflush, stove, curtains. Too much to list. $24,950. (310)901-7535



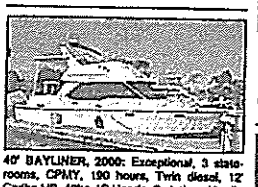
34' SILVERTON AFT-CABIN, 1993: Hardtop. New full enclosure, genset, 454's, AC/heat, full electronics, 2 staterooms, 2 heads. Immaculate! $49,950. (310)798-2944

Powerboats

38' STRIKER: Like new. 900mi range. New interior. $89,500. (760)603-1865

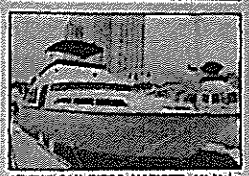
38' MEDITERRANEAN EXPRESS, 2002
Beautiful, economical, and easy to maintain vessel. Twin 430hp Volvo Penta diesel engines. Easy operation - free professional lessons offered. This boat is like new ... very lightly used. Loaded with options. Bait tank, refrigerator, range, generator with sound shield, flush deck insulated fish boxes & arch. Top speed approx. 30 Kts, cruise 20+ Kts.
Sold for $381,000
Asking price $179,000
Call Tom (619) 571-1581

40' CONCORDE SF, 1971: Cruise in style with twin low-time 3208 Turbo Cats. 2 staterooms, large salon, full galley, huge cockpit. $42,500. Email: sunsetguy2003@yahoo.com, (510)814-1333 (corrected phone number)

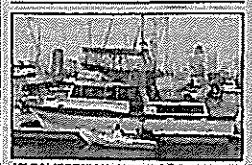


40' BAYLINER, 2000: Exceptional, 3 staterooms, CPMY, 190 hours, Twin diesel, 12' Caribe HB, 40hp-4S Honda, 2 station, 48 mile radar, 10" CRT. Recent: 8 batteries, 600GPD water, 2500W inverter, 8kW generator, 2 Vacu-heads, many extras. $150,000. 'SOLD'

Powerboats



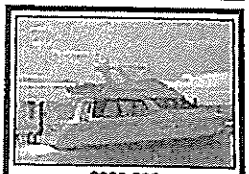
AT THE SAN DIEGO MARRIOTT: 41' Mainship, 1984. Condo on the water. Great salon, new twin Cruisaders. $85,000, interests only. Call Larry Ingram: (619)659-0483



45' CALIFORNIAN, 1979: This is a great boat with the best location. Twin 3208 Cats, 8kw gen, 20 gallons of fuel for a weekend on Catalina. Please email me for more photos: wmbrimch@msn.com. $79,000. (310)418-0379

447' CRUISERS, 2006: Volvo diesels, color electronics, hydraulic swim platform, underwater lights, all upgrades and options. Custom interior. $425,000. (949)842-7886

50' BERTRAM, 1989: Tournament ready Sportfisher. New electronics '08. New gensets '07. Both mains rebuilt. Over $100,000 spent w/receipts. $299,000 Slove: (619)684-0103



$299,000
53' CARVER VOYAGER, 2000
Excellent condition. Pilothouse. Twin 480 Volvo diesels. 3 staterooms, sleeps 8. Call owner: (310)922-1175

50' WOODEN VESSEL: Located in Long Beach. Priced at $7,000. Slip available to qualified applicant. Call Linda: (619)222-4255

Powerboats

61' HATTERAS COCKPIT MOTORYACHT
12.5kts cruising, max 17kts. GM 12V71TI diesels. Two 20KW Northern Lights gensets. 2004 14' Pendora with 60hp Yamaha. 1,579 gals fuel, 350 gals water, 310 gals waste. Extensive refit summer of 2008, incredible list of equipment. Shows like new! Owner must sell. Courtesy to brokers.
Reduced to: $469,000.
All offers considered.
Call owner Bob: (949)632-9747 or bob@ahack.com

62' STRIKER
SPORTFISHER 1988
REDUCED TO...$475,000

48' UNIFLITE
SPORTFISHER
1984...$199,000

40' TOLLYCRAFT
SPORTFISHER 1989
REDUCED TO...$175,000

CFB MARINE GROUP
OFFICE: 619-291-0300
MOBILE: 858-735-7078
www.yachtrite.com

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Boats ~ Vehicles ~ Land
www.thecatalinaexperience.com
501(c)3 Youth Camp • 714-943-1600

Partnerships

43' HUNTER, 1996: LLC. Furling main & jib. 10' dinghy with 6hp. Excellent condition. Kona Kai Marina. Full canvas. Professionally maintained. $4,000 down, $350/mo. Chuck: (858)752-1686.

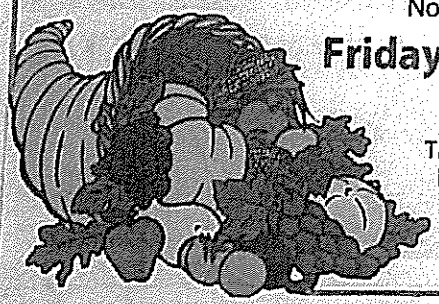
SHARE USE of a like new 40' trawler. 1 week per month, $500 per month plus fuel. Long Beach. (310)903-5419.

UNIQUE BOATING OPPORTUNITY
I have a beautiful 48' Navigator docked at the magnificent Marriott Marina in San Diego. Just share expenses - already financed and insured. You get EVERY weekend & every day June thru September. Your share is $2,500/mo.
Call Nick @ (949)488-2701

WANTED: Balboa Island resident to share in the cost of a Duffy or interested in purchase of new Duffy. Call Laurie: (805)570-5924

THE LOG Classified work!!
To place an ad call the experts at
1-800-887-1615

EARLY HOLIDAY DEADLINE!



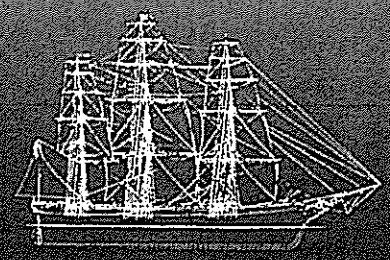
The Log Classified Ad Deadline for the November 27th issue is

Friday, November 20th at 5PM.

The Log Newspaper offices will be closed Thursday & Friday, November 26th & 27th in celebration of the Thanksgiving Holiday.

