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Termino Avenue Drain Project

ENVIRONMENTAL IMPACT REPORT

prepared for:
Los Angeles County Department of Public Works
Environmental Planning & Assessments
900 South Fremont Avenue
Alhambra, CA 91803

TERMINO AVENUE DRAIN

Draft
Environmental Impact Report

State Clearinghouse No. 20040310

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ES EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This Environmental Impact Report (EIR) has been prepared by the County of Los Angeles (County) to evaluate potential environmental effects that may result from the proposed Termino Avenue Drain Project (proposed project). This EIR has been prepared in accordance with the California Environmental Quality Act of 1970 (CEQA), as amended (Cal. Pub. Res. Code, § 21000 *et seq*.), and implementing State CEQA Guidelines (Cal. Code Regs., Title 14, § 15000 *et seq*.).

ES.2 PROJECT BACKGROUND

The proposed project area is located in the southern portion of the San Gabriel River watershed, in an area that has historically had flooding problems. The existing drainage system in this portion of the watershed is not sufficient to convey the maximum runoff that would be generated on average once every fifty years during what is known as a 50-year flood event. The City of Long Beach (City) and County of Los Angeles, through its Department of Public Works (DPW), have been working together since 1993 to alleviate flooding problems within this portion of the San Gabriel River watershed.

Previous hydrology and drainage studies recommended a storm drain system that would convey stormwater flows to an outlet at Colorado Lagoon. Based on these previous studies and community input, the County and the City revised the plans and, in 2000, identified a preferred alignment for conveying stormwater and appropriate measures for reducing pollutants from the stormwater. The alignment, similar to Alternative 2 evaluated in this EIR, resulted in storm drain discharge into Colorado Lagoon, with a low-flow bypass leading into Marine Stadium.

In February 2001, the County prepared a Mitigated Negative Declaration (MND) for the Termino Avenue Drain Project. The MND found that, with the incorporation of the recommended mitigation measures, there would be no significant environmental impacts as a result of the proposed project. Mitigation was proposed for aesthetics, biological resources, cultural resources, hazardous materials, hydrology/water quality, and noise that would reduce all potentially significant impacts to a less than significant level. The MND was approved by the County Board of Supervisors in June 2001. Following approval, the document was challenged in court and the County was ordered to conduct a ". . . proper study of the baseline conditions of the tidal culvert connecting the Colorado Lagoon and the Marine Stadium."

In addition to determining the baseline conditions of the tidal culvert, the County has made changes to the Termino Avenue Drain Project. On April 21, 2004, the County hosted a field meeting with the California Department of Fish and Game (CDFG), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Regional Water Quality Board (RWQCB), US Army Corps of Engineers (ACOE), and the Coastal Commission to solicit input regarding the two potential outlet structure locations (Colorado Lagoon and Marine Stadium). Based on agency input regarding the potential benefits and impacts associated with each alternative and subsequent analysis, the Marine Stadium option was selected by the County as the proposed project. Instead of a storm drain system that would convey stormwater flows to an outlet at the Colorado Lagoon, the proposed project would bypass Colorado Lagoon and all storm flows would be diverted directly into Marine Stadium. The proposed project includes a low-flow diversion and catch basin screens to improve water quality.

An Initial Study was prepared for this project in May 2004. The Initial Study concluded that there was substantial evidence that the project may have a significant impact on the environment in the areas of biological resources and hydrology/water quality (see Appendix A). Based on the Initial Study, the County determined that an Environmental Impact Report ("EIR") would be required for the project.

ES.3 PROPOSED PROJECT LOCATION AND SETTING

The proposed project is located in southern Los Angeles County within the City of Long Beach. The proposed storm drain alignment generally falls within existing roads and a former Pacific Electric (PE) Railway right-of-way. The mainline of the proposed project would run along Anaheim Street, southerly on Termino Avenue between 8th Street and 11th Street, along the PE right-of-way, across several streets, and along Appian Way, terminating at Marine Stadium. A lateral storm drain would extend from Termino Avenue along the PE right-of-way across several streets and terminate on Redondo Avenue just north of Anaheim Street. Other short lateral drains would connect to the mainline along 6th Street, 7th, Street, and 8th Street.

Land uses adjacent to the storm drain alignment are primarily residential. Commercial businesses are located at several of the street intersections that would be crossed by the proposed storm drain. The alignment passes west of Colorado Lagoon, a V-shaped water body of approximately 40 acres, which is connected to Marine Stadium to the southeast by a tidal culvert. Recreation Park, a City park and golf course, is located north of Colorado Lagoon. The proposed outlet structure at Marine Stadium is surrounded by residential and open space land uses. Marine Stadium is a mile-long rectangular inlet within Alamitos Bay, which outlets to the Pacific Ocean.

ES.4 PROPOSED PROJECT SUMMARY

The proposed project would involve the construction of a storm drain mainline, six lateral drains, low flow treatment pump station, catch basin screens, and an outlet to Marine Stadium in the City. The purpose of the proposed project is to construct a storm drain to alleviate flooding problems in the area and to accommodate water flows in a 50-year flood event. The proposed project would contain two key components; the storm drain to Marine Stadium; and the diversion system to the County Sanitation District sewer line. A description of the key components is provided below.

STORM DRAIN TO MARINE STADIUM

This component would include the construction of a 12,190 linear-foot storm drain to accommodate the 50-year frequency storm of 703 cubic feet per second (cfs). The mainline would consist of 8,090 linear feet of storm drain conduit from the terminus at Termino Avenue and Anaheim Street to Marine Stadium and would connect to the existing drainage system at various locations. In addition to the mainline, the proposed drain would include six lateral lines totaling 4,100 linear feet of conduit.

A double box culvert outlet structure with an opening of approximately 25 feet would also be constructed at Marine Stadium. The outlet structure would include energy dissipater blocks to reduce the velocity of stormwater from the box culvert and a woven geotextile fabric to minimize erosion. Approximately 250 cubic yards of material from Marine Stadium would be dredged in order to construct the outlet structure. Construction of the outlet structure in Marine Stadium would involve constructing a temporary coffer dam around the proposed construction zone. In addition, catch basin screens would be installed in all catch basins to capture suspended solids and water-borne litter and debris known as floatables before they enter the storm drain system.

The majority of the main drain project construction would be within portions of the abandoned Pacific Electric (PE) railway right-of-way, which is currently owned by the City. Construction of the mainline would require removal of a one-story detached commercial structure on the southwest corner of Ximeno Avenue and 7th Street. The building occupies approximately 1,500 square feet.

DIVERSION SYSTEM TO COUNTY SANITATION DISTRICT SEWER LINE

This component would include a diversion system to divert non-storm flows from the storm drain and direct them into an existing County sanitary sewer line. An underground storage box and a pump unit would be constructed to temporarily store the non-storm flows diverted from the proposed project until the water is conveyed to the sewer. The Los Angeles County Sanitation Districts would be responsible for treating the stormwater at existing sewage treatment plants. Based on an agreement with the County, the City would accept ownership and be responsible for operation and maintenance of the low-flow diversion system.

CONSTRUCTION ACTIVITIES

Construction of the proposed project is estimated to begin in April 2008. Construction would occur over a period of approximately 18 to 24 months, contingent on weather conditions suitable for construction. The proposed project would be constructed in continuous operation in sections, progressing approximately 100 feet per day.

GENERAL CONSTRUCTION REQUIREMENTS

To minimize construction impacts, a construction staging and traffic plan would be prepared by the County prior to construction. All affected roads would maintain two-way traffic (i.e., at least one lane in each direction) during the construction phase. Construction staging for the alignment would take place mostly within the PE right-of-way.

Construction activities would not occur before 7:00 AM or after 7:00 PM on weekdays and no construction would take place on Saturdays, Sundays, or national holidays, with the exception of (a) emergency construction activities; and (b) construction of the mainline along 7th Street, which would not occur between the hours of 7:00 PM on Friday and 9:00 AM on Saturday and after 6:00 PM on Saturday. No construction would occur on Sunday unless a permit is issued from the noise control officer, and activities would be limited to between the hours of 9:00 AM and 6:00 PM. Any additional weekend construction activities would be coordinated with the City. Construction crews would implement standard Best Management Practices (BMPs) during construction and adhere to all applicable construction safety guidelines. All construction activities would conform to DPW specifications and Americans with Disabilities Act (ADA) guidelines and would be undertaken in a manner consistent with all applicable federal, state, and local regulations regarding the handling and disposal of hazardous materials.

ES.5 AREAS OF CONTROVERSY

Community outreach efforts have been undertaken to solicit input on the proposed Termino Avenue Drain alternatives. A series of public meetings were held in 1996 and January, June, and July 2000 to discuss the storm drain options. Issues and concerns raised by the public regarding the proposed project and alternatives include water quality at Colorado Lagoon and Marine Stadium, impacts to marine and wildlife habitat at Colorado Lagoon and Marine Stadium, visual impacts associated with the location and size of the outfall structure, risks associated with stormwater overflow flooding adjacent properties, construction impacts on the community, particularly with respect to air quality, traffic and transportation, and noise, the consideration of alternatives to reduce water quality impacts to Colorado Lagoon and Marine Stadium, and the adequacy of mitigation measures to reduce impacts.

Similar comments were received in response to the Notice of Preparation (NOP)/Initial Study (IS) for this EIR and at the public scoping meeting for the proposed project. Copies of all comment letters submitted in response to the NOP/IS are provided in Appendix A.

ES.6 SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-1 provides a summary of the significant environmental impacts that would result during construction and operation of the proposed project, mitigation measures that would lessen the significant environmental impacts, and the level of significance of the environmental impacts that would remain after implementation of the proposed mitigation. Detailed analysis of environmental impacts is presented in Chapter 3 of this EIR.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

This section is prepared in accordance with Section 15126.2(b) of the State CEQA Guidelines (*CEQA Guidelines*), which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated but cannot be reduced to a less than significant level. An analysis of environmental impacts caused by the proposed project has been conducted and is contained in this EIR. Eleven issue areas were analyzed in detail in Chapter 3. Two issues have been found to result in significant unavoidable adverse impacts – Air Quality (construction NO_x) and Noise (construction noise and vibration).

EFFECTS FOUND NOT TO BE SIGNIFICANT

Sections 15128 and 15143 of the *CEQA Guidelines* require the identification of impacts of a project that were determined not to be significant and that were not discussed in detail in the impact section of the EIR. For this project, it was determined that significant impacts would not occur in the following resource categories: Agricultural Resources, Mineral Resources, Population and Housing, Public Services, and Utilities and Service Systems. An IS (Appendix A) was prepared which outlines the reasons why these effects were found to be not significant.

CUMULATIVE IMPACTS

According to Section 15130 (b)(1)(A) of the *CEQA Guidelines*, a list of past, present, and probable future projects producing related or cumulative impacts may be used as the basis of the cumulative impacts analysis. The "list" approach was used for the cumulative impacts discussion in this EIR. A list of related projects was provided by the City Planning Department. A radius of 1 mile was selected, since the cumulative impacts would primarily be limited to construction effects. As discussed in this EIR, the project's operational impacts would be minimal, since the storm drain would require limited maintenance and would not create new land uses in the project area. However, cumulative air quality impacts related to NO_x emissions from construction of the project and other cumulative projects in the area would be significant and unavoidable. The related projects, when combined with the proposed project, would also contribute to the already significant short-term construction noise and vibration impacts of the proposed project.

SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Construction of the proposed project would result in the irreversible commitment of nonrenewable resources, including fossil fuels; natural gas; water; and building materials such as lumber, concrete, and steel. However, the proposed project is not anticipated to consume substantial amounts of energy in a wasteful manner, and it is unlikely to result in significant impacts as a result of consumption of utilities. Operation of the proposed project would also consume small amounts of nonrenewable resources including energy to operate the diversion system pump, which would limit the availability of these resources for future generations or other uses during the life of the project. However, the small amounts of resources consumed during operation of the proposed project are considered to be negligible. Although irreversible environmental changes would result from the proposed project, such changes would not be considered significant.

GROWTH INDUCING IMPACTS

Implementation of the proposed project would not directly induce growth, as it is an infrastructure project that would serve existing and planned development in the project area. In addition, the project site and its immediate vicinity are already developed with urban land uses, including planned development, commercial and residential uses, and public facilities. The proposed project would construct a storm drain and a diversion system to divert non-storm flows. The project would not directly or indirectly introduce new uses inconsistent with the surrounding uses or create new housing or residential land uses which would cause an increase in population. No significant impacts would occur to public services or utilities which would require an increase in service or coverage which would require the employment of additional staff, and no increase in the use of adjacent areas would occur as a result of the construction or operation of the proposed project.

The proposed project could indirectly induce some growth within the City due to reduced flooding conditions; however, this growth would be limited, since the drainage area is already highly developed. Substantial population growth would not occur as a result of the proposed project; therefore, the project is not expected to significantly induce growth in the City and surrounding communities

ES.7 ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the *CEQA Guidelines* requires consideration and discussion of alternatives to the proposed project which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project. Three alternatives, including alternate flood control facilities, were considered but rejected from consideration in this EIR as infeasible. Two alternatives, including the No Project Alternative and the Colorado Lagoon Outlet Structure Alternative, are reviewed in Chapter 5 of this document and briefly summarized here.

ALTERNATIVE 1 – NO PROJECT

Under the No Project Alternative, the proposed Termino Avenue Drain would not be constructed. Stormwater flows would continue to flow through existing, inadequate storm drains and discharge into Colorado Lagoon and Marine Stadium. No new construction would occur; however, alternate flood control methods may need to be implemented. No construction impacts associated with hazardous materials, air quality, noise, traffic, or disturbance of cultural or biological resources would occur; however, impacts associated with flooding and degraded water quality would continue and could worsen with time. The environmental characteristics would be generally the same as those described in the existing conditions sections of Chapter 3.0.

ALTERNATIVE 2 – COLORADO LAGOON OUTLET STRUCTURE

This alternative is similar to the proposed project except that the majority of stormwater flows would be conveyed to Colorado Lagoon instead of Marine Stadium. Alternative 2 would have an identical alignment north of the intersection of East 4th and Park Streets; however, two storm drain alignments would be constructed south of the intersection to convey flows to both Colorado Lagoon and Marine Stadium. The smaller storm drain would convey an initial stormwater flow into Marine Stadium, with the larger storm drain conveying additional stormwater flows into Colorado Lagoon. Similar to the proposed project, non-stormwater flows would be diverted to the County Sanitation sewer line via a low-flow bypass pump.

Impacts associated with Alternative 2 would be similar to the proposed project for land use, cultural resources, transportation and circulation, air quality, noise and vibration, geology and soils, recreation. However, some impacts would be slightly greater than the proposed project, including aesthetics, biological resources, hydrology and water quality, and hazards and hazardous materials (see Table 5.3-1). These additional impacts are associated with the construction of the Colorado Lagoon outlet structure, which would not occur under the proposed project. Although none of the significance determinations would change for this alternative, the impacts would be increased for the categories described. Alternative 2 would reduce impacts to eelgrass and marine resources in Marine Stadium and would reduce aesthetic impacts at Marine Stadium by reducing the size of the outfall structure. Due to the additional impacts associated with construction at Colorado Lagoon, Alternative 2 would not be environmentally superior to the proposed project.