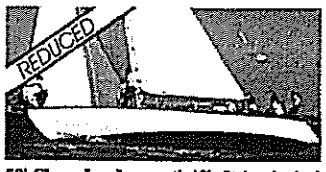
To place an ad call the experts at
1-800-887-1615

ATTACHMENT D (2 of 2)

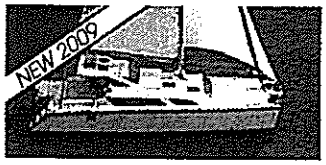


Flying Cloud Yachts

6400 Marina Drive, Long Beach, CA 90803 • FAX 562-594-0710
E-mail: flyingcloud@verizon.net
(562) 594-9716



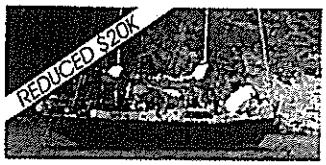
50' Cheoy Lee Lapworth '61. Strip planked wood construction, vastly upgraded, superb condition, turn key. **$200,000.**



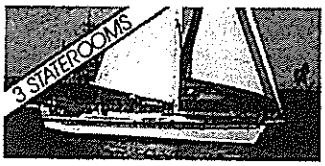
The Gemini 105Mc. Fully equipped. Offers speed, three private cabins, 27hp diesel ++++. ~~$162,500~~. **$149,997.**

48' Mariner Center Cockpit Ketch '81. 3 stateroom layout. Transferable slip to qualified buyer. ~~$176,000~~. **$145,000.**

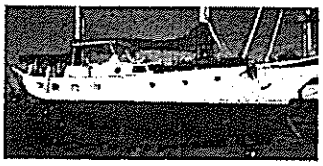
44' Gulfstar Center Cockpit Sloop '81. Perkins 4-154. New dark blue canvas, new batteries. Large aft cabin w/transom windows. **Great price @ ~~$104,500~~. $94,900.**



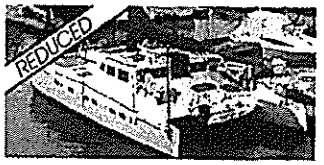
2-57' Bowman C/C Cutter Ketch '78. Designed by Holman & Pye, built in England. Fast & comfortable passagemaker. 9 sails. Under 100 hrs. SMOH on 110hp Perkins. Newly painted decks. ~~$219,000~~. **$199,000.**



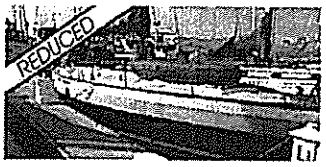
54' Irwin C/C Cutter '88. Yanmar diesel, electric winches for boom furl & headsail, watermaker, A/C. Washer/dryer, solar panels, new sails. Upgrades galore! Priced for quick sale @ **$220,000.**



49' Steel Garden Ketch '69. Very good condition & proven world cruising. Too much to list. Call for appt. **$179,000.**

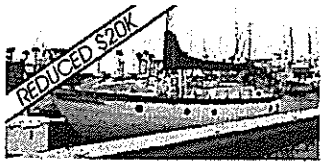


47' Choy Catamaran '02. Ready to cruise the South Pacific today. Everything as new, fully equipped. **$395,000.**



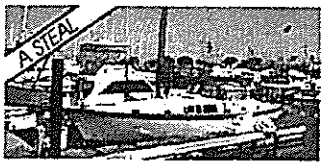
46' Ericson 46C Sloop '73. Flush deck, Bruce King designed - rare C model - world class cruiser. 2 staterooms, large salon, Perkins diesel. ~~$89,900~~. **$79,900.**

43' Hans Christian Ketch '81. Extensive upgrades. **$165,000.** Also 38' and 33' Hans Christians. All well equipped. Call for details.



43' Spindrift Pilothouse Cutter '81. Large, stout, Ron Amy designed sailing cruiser. Possible trade for small trawler. ~~$99,000~~. **$79,900.**

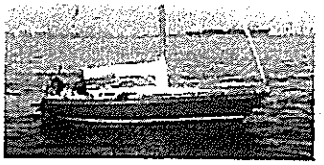
42' Catalina's. 2 strms., full electronics, dodger, bimini, dinghy davits, Novurania dinghy w/25hp OB. **$125,000.** Also a '89 w/genset & watermaker @ **$99,000.**



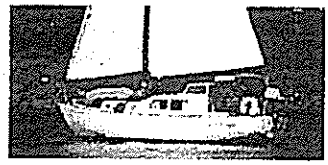
42' Irwin Center Cockpit Sloop '76. 2 staterooms + 2 heads. Tons of upgrades, call for details, will sell quickly @ **$74,500.**

40' Morgan/North American Sloop '79. Perkins diesel, almost everything is new, tons of upgrades! ~~$49,000~~. **$45,000 FIRM.**

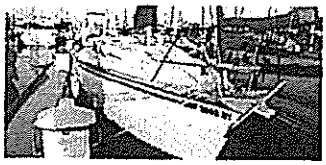
40' Catalina 400 MKII '02. Two private staterooms, twin wheels, 56hp Yanmar diesel, full electronics, A/C, 8kw genset. Too many upgrades to list. **$179,000.**



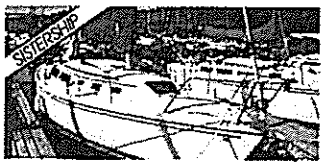
CF 37' Choate Sloop '75. Full interior. Wheel steering, fast & strong. Hull & deck LP '02- dark blue. 2 boat owner must sell. Call for details. **$35,000.**



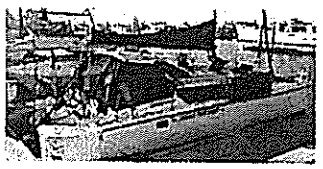
36' Cal Cruising '69. Built by Jensen. These well built Cal's offer great cruisability for little money. **$22,900.**



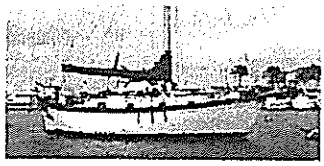
35' Hunter Sloop '87. Nice family boat. Low hours on Yanmar diesel, walk-thru transom, new standing rig ('02). ~~$39,500~~. **$34,500.**



34' Catalina '89. Full batten main, refurling. New headstay '08. Cabin heater, radar, dodger. Very nice condition. **$46,900.**

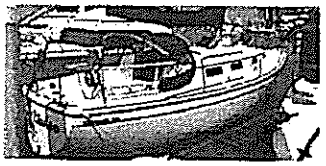


34' Gemini 105MC '05. 3 available: '05, '08, '00. From **$119,000.** Call for details.



31' Pacific Seacraft Cutter '78. Yanmar diesel. If you are willing to put in some sweat equity you will have a nice pocket cruiser. Newport mooring may be purchased separately. **$37,000.**

31' Mariner Ketch '71. Comfortable, solid and well cared for classic cruiser. Perfect for single handing or the whole family. **$29,900.**



Pearson 303 '85. Yanmar diesel, dodger, tabernackled mast. Clean and ready to cruise. **$27,500.**

30' Catalina Mark III '94. Shows like new, Universal diesel, dodger, autopilot, elec. anchor windlass. Should sell quick @ **$44,000.**

Please check our website for many more listings: www.flyingcloudyachts.com

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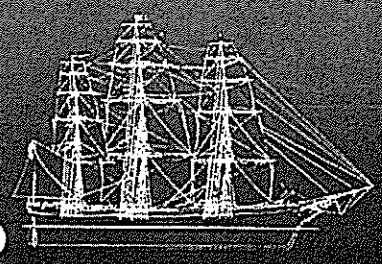
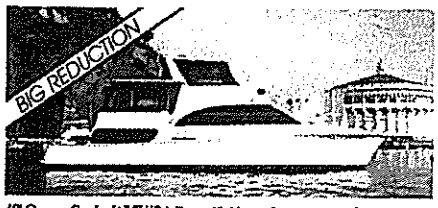
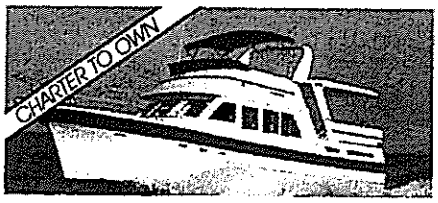
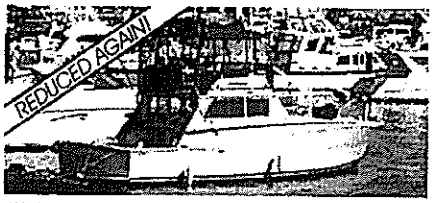




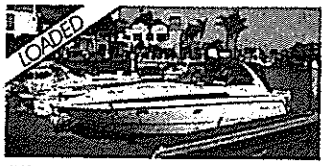
48' Ocean Cockpit MY '94. Beautiful boat. 3 staterooms, low hours on twin Detroit 6V71TI's. Walker Air Steps, full 'tronics, 10kw genset, AC & heat. New canvas & isenglass enclosures on FB and sundeck. Many upgrades. Priced for a quick sale @ ~~$279,000~~. $198,000.



48' Jefferson Sundeck MY '87. Twin Cats, Naiad stabilizers, 2 strms. + ofc. Air/heat, new electronics. Big discount for cash buyer. Call for details.

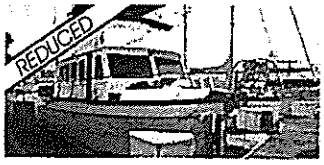


40' Viking SF '75. Repowered with 300hp Cummins in '90, exceptionally clean, 11' hardbottom Caribe RIB. ~~$99,900~~. $89,500.



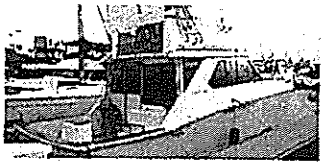
42' Bayliner 4085 Avanti Sunbridge Express '98. Under 500 original hours. Full electronics, generator, air, dinghy davit, Caribe. Near bristol condition. **Owner wants offers!**

42' Trojan Aft Cabin MY w/FB '72. Beautiful mahogany planked hull, completely refastened in '02. Enclosed bridge deck, dual helms, lots of upgrades! Great family boat, owner wants offers! Asking $78,000.

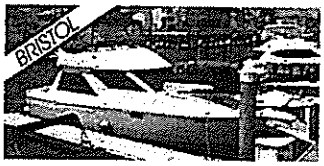


42' Californian LRC '80. Well respected LRC w/twin 3208 Cats, loads of upgrades. Exceptional condition in & out! $120,000.

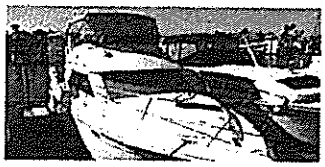
40' Egg Harbor Sedan '79. 6-71's w/340 original hours. New genset w/10 hrs., Beautiful condition, a must see. 2 boat owner. $115,000.



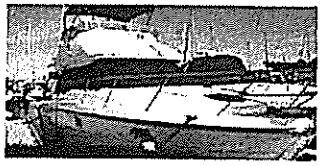
38' Chris Craft 392 Convertible '88. Under 700 original hours on 3208TA Cats. New T-top with full enclosure. 2 bait systems. beautiful condition! ~~$129,000~~. $114,000.



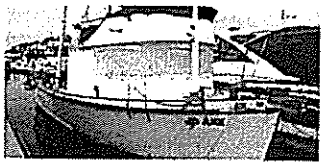
37' Bayliner 3788 MY '97. Only 450 hours on twin 714hp Mercruisers. Yacht came from fresh water 4 years ago. Beautiful condition in & out. Air/heat. Many upgrades. **A steal @ $74,000.**



37' Cruisers Inc. '03. Twin Mercruisers w/only 80 hrs. Has all the bells and whistles and shows as new. Owner's cabin aft w/full size bathtub. ~~$199,900~~. $179,900.

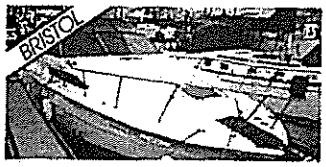


34' Bayliner 3488 Command Bridge '02. Only 300 hours on 260hp Mercruisers. AC/heat, Avon RIB dinghy with 5hp 4-stroke OB. ~~$129,000~~. $99,000.

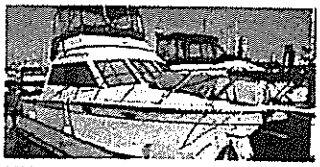


34' Hill Marine Trawler '78. New 2004 Ford Lehman 140hp, new 2004 6kw Northern Lights, refastened in 2002. $29,000.

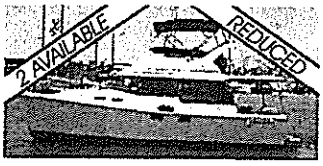
34' Mainship Pilot Express '03. Only 50 hrs. on Yanmar 370hp diesel. Furuno radar, color GPS plotter, autopilot. Shows as new. Great deal, buy it now. $165,000. Sistership.



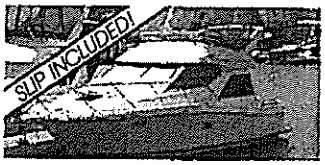
34' Sea Ray Express '89. Only 688 hours on twin Mercruisers. You won't find a nicer one. Bristol condition in & out. Full cockpit enclosure. Priced for quick sale. $48,500.



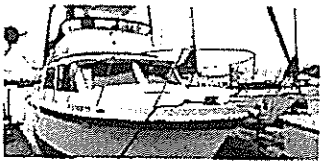
33' Egg Harbor '91. Twin 454's, low hours, genset, A/C, ready to fish! $62,500.