Table ES-1 Summary of Environmental Impacts and Mitigation Measures

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
BIOLOGICAL RESOURCES			
BIO-1 Tree removal during construction of the proposed project would disturb nesting birds, including raptors.	Significant	**BIO-A** Should tree removal or removal of the Long Beach Greenbelt restoration area occur during the breeding season for migratory non-game native bird species (generally March 1-September 1, as early as February 1 for raptors), weekly bird surveys would be performed to detect any protected native birds in the trees to be removed and other suitable nesting habitat within 300 feet of the construction work area (500 feet for raptors). The surveys would be conducted 30 days prior to the disturbance of suitable nesting habitat by a qualified biologist with experience in conducting nesting bird surveys. The surveys would continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, DPW would delay all clearance/construction disturbance activities in suitable nesting habitat or within 300 feet of nesting habitat (within 500 feet for raptor nesting habitat) until August 31 or continue the surveys in order to locate any nests. If an active nest is located, clearing and construction with 300 feet of the nest (within 500 feet for raptor nests) shall be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing. Construction personnel shall be	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		instructed on the sensitivity of the area. The results of this measure would be recorded to document compliance with applicable State and Federal laws pertaining to the protection of native birds.	
BIO-2 Construction of the proposed project would temporarily and permanently impact eelgrass within Marine Stadium. Construction of the outlet structure would temporarily displace 0.13 acre of eelgrass, while the increased turbidity during construction would cause an increase in sediment deposition on eelgrass blades and result in decreased underwater light levels. In addition, 0.05 acre of eelgrass would be permanently removed at the location of the outlet structure. The proposed project would also result in the removal of a native landscape planting area in the PE right-of-way, which includes plants that are typically associated with southern California native scrublands.	Significant	**BIO-B** Direct permanent and temporary impacts to marine sea grassess in Marine Stadium shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy. A total of 0.16 acres of eelgrass will be replanted by DPW, including at least 0.08 acres in the temporary impact area when sediment conditions stabilize following the completion of outlet construction. The remaining 0.08 acres of eelgrass shall be planted within Alamitos Bay. **BIO-C** 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. **BIO-D** 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. **BIO-E** If barges and work vessels are used during construction, measures shall be taken 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. **BIO-F** No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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. **BIO-G** During construction of the Marine Stadium outlet structure, floating booms shall be used to assist in containing debris discharged into Marine Stadium, and any debris discharged should be removed as soon as possible but no later than the end of each day. **BIO-H** A silt curtain shall be utilized to assist in controlling turbidity during construction of the cofferdam at Marine Stadium. The County of Los Angeles shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column. **BIO-I** 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 Marine Stadium. 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 possible measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits. **BIO-J** A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality BMPs are implemented, and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		thirty 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 shall be completed within 30 days and will be submitted to the California Coastal Commission and the U.S. Army Corps of Engineers. **BIO-K** The Pacific Electric (PE) right-of-way between 7th and 8th Streets shall be replanted with native vegetation at a 1:1 ratio. A restoration and monitoring plan for the site shall be prepared and implemented at the conclusion of construction. The restoration plan shall, at minimum, include the following components: * Prior to construction, a qualified horticulturist with experience in native plant cultivation shall supervise salvage of plants, soil, and other materials as appropriate from the Long Beach Greenbelt area in the PE right-of-way between 7th and 8th Streets. Salvaged materials shall be maintained and used in replanting of the site. Supplemental native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock) shall be used as necessary. * Following implementation, the restoration area shall be monitored quarterly for the first two years and biannually for three more years. Success shall be defined as 80 percent survival of container plants after two years and 100 percent survival thereafter.	
BIO-3 Construction activities associated with the outlet structure, including creation of the coffer dam, removal of rip-rap, and dredging	Significant	See **BIO-B** through **BIO-J**	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
would temporarily and permanently impact tidal zone marine organisms within Marine Stadium. The temporary increased turbidity and sediment loading would result in mortality of algae, benthic invertebrates, and benthic fishes. In addition, a permanent loss of benthic invertebrate biomass and goby biomass would occur within the footprint of the outlet structure.			
BIO-4 Construction within Marine Stadium would increase turbidity resulting in a temporary decrease in water quality in designated Essential Fish Habitat.	Significant	See **BIO-F** through **BIO-J**	Less than Significant
CULTURAL RESOURCES			
CUL-1 Construction of the proposed project would cause a substantial change in the significance of an archaeological resource. The extensive ground disturbance associated with the proposed project would disturb subsurface cultural resources associated with two archaeological sites, three significant prehistoric archaeological sites, and the abandoned PE railroad identified within or near the project boundaries.	Significant	**CUL-A** A qualified archaeological monitor shall be present during all ground disturbing activities within the PE right-of-way. If archaeological materials are encountered during construction, work in the vicinity shall be immediately halted until the resource is assessed and the need for treatment is determined. **CUL-B** If cultural materials are encountered during ground disturbing activities outside the PE right-of-way where archaeological monitoring is not recommended, work in the vicinity of the discovery will be halted immediately and a qualified archaeologist will be contacted to assess the find.	Less than Significant
CUL-4 Grading activities would potentially disturb human remains.	Significant	**CUL-C** If human remains are encountered on the property during grading activities, the Los Angeles County Coroner's Office shall be contacted and all activities in the vicinity of the discovery shall cease until appropriate disposition of the remains is determined.	Less than Significant
TRANSPORTATION AND CIRCULATION			
TRANS-1 Construction-related traffic, including hauling, material delivery, and worker access would temporarily result in traffic delays, decreased vehicle speeds at roadway intersections and approaches, and restricted access to adjacent properties. In addition, slow moving construction vehicles on the roadways would increase the risk of vehicle accidents.	Significant	**TRANS-A** Prior to construction, a construction traffic control plan shall be prepared by the contractor for review and approval by the Los Angeles County Department of Public Works. The plan shall also be submitted to the City of Long Beach for	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		review. The plan shall include, at a minimum, advanced signing on Termino Avenue, alerting motorists to roadway construction and an increase in construction vehicle movements, signing to alert motorists to temporary or limited access points to adjacent properties, and appropriate barricades. At least one point of ingress/egress shall be maintained to all properties adjacent to construction area. **TRANS-B** Temporary traffic cones/barricades, temporary striping, and delineators shall be appropriately placed in order to maintain one through lane in each direction during the peak hours. Lane widths within these areas may be reduced. **TRANS-C** In the vicinity of storm drain crossings at abandoned PE Railroad right-of-way at Ximeno Avenue, 7th Street, 8th Street, and Termino Avenue at 10th Street and 11th Street, no lane closures would occur during the peak traffic period (6:00 AM to 8:30 AM and 3:30 PM to 6:00 PM on weekdays). **TRANS-D** No construction shall on occur on 7th Street on weekdays. Construction on 7th Street shall occur on weekends at which time a minimum of one travel lane in each direction shall be open to traffic. **TRANS-E** No construction shall occur at the intersection of Termino Avenue and Anaheim Street during the morning or evening peak traffic periods. **TRANS-F** Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California and Caltrans's Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		Maintenance Work Zones." These guidelines provide methods to minimize construction effects on traffic flow.	
TRANS-2 Slow moving construction vehicles and equipment and temporary closures of lanes and sidewalks during construction of the proposed project would increase hazards.	Significant	See **TRANS-A**	Less than Significant
TRANS-3 Temporary lane closures associated with excavation, conduit installation, and backfilling would increase emergency response time and impact emergency access to the project site.	Significant	See **TRANS-F** **TRANS-G** Prior to construction, Los Angeles County Department of Public Works shall provide written notification to City of Long Beach fire, police, and paramedic departments, regarding the schedule and duration of construction activities, and to identify alternative routes that may be used to avoid response delays.	Less than Significant
AIR QUALITY			
AIR-1 Construction emissions would violate SCAQMD's air quality standards for NO_x. Construction equipment engine exhaust would result in emissions of 292 pounds per day of NOx as a result of conduit construction, trenching, pipe placement, and other construction activities exceeding the 100 pound per day threshold.	Significant	**AIR-A** The project shall provide a plan, for approval by the Los Angeles County Department of Public Works, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOX reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The construction contractor shall submit to the Los Angeles County Department of Public Works a comprehensive inventory of all off-road construction equipment,	Significant and Unavoidable

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the construction contractor shall provide DPW with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.	
NOISE			
NOISE-1 Construction noise along the main alignment and laterals would not violate noise ordinances; however, noise levels would be considered disturbing and interfere with daily activities to nearby residences, which are located approximately 50 feet away. In addition, pile driving activities near Marine Stadium would exceed the noise ordinance at the nearest homes, which are located approximately 120 feet away.	Significant	**NOISE-A** Best management practices (BMPs) for construction noise shall be implemented for the duration of construction of the proposed project. Such BMPs shall include the following: • The project contractor shall plan and schedule construction activities to minimize the simultaneous operation of diesel-engine powered equipment near residences or other sensitive receptors, so as to minimize noise levels resulting from operating several pieces of high noise level-emitting equipment. • Construction equipment shall be fitted with state-of-the-art noise shielding and muffling devices to reduce noise levels to the maximum extent feasible.	Significant and Unavoidable

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		• Stationary sources, such as message boards for traffic control, that would be located within 500 feet of residences shall be solar or battery powered, or connected to the local power grid, i.e., not powered by an internal combustion engine. • Equipment maintenance and staging areas shall be located as far away from the residences as feasible. **NOISE-B** Pile driving and jack hammering shall be limited to the hours of 8:00 AM to 5:00 PM, Monday through Friday, and shall be prohibited on weekends and state and federal holidays. **NOISE-C** The contractor shall establish a noise complaint and response procedure that includes a 24-hour telephone number for complaints, and a procedure where a field engineer/construction manager will respond to and investigate the complaints and take corrective action if necessary in a timely manner. Complaints after normal working hours may be received by voice mail. **NOISE-D** All residences within 100 feet of planned jack hammering and similar pavement breaking activities shall be notified of the planned activities prior to the start of work. The notifications, by standard mail, shall be delivered at least two weeks prior to the start of work. The notification shall advise that there will be loud noise and potentially perceived vibration associated with the construction, and shall state the date, time, and planned duration of the planned activities. The notification shall provide a telephone contact number for affected parties to ask questions and report any unexpected noise impacts.	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		NOISE-E Project specifications shall require the pile driving equipment to be equipped with noise reduction that would limit the maximum impact noise to 90 dBA at 50 feet. Alternatively, the contractor may erect temporary noise barriers that would limit the maximum impact noise to 80 dBA at the nearest residences. **NOISE-F** All residences within 300 feet of planned pile driving activities shall be notified of the planned activities prior to the start of work. The notifications, by standard mail, shall be delivered at least two weeks prior to the start of work. The notification shall advise that there will be loud noise associated with the construction, and shall state the date, time, and planned duration of the planned activities. The notification shall provide a telephone contact number for affected parties to ask questions and report any unexpected noise impacts.	
NOISE-3 Pile driving activities near Marine Stadium would exceed the City of Long Beach standards and disturb nearby residences, which are located approximately 120 feet away.	Significant	See **NOISE-B** through **NOISE-D**	Significant and Unavoidable
NOISE-4 Construction activities would create noise that would exceed the standards established in the Noise Element of the General Plan and the City of Long Beach's Noise Ordinances.	Significant	See **NOISE-A** through **NOISE-F**	Significant and Unavoidable
HAZARDS AND HAZARDOUS MATERIALS			
HAZ-2 Excavation and dredging activities would expose workers to contaminated soil through dermal absorption and inhalation of soil particles or vapors and contaminated groundwater through dermal absorption or inhalation of vapors.	Significant	**HAZ-A** Groundwater Monitoring. Prior to any excavation activities within the proposed storm drain alignment south of Colorado Street, groundwater monitoring wells shall be installed to quantify the groundwater flow and to collect samples to be tested for contaminants. Site specific Maximum Contaminant Levels (MCLs) shall be established by the RWQCB. Should groundwater contamination levels exceed RWQCB MCLs, any water	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		encountered during excavation or dewatering activities shall be handled using one of three methods: discharge to a sanitary sewer system, transport offsite using a disposal contractor, or discharge into a storm drainage system in compliance with a National Pollution Discharge Elimination System (NPDES) permit. Specific mitigation requirements for each of the three options are discussed below. **Disposal in Sanitary Sewer System:** Prior to construction, the construction contractor would coordinate with the Los Angeles County Sanitation Districts to determine the applicable disposal requirements. A written agreement would be obtained describing the testing, monitoring, and disposal requirements for the dewatering effluent. Based on the level of contamination identified at the site, best available technology (BAT) economically achievable would be implemented to ensure that pollutant concentrations in the wastewater discharge did not exceed the disposal requirements. If the treated effluent is discharged only into the sanitary sewer system, an NPDES permit would not be required; however, a permit would be required from the Sanitation Districts. **Transport Offsite:** Under this option, dewatering effluent would be removed from the site by a licensed commercial transportation, storage, and disposal (TSD) contractor. If all dewatering effluent is transported offsite to an approved disposal facility, an NPDES permit would not be required. **Discharge into Storm Drainage System:**	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		Under this option, the construction contractor would coordinate with the Regional Water Quality Control Board (RWQCB) regarding the disposal of dewatering effluent in local storm drains. If contamination levels exceeded RWQCB effluent limitations, the project must comply with RWQCB's Order No. 97-043. Best Management Practices (BMPs) and BAT would be implemented to ensure that pollutant concentrations in the wastewater discharge would not cause violation of any applicable water quality objective for the receiving waters, including discharge prohibitions. In addition, BAT would be implemented to ensure that the discharges would not cause acute nor chronic toxicity in receiving waters. If groundwater contamination is found in the dewatering effluent, water would be treated by granular activated carbon (GAC) or other accepted treatment to remove dissolved-phase hydrocarbons. If necessary, a second absorption media consisting of clay would be used to remove methyl tertiary-butyl ether (MTBE) and other fuel oxygenates. Dewatering activities would be monitored under RWQCB's Monitoring and Reporting Program. **HAZ-B** Soil Contamination. The site manager and equipment operators shall survey the work area at the beginning of each workday and routinely throughout each day during soil excavation and dredging to check for the presence of potentially impacted soil and contaminant sources. Hydrocarbon-impacted soils can be identified in the field (1) by a petroleum odor, (2) by a darker appearance than surrounding soil,	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		and (3) through screening with an organic vapor analyzer (OVA) or other field equipment. Equipment operators, management, and other field personnel shall be notified of any potential impacted soils and contaminant sources within the work area. These areas shall be clearly marked. If contaminated soils are encountered during construction, operations shall be stopped in the vicinity of the suspected impacted soil. Surface samples shall be analyzed using appropriate collection and sampling techniques. Once an area of contamination is identified, soils shall be segregated, sampled, and tested to determine the appropriate disposal and treatment options. If the soils exceed the applicable screening criteria established by the RWQCB or are classified as hazardous (according to the Resource Conservation and Recovery Act [RCRA] and CCR Title 22), soils shall be hauled to a Class I landfill or other appropriate soil treatment and recycling facility.	

TABLE ES-2 COMPARISON OF IMPACTS FOR THE PROPOSED PROJECT AND THE ALTERNATIVES

Impact Area	Proposed Project	Alternative 1: No Project	Alternative 2: Colorado Lagoon Outlet Structure
Land Use	IV	IV (Similar)	IV (Similar)
Aesthetics, Light, and Glare	III	IV (Less)	III (Greater)
Biological Resources	II	IV (Less)	II (Greater)
Cultural Resources	II	IV (Less)	II (Similar)
Transportation and Circulation	II	IV (Less)	II (Similar)
Air Quality: Construction	I	IV (Less)	I (Similar)
Operation	IV	IV (Similar)	IV (Similar)
Noise and Vibration	I	IV (Less)	I (Similar)
Geology and Soils	III	IV (Less)	III (Similar)
Hydrology and Water Quality	III	IV (Less)	III (Greater)
Hazards and Hazardous Materials	II	IV (Less)	II (Greater)
Recreation: Construction	III	IV (Less)	III (Similar)
Operation	IV	IV (Similar)	IV (Similar)

Notes:

I: Significant Unavoidable Impact
II: Significant Impact Unless Mitigated
III: Less Than Significant Impact
IV: No Impact

Less: Impact is lower in magnitude than impacts of the proposed project
Similar: Impact is similar in magnitude to impacts of the proposed project
Greater: Impact is greater in magnitude than impacts of the proposed project
Mixed: Some impacts are less than, similar to, and/or greater in magnitude than impacts of the proposed project

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DRAFT ENVIRONMENTAL IMPACT REPORT
TERMINO AVENUE DRAIN

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1 INTRODUCTION

1.1 SUMMARY OF THE PROPOSED PROJECT

This Environmental Impact Report (EIR) has been prepared by the County of Los Angeles Department of Public Works (County) to evaluate potential environmental effects that may result from the proposed Termino Avenue Drain Project (proposed project). This EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) statutes (Cal. Pub. Res. Code, § 21000 et. seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, § 15000 et. seq., 1998).

The proposed project involves storm drain improvements in the southeastern portion of the City of Long Beach (City). The project area is located in the southern portion of the San Gabriel River watershed, which has historically had flooding problems. Specifically, the project addresses a 596-acre sub-watershed that drains into Colorado Lagoon, a V-shaped water body of approximately 40 acres, which is connected to Marine Stadium to the southeast by a tidal culvert. In 1995, severe flooding caused extensive property damage in the project area, which has been designated as a special flood hazard area by the Federal Emergency Management Agency (FEMA). The existing drainage system in this portion of the watershed is not sufficient to control the maximum runoff that would be generated on average once every fifty years during, what is known as, a 50-year flood event.

The proposed project entails the construction of a new underground storm drain system, which would provide increased flood protection within the project area. The new drainage system would convey storm flows directly to Marine Stadium, located immediately southeast of Colorado Lagoon, and would have the capacity to convey the runoff from a 50-year flood event. The mainline of the proposed drainage system would run along a former Pacific Electric (PE) Railway right-of-way and across several streets. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. Aside from the new outlet structure at Marine Stadium, the proposed storm drain components would all be located underground. Construction activities would temporarily disturb City Streets and an abandoned railroad right-of-way; however, upon completion of the project, the alignment would be returned to its existing condition.

The proposed project would improve water quality by eliminating an existing source of urban runoff into Colorado Lagoon. In addition, catch basin screens and a low-flow treatment pumping station would be installed to improve water quality. The catch basin screens would be installed in all catch basins to remove suspended solids and water-borne litter and debris, known as floatables, from the urban runoff and light storm flows. The low-flow pumping station would improve water quality by diverting non-rainy season low flows to the County's sewage treatment system.

The proposed new drainage system would be constructed in an area with a mix of residential, commercial, and recreational land uses. The upstream portion of the alignment is predominantly characterized by residential and commercial development; the downstream portion of the alignment, near Colorado Lagoon and Marine Stadium, primarily includes open space and recreational uses.

1.2 THE CEQA ENVIRONMENTAL PROCESS

As the lead agency under CEQA, the County has determined that an EIR is required for the proposed project. CEQA requires the preparation of an EIR when there is substantial evidence supporting a fair argument that a project may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of the proposed project. The EIR process is intended to facilitate the objective evaluation of the potentially significant direct, indirect, and cumulative impacts of the proposed project, and to identify potentially feasible mitigation measures and alternatives that would reduce or avoid the project's significant effects. In addition, CEQA specifically requires that an EIR identify those adverse impacts determined to be significant after mitigation.

In accordance with the *CEQA Guidelines*, a Notice of Preparation (NOP) was distributed on May 10, 2004 to the Office of Planning and Research and each responsible federal and state agency, in addition to public agencies and organizations and private organizations and individuals with a possible interest in the project. The purpose of the NOP was to provide notification that the County planned to prepare an EIR and to solicit input on the scope and content of the EIR. In response to the more than 20 copies of the NOP that were distributed, 12 written comment letters were received from various agencies, organizations, and individuals. These letters and the NOP are included in Appendix A of this EIR.

Public scoping meetings were held on May 19, 2004 at Lowell Elementary School and on May 22, 2004 at Jefferson Leadership Academies. The purpose of these meetings was to seek input from public agencies and the general public regarding the environmental issues and concerns that may potentially result from the proposed project. Approximately 37 people attended the scoping meeting held on May 19, and approximately 26 people attended the scoping meeting held on May 22. Two written comments were submitted at the meetings. A court reporter was present at both scoping meetings to record the public comments. A transcript of the public comments and copies of the written comment letters are included in Appendix A.

An Initial Study for the project was prepared in May 2004 and is included in Appendix A. This EIR focuses on the environmental impacts identified as potentially significant during the initial study process, including the comments received in response to the NOP and received at the public scoping meeting. The issue areas analyzed in this EIR include land use, aesthetics, biological resources, cultural resources, transportation/circulation, air quality, noise, geology/soils, hydrology/water quality, hazards/hazardous materials, recreation, and public services and utilities. All issues not evaluated in detail in Chapter 3.0 of this EIR are addressed as required by CEQA in Section 4.2, Effects Not Found to be Significant.

This Draft EIR is being circulated for 45 days for public review and comment. The dates of the public review period are identified in the Notice of Availability attached to this Draft EIR. During this period, comments from the general public, organizations, and agencies regarding environmental issues raised in the Draft EIR and the accuracy and completeness of the Draft EIR may be submitted to the lead agency at the following address:

Dale Sakamoto
County of Los Angeles, Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460
Email: dsakamoto@dpw.lacounty.gov
Phone: (626) 458-3915

General questions about the EIR process should also be directed to Dale Sakamoto at (626) 282-3915 or dsakamoto@ladpw.org. The County will prepare written responses to comments received on the Draft EIR if they are (1) submitted in writing and postmarked to the address above by 5:00 PM of the last day of the public review period identified in the Notice of Availability, or (2) presented verbally at the public hearings on the Draft EIR that will be held during the public review period. Upon completion of the public review period, a Final EIR will be prepared that will include the comments on the Draft EIR received during the formal public review period and responses to environmental issues raised.

Prior to considering whether to approve the proposed project, the County, as the lead agency and decision-making entity, is required to certify that the Final EIR has been completed in compliance with CEQA, that the proposed project has been reviewed and the information in the EIR has been considered, and that the EIR reflects the independent judgment of the County. CEQA also requires the County to adopt "findings" with respect to each significant environmental effect identified in the EIR (Pub. Res. Code §21081; Cal. Code Regs., Title 14, §15091). For each significant effect, CEQA requires the approving agency to make one or more of the following findings:

- The project has been altered to avoid or substantially lessen significant impacts identified in the Final EIR.
- The responsibility to carry out such changes or alterations is under the jurisdiction of another agency.
- Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

If the County concludes that the proposed project would result in significant effects, which are identified in this EIR, and that those effects would not be substantially lessened or avoided by feasible mitigation measures and alternatives, then the County must adopt a "statement of overriding considerations" prior to approval of the proposed project (Pub. Res. Code §21081[b]). Such statements are intended under CEQA to provide a written means by which the lead agency balances in writing the benefits of the proposed project and the significant and unavoidable environmental impacts. Where the lead agency concludes that the economic, legal, social, technological, or other benefits outweigh the unavoidable environmental impacts, the lead agency may find such impacts "acceptable" and approve the project.