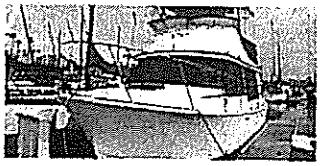
32' Bayliner 3288 MY. '94 with T-Hinos, full 'tronics, FB enclosure, new propane stove. $67,000. Also a '93 with hardtop and new interior. $64,000.



32' Bayliner 3258 '00. 2 staterooms, dual helms, low hours. Clean & ready for Catalina! ~~$72,900~~. $52,900.

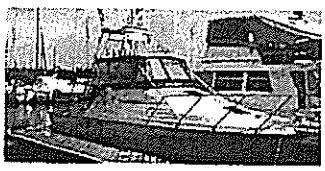


32' Unifilte Sport Fish '75. Tw. 350hp Crusaders FWC. Ready for fishing. Radar, fishfinder, cockpit 9'4" x 7'6", 2 bait bags, 10 rod holders, Precision outriggers. A very good buy @ $24,000.

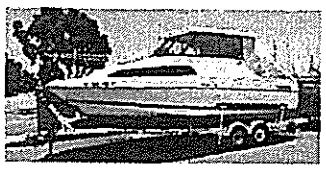


30' Tollycraft FB Sedan '78. Twin Chevy's. Complete refurb. Beautiful interior - a must see! $34,500.

38' Glassmar Sportfish '78. Single Cummins diesel with only 530 hours since major overhaul. Dependable & economical. New bottom paint. $22,000.



29' Luhrs SF Tournament '89. Offshore fishing at an affordable price! 60 sq. ft. cockpit, tuna tower, twin Crusaders. ~~$36,000~~. $29,995.



23' Bayliner 2252 '99. On trailer at our display. Call for details. $17,900.

20' Sea-Doo Speedster '06. Twin 310hp Rotex Jet engines. Seats 7 for a fast & fun ride up to 70 mph. Hull is red. Price includes trailer. $29,000.

Please check our website for many more listings: www.flyingcloudyachts.com

WILLIAM WATERHOUSE

LETTER CODE: P-20

RESPONSE P-20-1

The comment erroneously states that the proposed project would result in the loss of 591 small boat slips and that the Notice of Preparation (NOP) did not disclose that any slips would be eliminated. Further, the comment requests that the EIR be revised and recirculated to provide notice to recreational boaters that a large number of small slips are being eliminated.

The NOP, as made publically available in three local libraries and on the City's website (http://www.lbds.info/civica/filebank/blobdload.asp?BlobID=2956) identified that the proposed project would result in a loss of slips. At the time the NOP was published it was estimated that 308 slips would be eliminated with project implementation. Project refinements during preparation of the DEIR resulted in an estimated loss of 321 slips.

Section 3.0, Project Description, as contained in the DEIR includes a complete description of the number of slips that will be eliminated or added as a result of the proposed project (refer to Table 3.B, page 3–8). In addition to listing the number of existing and proposed slips for each Basin, the slip sizes in five-foot increments are also provided. The DEIR statement that 321 slips will be eliminated is a summary of the entire project, similar to the descriptions regarding the change in dock square footage or number of piles. It was not the intent of the DEIR, as stated in the comment, to give the impression that little change is proposed. In fact, the table provided in the comment is a summary of the same information provided in Table 3.B in the DEIR.

The comment's presumption that the attrition program prohibits new small boat owners from occupying slips is not true. The attrition program was put in place so that boaters could be accepted into the Marina on a month to month basis. Under the program, and until the rebuild is completed, slips that are vacated are not replaced by a long-term tenant lease. A monthly slip rental allows available slips to be filled.

RESPONSE P-20-2

The comment states the proposed project would result in a significant adverse impact on recreational boating. Further, the comment states that the proposed slip mix will not serve the demand for smaller slips. A slip waitlist, provided by Marina staff, is attached to the comment for reference.

The slip waitlist report provided to Mr. Waterhouse was a monthly report that represents a snapshot in time. The available small slips in the marina are being rented to the individuals on the waiting list and the numbers quoted by Mr. Waterhouse change by the day. Marina

staff has tracked a history of the 20-foot slip usage since March 2005, and have experienced vacancies in the 20-foot slip category from 100 to over 225 during that period. Further, it should be noted that the City is continuing to fill slips from the waiting list in all sizes and has a sufficient number of slips to accommodate the small vessels currently on the list.

Identifying a marina as a small slip marina is a function of the percentage of small slips in a marina. In the proposed design, roughly 25% of the slips will be 25-foot or less, roughly 40% of the slips will be 30-feet or less and nearly 60% of the slips will be 30-feet or less. By contrast, if a "large slip" is defined as 50-foot or greater, less than 13% of the slips will in that category in the proposed design. These figures do not include the small dry vessel storage spaces currently located in the City and in the proposed design.

During development of the Marina conceptual design, the City considered the vacancy rates and the waitlist for larger slips. It is in the interest of the Marina and the City to provide a slip mix that will not result in vacancies and that will meet the future demand of boaters.

The DEIR concluded that, based on the historic vacancy rates and the ability to provide all current slip tenants with a slip after project implementation, the proposed project would not result in a significant impact to recreation facilities. The primary purpose of the project is to renovate the aging facilities and to bring them up to current standards. In the judgment of the City staff, the DEIR provides sufficient analysis to conclude that impacts to recreational resources are less than significant. The commenter's opinions regarding the analysis in the DEIR will be made available to decision makers for their consideration.

RESPONSE P-20-3

The comment asserts that the City has actively forced small boat owners out of the Marina. The comment further questions the removal of a number of 20-foot slips in Basin 2.

The attrition program does not force any boat owners out of the Marina. The reference to slips being held open means that, when a boat slip is vacated, that slip is filled by a boater on the waitlist under a short-term agreement.

Marina staff has indicated that some fingers in Basin 2 were removed due to safety reasons and not as an attempt to eliminate small slips. The fingers were failing at a rapid rate. Those 20-foot slips are still counted in the Marina's current slip mix, and the Marina continues to have many more 20-foot slips than are either filled or on a waiting list at any point in time. The removal of these slips for safety reasons was not an attempt to implement the proposed project.

The City is aware that all approval processes, including CEQA certification, must be completed prior to implementing the project. Unlike the CEQA case law referenced in the

comment, *Save Tara v. City of West Hollywood* (2008) 45 Cal 4th 116, no tenants of the Marina have been evicted prior to project approvals in order to prepare for project implementation.

The removal of these dock fingers for safety reasons is a Marina maintenance issue. The proposed project phasing indicates that Basin 4 and the mitigation site are the first phase to be implemented. Improvements to Basin 2 are not scheduled to begin until Phase 4 of the project, approximately 18 months after the first phase gets underway. Therefore, there is no cause-and-effect action which furthers the overall project in this case.