In addition, public agencies, when approving a project, must also adopt a mitigation monitoring and reporting program (MMRP) describing the changes that were incorporated into the project or made a condition of project approval in order to mitigate or avoid significant effects on the environment (Pub. Res. Code § 21081.6). The MMRP is adopted at the time of project approval and is intended to ensure compliance during project implementation. Upon approval of the proposed project, the County would be responsible for the implementation of the proposed project's MMRP.

1.3 ORGANIZATION OF THE EIR

The content and format of this EIR meet the current requirements of CEQA and the *CEQA Guidelines*. The EIR is organized into the following chapters so the reader can easily obtain information about the project and its specific issues.

The **Executive Summary** of this EIR provides an overview of the information provided in detail in subsequent chapters. It consists of an introduction; a description of the proposed project and alternatives considered; a discussion of areas of controversy and issues to be resolved; and a table that summarizes the potential environmental impacts in each category, the significance determination for those impacts, mitigation measures, and significance after mitigation.

Chapter 1 of this EIR provides a brief description and purpose of the proposed project. It includes an overview of the CEQA environmental review process and a section describing the organization of the EIR.

Chapter 2 of this EIR provides a detailed description of the proposed project. Project objectives are identified, and information on the project characteristics, conceptual project design, and construction scenario is provided. This section also includes a description of the intended uses of the EIR and public agency actions.

Chapter 3 of this EIR describes the potential environmental effects of implementing the proposed project. The discussion in Chapter 3 is organized by 12 environmental issue areas, as follows:

- Land Use and Planning
- Aesthetics, Light, and Glare
- Biological Resources
- Cultural Resources
- Transportation/Circulation
- Air Quality

- Noise
- Geology and Soils
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Recreation

For each environmental issue in Chapter 3, the analysis and discussion is organized into five subsections as described below:

- *Environmental Setting* – This subsection describes, from a local and regional perspective, the physical environmental conditions in the vicinity of the proposed project at the time of publication of the NOP. The environmental setting establishes the baseline conditions by which the County will determine whether specific project-related impacts are significant.
- *Regulatory Setting* – This subsection provides a summary of the federal, state, and local regulatory parameters pertinent to each topic area as established at the time of publication of the NOP.
- *Environmental Impact Analysis*
    - Significance Criteria – This subsection identifies a set of criteria for determining whether an impact would be considered significant.
    - Impacts Discussion – This subsection provides detailed information on the environmental effects of the proposed project during construction and operations phases, and whether the impacts of the proposed project would meet or exceed the established significance criteria.
- *Mitigation Measures* – This subsection identifies potentially feasible mitigation measures that would avoid or substantially reduce significant adverse project-related impacts.
- *Significant Unavoidable Adverse Impacts* – This subsection identifies any residual significant and unavoidable adverse effects of the proposed project that would result even after the mitigation measures have been implemented.

Chapter 4 of this EIR presents the other mandatory CEQA sections, including the following:

- Unavoidable Significant Adverse Impacts – This subsection identifies and summarizes the unavoidable significant impacts described in detail in Chapter 3.

- Effects Not Found to Be Significant – This subsection identifies and summarizes the environmental impacts that were determined to have no adverse environmental effect or less than significant environmental effect, given the established significance criteria.

- Cumulative Impacts – This subsection addresses the potentially significant cumulative impacts that may result from the proposed project when taking into account related or cumulative impacts resulting from other past, present, and reasonably foreseeable future projects.

- Irreversible Environmental Changes – This subsection addresses the extent to which the proposed project would result in the commitment of nonrenewable resources.

- Growth-Inducing Impacts – This subsection describes the potential of the proposed project to induce economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment.

Chapter 5 of this EIR describes and evaluates the comparative merits of the two alternatives to the proposed project that would feasibly attain most of the basic objectives of the proposed project and avoid or substantially lessen potentially significant project-related impacts. The chapter also describes the preliminary site constraints analysis and rationale for selecting the range of alternatives discussed in the EIR and identifies the alternatives considered by the County that have been rejected from further evaluation. Chapter 5 also includes a discussion of the environmental effects of the No Project Alternative and identifies the environmentally superior alternative.

Chapter 6 provides a bibliography of reference materials used in preparation of this EIR.

Chapter 7 includes a list of agencies, organizations, and persons consulted during preparation of this EIR.

Chapter 8 provides a list of acronyms and abbreviations used in this EIR.

Chapter 9 identifies those persons responsible for preparation of this EIR.

2 PROJECT DESCRIPTION

This chapter describes the project location and setting, the project background, the objectives of the project, the project components and construction requirements, the intended uses of the EIR, project approvals required, and a list of related projects. This information is provided pursuant to the *CEQA Guidelines*, Section 15124.

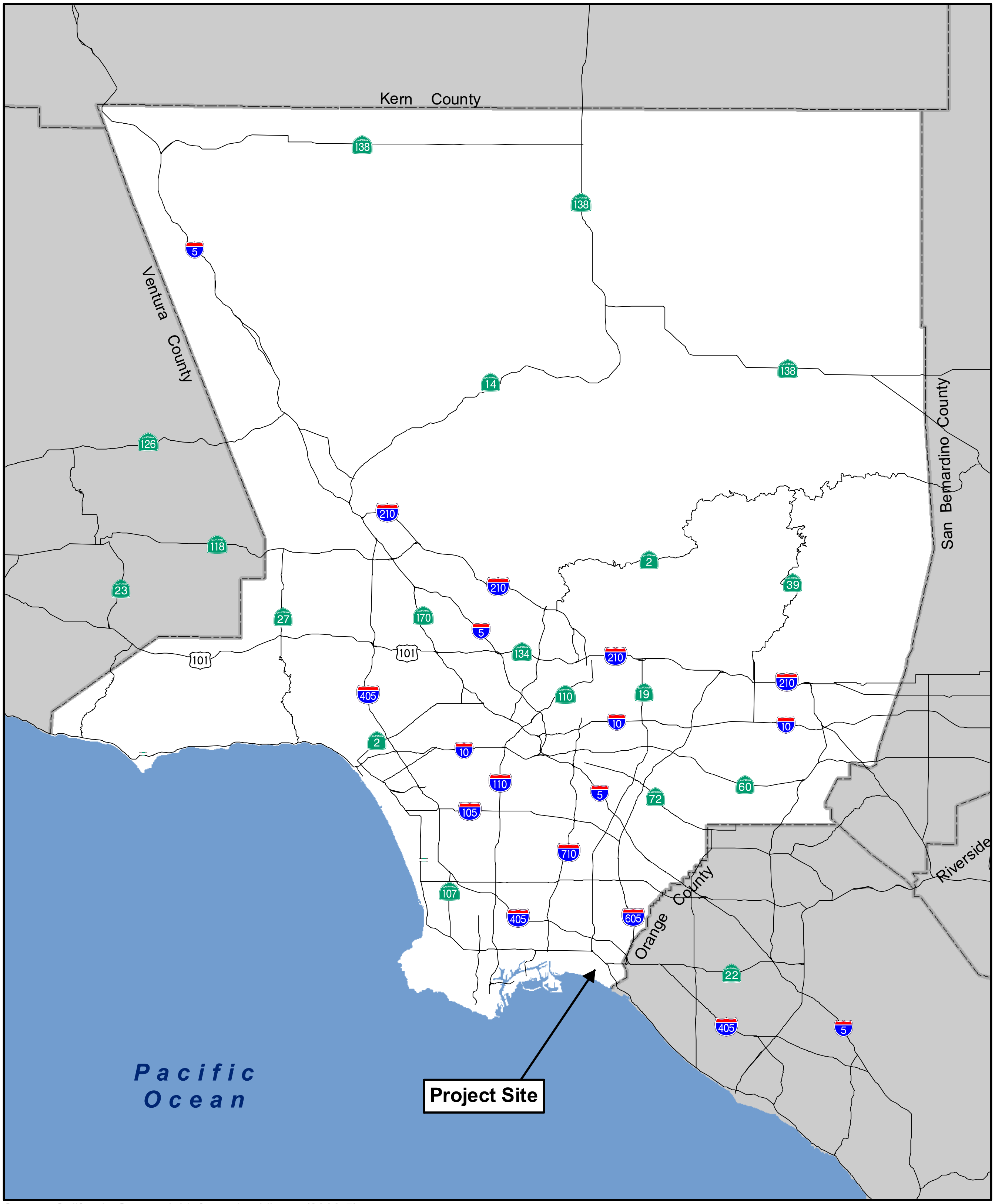
2.1 PROJECT LOCATION AND SETTING

The proposed project is located in southern Los Angeles County within the City of Long Beach (Figure 2-1). The City occupies approximately 50 square miles and has an estimated population of 461,522 (U.S. Census Bureau 2000). The topography of Long Beach is generally flat with scattered rolling hills.

The proposed storm drain alignment generally falls within existing roads and a former Pacific Electric (PE) Railway right-of-way (Figure 2-2). The mainline of the proposed project would run along Anaheim Street, southerly on Termino Avenue between 8th Street and 11th Street, along the PE right-of-way, across several streets, and along Appian Way, terminating at Marine Stadium. A lateral storm drain would extend from Termino Avenue along the PE right-of-way across several streets and terminate on Redondo Avenue just north of Anaheim Street. Other short lateral drains would connect to the mainline along 6th Street, 7th, Street, and 8th Street. The project area is shown on the USGS 7.5 Minute Topographic Long Beach quadrangle. The project area is generally flat with a slight slope toward Alamitos Bay to the southeast.

A land use map of the project area is provided on Figure 2-3. Land uses adjacent to the storm drain alignment are primarily residential. Commercial businesses are located at several of the street intersections that would be crossed by the proposed storm drain, including East Anaheim Street and East 11th Street. The alignment passes west of Colorado Lagoon, a V-shaped water body of approximately 40 acres, which is connected to Marine Stadium to the southeast by a tidal culvert. Recreation Park, a City park and golf course, is located north of Colorado Lagoon. The proposed outlet structure at Marine Stadium is surrounded by residential and open space land uses. Marine Stadium is a mile-long rectangular inlet within Alamitos Bay, which outlets to the Pacific Ocean.

There are four elementary schools, two middle schools, and one high school located within ¼ mile of the proposed alignment: Lowell Elementary School (5201 East Broadway Avenue), located approximately 0.16 mile southwest of the termination of the alignment at Marine Stadium; John C. Fremont Elementary School (4000 East 4th Street), located approximately ¼-mile southwest of the alignment's intersection with Ximeno Avenue; Bryant Elementary School (4101 East Fountain Street), located approximately 0.12 mile northeast of the termination of the Termino Avenue lateral at Anaheim Street; Willard Elementary School (1055 Freeman Avenue), located approximately 0.15 mile west of the termination of the alignment



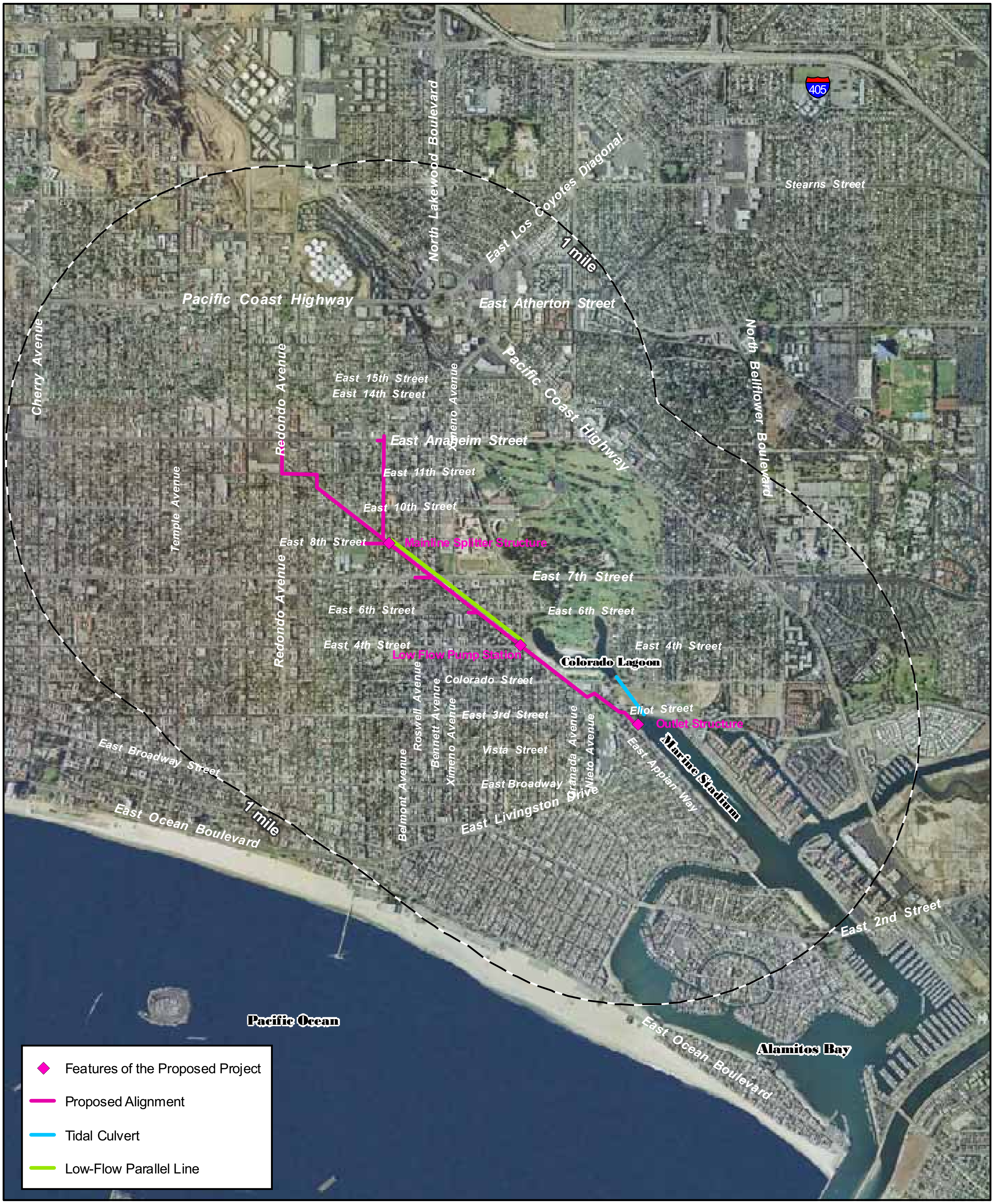
Source: California Geospatial Information Library (2003-5)

N

1 inch equals 12 miles

0 3 6 12 18 24 Miles

Figure 2-1
Regional Location Map



Source: City of Long Beach, 2004; California Geospatial Information Library (CalGIS), 2003-2005

N

1 inch equals 0.5 mile

0 0.25 0.5 1 Miles

Figure 2-2
Project Vicinity Map

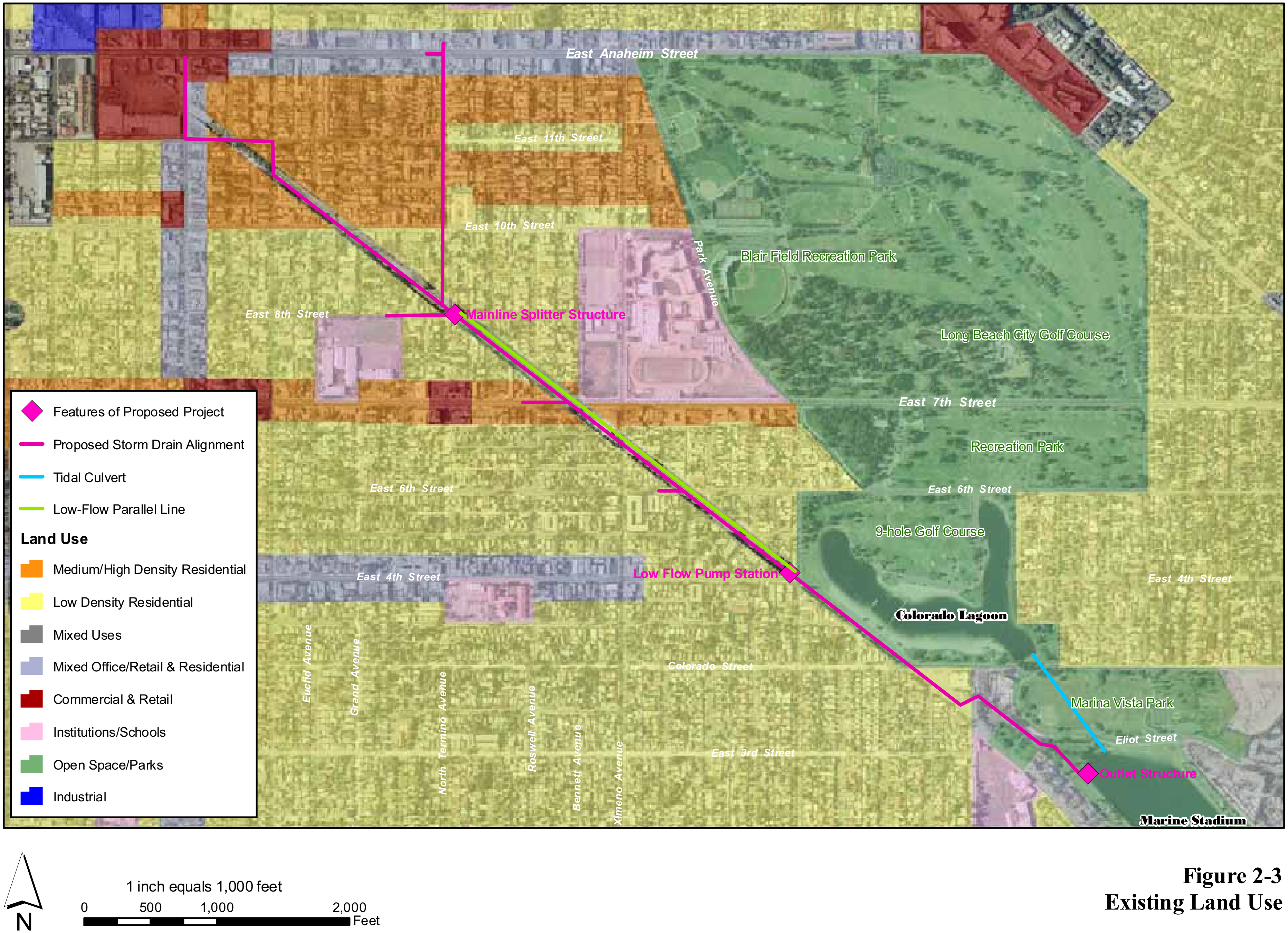


Figure 2-3
Existing Land Use

at Redondo Avenue and Anaheim Street; Will Rogers Middle School (356 Monrovia Avenue), located 0.1 mile west of the termination of the alignment at Marine Stadium; Jefferson Middle School (750 Euclid Avenue), located approximately 0.12 mile southwest of the intersection of the main storm drain alignment and the Termino Avenue lateral; and Woodrow Wilson High School (4400 East 10th Street); located approximately 0.2 mile northeast of alignment.