RESPONSE P-20-4

The comment states that the project design includes only power boat size slips, and that the EIR should be revised to analyze a Marina with half of the slips sized for sailboats. Although the comment references a new analysis in the EIR, the comment is related to the project design and does not contain any substantive questions about the analysis in the DEIR. Additionally, the proposed project does not include only power boat sized slips; the project includes slips designed to sailboat widths. Because the comment does not address environmental issues, no further response is necessary.

RESPONSE P-20-5

The comment expresses concern that the DEIR does not address the expansion of the Marina footprint into Marine Stadium, a historic rowing venue. The comment further expresses concern that the EIR addressed the width of the Marina Channel based on DBAW standards and not the need for a standard 2,000 meter course.

See Response P-2-1 for clarification of the designated boundaries of Marine Stadium. To further clarify, the waters extending from Marine Stadium and beyond the Second Street Bridge still provide 2,000 meters (m) of straight water, which is the standard sprint distance for national and international rowing. The original rowing course as constructed for the 1932 Olympics contained four lanes (see DEIR Figure 4.4.2). With project implementation, four lanes would still be available for use in rowing competitions and practices. Therefore, in the judgment of the City, the DEIR provides sufficient analysis to conclude that the proposed project would not adversely impact Marine Stadium and would not prevent the continued use of the waterway as a rowing course.

RESPONSE P-20-6

The comment erroneously accuses the authors of the DEIR of avoiding discussion of the project impacts on the original 2,000 meter rowing course.

The DEIR discussed at length the historical significance of Marine Stadium and the location of the original rowing course. The DEIR identified Marine Stadium as a designated California Historic Landmark (CHL No. 1014). The basis for this designation is the stadium's history as the official rowing site of the 1932 Olympic Games, and because it is the only water body constructed specifically for rowing events.

However, as noted in the comment, and included in the Historic Resources Report (Appendix D to the DEIR), Marine Stadium underwent a series of changes subsequent to the 1932 Olympic Games. As stated in the comment, in order to accommodate the 1968 Olympic Trials, the location of the start line was shifted from near the Second Street Bridge to the location near the Long Beach Yacht Club. However, the use of a new start line was due to the filling in of the northern portion of Marine Stadium, and was done many decades after the event and use that qualified Marine Stadium as a Historic Resource. When analyzing an historic resource under CEQA, the integrity of the resource must be evaluated.

The City Council's designation of the resource was made after several changes, including construction of the Second Street Bridge and filling in of the northern portion of the water body, had compromised the integrity of the original resource. At the time the City nominated and adopted Marine Stadium as a local historic resource, the southern boundary was identified as just north of the Second Street Bridge. In fact, the comment states that "—the Council plainly meant to include the *entire* rowing course in the designation" There has been no attempt on the part of the consultant to change the resource's boundaries as a project advocate. In further support of these facts as presented in the DEIR, Marine Stadium was eliminated from consideration for the 1984 Olympics due to the construction of the Second Street Bridge.

RESPONSE P-20-7

The comment states that the compromise plan presented at the October 22, 2009 public meeting for the proposed project requires inclusion in the EIR and solicitation for additional comment.

The design presented at the referenced meeting is included herein as Figure 1, Response to Comment Regarding Design of Basins 3 and 4. This plan was suggested by the Marine Department in an effort to address the concerns and comments received regarding the proposed 35' encroachment into the Marina Channel between Basins 3 and 4. The design option eliminates the permanent fingers that protrude into the navigable channel from Basin 4.

The design as presented is a reduction of the project footprint (as requested in Comments P-20-5 and 20-6 contained in this letter) and would lessen project impacts related to air quality, noise, biological resources, and water quality. Further, the compromise plan was developed in direct response to concerns raised regarding encroachment of the proposed project into the

Marina Channel. The plan as presented reduces the extent of the proposed docks in Basin 4 only, and closer to the existing Basin configuration. Therefore, because the compromise design would not create additional impacts or expand the affected areas of the project, it would not require re-circulation of the DEIR.

RESPONSE P-20-8

The comment reiterates the provisions of the California Coastal Act applicable to the Coastal Commission's review of the proposed project. The comment disagrees with the DEIR's analysis regarding the provision of lower cost recreational facilities.

The comment proposes that the elimination of slips for smaller boats is an elimination of lower cost recreation. The comment lists the purchase prices and slip rental fees for sail and power boats ranging from 18 to 50-feet in length. However, the analysis contained in the EIR was based on the intent of Coastal Act Section 30213, and lower cost recreational facilities is interpreted to mean truly affordable recreation, not boat ownership based on the size of the boat.

When analyzing low cost recreation, the Coastal Commission is generally concerned with access to coastal facilities, walking trails, parks, public beaches, picnicking facilities, and low cost rentals. Boat ownership is not generally considered a low cost recreation activity. As can be calculated from the table provided in the comment, the lowest boating cost (for an 18 to 25-foot sailboat) would require over $1,973 a year for slip fees and an investment of approximately $7,500 (not including maintenance or repairs). Based on the costs provided in the comment, over a three year period this would require an investment of $13,420.

The comment's reference to recent Coastal Commission recommendations for the Dana Point Harbor is not directly related to the proposed project. Each Marina is a unique mix of uses and needs and must be considered on an individual basis. The reduction of smaller slips and the overall slip mix will be addressed by the Coastal Commission during their review of the project. In the judgment of the City staff, the DEIR provides sufficient analysis to conclude that impacts to recreational resources are less than significant. The commenter's opinions regarding the analysis in the DEIR will be made available to decision makers for their consideration.

RESPONSE P-20-9

The comment questions the removal of slips in Basin 2. Removal of these slips was determined by the City to be a safety issue. See Response P-20-3, above.

RESPONSE P-20-10

The comment states that the DEIR failed to quantify the greenhouse gas (GHG) emissions generated by the automobiles and boats that use the facilities within the Alamitos Bay Marina.

The number of long-term on-road vehicle trips that would be generated by the proposed project is directly related to the number of boat slips and parking spaces within the marina. The City of Long Beach Zoning Ordinance requires 0.75 parking spaces per boat slip, and does not distinguish the need for parking spaces based on the size of boats being berthed in a noncommercial marine. As stated in the DEIR, the proposed project would reduce the number of slips by 321 from 1,967 to 1,646 and increase the number of parking spaces by 9 from 2,515 to 2,524. Therefore, it is not anticipated that the proposed project would increase the long-term regional vehicle emissions.

The existing marina has 1,967 slips of various sizes. The proposed project will reduce the number of slips to 1,646. The exact size, ratio of 2-stroke gasoline, 4-stroke gasoline, and diesel engines, and the age of the boats that use the existing slips and would use the proposed slips is unknown. Therefore, because there is an overall reduction in the number of slips, it was assumed that the increase in the average vessel size due to the proposed project would be offset by the reduction in the total number of slips within the marina. Further, the actual usage time of any type of vessel is extremely difficult, if not impossible, to estimate; there is no way to accurately estimate the number of hours or times a higher emission boat may be used as compared to a lower emission one. It cannot be automatically assumed that, as asserted in the comment, overall operational emissions will increase due to the presence of additional larger boats.

The commenter suggested that waitlist preference be given to boats with lower emissions in order to reduce GHG emissions. However, as stated above, City staff would have no measurable method to determine how much a higher emission boat may be used as compared to a lower emission one. The amount of emissions is dependent on the amount of use of any particular vessel. It is possible that a higher emission boat used far less often than a lower emission boat could, over the course of time, contribute fewer emissions.

The comment also states that the proposed project would not aid the State in meeting the 80 percent reduction in 1990 GHG emissions required by Assembly Bill 32 (AB-32). The majority of the long-term GHG emissions generated are produced by the automobiles and boats that use the marina. On-road and off-road engine emissions are the responsibility of the ARB. The proposed project has no jurisdiction over these emission sources. Therefore, the proposed project cannot implement any measures that would reduce the long-term mobile source GHG emissions. In the judgment of the City staff, implementation of DEIR Mitigation Measures 4.2-4 and 4.2-5 would ensure that operation of the proposed project would not conflict with implementation of the GHG reduction goals under AB 32 or other State regulations. In the City's opinion, the EIR provides sufficient analysis to conclude that

impacts related to GHG emissions are less than significant. Opinions regarding the analysis in the DEIR will be made available to decision makers for their consideration

RESPONSE P-20-11
The comment requests that the EIR include discussion of measures to reduce energy consumption and GHG emissions and that the renovated restrooms should be designed to meet LEEDS standards.

The Air Quality Section of the DEIR (Page 4.2-38) included a discussion of energy efficient design and recommended mitigation measures to ensure that the project incorporated CO_2 reduction measures to improve energy efficiency and reduce energy consumption. Additionally, the DEIR stated that the project will comply with all Title 24 requirements, thereby increasing the energy efficiency of all on-site restrooms. Mitigation Measure 4.2-2 of the DEIR includes a requirement that the redesigned bathrooms include measures from the LEED certification program and other green building guidelines that reduce greenhouse gas (GHG) emissions.

In the judgment of the City staff and its consulting team, implementation of DEIR Mitigation Measures 4.2-2 and 4.2-3 will ensure that CO_2 reduction measures are incorporated into the project design in order to reduce CO_2 emissions associated with building design and building operation/maintenance. Further, implementation of Mitigation Measures 4.2-2 and 4.2-3 will ensure that operation of the proposed project would not conflict with implementation of the GHG reduction goals under AB 32 or other State regulations. Therefore, the City has determined that the EIR provides sufficient analysis to conclude that impacts related to GHG emissions are less than significant. Opinions regarding the analysis in the DEIR will be made available to decision makers for their consideration

RESPONSE P-20-12
The comment questions why all of the existing piles need to be replaced and whether any of the existing piles will be reused. The comment further requests a graphic to illustrate what areas will be impacted by noise exceeding the City's exterior noise standards.

All of the existing piles require replacement due to their age (over 50 years old) and the design of the new dock systems. The new dock systems will require fewer piles but the exact locations for each pile cannot be replicated due to differences in the design and the layout of the docks that is best suited for the Marina.

Section 4.9.5.2 of the DEIR states that homes located within 706 ft of the pile driving would be exposed to noise levels in excess of the City's daytime exterior noise standard of 70 dBA L_{max}. A map showing the pile driving impact areas has been added to the FEIR. Figure 2,

Response to Comment regarding Noise Contours, has been included to illustrate the description of construction noise impacts provided in DEIR Section 4.9, Noise. As described in the DEIR, sensitive land uses (including residential) located within 315 ft of the standard construction equipment and 706 ft of the pile driving would be exposed to noise levels in excess of the City's daytime exterior noise standard of 70 dBA L_{max}. These noise contours are illustrated on Figure 2 for each Basin. It should be noted that only portions of each Basin would be under construction at any one time. As the construction phasing is implemented, different areas within the Marina would be subject to noise impacts.

As stated in the DEIR, project construction activities would result in a significant noise impact; however, the noise impact would be intermittent and temporary and would no longer occur once construction of the project is completed. The City of Long Beach Municipal Code allows elevated construction-related noise levels as long as the construction activities are limited to the hours specified (between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and federal holidays, and between 9:00 a.m. and 6:00 p.m. on Saturdays). Adherence to the City's noise regulations and implementation of Mitigation Measures 4.9-1 through 4.9-5 would reduce construction noise impacts to sensitive receptors; however, the construction noise impacts would remain significant and unavoidable due to intermittent high levels of noise and the disturbance that noise will have on nearby residents and the public using outdoor recreation open space.

RESPONSE P-20-13

The comment suggested that the EIR should include two additional alternatives to mitigate the loss of smaller slips. The first alternative suggested is a rebuild of the Marina with the current slip mix, and the second suggestion is an alternative creating an equal number of dry storage spaces for the loss of 20, 25 and 30-foot boats.

Although the comment is primarily related to slips mix and design issues and does not contain specific comments or questions about the analysis in the DEIR, the following discussion is provided for clarification.

One of the project objectives is to "renovate and replace the deteriorating Marina facilities to expand recreational boating opportunities in keeping with the current and future demands of the boating public for larger slips". The goal of the rebuild is to provide a Marina that can be fully occupied with little to no vacancies in order to meet the needs of the boating public and provide revenue to the City. As stated later in the comment, the Marina Del Rey Slip Sizing Study concluded that more boats 30' and under were being placed on trailers and that dry storage could be used to meet the small boat demand. This statement supports the City's premise that smaller boat owners are moving toward landside storage, thereby creating a trend in demand for larger waterside boat slips.

The DEIR included Alternative 3 (see DEIR Section 5.0, Alternatives), an alternative intended to implement all of the necessary components of the proposed project and create an on-site dry stack storage system to minimize the loss of smaller slips. This alternative is similar to the one suggested in the comment in that it is intended to offset the loss of some of the smaller boat slips by provision of a landside storage option. Although this Alternative would not be environmentally superior to the proposed project, and impacts would be similar to the project, it would meet all of the project objectives. The City has determined that the EIR provides sufficient analysis regarding project alternatives and that several design options have been considered by the Marine Bureau. Opinions regarding the Alternatives analysis in the DEIR will be made available to decision makers for their consideration.