2.2 PROJECT BACKGROUND

The proposed project area is located in the southern portion of the San Gabriel River watershed, which has historically experienced flooding problems. In 1995, severe flooding of up to 5 feet caused extensive property damage in the southern portion of the watershed. Portions of the watershed are located in a special flood hazard area as designated by the Federal Emergency Management Agency (FEMA). In 1983, the City amended its General Plan with the adoption of FEMA maps, which indicate the areas subject to flooding in 100- and 500-year frequency flood events. The existing drainage system in this portion of the watershed is not sufficient to convey the maximum runoff that would be generated on average once every 50 years during what is known as a 50-year flood event.

The City and County of Los Angeles, through its Department of Public Works, have been working together since 1993 to alleviate flooding problems within this portion of the San Gabriel River watershed. Previous hydrology and drainage studies recommended a storm drain system that would convey storm water flows to an outlet at Colorado Lagoon. Public concerns regarding these studies were voiced by the City and local residents during the public review period and at a series of public meetings in 1996. One prevalent concern related to the provision of adequate flood control without degrading water quality at Colorado Lagoon and Marine Stadium. In addition, meetings were conducted in January, June, and July 2000 for the purpose of presenting the status of the project and receiving additional public input. Community concerns raised at the meetings included:

- Water quality at Colorado Lagoon and Marine Stadium;
- Impacts to marine and wildlife habitat at Colorado Lagoon and Marine Stadium (i.e. birds, fish, eelgrass, and benthic organisms);
- Visual impacts associated with the size of the outfall structure(s) at Colorado Lagoon and Marine Stadium;
- Risks associated with stormwater overflowing from Colorado Lagoon and flooding adjacent properties;
- Construction effects on the community (i.e. traffic, air quality, and noise);

- Consideration of alternatives that would reduce or minimize water quality impacts to Colorado Lagoon and Marine Stadium; and
- Adequacy of mitigation measures to reduce impacts.

Based on these previous studies and community input, the County and the City revised the plans and, in 2000, identified a preferred alignment for conveying stormwater and appropriate measures for reducing pollutants from the stormwater. The alignment, similar to Alternative 2 evaluated in this EIR, resulted in storm drain discharge into Colorado Lagoon, with a low-flow bypass leading into Marine Stadium.

In February 2001, the County prepared a Mitigated Negative Declaration (MND) for the Termino Avenue Drain Project. The MND found that, with the incorporation of the recommended mitigation measures, there would be no significant environmental impacts as a result of the proposed project. Mitigation was proposed for aesthetics, biological resources, cultural resources, hazardous materials, hydrology/water quality, and noise that would reduce all potentially significant impacts to a less than significant level. The MND was approved by the County Board of Supervisors in June 2001. Following approval, the document was challenged in court by Friends of the Colorado Lagoon. The court found that the document provided inadequate CEQA analysis; consequently, the County was ordered to conduct a ". . . proper study of the baseline conditions of the tidal culvert connecting the Colorado Lagoon and the Marine Stadium." Based on the results of their May 2004 Initial Study which identified potentially significant impacts for Biological Resources and Hydrology/Water Quality (see Appendix A), the County decided to prepare an EIR for the proposed project.

Since June 2001, when the MND was approved, a number of changes have been made to the Termino Avenue Drain Project. On April 21, 2004, the County hosted a field meeting with the California Department of Fish and Game (CDFG), US Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Regional Water Quality Board (RWQCB), US Army Corps of Engineers (ACOE), and the Coastal Commission to solicit input regarding the two potential outlet structure locations (Colorado Lagoon and Marine Stadium). Based on agency input regarding the potential benefits and impacts associated with each alternative and subsequent analysis, the Marine Stadium option was selected by DPW as the proposed project. Instead of a storm drain system that would convey storm water flows to an outlet at the Colorado Lagoon, the proposed project would bypass Colorado Lagoon and all storm flows would be diverted directly into Marine Stadium. The project includes a low-flow diversion and storm drain catch basin screens to improve water quality.

A comprehensive hydrology and water quality analysis has been prepared to evaluate potential project impacts to Colorado Lagoon and Marine Stadium. In addition, a detailed inspection of the tidal culvert has been completed. These issues are discussed in Chapter 3.9, Hydrology and Water Quality.

2.3 PROJECT OBJECTIVES

The goal of the proposed project is to provide an efficient storm water drainage system that would protect the project vicinity from flooding. The primary project objectives that have been identified in support of this goal include:

- Construct a storm water drainage system suitable to convey a 50-year flood event;
- Minimize flood-related damage to properties in the low-lying portions of the sub-watershed;
- Convey non-storm flows to the Los Angeles County Sanitation Districts (Sanitation Districts) sewer treatment plant; and
- Develop feasible alternatives and mitigation measures that address watershed flooding issues.

2.4 PROJECT COMPONENTS

The proposed project would consist of two components intended to achieve the project objectives, as presented above. Sections 2.4.1 and 2.4.2 describe the construction of the storm drain to Marine Stadium and the diversion system to the County Sanitation Districts sewer line.

2.4.1 STORM DRAIN TO MARINE STADIUM

The proposed Termino Avenue Storm Drain alignment is shown on Figure 2-4. The total length of the storm drain, including mainline and laterals, would be approximately 12,190 linear feet. The mainline would consist of 8,090 linear feet of storm drain conduit varying in size from 48-inch reinforced concrete pipe (RCP) at the upstream terminus at Termino Avenue and Anaheim Street, to 8 by 8-foot double reinforced concrete box conduit at the downstream terminus with Marine Stadium. Dimensions of the proposed conduit are shown in Table 2-1. The proposed storm drain conduit would connect to the existing drainage system at various locations. In addition to the mainline, the proposed drain would include six laterals totaling 4,100 linear feet of conduit and ranging in size from 48 to 36 inches. The laterals would also be constructed of reinforced concrete pipe. The storm drain would be sized to accommodate the 50-year frequency storm of 703 cubic feet per second (cfs).

TABLE 2-1 STORM DRAIN CONDUIT DETAILS

Location	Pipe/Box	Size
Marine Stadium vicinity	Dbl Box	8' x 8'
Colorado Lagoon vicinity	Dbl Box	8' x 6.5'
4th Street and Park Avenue	Dbl Box	8' x 6.5'
PE right-of-way	Box	24' 1" x 6.5'
Ximeno Avenue	Box	11' x 5.5'
Rosewell and PE right-of-way	Box	9' x 5.5'
Termino Avenue	Pipe	66" RCP
Termino Avenue and 11th street	Box	9' x 4'
Termino Avenue and Anaheim Street	Box	6' x 4'
Anaheim Street	Pipe	48" RCP

The outlet structure at Marine Stadium would consist of a double box culvert. Figure 2-5 shows a rendering of the proposed Marine Stadium outlet structure. The width of the proposed outfall opening would be approximately 25 feet at the head wall. A handrail would be placed on the top of the wing wall to provide access for maintenance of the outfall. Energy dissipater blocks would be placed in the outlet opening to reduce the velocity of stormwater from the box culvert during major storm events. A woven geotextile fabric would extend into Marine Stadium from the terminus of the outlet to minimize erosion. Approximately 250 cubic yards of material from Marine Stadium would be dredged in order to construct the outlet structure. Architectural treatments for the proposed outlet structure would be compatible with the color and texture of the surrounding rip rap-lined bank.

Catch basin screens would be installed to capture suspended solids and water-borne litter and debris known as floatables before they enter Marine Stadium. The screens would be installed in all catch basins within the storm drain system.

The majority of the main drain project construction would be within portions of the abandoned PE right-of-way, which is currently owned by the City. Some existing landscape features within the PE right-of-way would be replaced, including the landscaped area north of 7th Street. The main alignment would include crossings at Anaheim Street, Loma Avenue, Euclid Avenue, 11th Street, 10th Street, Termino Avenue, 8th Street, Roswell Avenue, 7th Street, Bennett Avenue, Ximeno Avenue, 6th Street, Park Avenue, Appian Way, Colorado Street, and Nieto Avenue. The alignment is shown on Figure 2-4.

Construction of the mainline would require removal of a one-story detached commercial structure on the southwest corner of Ximeno Avenue and 7th Street owned by the County. The building occupies approximately 1,500 square feet. The building is currently vacant and had previously been used for storage. No relocation would be required as part of the project.

2.4.2 Diversion System to County Sanitation Districts Sewer Line

Based on discussions with the City and the County Sanitation Districts, the proposed project would include a diversion system that would divert the non-storm flows (i.e., irrigation and other sources of urban runoff) from the storm drain and direct them into an existing County sanitary sewer line. The diversion system would be located near 8th Street adjacent to the storm drain alignment. An independent low-flow parallel line would convey dry flows from the mainline at 8th Street downstream to a storage and diversion box located under the PE right-of-way at 4th Street and Park Avenue.

The sewer line has the capacity to receive a maximum of 40,000 gallons per day from the proposed project. An underground storage box and a pump unit would be constructed to temporarily store the non-storm flows diverted from the proposed project until 12:00 AM. The pump would drain the storage box daily and convey flows to the sewer between the hours of 12:00 AM and 5:00 AM, when the flows in the sewer pipe are typically at their lowest. The diversion system would include a pump station screening device, a six-inch ductile iron pipe (DIP), and other appurtenant structures. These structures would be located underground, with the exception of a small pump enclosure (approximately 4 feet high) and utility bores.

The Sanitation Districts would be responsible for treating the stormwater at existing sewage treatment plants. The City would maintain the pump station screening device, DIP, and other structures.

2.4.3 Post-Construction Revegetation

Installation of the mainline would result in the removal of a native landscaping area in the PE right-of-way between 7th and 8th Streets, called the Long Beach Greenbelt. Upon completion of project construction, this area would be revegetated with native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock). To the extent feasible, plants, soil, and woody material from the areas to be impacted would be made available for salvage and use in planting efforts. Installation of the mainline would also result in the removal of the community garden at the northern end of the PE right-of-way. The garden would be replaced upon completion of the project.

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Figure 2-4
Termino Avenue Storm Drain Alignment

Figure 2-5
Rendering of Proposed Outlet Structure

the alignment and progress south to Colorado Lagoon. No construction other than emergency work would take place on Saturdays, Sundays, or national holidays.[1] Construction activities would not occur before 7:00 AM or after 7:00 PM on weekdays. Table 2-2 lists the equipment that would likely be used to build the storm drain during construction.

TABLE 2-2 CONSTRUCTION EQUIPMENT REQUIREMENTS

Equipment Type	Demolition	Conduit Construction/ Trenching/ Pipe Placement	Road Bed Reconstruction	Paving
Pick-Up Trucks	3	3	3	3
Back-Hoe (rubber-tired)	2	2	-	-
Concrete Saws/Jack hammers	2	2	-	-
Wheeled Loader	1	2	1	1
High Side End Dump Truck	6-8	-	-	-
Sheet Pile Cofferdam	-	1	-	-
Crane with sheet pile driver attachment	-	1	-	-
Crane	-	2	-	-
Skidsteer Loader	2	-	1	-
Generators	-	3	-	-
Compressor	-	1	-	-
Concrete Saws	2	1	-	-
Grader	-	-	1	-
Excavator	-	2	-	-
Compactor	-	2	1	-
Asphalt Paving Machine	-	-	-	1
Roller	-	1	-	2
*Construction signs would likely be used predominately at intersections and along Termino Avenue.				

In general, the construction process for the proposed storm drain mainline and laterals would include the following components: (1) site preparation, including vegetation clearing and pavement removal; (2) excavation of the storm drain trench; (3) installation of the base material and storm drain conduit; (4) backfill and compact stockpiled material; and (5) revegetation, repavement, and/or cleaning of the area to restore alignment to previous condition. Approximately 40 percent of the construction would occur in the PE right-of-way and parking lots, with the remaining 60 percent occurring within public streets.

The project would require 10 to 20 construction workers on a daily basis. Approximately 570 truck loads of concrete would be required to construct the box conduits and outfall structure, with a maximum of 30 concrete truck deliveries daily during peak construction activity. Additional materials would be delivered to the site, such as rebar and forms, but these deliveries would not likely coincide with the delivery of concrete and would also be fewer in number. The project would require the excavation of soils and

1 Construction of the mainline along 7th Street would occur on weekends to minimize traffic impacts. Construction would not occur between the hours of 7:00 PM on Friday and 9:00 AM on Saturday and after 6:00 PM on Saturday. No construction activities would occur on Sunday unless a permit is issued from the noise control officer, and would be limited to the hours of 9:00 AM and 6:00 PM. Any proposed weekend construction activities would be coordinated with the City.

backfilling within the PE right-of-way. Demolition debris would include asphalt and concrete, which would be recycled or disposed of at certified landfills. Approximately 60 round trip loads of demolition debris would be taken to the chosen certified landfill. An estimated 20 truck loads of excavated soil would be transported from the site per day.

Construction staging for the alignment would take place mostly within the PE right-of-way, but, in some areas, staging would occur on local streets. Construction staging for the southernmost portion of the pipeline and the outlet structure into Marine Stadium would occur in the adjacent parking lot. Construction crews would implement standard Best Management Practices (BMPs) during construction and adhere to all applicable construction safety guidelines. All construction activities would conform to DPW specifications and Americans with Disabilities Act (ADA) guidelines and would be undertaken in a manner consistent with all applicable federal, state, and local regulations regarding the handling and disposal of hazardous materials.

To minimize construction impacts, a construction staging and traffic plan would be prepared by the County prior to construction. To the degree possible, staging of construction equipment and construction employee parking would occur on-site, thus eliminating the impacts along adjacent city streets. The plan would include, but is not limited to, hours of construction (limit to off-peak hours), identification of haul routes, and potential off-site parking/staging areas. All roads would maintain two-way traffic (i.e., at least one lane in each direction) during the construction phase.

Construction of the outlet structure in Marine Stadium would involve constructing a temporary coffer dam around the proposed construction zone, removing and replacing rip rap along the shoreline, recontouring the rip rap shoreline to depths of minus five (–5) ft mean lower low water (MLLW) around the opening of the outlet structure, and dredging approximately 250 cubic yards of bayfloor. Construction of the temporary cofferdam would require installation of sheet piling, which would extend approximately 120 feet into Marine Stadium from the edge of the existing pavement (see Figure 2-4). The temporary construction easement would extend approximately 34 feet to the north of the proposed outlet structure centerline and 48 feet south of the centerline. The temporary sheet piling would extend approximately 7 feet above the water surface elevation during construction, depending on tide levels. Dewatering, the discharge of pollutants when non-storm water or accumulated precipitation must be removed from a work location so that construction work may be accomplished, would be required during dredging and construction operations. Construction of the Marine Stadium outlet structure would take approximately three months. Construction-related impacts, including air quality, noise, and traffic, are discussed in this EIR in Chapters 3.6, 3.7, and 3.5 respectively.

2.6 INTENDED USES OF THE EIR

An EIR is a public document used by a public agency to analyze the significant environmental effects of a proposed project, to identify alternatives, and to disclose possible ways to reduce or avoid environmental damage (Cal. Code Regs., Title 14, §15121). As an informational document, an EIR does not recommend approval or denial of a project. The main purpose of an EIR is to inform governmental decision makers and the public about potential environmental impacts of a proposed project.

This EIR will be used by the County Board of Supervisors, as the lead agency under CEQA, in making a decision with regard to the construction and operation of the proposed Termino Avenue Drain Project. The information in this EIR will also be used by responsible agencies and other agencies with jurisdiction, as listed below, in deciding whether to grant permits or approvals to construct or operate the proposed project.

2.7 PROJECT APPROVALS REQUIRED

As described above, this EIR will be used by the County as a decision making tool for approval of the Termino Avenue Drain Project. Prior to implementation of the proposed project, the Los Angeles County Board of Supervisors must certify the EIR, adopt the Findings of Fact, Mitigation Monitoring Program and Statement of Overriding Considerations, and approve the various County permits required for the storm drain construction project. In addition, a series of approvals, permits, and notifications must be obtained from several federal and state, and local area regulatory agencies. The required permits and approvals for the proposed project are presented in Table 2-3.

TABLE 2-3 PROJECT ENTITLEMENTS AND REGULATORY PERMITS

Agency	Permit/Action
Federal	
U.S. Army Corps of Engineers	Section 404[2] and Section 10 Permit for the discharge of dredged or fill material into Marine Stadium.
State	
California Coastal Commission	Coastal Development Permit for development within a coastal zone.
California Regional Water Quality Control Board, Los Angeles Region	Construction General Permit for ground disturbing activities; Section 401 Permit for discharge of storm water into Marine Stadium; waste discharge permit for construction dewatering if groundwater is encountered during construction.
City	
City of Long Beach, Department of Public Works	Various ministerial approvals (e.g., utility relocation, grading, drainage, and traffic control)

2.8 RELATED PROJECTS

A list of related projects was compiled pursuant to Section 15130 of the *CEQA Guidelines*. The list includes related past, present, and probable future projects that, when taken together with the proposed

[2] This Project is part of the Nationwide Permit Program (NWP). As such, an Environmental Impact Statement is not required. The NWP program authorizes only those activities that have minimal adverse effects, individually or cumulatively. See U.S. Army Corps of Engineers' "Finding of No Significant Impact for Nationwide Permit Program" at www.usace.army.mil/cw/cecwo/reg/new98fons.htm.