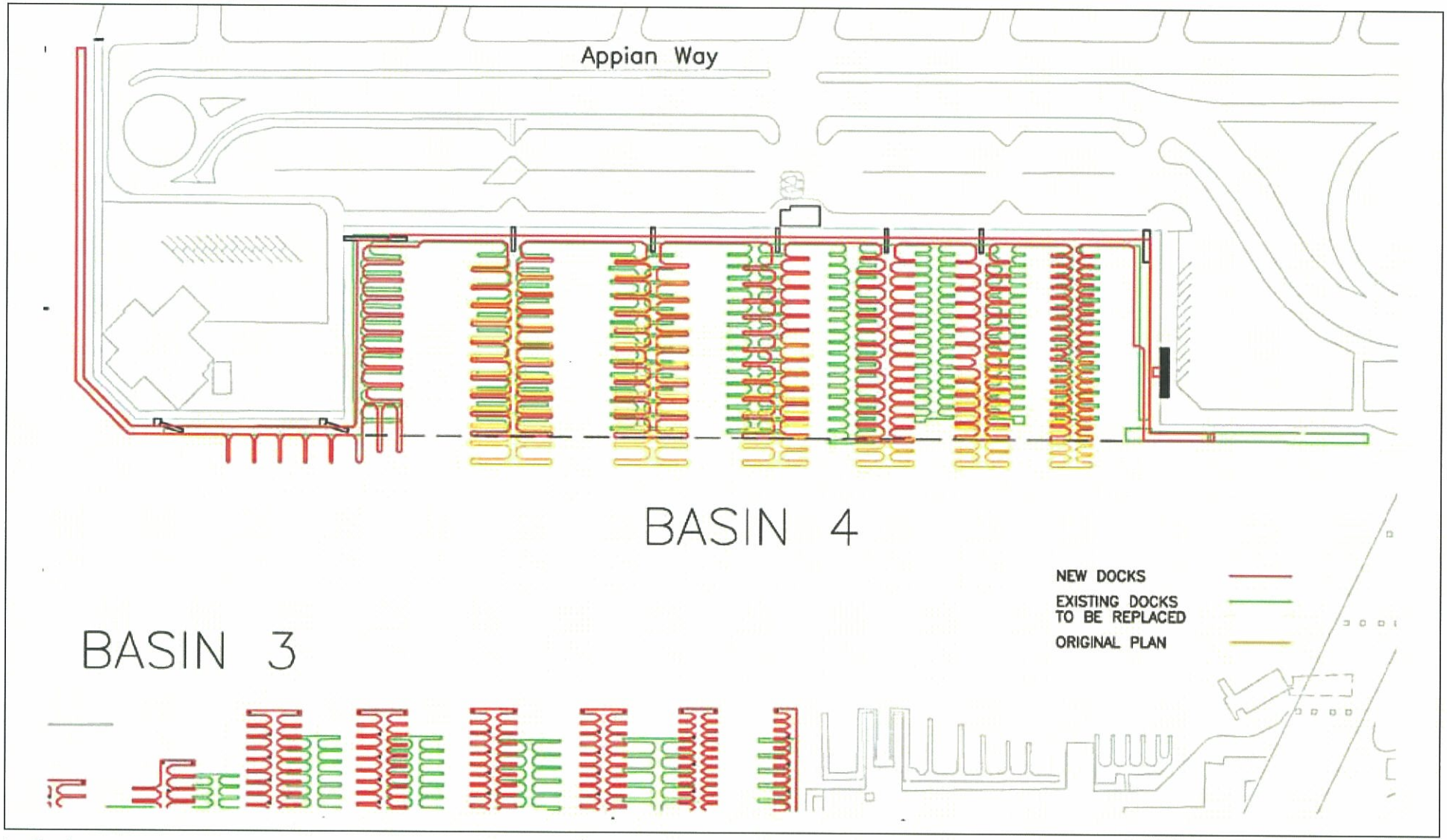


FIGURE 1

LSA

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FEET

SOURCE: Tran Systems

I:\TSY0701B\G\Fig 1 RTC Basin 3 4.cdr (12/04/09)

Alamitos Bay Marina Rehabilitation Project EIR

Response to Comment Regarding Design of Basins 3 & 4

LSA

LEGEND

- Project Locations
- Current Marine Stadium Boundary

Order of Projects

- Phase 1
- Phase 1A
- Phase 2 and 3
- Phase 4 to 7
- Phase 8 to 11
- Phase 12

Noise Contours

Areas Exceeding City Noise Standard of 70 dBA by Standard Construction Equipment Noise (315')

- Phase 1
- Phase 1A
- Phase 2 and 3
- Phase 4 to 7
- Phase 8 to 11
- Phase 12

Areas Exceeding City Noise Standard of 70 dBA by Pile Driving Noise (706')

- Phase 1
- Phase 1A
- Phase 2 and 3
- Phase 4 to 7
- Phase 8 to 11
- Phase 12

0 500 1000
FEET

SOURCE: DigitalGlobe (4/08); TBM (2008); City of Long Beach (2008, 1/09)

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FIGURE 2

Alamitos Bay Marina Rehabilitation Project

Reponse to Comment regarding Noise Contours

ATTACHMENT A

ERRATA MEMORANDUM

LSA

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RIVERSIDE
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SAN LUIS OBISPO
SOUTH SAN FRANCISCO

MEMORANDUM

DATE: December 8, 2009

TO: Jill Griffiths

FROM: Ashley Davis

SUBJECT: Draft EIR Errata

As a result of preparing the Draft EIR Response to Comments this week, LSA Associates, Inc. (LSA) noted the following typographical errors/errata in the Draft EIR that we would like to clarify for the record. Please see revised text below. Please include this memorandum in the project file and CEQA Administrative Record for the project. This errata does not change the level of significance of any impacts or conclusions in the EIR.

The following text is excerpted from page 4.2-35:

> **Fugitive Dust.** Fugitive dust emissions are generally associated with land clearing, exposure, and cut-and-fill operations. Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather conditions. Nearby sensitive receptors and on-site workers may be exposed to blowing dust, depending upon prevailing wind conditions. Fugitive dust would also be generated as construction equipment or trucks travel on unpaved areas of the construction site. Only the site preparation phase prior to paving the parking lots is anticipated to generate any measurable emissions of fugitive dust. PM_{10} and $PM_{2.5}$ emissions from grading operations during the site preparation phases are based on the LST analysis techniques published by the SCAQMD (see Appendix B). The PM_{10} and $PM_{2.5}$ emissions are included in construction emissions listed in Table 4.2.E. As shown, the emissions would not exceed the SCAQMD's thresholds. Therefore, no mitigation measures would be required. However, to endure that impacts related to construction related fugitive dust remain less than significant, and to ensure project compliance with South Coast Air Quality Management District (SCAQMD) Rules 402 and 403, Mitigation Measures 4.2-1 and 4.2-5 have been proposed.