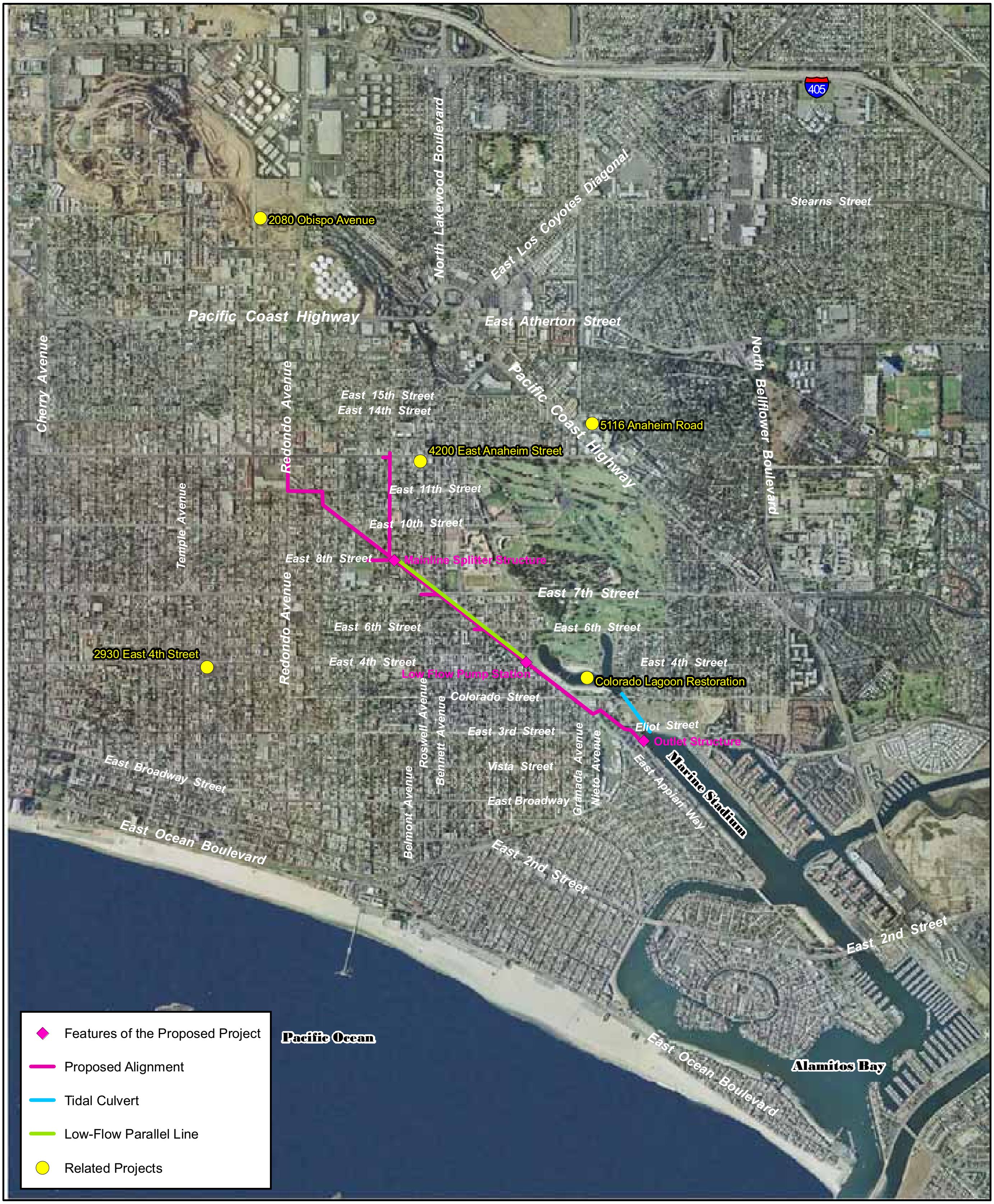
project, could cause significant cumulative environmental impacts. This EIR includes an analysis of cumulative impacts for each environmental impact category in Chapter 4.

Table 2-4 includes all of the approved, under construction, or reasonably foreseeable projects within one-mile of proposed Termino Avenue Drain alignment. The one-mile boundary was selected based on the location and type of the project as described further in Chapter 4.3, Cumulative Impacts. The list of related projects is derived from a larger City-wide list of related projects obtained by the City Planning Department. The locations of the following projects are shown on Figure 2-6, Related Projects.

TABLE 2-4. CUMULATIVE PROJECT LIST

Project No.	Address	Size	Description
1	2080 Obispo	106 units (single family homes)	Residential development project.
2	4200 E. Anaheim St.	29 units (condominiums)	Residential development project.
3	5116 Anaheim Road	34 units (attached town homes)	Residential development project
4	2930 E. 4th Street	6,200 square-feet	Commercial expansion project (Ralph's Supermarket)
5	Colorado Lagoon Restoration Project	N/A	This project includes clean-out of the existing tidal culvert that connects Marine Stadium to Colorado Lagoon, installation of a vegetated bioswale along the fenceline between Recreation Park Golf Course and Colorado Lagoon, installation of bioswales at Colorado Lagoon drain outlets, and installation of a low-flow diversion system to the sanitary sewer. The City was recently awarded $3.8 million in Proposition 40 grant funding for the project.

Source: City of Long Beach, February 6, 2007



Source: City of Long Beach, 2004; California Geospatial Information Library (CalGIS), 2003-2005

N

1 inch equals 0.5 mile

0 0.25 0.5 1 Miles

Figure 2-6
Related Projects

3 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

The following sections include an analysis, by issue area, of the proposed project's potential effects on the environment. Each environmental issue area includes the following subsections:

- Environmental Setting;
- Regulatory Setting;
- Environmental Analysis;
- Mitigation Measures; and
- Significance After Mitigation.

The environmental issue areas analyzed in this section are as follows:

3.1 Land Use and Planning;
3.2 Aesthetics, Light, and Glare;
3.3 Biological Resources;
3.4 Cultural Resources;
3.5 Transportation/Circulation;
3.6 Air Quality;
3.7 Noise;
3.8 Geology/Soils;
3.9 Hydrology/Water Quality;
3.10 Hazards and Hazardous Materials; and
3.11 Recreation.

As identified in the Initial Study prepared in May 2004 (see Appendix A), the following are the environmental issue areas that were not found to be significantly impacted or potentially impacted by the proposed project:

- Agricultural Resources;
- Mineral Resources;
- Population/Housing;
- Public Services; and
- Utilities and Service Systems.

Therefore, no further evaluation of these environmental issue areas is necessary in this chapter. Chapter 4.0 includes a brief discussion of impacts that were not found to be significant.

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3.1 LAND USE AND PLANNING

3.1.1 ENVIRONMENTAL SETTING

EXISTING LAND USES

The City of Long Beach is a diverse community encompassing areas of residential and commercial land use as well as heavy industry and port activity. The City is characterized by relatively flat topography and has over 10 miles of coastline that includes several bays, inlets, and the Port of Long Beach.

The proposed project alignment covers approximately 12,190 linear feet currently occupied by PE right-of-way, open space, roadways, parking lots, and sidewalk. As shown on Figure 2-3, land uses adjacent to the storm drain alignment are primarily residential, consisting of a mix of high and medium density multi-family housing and single family housing. Commercial businesses are located at some of the street intersections where the proposed storm drain crosses, including East Anaheim Street and East 11th Street.

The northernmost portion of the project alignment would extend through mixed office/retail areas, as well as high, medium, and low density residential areas. Between 10th and Colorado Streets, the alignment would travel southeast along an abandoned PE right-of-way, now owned by the City. Some portions of this right-of-way have been planted by community residents. Seven schools are located within proximity to the proposed project alignment (see Figure 2-2), including Woodrow Wilson High School, located adjacent to the PE right-of-way on 7th Street. The proximity of the project to local schools is discussed further in Chapter 2, Project Description.

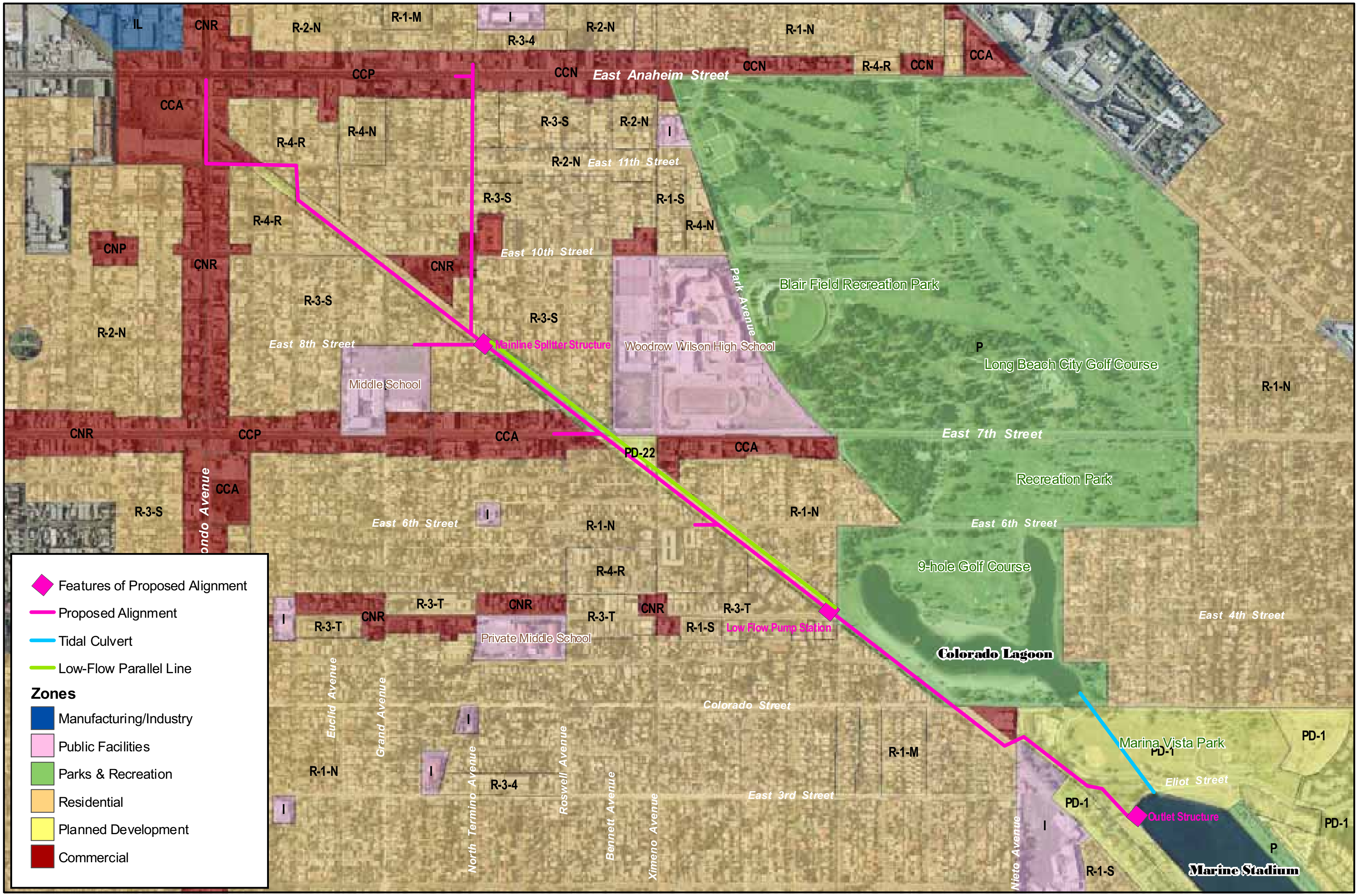
South of Colorado Street, the project alignment would join Appian Way for approximately 500 feet before extending north-east across a parking lot into Will Rogers Mini Park. The alignment would then travel southeast through the park to the southern terminus of the project alignment at Marine Stadium (Figure 2-2). Marine Stadium is a 1-mile-long rectangular inlet within Alamitos Bay.

3.1.2 REGULATORY SETTING

The storm drain is a County project located on incorporated City land; therefore, the City General Plan and Zoning Ordinance will be used to determine project-related impacts on planned land uses. The zoning designations for the project area are shown on Figure 3.1-1.

THE CITY OF LONG BEACH GENERAL PLAN LAND USE ELEMENT AND ZONING ORDINANCE

The City adopted a Land Use Element in July 1989, which was revised in April 1997. This element of the General Plan establishes goals, objectives, policies, and programs for the manner in which new development will occur and existing uses will be preserved within the City. The relevant goals of the Land Use Element include the following:



Data Source: City of Long Beach (2003)

N

1 inch equals 1,000 feet

0 500 1,000 2,000 Feet

Figure 3.1-1
General Plan Land Use Zoning

- Managed Growth: Long Beach accepts the population and economic growth anticipated through the Year 2000, and intends to guide that growth to have an overall beneficial impact upon the City's quality of life.

- Economic Development: Long Beach will pursue economic development which focuses upon international trade, while maintaining and expanding its historic economic strengths in aerospace, bio-medicine, and tourism.

- Downtown Revitalization: Long Beach will build its downtown into a multi-purpose activity center of regional significance, emphasizing a quality physical environment, a pedestrian focus, and a wide variety of activities and architectural styles.

- Neighborhood Emphasis: Long Beach recognizes the strong neighborhood to be the essential building block of a City-wide quality living environment, and will assist and support citizen efforts to maintain and strengthen their neighborhoods.

- Facilities Maintenance: Long Beach will maintain its physical facilities and public rights-of-way at a high level of functional and aesthetic quality, manifesting the pride of the citizens in their City and ensuring that future generations need not bear the burden of deferred maintenance.

- Functional Transportation: Long Beach will maintain or improve the current ability to move people and goods to and from development centers while preserving and protecting residential neighborhoods.

The objectives of the Land Use Element focus on maintaining quality, conserving existing neighborhoods, revitalizing activity centers, and strengthening arterial corridors. The Land Use Element includes policies that address five major components: forecasts, urban design, neighborhood, activity center, and traffic corridors. Within the Land Use Element, these policies and objectives are addressed on a neighborhood basis (City of Long Beach 1997).

The proposed project traverses four neighborhoods: Wilson High, Eastside and Carroll Park, Belmont Heights, and Belmont Park (see Figure 2-2). Each neighborhood plan includes a summary of the neighborhood description and analysis, and a summary of neighborhood policies, which includes three subcategories of land use: design controls/architectural compatibility, neighborhood services, and facilities and amenities. Belmont Heights is characterized as an older residential area primarily developed with single-family, duplex, and mid-density (2-5 units) apartment buildings. The land use goals for the Belmont Heights area are to preserve the low density, unique housing stock within this neighborhood and provide more recreational space. Belmont Park is overwhelmingly developed with single-family homes. The land use policies for this neighborhood include maintaining Belmont Park as a low-scale, low-density neighborhood with many amenities and the continued vitality of the commercial center along 2nd Street. Eastside and Carroll Park have a combination of low, middle and some higher residential densities. The land use policies for this area are aimed at providing a mix of commercial and residential uses. Wilson High is a low to moderately dense residential neighborhood bisected by the PE right-of-way. Land use policies for this area focus on mid-density infill development compatible with the surrounding neighborhood context. Land use policies for the City and the project neighborhoods do not directly address utility upgrades (City of Long Beach 1997).

However, the Land Use Element includes a component dedicated to areas of the City subject to flooding. In 1983, the City amended its General Plan with the adoption of FEMA maps, which indicate the areas subject to flooding in 100- and 500-year frequency flood events. These maps are revised periodically whenever FEMA revises its maps for the City. The most recent update of the City's Flood Zone map took effect on January 11, 2002, and no more recent updates have occurred. As such, these maps are considered the most recent, and therefore, most accurate Flood Zone maps for the project area. The project site is mapped within an area prone to flooding during a 100-year storm event. The Land Use Element does not identify the need for improvements to those areas subject to flooding in its objectives, goals, and policies (City of Long Beach 1997).

CITY OF LONG BEACH ZONING ORDINANCE

The Zoning Ordinances serve as the instruments of land use regulation for all properties and proposed development within the City. The outfall structure would be located at Marine Stadium, an area zoned Open Space and designated open space/park. Other General Plan land use designations along the mainline include: Right-of-Way - Pacific Electric Railroad; Townhomes, Moderate Density Residential, and High Density Residential in the project area north of 7th Street; and Single Family, Townhomes, and Open Space/Parks in the project area south of 7th Street (see Figure 2-3). The Zoning Ordinances establish development densities, minimum lot size, setbacks, open space requirements, height limits, and other development characteristics. The Zoning Ordinances do not stipulate development characteristics associated with utility upgrades.

CITY OF LONG BEACH LOCAL COASTAL PROGRAM

At the state level, the California Coastal Act (CCA) of 1976 (Cal. Code Regs. Title 14 § 30000) requires each local jurisdiction along the coast to prepare and submit for state certification a Local Coastal Program (LCP) for that portion of its area located within a specified Coastal Zone. An LCP is defined as "a local government's land use plans, zoning ordinances, zoning district maps, and, within sensitive coastal resources areas, other implementing actions, which, when taken together, meet the requirements of, and implement the provisions and policies of [the Coastal Act] at the local level" (PRC § 30108.6).

The City's LCP was certified by the California Coastal Commission (CCC) in 1980. The LCP represents the commitment of the City to provide continuing protection and enhancement of its coastal resources. The LCP provides general policies for areas within the Coastal Zone and categorizes the coastal zone in Long Beach into eight community plans. The proposed project is within the Waterland Communities subarea, specifically Area C (Belmont Heights/Belmont Park). The LCP provides an implementation plan and a policy plan summary for the following categories: shoreline access; recreation and visitor serving facilities; locating and planning new development; historic preservation; and hazards.

The use of Marine Stadium as an ecological, recreational, and wildlife resource is discussed in the Resource Management Plan portion of the LCP. The Resource Management Plan also includes recommendations for Colorado Lagoon, which connects to Marine Stadium through a tidal culvert. Key issues discussed for both Marine Stadium and Colorado Lagoon include improving water quality while maintaining public access for recreational use of these facilities.

With reference to the proposed project, the LCP states that "[a]ll street and utility improvements necessary for the safe and proper functioning of Area C are in place. Utility systems capacities are considered adequate to accommodate any growth within Area C foreseen by this plan" (City of Long Beach 1980 page III-C-8).

Furthermore, the LCP recommends that "[t]he Pacific Electric Company right-of-way between Roycroft and Argonne along Livingston Drive and the right-of-way and vacant land on the southeast corner of Fourth Street and Park Avenue should be used for a combination of the following activities: limited playfield; neighborhood gardens; botanical gardens; green open space; and a bicycle path. Plans for these developments shall be prepared as part of a capital improvement program to be completed after certification of the LCP" (City of Long Beach 1980 page III-C-13).

3.1.3 Environmental Analysis

The Land Use analysis addresses the project's relationship to the existing land use regulations that are applicable to the project site, and the relationship between the project and surrounding uses. This analysis identifies applicable plans, policies, and goals, and discusses the relationship between the proposed uses and regulatory guidelines. Evaluations are made regarding whether the project is consistent with the relevant plans. Projects are considered consistent if they are compatible with the general intent of the plans and would not interfere with their primary intent.

The analysis compares the proposed uses to the existing land uses surrounding the project site to determine whether the project would disrupt, divide, or isolate existing neighborhoods, communities, or land uses. The existing land use information is based on aerial photography, land use maps, and field surveys in which surrounding uses were identified and characterized. As such, the analysis addresses general land use relationships and urban form. The extent to which the project would affect traffic, noise, and air quality is addressed independently in other sections of this EIR.

Thresholds of Significance

The project would have a significant effect on land use if it would result in one or more of the following:

- introduce land uses that are physically or functionally incompatible with adjacent uses;
- substantially conflict with the established community character;
- physically divide an established community; or
- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

IMPACT ANALYSIS

LAND-1: *The proposed project would be consistent with applicable land use plans, zoning, and land use designations.*

City of Long Beach Land Use Element

As described above, the Land Use Element focuses on maintaining quality, conserving existing neighborhoods, revitalizing activity centers, and strengthening arterial corridors. It does so by establishing neighborhood-specific policies addressing five different components: forecasts, urban design, neighborhood, activity center, and traffic corridors. The proposed project traverses four neighborhoods: Wilson High, Eastside and Carroll Park, Belmont Heights, and Belmont Park. The land use policies for these neighborhoods describe maintaining the existing neighborhood character and preserving residential uses. The proposed project involves upgrading an existing storm drain facility. The proposed improvements would be located almost entirely underground upon completion of the project. The storm drain is located primarily within the PE right-of-way. Aside from the small storage building, there is no development on the PE right-of-way which would be removed as part of the project. Further, the alignment would be restored to its original condition following completion of the proposed project. As such, the proposed project would not require changes to the residential character of these neighborhoods. Further discussion regarding consistency with the General Plan is also included Chapter 3.2, Aesthetics, Chapter 3.5, Transportation and Circulation, Chapter 3.6, Air Quality, and Chapter 3.7, Noise.

The Land Use Element identified areas in the City that are prone to flooding based on the most recent FEMA maps. The potential for flooding in the project area is of particular concern in the Land Use Element of the General Plan. The proposed project would alleviate flooding in the project area and would therefore provide a benefit consistent with the Land Use Element. Thus, the proposed project would not conflict with the General Plan objectives, goals, and policies applicable to the project area and would benefit flood control in a portion of the City. The impact would be less than significant, and no mitigation measures are required.

City of Long Beach Zoning Ordinance

As described above, the project area consists of a mix of uses, including Right-of-Way - Pacific Electric Railroad; Townhomes, Moderate Density Residential, and High Density Residential in the project area north of 7th Street; and Single Family, Townhomes, and Open Space/Parks in the project area south of 7th Street. The proposed project involves upgrading an existing storm drain facility. The proposed improvements would be located almost entirely underground upon completion of the project. The proposed project would not conflict with the City's development standards because the project site would be returned to its original condition following project completion. The impact would be less than significant, and no mitigation measures are required. No new development would occur that conflicts with existing zoning designations.

City of Long Beach Local Coastal Program

A primary concern of the Long Beach LCP is improving water quality while maintaining public access for recreational uses at Marine Stadium. The proposed project would include elements to improve water quality in Marine Stadium. The catch basin screens would remove trash from the storm drain, preventing it from entering Marine Stadium and potentially backwashing via the tidal culvert into Colorado Lagoon. Furthermore, the low-flow pumping station would divert low-flow water into the sewage system for treatment, thus eliminating low flows directly into Marine Stadium. As the first rains wash the majority of water pollutants into the stormwater system, diverting the initial and low-flow water in the stormwater pipe would improve the quality of water entering Marine Stadium. Potential impacts and benefits to water quality are discussed in further detail in Chapter 3.9, Hydrology and Water Quality. Public Access to and recreational use of Marine Stadium would continue during construction and operation of the project. Thus, the proposed project would not conflict with the City's LCP, which also states that the PE right-of-way should be open space. The impact would be less than significant, and no mitigation measures are required.

Other Regional Plans and Programs

The Southern California Association of Governments (SCAG) determined that the project would not be regionally significant and therefore, is not required to demonstrate compliance with the Regional Transportation Plan (RTP) or Regional Comprehensive Plan (RCP). The determination letter from SCAG is included in Appendix A. The project would replace existing underground storm drain infrastructure and alleviate flooding hazards in a highly urbanized area. As discussed above, the alignment would be returned to its original condition upon completion of project and no land use or zoning changes would occur. The impact would be less than significant and no mitigation would be required.

LAND-2: *The proposed project would be compatible with surrounding land uses in the vicinity.*

Construction effects, such as noise, dust, vibration, and access restrictions would result from construction of the proposed project. Construction-related impacts related to air quality, traffic and noise are discussed in Chapter 3.6, Air Quality, and Chapter 3.7, Noise, and Chapter 3.5 Traffic and Transportation.

Upon completion of the project, the alignment would be returned to its existing condition and the only visible features would be the outlet structure at Marine Stadium, small above-ground facilities at the low-flow diversion pump location, and new manhole covers along existing roads. With the exception of these features, the proposed project would be constructed entirely underground. During operation of the completed stormwater pipeline, the underground portion of the project would not introduce new land uses or disrupt existing land uses and the project site would be restored to its original condition. Other than the features described above, the proposed project would not be visible from the surface and consequently, the area through which the project traverses would not be impacted on the surface by the new storm drain system. The outfall structure at Marine Stadium would not change the stadium's land use designation of open space/parks. The outlet structure would be visible within the rock rip rap shoreline, and would have an appearance that would be similar to other outlet structures that currently discharge into Marine Stadium. As such, operation of the project would be compatible with surrounding land uses. The impact would be less than significant, and no mitigation measures are required.

LAND-3: *The proposed project would not disrupt or divide the physical arrangement of an established community or substantially alter existing land use patterns, or conflict with the established community character.*

Because the proposed project alignment would be almost entirely underground, it would have no effect on the character of communities through which it passes. Temporary impacts resulting from construction would not substantially diminish the character of surrounding communities, which would ultimately be served by the improved flood protection that would result from implementation of the proposed project.

Construction of the proposed project would temporarily restrict access to certain portions of the alignment, including short-term obstructions along streets and sidewalks and at some intersections. Such obstructions would be temporary, and detours would be provided to divert vehicles and pedestrians around the project site (see Chapter 3.5, Transportation and Circulation). Detours and obstructions would not restrict access to adjacent residences. Consequently, construction impacts would be temporary and would not result in any land use compatibility impacts.

The proposed project alignment traverses the Wilson High, Eastside Carroll Park, Belmont Heights, and Belmont Park neighborhoods. As it is largely underground, operation of the proposed project would not physically divide any established community within Long Beach. In contrast, it would create infrastructure that would serve to protect the neighborhoods of Long Beach with sufficient facilities for flood control. The outfall structure would be located at the edge of Marine Stadium, and as such, would not physically obstruct or divide a community. Consequently, the proposed project would not be incompatible with adjacent communities, and no significant land use impacts would occur.

3.1.4 Mitigation Measures

Impacts to land use would be less than significant; therefore, no mitigation measures are required.

3.1.5 Significance After Mitigation

No impacts to land use have been identified and no mitigation proposed; therefore, impacts on land use would be less than significant without mitigation.

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3.2 AESTHETICS, LIGHT, AND GLARE

This section evaluates the potential impacts to visual resources resulting from construction and operation of the proposed project. The assessment was based on the *CEQA Guidelines* Appendix G and visual assessment guidelines developed by the United States Department of Transportation in *Federal Highways Administration (FHWA) Visual Impact Assessment for Highway Projects* (FHWA Publication No.FHWA-HI-8-054). Figure 3.2-1 illustrates the location of photographs shown in this section.

3.2.1 ENVIRONMENTAL SETTING

REGIONAL SETTING

Portions of the Pacific Coast Highway (PCH), also known as State Route 1 (SR 1), are designated as a scenic highway. PCH roughly parallels the proposed project approximately 2.5 miles east of the project alignment. This segment of PCH is eligible as a State Scenic Highway, but is not officially designated as such.

LOCAL SETTING

The proposed alignment is shown on Figures 2-2 and 2-4, and the land uses that surround the alignment are shown on Figure 2-3. At its northern extent, between Anaheim Street and the point at which the alignment enters the PE right-of-way near Termino Avenue and East 8th Street, the proposed mainline alignment travels within a number of streets characterized by retail/commercial and mixed-density residential. The lateral line, which extends to the northwest of the mainline, travels through similarly designated streets before joining the PE right-of-way between East 10th and Mayfield Streets. Community gardens are located where the lateral line would join the PE right-of-way (north of 10th Street). A typical view of the residential streets is shown in Figure 3.2-2, while Figure 3.2-3 depicts the view along Anaheim Street from the intersection with Termino Avenue.

The proposed alignment would travel for approximately 8,500 linear feet along the PE right-of-way, which varies between approximately 90 to 125 feet in width. The PE right-of-way is devoid of structures and the rail bed has been removed. As indicated in Figures 3.2-4 and 3.2-5, the majority of the right-of-way is sparsely vegetated, and is characterized by dirt and intermittent grasses, logs, and utility lines. Houses are located either side of the right-of-way, many of which have little frontage between the building façade and the edge of the alignment (see Figure 3.2-4). By contrast, the portion of the PE right-of-way between East 8th Street and East 7th Street is densely vegetated, with walking paths providing access through the planted natural vegetation (see Figure 3.2-6). A greenbelt within portions of the right-of-way was developed by the Greenbelt Committee of Long Beach, a non-profit community group.

Existing land uses adjacent to the alignment are shown on Figure 2-3. For the majority of the alignment, residences are either side of the PE right-of-way, but other uses are also within proximity of the alignment. Woodrow Wilson High School, located at 4400 East 10th Street, is directly adjacent to the PE

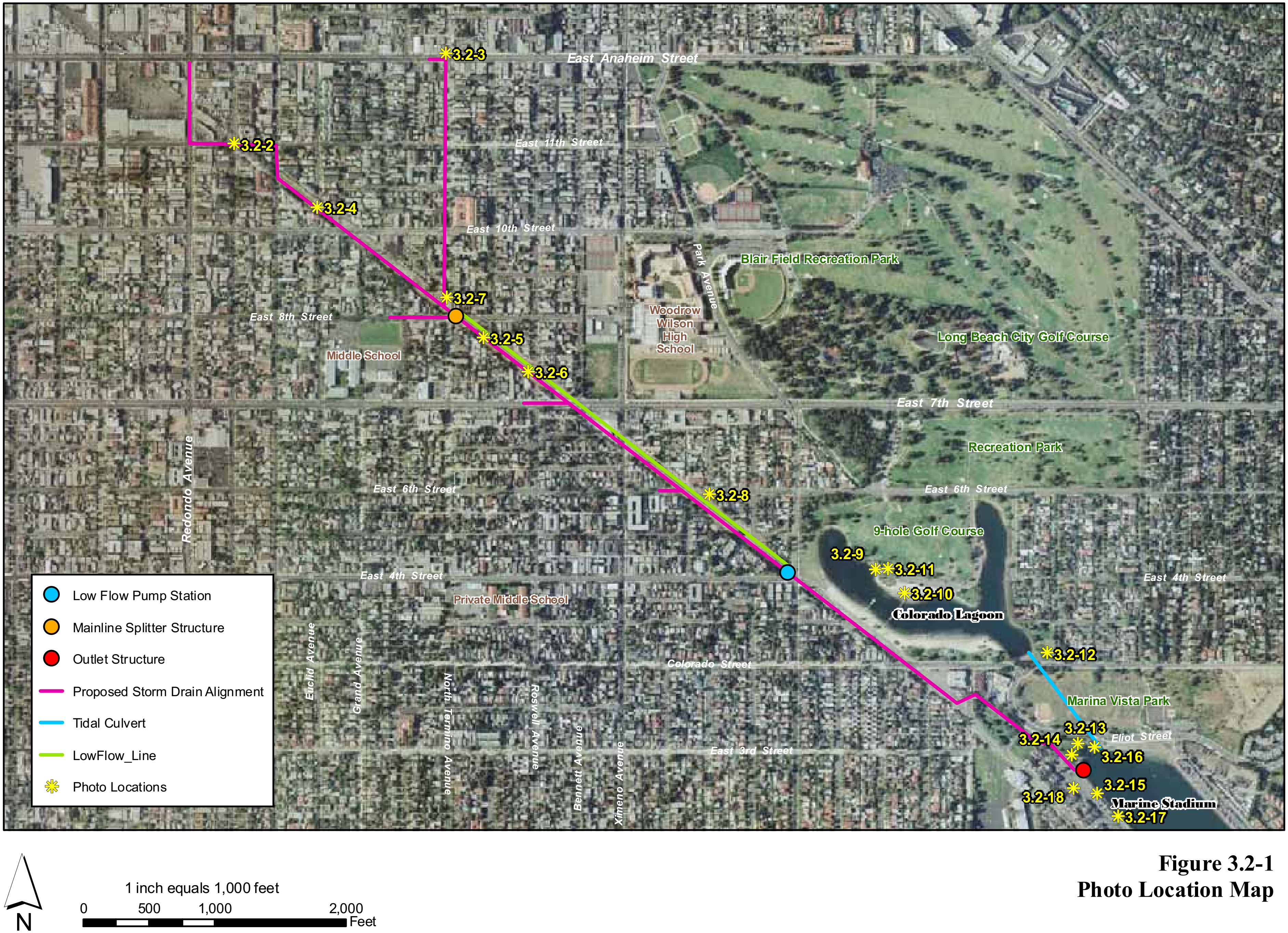

Figure 3.2-1
Photo Location Map

Figure 3.2-2
View along 11th Street at Newport Avenue

Figure 3.2-3
View from the junction of East Anaheim Street and Termino Avenue

Figure 3.2-4
View along the PE Right-of-Way facing southwest towards 10th Street

Figure 3.2-5
View along the PE Right-of-Way facing southeast from Ximeno Avenue

Figure 3.2-6
View along the PE Right-of-Way north of 7th Street

Figure 3.2-7
View along the PE Right-of-Way facing southeast at Termino Avenue and 8th Street

right-of-way at the school's southern border on 7th Street (see Figure 2-3). The school consists of 10 buildings for teaching and administration, all of which are located between 700 and 1,500 feet from the PE right-of-way. Farther south, a commercial structure is located at the corner of East 7th and Ximeno Streets, through which the proposed alignment passes. This structure is a one-story building.

At a number of intersections, such as at East 10th Street and Grand Avenue, and at East 8th Street and Termino Avenue, the PE right-of-way terminates on either side of the intersection (see Figure 3.2-7). The PE right-of-way is visible from a number of residential streets, particularly where streets make right-angle turns to avoid the right-of-way. This scenario provides a brief vista of open space, as shown in Figure 3.2-8.

As the alignment continues south, it leaves the PE right-of way at approximately East 4th Street and Park Avenue, where it travels along Appian Way, west of Colorado Lagoon. Colorado Lagoon is a recreational area consisting of a V-shaped salt water body approximately 40 acres in size, including a beach area characterized by gently sloping sandy banks that lead to the water (see Figures 3.2-9 and 3.2-10). Grassy open space and picnic areas (see Figure 3.2-11) surround the lagoon. A view of the lagoon, as seen from the south, is provided in Figure 3.2-12. Recreation Park, a City park and golf course, is located to the north of the Colorado Lagoon.

South of Colorado Street, the proposed alignment continues approximately 430 feet further along Appian Way before veering northeast through a parking lot, across Nieto Avenue, and southeast along East Paoli Way. Adjacent land uses along this segment of the alignment are predominantly residential and open space, with residences along Nieto Avenue looking northwest toward Marina Vista Park. At Paoli Way, the proposed alignment passes approximately 250 feet northeast of Rogers Middle School. Due to the intermediate open space between the school and the alignment, the alignment is visible from buildings in the northeastern portion of the school property. The alignment terminates at the proposed storm drain outlet into Marine Stadium, a 1 mile-long rectangular inlet within Alamitos Bay (see Figures 3.2-16, 3.2-17, and 3.2-18). A rendering of the proposed Colorado Lagoon outfall structure at Marine Stadium is shown in Figure 2-5.

3.2.2 REGULATORY SETTING

THE CITY OF LONG BEACH GENERAL PLAN

While the General Plan serves as the principal instrument regulating land use across the City, it does not contain specific policies with regard to aesthetics of storm drain infrastructure. Rather, the goals and policies relate to neighborhood character, building style, height, and density. The majority of the proposed project would be located below grade, and consequently, would not be visible once constructed.

As indicated in Chapter 3.1, the General Plan Land Use Element divides the City into separate neighborhoods. The proposed project traverses four different neighborhoods, including Wilson High, Eastside and Carroll Park, Belmont Heights, and Belmont Park. Each neighborhood plan includes a summary of the neighborhood description and analysis, and a summary of neighborhood policies, which

Figure 3.2-8
View along the PE Right-of-Way from East 5th Street and Roycroft Avenue

Figure 3.2-9
Facing west at Colorado Lagoon

Figure 3.2-10
Beach at Colorado Lagoon

Figure 3.2-11
Picnic facilities at Colorado Lagoon

Figure 3.2-12
Colorado Lagoon from Orlena Avenue

Figure 3.2-13
View from Marina Vista Park toward houses on Paoli Way

Figure 3.2-14
Marine Stadium from Marina Vista Park

Figure 3.2-15
View south along the southern side of Marine Stadium and bike path

Figure 3.2-16
Across Marine Stadium torward houses on Paoli Way

Figure 3.2-17
View northwest along the southern side of Marine Stadium and bike path

Figure 3.2-18
Marine Stadium from the adjacent parking lot on Paoli Way

includes design controls/architectural compatibility. Belmont Heights and Belmont Park are predominantly low density, low scale residential neighborhoods. The land use goals for the Belmont Heights area are to preserve the low density, unique housing stock within this neighborhood and provide more recreational space. The land use policies for Belmont Park include maintaining Belmont Park as a low scale, low density neighborhood with many amenities and the continued vitality of the commercial center along 2nd Street. Wilson High and Eastside and Carroll Park are mixed density residential neighborhoods. The land use policies for Eastside and Carroll Park are aimed at providing a mix of commercial and residential uses. Land use policies for Wilson High focus on mid-density infill development compatible with the surrounding neighborhood context. Design controls for these four neighborhoods concentrate on conformity to existing scale, color, texture, and style of buildings, emphasizing these characteristics in a residential context. Design criteria for utilities are not called out in these sections.

The City's Scenic Routes Element indicates that there are no officially designated state scenic roadways in the vicinity of the proposed project. The closest officially designated scenic roadway is a segment of State Route 91 (SR 91) in Orange County, from State Route 55 (SR 55) through the City of Anaheim. This segment of SR 91 is located approximately 16 miles east of the proposed project. Running diagonally northeast of the project alignment, State Route 1 (SR 1) is listed as a roadway that is eligible for official state scenic designation; however, at present that status is not official. Ocean Boulevard, located approximately 0.9 mile south of the southern extent of the project alignment, has been proposed as part of the County's scenic highway system; however, like SR 1, this status is not official. As noted in the City's Scenic Routes Element, no City- or County-designated scenic roadway is within view of the project site. Consequently, the proposed project will not be visible from any Caltrans-designated Scenic Highways.

The City's Transportation Element includes a Street Tree Beautification Program, designed to improve the visual quality along city streets. The program prioritizes regional corridors, major arterials and entrances to the City (City of Long Beach 1991). This program is run by the Department of Public Works and the Department of Planning and Building.

CITY OF LONG BEACH LOCAL COASTAL PROGRAM (LCP)

The City's LCP, certified by the CCC in 1980, discusses aesthetic considerations by Area, with the proposed project located in Area C. As indicated in Chapter 3.1, the LCP represents the commitment of City to provide continuing protection and enhancement of its coastal resources, including visual resources. The LCP states that "[t]he views of Marine Stadium from homes along Paoli Way … are sometimes interrupted by chain link fences and bleachers erected in connection with stadium events. Open space around Colorado Lagoon and the water of the Lagoon are visual sources of enjoyment for those residing near it, as well as for its users. The neighborhoods of Area C are also visual resources. Large trees, extensive landscaping, and a high level of maintenance of homes and grounds contribute to the visual quality of these communities" (City of Long Beach 1980, page III-C-7).