The following text is excerpted from page 4.2-38:

> The project will comply with all Title 24 requirements, thereby increasing the energy efficiency of all on-site restrooms. Therefore, the proposed project is not expected to result in a long-term increase in GHG emissions. Further, Mitigation Measures 4.2-~~4~~-2and 4.2-~~5~~-3 have been proposed and will require the Marine Bureau to incorporate CO_2 reduction measures in order to reduce CO_2 emissions associated with building design and building operation/maintenance to improve energy efficiency or reduce energy consumption. With implementation of Mitigation Measures 4.2-~~4~~-2 and 4.2-3~~5~~, operation of the proposed project would not conflict with implementation of the GHG reduction goals under AB 32 or other State regulations. In addition, the proposed project is a less intense continuation of an existing land use. Therefore, with mitigation, operational GHG impacts are considered less than significant.

The following text is excerpted from page 4.2-38:

> Table 4.2.F shows that the calculated emissions rates for the proposed construction activities are below the localized significance thresholds for NO_X, CO, PM_{10}, and $PM_{2.5}$. Therefore, the proposed construction activities would not cause any short-term, localized, significant air quality impacts. The overall project construction is below thresholds, and each phase of project construction would also be below thresholds. However, as stated above, the analysis was based on information provided by the project engineer indicating that no more than 1 ac of parking lot repaving would occur at any one time. Therefore, Mitigation Measure 4.2-~~2~~-4 has been proposed requiring that repaving areas do not exceed 1 ac at any one time. With implementation of Mitigation Measure 4.2-~~2~~4, emission rates for each phase of project construction would remain below the thresholds, reducing potential impacts to a less than significant level.

The following text is excerpted from page 4.3-28:

> However, due to the potential for sea turtles to be present in the project area during the Marina renovation, Mitigation Measure 4.43-2 has been proposed, requiring a biologist to monitor the site during construction and be empowered to stop construction to avoid negative effects on sea turtles. Implementation of Mitigation Measure 4.43-2 would reduce potential construction impacts to sea turtles to a less than significant level.

The following text is excerpted from page 4.3-29

> Mitigation Measure ~~4.3-2~~ 4.3-3, requiring 1,648 sf of eelgrass vegetation to be successfully transplanted in accordance with the SCEMP, is proposed to reduce potential impacts to eelgrass marine resources to a less than significant level. -Additionally, Mitigation Measures 4.3-4 and 4.3-5 have been proposed to avoid potential impacts to marine biological resources from construction activities. Implementation of Mitigation Measures ~~4.4-2~~ 4.3-3 through 4.3-5 will reduce impacts related to eelgrass and biological resources during construction to a less than significant level.

The following text is excerpted from page 4.3-30

> However, to ensure that potential impacts to the great blue heron as well as other California species of concern listed above are reduced to a less than significant level, Mitigation Measure ~~4.4-5~~ 4.3-6 has been proposed, restricting the removal of trees and vegetation during the nesting season and requiring surveys, as necessary, prior to construction. Implementation of Mitigation Measure ~~4.4-5~~ 4.3-6 would ensure that potential impacts to migratory birds are reduced to a less than significant level.

The following text is excerpted from Mitigation Measure 4.3-2 on page 4.3-31 and 4.3-32:

4.3-2 Prior to the start of any construction or dredging activities, the Marine Bureau Manager shall verify that the following measures have been incorporated into the final project plans and construction contract in order to further reduce any potential impacts to green sea turtles and marine mammals:

- A qualified marine biologist shall be on site during the construction period to monitor the presence of endangered species and marine mammals. The on-site biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.
- Construction crews and work vessel crews shall be briefed on the potential for this species and marine mammals to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.
- If a marine mammal is observed within a radius of 1,200 ft (366 meters) from the dredge operation, then activities shall not be initiated until the animal has passed out of the project area. If an animal is periodically but not constantly observed during this period, dredging activities shall not be initiated for a period of 15 minutes, which is the estimated amount of time for a seal lion or other marine mammal to transit out of the project area.
- In the event that a sea turtle is sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle is safely outside the outer perimeter of construction. The on-site biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.
- The biological monitor shall prepare an incident report of any marine mammal or green sea turtle activity in the project area and shall inform the construction manager to have his/crews be aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game (CDFG) and the National Marine Fisheries Service (NMFS).
- In the event of a watercraft collision with a marine mammal or sea turtle the NMFS Stranding Coordinator shall be contacted within 24 hours.

The following text is excerpted from Mitigation Measure 4.3-4 on page 4.3-33.

4.3-4 Prior to issuance of any demolition or construction permits, the Marine Bureau Manager shall provide verification that the following provision has been included in the contract for project construction: that a qualified biologist has been retained to implement the following measures, which shall be incorporated during all phases of construction in order to minimize impacts on eelgrass and other biological resources:

- Impacts to eelgrass beds shall be avoided where practical and feasible. A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone. To assist the construction crew in avoiding unnecessary damage to eelgrass, the project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques.
- Barges and work vessels shall avoid impacts to eelgrass beds in the immediate vicinity of Basins ~~2 and 4~~ 6-South. Barges and work vessels shall be operated in a manner to ensure that eelgrass beds are not impacted through grounding,

propeller damage, or other activities that may disturb the seafloor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.

- A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality best management practices (BMPs) are implemented and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within 30 days after the project is completed, a post-construction marine biological survey shall be conducted to determine the extent of any construction impacts on eelgrass habitat. The survey report will be completed within 30 days and shall be submitted to the California Coastal Commission and the United States Army Corps of Engineers.

The following text is excerpted from Mitigation Measure 4.6-3 on page 4.6-14:

4.6-3 Soil Management Plan: The Office of Environmental Health Hazard Assessment (OEHHA) shall review the dredge materials removal workplan and shall list any additional requirements. Development of the dredge materials workplan shall also be coordinated with the Southern California Dredged Material Management Team and the Los Angeles Region Contaminated Sediments Task Force. Implementation of the workplan shall be overseen by the OEHHA for compliance with local, State, and federal regulations. Any additional sampling or contaminant material removal shall be subject to these same regulations. As part of the soil management plan, all disposal material will be characterized prior to disposal at a State landfill site. All hazardous waste will be disposed of in a Class I landfill. All other soils or solid waste will be disposed of at an unclassified landfill. In addition, during construction activities of the potentially impacted soils on site, monitoring will be required by the South Coast Air Quality Management District (SCAQMD).

After removal of the contaminated materials from Basin 1 and during the drying process of these sediments/soils, a mixture of Simple Green and water (10:1) shall be lightly applied to the excavated sediments/soils. Simple Green accelerates the decomposition process and will have the overall result of shortening the duration of odor emissions.