3.2.3 ENVIRONMENTAL ANALYSIS

This environmental analysis uses a qualitative description approach to evaluate the impact of the proposed project on visual resources. Locations from which the project could be seen in each zone and key views are identified. In general, key views are those viewsheds of medium or high–quality[1], which contain elements that are considered visually important or which are visible to sensitive viewers. Sensitive viewers are groups of people who would see the project site during construction and operation. Residents, motorists, and recreationalists would be sensitive viewers of the proposed project. As the majority of the structure would be underground during operation, the majority of sensitive views would occur during construction.

Key views are those viewsheds that provide views of scenic vistas or visually important areas. Key views have a high quality of topographic relief, a variety of landscaping, rich colors, impressive scenery, and unique built features. Key Observation Points (KOPs), views of the project site from a representative range of sensitive viewer locations, were selected for each project site location and an evaluation made as to the degree of visual change from each location as a result of the project.

Five KOPs were selected for this analysis, as shown in Figures 3.2-14, 3.2-15, 3.2-16, 3.2-17, and 3.2-18. These views were selected as they represent the view that would result from the proposed project from a number of places and for a range of viewers, including park users at Marina Vista Park (see Figures 3.2-14 and 3.2-16), recreational users of the path adjacent to Marine Stadium (see Figures 3.2-15 and 3.2-17), and visitors and residents adjacent to Paoli Way (see Figure 3.2-18). Residents adjacent to these locations, and passing motorists, would also experience views from these KOPs.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on aesthetics if it would result in one or more of the following:

- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial artificial light that would adversely affect nighttime views in the area.

EFFECTS DISMISSED IN THE INITIAL STUDY

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that several issues were less than significant and did not need to be further analyzed in the EIR. Specifically, the Initial Study determined that the project would not:

- substantially damage significant visual resources such as trees, rock outcroppings, and historic

[1] The quality of views are defined by FHWA using several factors, including vividness, intactness, and unity.

buildings within a state scenic highway;

- have a substantial adverse effect on a scenic vista or obstruct designated scenic views; or
- create a new source of substantial glare that would adversely affect day or nighttime views in the area or create potential hazards to motorists.

As discussed in the Initial Study, there are no designated state scenic highways near the project site; the nearest designated state scenic highway is the Angeles Crest Highway (State Route 2), located approximately 30 miles north of the project site in the San Gabriel Mountains. Two eligible state scenic highways, Pacific Coast Highway (PCH) from Venice Boulevard (near Santa Monica) to Highway 101 (near Oxnard) and Topanga Canyon Boulevard (State Route 27) in the Santa Monica Mountains, are located approximately 24 and 30 miles to the northwest, respectively. The project site is not visible from any of these highways; therefore, impacts related to scenic highways would not occur.

Based on a review of the City's General Plan and LCP, there are no scenic vistas open to the public within the project area that would be affected. Furthermore, the proposed project would not result in placement of any buildings or other obstructions to hinder views of scenic resources. The project site is predominantly composed of arterial and local residential streets, and built-up residential and commercial developments that would not be affected by the buried storm drain facilities.

As the majority of the proposed project is below-grade, it would not create substantial shade and shadow effects. The outlet structure and low-flow control cabinet would be visible after construction, but likewise, these would not create shade and shadow effects. The project would not install any new lighting; hence, no new source of nighttime light would result from the project. Likewise, the project would not use construction materials that would reflect natural sunlight or otherwise result in glare.

IMPACT ANALYSIS

VIS-1: *The proposed project would not substantially degrade the existing visual character or quality of the site.*

With the exception of the outfall structure and low-flow control cabinet, the proposed project components would all be underground. When in operation, the underground portion of the project would not visibly introduce new land uses or visual features and none of this portion of the drain would be visible to sensitive viewers. During excavation and construction, the proposed alignment would be temporarily disturbed and construction activities would be visible to sensitive viewers along each construction segment. However, these impacts would be temporary and the alignment would be restored to its existing visual character upon completion of the project construction. Thus, operation of the drain would not affect the adjacent and proximate visual character.

The proposed outfall structure, which would consist of head walls and wing walls, would be larger than the existing Colorado Lagoon outfall structure at Marine Stadium (see Figure 2-5). The dimensions of the proposed outfall opening would be approximately 25 feet at the culvert head wall. Although the head wall and wing walls would be visible from adjacent areas, most of the structure would be submerged during high tide. At mean low tide, approximately 3 to 4 feet of the head wall would be exposed. At mean high tide, approximately 1 to 1.5 feet of the head wall would be visible. A handrail would be placed on the top of the wing wall to provide access for maintenance of the outfall. A rendering of the proposed outlet structure is shown in Figure 2-5.

Although the outfall structure at Marine Stadium would be larger than other outlet structures nearby, it would not degrade the existing visual character of Marine Stadium. As indicated in Figure 3.2-18, the proposed structure would be below the line-of-sight for patrons in the parking lot adjacent to Marine Stadium, and the structure would appear at an oblique angle to passing motorists, whose views of the structure would be fleeting and temporary (see Figures 3.2-15 and 3.2-18). Although the proposed outfall structure would be larger than existing structures in the area, it would not be visibly intrusive to recreationalists and residences. The proposed outfall structure would appear slightly larger than the existing outfall structure connected to Colorado Lagoon, but the new outfall structure would be consistent with the style of the existing structure and would not be an uncommon sight for this setting, where an urban area meets a marine environment. The handrail would be clearly visible from the parking lot and the bike path. However, it would not be out of character with the surrounding visual setting nor would it detract from the visual quality of the bike path. Impacts would be less than significant.

Placement of the catch basin screens along the alignment and low-flow pumping station in the PE right-of-way just north of East 4th Street would not result in a significant visual impact because these structures would be located underground. Some above-ground structures would be installed, including a small pump enclosure and utility bores. These structures would be located within the alignment near the intersection with East 4th Street and would be visible from a limited number of residences adjacent to the alignment, and fleetingly to passing motorists. The pump enclosure would look like a standard metal or aluminum utility box, similar to an on-street cable wire or phone line junction box. These boxes are generally painted gray or silver and measure approximately six feet in height. The proposed structures would most likely be located near the sidewalk or existing street utilities. Because utility boxes are a common sight on urban sidewalks, the standard appearance of these features renders them unmemorable to the average viewer. Due to the limited duration of the view and the ordinary appearance of the proposed enclosure, it would likewise be rendered relatively unnoticeable to passing motorists. Accordingly, the impact would be less than significant.

During construction, the visual character of vegetated areas of the PE right-of-way would be temporarily affected due to the presence and operation of construction vehicles and equipment and removal of planted vegetation. Vehicles, equipment, and the open storm drain trench would also be visible from adjacent residences along the length of the alignment. As described in Chapter 2.0 Project Description, Construction, would progress approximately 100 feet per day, and no one residential block would typically be disturbed during construction for more than approximately 3 to 5 weeks. Upon completion of construction, soil would be placed on over the installed pipe to restore the original ground surface level. As these views would be of short duration during construction, and as most houses along the PE right-of-way face toward the street rather than the open space of the right-of-way, this impact would be less than significant.

The proposed project requires removal of a one-story structure that is currently vacant. The building is located near the southwest corner of Ximeno Avenue and 7th Street. The building is of a modern style and does not exhibit any remarkable architectural features (refer to Chapter 3.4, Cultural Resources). The building is located behind a commercial strip consisting of similar one- and two-story buildings. As such, removal of the one-story detached structure would not alter the visual character of the area. Impacts would be less than significant.

3.2.4 MITIGATION MEASURES

No significant impacts to aesthetics or light and glare would occur as a result of the project; therefore, no mitigation measures are required.

3.2.5 SIGNIFICANCE AFTER MITIGATION

No significant unavoidable adverse impacts to aesthetics or light and glade would occur as a result of the proposed project.

3.3 BIOLOGICAL RESOURCES

This section evaluates existing biological resources at the site and potential impacts associated with the proposed project. Information in this section was gathered through literature review, examination of available databases, and through field reconnaissance. Field surveys for vegetation communities, rare plants, wildlife, and eelgrass were conducted from 2003 through 2005. This information adequately reflects the existing conditions that were present at the time the notice of preparation was published for this project (May 2004). The site is located in an urbanized area and no major changes in biological resource conditions were observed or documented within the survey area between May 2004 and the completion of the field surveys in 2005 (see Appendix B, Biological Technical Report). In addition, water quality testing, including salinity and turbidity analysis, were conducted for the project (see Appendix D, Hydrologic and Water Quality Analyses Report). A Biological Technical Report prepared for the proposed project is included as Appendix B.

3.3.1 ENVIRONMENTAL SETTING

VEGETATION

The project site is located within existing streets and the abandoned PE railway right-of-way, which is generally heavily disturbed and/or developed. A portion of the PE right-of-way is currently a community sponsored environmental restoration project. The Long Beach Greenbelt project runs from 11th Street/Loma Avenue to 4th Street/Park Avenue along the PE right-of-way; however, habitat restoration has only occurred in one area, from 8th Street to 7th Street. A trail runs through the center of the restoration area.

The majority of the area within the proposed alignment is developed. Vegetation communities along the alignment include marine, native landscaping, developed, disturbed, and ornamental vegetation. A description of each vegetation community is provided below and the total acreage areas are presented in Table 3.3-1. The biological survey area included the alignment and a 100-foot buffer, with the exception of the outlet structure area, where a 500-foot buffer was included in the study area. A vegetation map showing the project boundary is shown on Figure 3.3-1, and a detailed eelgrass map is provided in Figure 3.3-2.

MARINE

The marine portion of the study area is within Marine Stadium, which was used for the 1932 Olympic rowing competition and is now used for water skiing, high performance boat racing, crew competition, and outrigger canoe competition. Marine habitats in Marine Stadium include sand beach, mudflat, intertidal and subtidal rip rap, and subtidal soft bottom. The project area shoreline consists of protective quarry rock rip rap on the west side of Marine Stadium. A storm drain and a tidal culvert are located within this section of shoreline. This shoreline grades into a sandy beach (End Beach) on the east side of the tidal culvert, which was used as a mitigation site for eel grass. The entire length of the Marine Stadium's eastern shoreline is rock rip rap. This vegetation community and the associated acreage calculations do not include the shoreline and upland habitats of Marine Stadium, which are included below as 'Other'.

TABLE 3.3-1 VEGETATION COMMUNITIES AND LAND COVER TYPES[1]

Vegetation Communities	Acre(s)
Marine/Eelgrass[2]	5.75/0.13
Native landscaping	2.54
disturbed	7.27
developed	43.89
ornamental	1.66
other	0.75
Total Acres	**61.86**

[1] 'Marine' includes a 500-foot buffer from the outlet structure. All other acreages include a 100-foot buffer around the proposed alignment.
[2] "Eelgrass" includes only eelgrass patches within "Marine."

The subtidal soft bottom of Marine Stadium provides habitat for eelgrass (*Zostera marina*) beds. Eelgrass is a flowering marine plant that forms meadows in southern California embayments. This species of seagrass grows in Alamitos Bay between the ocean entrance channel and Marine Stadium at depths between 0.0 feet MLLW and -12 feet MLLW. Figure 3.3-2 maps the existing eelgrass in Marine Stadium. Eelgrass vegetation was mapped using a Global Position System (GPS) and a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel/safety diver (CRM 2005a). The eelgrass canopy (consisting of shoots and leaves approximately two to three feet long) attracts many marine invertebrates and fishes, and the added vegetation and the vertical relief it provides 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 sportsfish value (California halibut and barred sand bass). A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) lives within the soft sediments that cover the root and rhizome mass system. Eelgrass meadows are also critical foraging centers for seabirds (such as the endangered California least tern) that seek out baitfish (i.e., juvenile topsmelt) attracted to the eelgrass cover. 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. Approximately 0.13 acres of eelgrass habitat occur within the project area. Marine habitat, including the eelgrass habitat and a 500-foot buffer around the outlet structure, occupies approximately 5.57 acres of the project area. A complete discussion of marine vegetation in the study area is included in Appendix B.

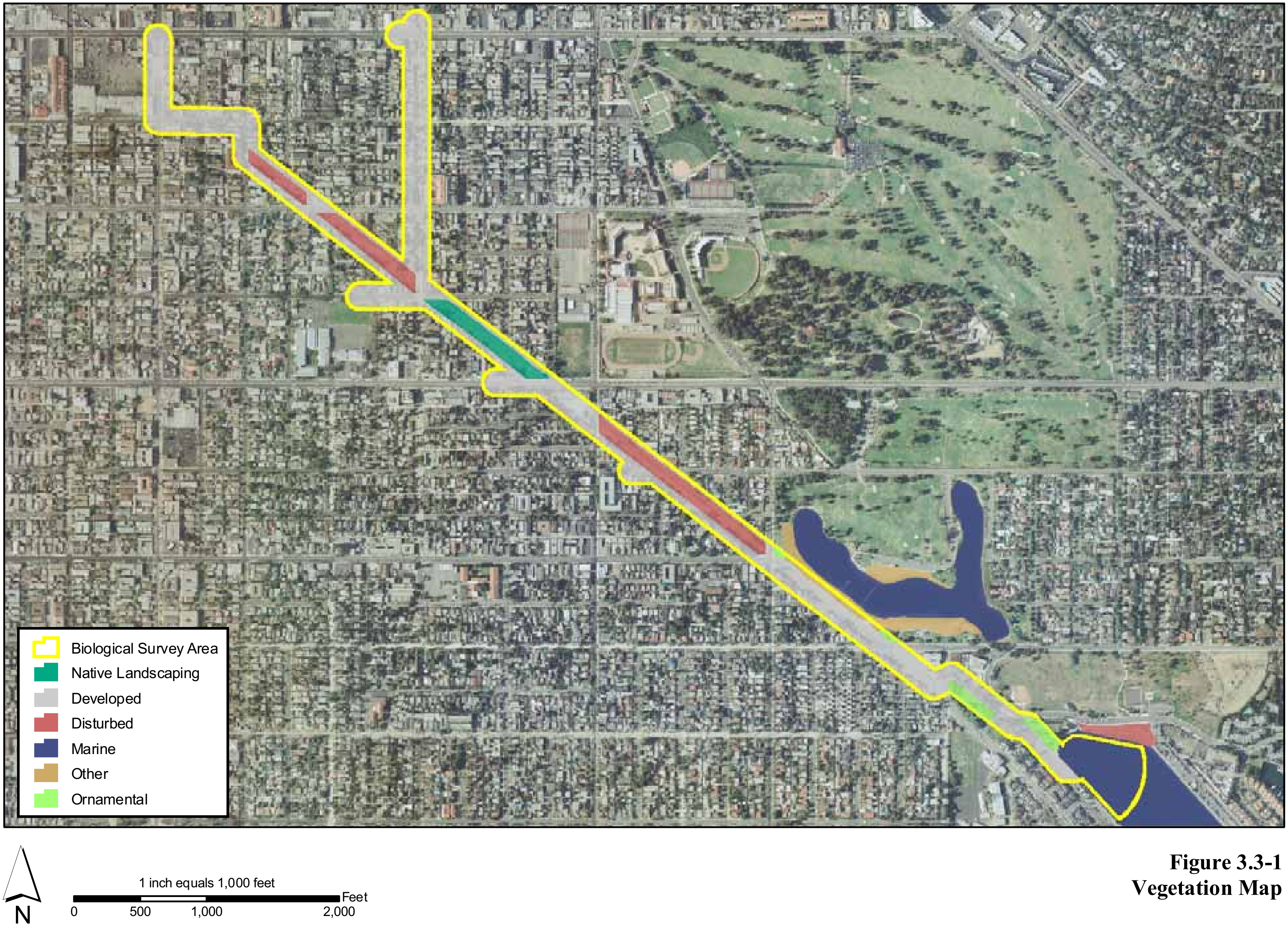

Figure 3.3-1
Vegetation Map

Source: Aerial base from City of Long Beach. Eelgrass survey by Coastal Resources Management, May 2005

Figure 3.3-2
Eelgrass Map

NATIVE LANDSCAPING

An area of native landscaping exists within the PE right-of-way, which includes California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), and various sage species (*Salvia* sp.) typical of southern California native scrublands. In addition to the above species, the area is dominated by species such as goldenbush (*Isocoma menziesii* var. *vernonioides*), coyote brush (*Baccharis salicifolia*), and big saltbush (*Atriplex lentiformis* ssp. *lentiformis*). The native landscaping area is not naturally occurring, and was planted, at least in part, in November of 2000. The plantings appear to be healthy and thriving. The native landscaping area is encroached upon by many escaped ornamental plants, has a significant cover of mulch, and experiences foot-traffic from recreational trail users. Approximately 2.54 acres of this habitat occur within the project area shown on Figure 3.3-1. A complete discussion of native landscaping in the study area is included in Appendix B.

DISTURBED

Disturbed habitat is any land that has been permanently altered by previous human activity, including grading, repeated clearing, intensive agriculture, vehicular damage, or dirt roads. Disturbed land is typically characterized by more than 50 percent bare ground and an absence of remnant native vegetation. In addition, the previous disturbance was severe enough to eliminate future potential biological value of the land without active restoration. Such areas can include dirt trails and cleared areas. Disturbed habitat in the project area is characterized by mowed, non-native species such as Bermuda grass (*Cynodon dactylon*), wild radish (*Raphanus sativus*), and patches of bare ground. Approximately 7.27 acres of this habitat occur within the project area shown on Figure 3.3-1. A complete discussion of disturbed vegetation in the study area is included in Appendix B.

DEVELOPED

Developed areas include roadways, residences, commercial development, and ornamental landscaping associated with these facilities. There are few or no native plant species in developed areas. The developed community includes invasive, exotic species such as eucalyptus (*Eucalyptus* sp.) and iceplant (*Carpobrotus edulisi*) that have been used as ornamentals and, in some instances, slope stabilization. Approximately 43.89 acres of this habitat occur within the project area shown on Figure 3.3-1. A complete discussion of developed vegetation in the study area is included in Appendix B.

ORNAMENTAL VEGETATION

Ornamental areas can be characterized as sites that are dominated by commercially available, exotic species, most of which were planted for aesthetic purposes. Ornamentals have been planted throughout the parks of the project area for aesthetic or landscaping purposes to provide as visual screens. Eucalyptus and Bermuda grass, exotic species, are examples of common ornamental/exotic species within the ornamental areas. Approximately 1.66 acres of this habitat occur within the project area shown on

Figure 3.3-1. A complete discussion of ornamental vegetation in the study area is included in Appendix B.

OTHER

A portion of the 100-foot buffer in the study area includes the beach area of Colorado Lagoon. This beach sand area is an additional cover type, although it is not a separate vegetation community. This area is heavily used for recreational purposes. Approximately 0.75 acres of this habitat occur within the project area shown on Figure 3.3-1. A complete discussion of other vegatation in the study area is included in Appendix B.

WILDLIFE

Birds

Fifty-two species of birds were observed during general wildlife surveys and California least tern (*Sterna antillarum*) and California brown pelican (*Pelecanus occidentalis*) surveys. Surveys for California least tern and California brown pelican were conducted by Keane Biological Consulting (2004). Twice weekly foraging surveys were conducted from June 16 through August 27, 2004. Data recorded included number of foraging dives, foraging flights, and transit flights. The surveys found that foraging behavior by least terns is rare at Colorado Lagoon and occasional at Marine Stadium, and foraging and roosting behavior by brown pelicans is rare at both locations. Other species observed in the project vicinity include, but are not limited to, great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), mallard (*Anas platyrhynchos*), red-breasted merganser (*Mergus serrator*), western sandpiper (*Calidris mauri*), California gull (*Larus californicus*), cliff swallow (*Hirundo pyrrhonota*), and northern mockingbird (*Mimus polyglottos*). A complete list of birds observed in the study area is included in Appendix B.

Reptiles and Amphibians

No reptile or amphibian species were observed during recent surveys. Species likely to occur within the project vicinity include pacific tree frog (*Hyla regilla*), western toad (*Bufo boreas*), and gopher snake (*Pituophia melanoleucus*). A complete list of reptiles and amphibians observed in the study area is included in Appendix B.

Mammals

One mammal species was observed or detected during general wildlife surveys, a common squirrel. Other species expected to occur within the project site include striped skunk (*Mephitis mephitis*), domestic cat (*Felis silvestris*), house mouse (*Mus musculus*), black rat (*Rattus rattus*), California vole (*Microtus californicus*), domestic dog (*Canis familiaris*), and Virginia opossum (*Didelphis virginiana*). A complete list of mammals observed in the study area is included in Appendix B.

Marine

Sixteen marine species were observed during eelgrass surveys. Species observed in the project vicinity include but are not limited to: Gould's bubble snail (*Bulla gouldiana*), predatory sea slugs (*Navanax inermis*), the snail *Alia carinata*, found attached to eelgrass blades, concentrations of the amphipod *Grandidierella japonica* on lower intertidal sandy bottom habitat, numerous topsmelt baitfish (Atherinops affinis), black surf perch (*Embiotoca jacksoni*), shiner surfperch (*Cymatogaster aggregata*), staghorn sculpin (*Leptocottus armatus*), unidentified gobies (*Gobiidae*, unid.) on shallow sandy bottom habitat, unidentified flatfish (*Pleuronectidae*, unid), juvenile halibut (*Paralichthys californicus*) and round sting ray (*Urolophus halleri*). A complete list of marine wildlife observed in the study area is included in Appendix B.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources include plant and animal species present in the project study area that are considered sensitive by federal, state, or local conservation agencies and organizations, or unique habitat areas that are of relatively limited distribution. Determination of sensitive wildlife is made by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG). A California Natural Diversity Database (CNDDB) search of the Long Beach and seven adjacent quadrangles – Inglewood, South Gate, Whittier, Los Alamitos, Seal Beach, San Pedro, and Torrance – resulted in a total of 25 plant species and 35 sensitive animal species known to occur in the general area of the project site (CDFG 2005).

SENSITIVE PLANT SPECIES

The biological study area, shown as the pink boundary on Figure 3.3-1, was surveyed for the presence of sensitive plant species during the months of July and November. This involved searching for target sensitive species expected in the region by walking meandering transects through all habitats on and immediately surrounding the site. All of the potentially occurring sensitive plant species would have been detectable during the surveys because their blooming periods overlap or they are perennial shrubs species. No sensitive plant species were detected in the project area. Sensitive plant species known from the vicinity or with potential to occur within the project vicinity are described in Table 2 of Appendix B.

SENSITIVE WILDLIFE SPECIES

Birds

Eight sensitive bird species were observed within the project vicinity during surveys conducted for this project: California least tern, California brown pelican, Cooper's hawk, western yellow warbler, California gull, osprey, double-crested cormorant, and the elegant tern. A complete list of sensitive bird species with potential to occur in the project vicinity are described in Table 3 of Appendix B.

Reptiles and Amphibians

No sensitive reptile species were observed within the project vicinity. Sensitive reptile species with potential to occur in the project vicinity are described in Table 3 of Appendix B and include San Diego horned lizard and southwestern pond turtle.

Mammals

No sensitive mammals were observed or detected within the project vicinity. Table 3 of Appendix B presents sensitive mammals that have potential occur within the project site and include the San Diego desert woodrat and the Pacific pocket mouse.

Sensitive Invertebrates

No sensitive invertebrates are known from the project vicinity. Table 3 of Appendix B presents sensitive invertebrates that have potential occur within the project site and include the monarch butterfly and the tiger beetle.

Marine Organisms

Marine Stadium is considered Essential Fish Habitat (EFH), defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The proposed project is located within an area designated as EFH for one Fisheries Management Plan (FMP), the Coastal Pelagics Management Plan. Although not observed during eelgrass surveys, 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, Pacific sardine, Pacific mackerel, and jack mackerel (CRM 2005b).

SENSITIVE HABITATS

Sensitive habitats are those considered rare within the region, support sensitive flora and/or fauna, or function as linkages for wildlife movement. Although the native landscaping within the PE right-of-way includes plants that are typically associated with southern California native scrublands, there are no naturally occurring sensitive habitats in the project area. Non-naturally occurring sensitive habitats in the project vicinity include southern coastal bluff scrub and southern coastal salt marsh.

HABITAT CONNECTIVITY (WILDLIFE CORRIDORS AND HABITAT LINKAGES)

Wildlife corridors are relatively narrow landscape features that provide connections between larger blocks of native habitat. Habitat linkages are broader native habitat patches that join larger patches of habitat and can reduce the adverse effects of habitat fragmentation. Wildlife migration corridors are essential in geographically diverse settings, and especially in urban settings, for the sustenance of healthy and genetically diverse animal communities.

The project site north of Colorado Lagoon is heavily disturbed and urban, and surrounded by residential and commercial development. The existing abandoned railway may serve as a corridor for urban-adapted species that are accustomed to constant disturbance. As such, this portion of the site does not serve as a high-quality wildlife corridor. The Colorado Lagoon provides habitat for bird species, which likely also forage over Marine Stadium. There is no area between these two water bodies that serves as a wildlife corridor for terrestrial species.

REGIONAL RESOURCE PLANNING CONTEXT

No regional habitat conservation plans (HCP) or Natural Community Conservation Plans (NCCP) have been adopted that would affect the project study area. The City has a Local Coastal Plan (LCP) that was certified by the California Coastal Commission (CCC) in 1980. The LCP represents the commitment of the City to provide continuing protection and enhancement of its coastal resources. The LCP provides general policies for areas within the Coastal Zone and categorizes the coastal zone in Long Beach into eight community plans. The proposed project is within the Waterland Communities subarea, specifically Area C (Belmont Heights/Belmont Park). The LCP provides an implementation plan and a policy plan summary for the following categories: shoreline access; recreation and visitor serving facilities; locating and planning new development; historic preservation; and hazards. In addition, Marine Stadium is considered essential fish habitat (EFH).[1] The proposed project is located within an area designated as EFH for one FMP, the Coastal Pelagics Management Plan.

3.3.2 REGULATORY SETTING

The following provides a general description of the applicable permitting requirements for the project. Since the project would not result in the direct take of federally regulated species, USFWS consultation is not expected to occur. Regulatory requirements related to impacts to "waters of the U.S." (Section 404 and 401 of the Clean Water Act [CWA]) are included for potential impacts to Colorado Lagoon and Marine Stadium. In addition, the California Coastal Act (CCA) and the Magnuson-Stevens Fishery Management and Conservation Act regulate activities within the Coastal Zone.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Certain gamebird species are allowed to be hunted for specific periods determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of

[1] Essential Fish Habitat (EFH) can consist of both the water column and the underlying surface (e.g. seafloor) of a particular area. Areas designated as EFH contain habitat essential to the long-term survival and health of our nation's fisheries.

prey. Although no permit is issued under the MBTA, if vegetation removal within the project area occurs during the breeding season for raptors and migratory birds (generally March 1 through September 1; as early as February 15 and as late as September 15 for raptors), the USFWS requires that surveys be conducted to locate active nests within the construction area. If active raptor or migratory bird nests are detected, project activities may be temporarily curtailed or halted.

SECTION 1600 OF THE CALIFORNIA FISH AND GAME CODE

Under Sections 1600-1607 of the California Department of Fish and Game Code, CDFG regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFG jurisdiction are defined in the code as the "bed, channel or bank of any river, stream or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." The California Code of Regulations (14 CCR 1.72) defines a stream as:

> "[A] stream is 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 a surface or subsurface flow that supports or has supported riparian vegetation."

In practice, CDFG usually extends its jurisdictional limit to the top of a stream or lake bank, or outer edge of the riparian vegetation, whichever is wider. Riparian habitats do not always have identifiable hydric soils, or clear evidence of wetland hydrology as defined by the U.S. Army Corps of Engineers (ACOE). Therefore, CDFG wetland boundaries often extend beyond ACOE wetland boundaries, which sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Jurisdictional boundaries under Sections 1600-1607 may encompass an area that is greater than that under the jurisdiction of Section 404 (Cylinder et al. 1995).

SECTION 404 AND 401 OF THE CLEAN WATER ACT

The CWA governs pollution control and water quality of waterways throughout the U.S. Its intent, in part, is to restore and maintain the biological integrity of the nation's waters. The goals and standards of the CWA are enforced through permit provisions. Sections 401 and 404 of the CWA pertain directly to the proposed project. Section 401 requires certification from the Regional Water Quality Control Board (RWQCB) that the proposed project is in compliance with established water quality standards. Section 404 of the CWA requires an individual or nationwide permit from the ACOE for discharge into "waters of the U.S."

CALIFORNIA COASTAL ACT OF 1976

At the state level, the California Coastal Act (CCA) of 1976 (Cal. Code Regs. Title 14 § 30000) requires each local jurisdiction along the coast to prepare and submit for state certification a LCP for that portion of its area located within a specified Coastal Zone. An LCP is defined as "a local government's land use plans, zoning ordinances, zoning district maps, and, within sensitive coastal resources areas, other implementing actions, which, when taken together, meet the requirements of, and implement the provisions and policies of [the Coastal Act] at the local level" (PRC §30108.6).

See the discussion of the City LCP under "Regional Resource Planning Context" above.

MAGNUSON-STEVENS FISHERY MANAGEMENT AND CONSERVATION ACT

An EFH Assessment for the project has been provided in conformance with the 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (FR 62, 244, December 19, 1997) (Appendix B). The 1996 amendments set forth a number of new mandates for the National Marine Fisheries Service (NMFS), 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.

3.3.3 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on biological resources if it would result in one or more of the following:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS;
- 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, NMFS, or USFWS;
- have a substantial adverse effect on any 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;
- 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; or
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

EFFECTS DISMISSED IN THE INITIAL STUDY

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that implementation of the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan (HCP), NCCP, or other approved local, regional, or state HCP as the project area is not located within an adopted HCP, NCCP, or other approved local, regional, or state HCP. As such, these impacts are not considered further in this analysis.

IMPACT ANALYSIS

BIO-1 *The proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS.*

No sensitive plant species were found during the focused botanical surveys during the appropriate survey periods for the potentially occurring species. No federally or state-listed species are expected to occur within or adjacent to the potential area of impact based on survey results and habitat suitability. No impacts to sensitive plant species would occur as a result of the proposed project.

Two sensitive bird species were identified during general wildlife surveys, the California brown pelican and California least tern. Foraging behavior by California least terns is rare at Colorado Lagoon and occasional at Marine Stadium, and foraging and roosting behavior by California brown pelicans is rare at both locations (see Appendix B). The California brown pelican and California least tern that use Colorado Lagoon and Marine Stadium would not be adversely affected by project construction or operation (Keane Biological Consulting 2004). Some tree removal would occur during construction in the Marina Stadium and Long Beach Greenbelt areas, which would significantly affect nesting birds, if present. Although no active nests were observed during the surveys, nesting birds could be present when construction activities commence. Disturbance of active nests would violate the Migratory Bird Treaty Act (MBTA) and result in a significant impact requiring mitigation. To ensure compliance with the MBTA, mitigation measure BIO-A has been provided to require nesting bird surveys prior to the start of project construction. With implementation of this mitigation measure, impacts to nesting birds would be less than significant.

BIO-2 *The proposed project would not 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, NMFS, or USFWS; however, significant impacts to eelgrass and native landscaping areas would occur during construction, requiring mitigation.*

Direct/permanent and temporary impacts to biological resources that would result from implementation of the proposed project are discussed below. Direct impacts were quantified by comparing the proposed project footprint with the biological resources mapping within the project area (Figure 3.3-1 and 3.3-3).

Source: Aerial base from City of Long Beach. Eelgrass survey by Coastal Resources Management, May 2005

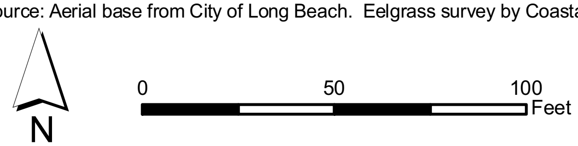

Figure 3.3-3
Direct and Temporary Impacts to Eelgrass

This assessment assumes that all biological resources within the limits of grading for the project facilities would be eliminated during construction. Temporary impacts include impacts associated with construction of the project. During operation of the project, the only project features that would be above-ground would be the outfall structure, manholes, and small pump station components. Implementation of the proposed project would result in the direct loss of habitat or land cover types as shown in Table 3.3-2.

TABLE 3.3-2 PERMANENT AND TEMPORARY VEGETATION IMPACT ACREAGES[1]

Vegetation/Cover Type	Permanent/Direct Impacts	Temporary Impacts
Marine/Eelgrass	0/0.05	5.75/0.08[2]
Native landscaping	0	2.54
Disturbed	0	7.27
Developed	0	43.89
Ornamental	0	1.66
Other	0	0.75
Total Vegetation Impacts	0.05	61.86

[1] Impact calculations include a 100-foot buffer around the proposed alignment.

[2] 'Marine' includes a 500-foot buffer from the outlet structure, as shown on Figure 3.3-1; 'Eelgrass' includes only eelgrass patches, as shown on Figure 3.3-2.

As shown, the project would result in 0.05 acres of permanent impacts and 61.86 acres of temporary impacts. The majority of the impacts would occur within disturbed and developed vegetation types, which are not considered sensitive by state or federal agencies or by the County. Impacts to these vegetation communities are not considered significant.

Indirect impacts are not easily quantifiable but are likely to occur with most development. Indirect effects include short-term indirect impacts related to construction or long-term indirect impacts associated with operation of the project in proximity to biological resources. During construction of the project, short-term indirect impacts may include dust and noise, which could temporarily disrupt habitat and species health and create soil erosion and runoff. As discussed in Chapter 2.0, all project grading and construction would be subject to the standard restrictions and requirements that address erosion and runoff, including the federal Clean Water Act (401 and 404 permit), National Pollution Discharge Elimination System (NPDES), and a Storm Water Pollution Prevention Plan (SWPPP).

Marine Habitat

Operational Impacts

The proposed project may affect the salinity of Colorado Lagoon and Marine Stadium by altering the direction of existing storm flows, which could have the potential to affect marine biological communities. Under the proposed project, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than under existing conditions during storm events, thereby suggesting an improvement in salinity levels (i.e., more stable salinity levels) (Appendix D). However, salinity levels in Marine Stadium would temporarily drop near the new outlet structure during major storm events, suggesting a degradation of salinity levels compared to existing conditions. Salinity levels resulting from project operation are shown in Figures 5.1 through 5.8 of the Everest Report (Appendix D). Salinity levels in Marine Stadium near the tidal culvert would remain higher than under existing conditions during storm events since the salinity in the water flowing from Colorado Lagoon would remain higher than under existing conditions.

The significance of the decreased salinity in Marine Stadium relative to impacts on eelgrass and other species is based upon species' tolerances to low salinity for less than 48 hours during storm events, and the time in which recovery to ambient salinity occurs. Eelgrass can survive in a wide range of water salinities, including the range of salinities projected at Marine Stadium. Therefore, eelgrass is likely to be able to withstand periodic flooding events that would reduce salinities in Marine Stadium below 25 parts per thousand (ppt) for a maximum of 48 hours. In addition, eelgrass growth is generally dormant through the winter months, with most growth occurring during spring and summer (Phillips and Watson 1984). Therefore, most storm-related events would occur when eelgrass is within its dormant growing phase, which reduces the potential for salinity impacts to eelgrass. Impacts to eelgrass from a change in salinity levels would be less than significant.

Many benthic bay invertebrates tend to be introduced species capable of tolerating a wide range of salt water concentrations. In the sediments around outlets, some species respond by burrowing deeper into the sediments where salinity is less affected by stormwater flows. Those invertebrates that cannot escape the effects of lowered salinity and that may not be as tolerant of initial low salinities, such as species living on eelgrass blades, would be killed; however, invertebrate recolonization would begin to occur as soon as salinity levels return to ambient conditions, which is expected to occur within approximately 48 hours. Fishes, such as surfperch, topsmelt, and halibut would temporarily move away from low-salinity areas of Marine Stadium and then return to the areas near the outlets when salinity levels returned to ambient levels. Again, this would likely occur within 48 hours of the flood event, or when prey items for fishes again become prevalent.

The overall results of the water quality analysis indicate that only a small area near the outlet would be affected by reduced salinity, and that overall, the average salinity would be higher in both Colorado Lagoon and Marine Stadium (please refer to Chapter 3.9, Hydrology and Water Quality, for a discussion of water quality impacts). As indicated in Chapter 3.9, Hydrology and Water Quality, impacts to marine life from a change in salinity levels would be less than significant.

Construction Impacts

A total of 0.13 acre of eelgrass is located within the outlet structure construction easement zone (see Figure 3.3-2). Initially, all of the eelgrass would be removed once the coffer dam is constructed, the area is dredged, and the waters are pumped out of the coffer dam. Once the outlet is constructed, and the coffer dam is removed, a total of 0.05 acre would be permanently lost in the footprint of the outlet structure or by rip rap placed along side and in front of the structure to depths of -6 ft MLLW. The remaining 0.08 acre of removed eelgrass habitat within the coffer dam would be available for onsite eelgrass mitigation once the bayfloor is restored to tidal action. The loss of 0.13 acre 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. Mitigation measures BIO-B through BIO-E would require the replacement of eelgrass habitat directly affected by construction activities.

Eelgrass beds located nearby the construction zone would be potentially affected by short-term increases in turbidity when the coffer dam is constructed. This may result in the deposition of fine sediments on eelgrass blades and reduce underwater light levels that would temporarily reduce eelgrass primary productivity. With implementation of mitigation measures, potential impacts to eelgrass beds would be less than significant. With the implementation of water quality Best Management Practices (BMPs) and mitigation measures BIO-F through BIO-J to reduce the spread of any turbidity plume, there should be no significant impacts to eelgrass bed resources outside of the localized construction zone.

Terrestrial Vegetation Communities

On-land construction activities would primarily affect developed and disturbed areas. All of the Long Beach Greenbelt native landscaping area within the PE right-of-way (2.54 acres) would be removed for construction of the proposed project, including planted oak trees. As part of the proposed project, at the conclusion of project construction, all impacted areas would be restored to their existing condition, including the Long Beach Greenbelt. However, short-term impacts to vegetation communities would be significant. Implementation of mitigation measure BIO-K would reduce the level of impact to less than significant. Mitigation measure BIO-K is provided to ensure that the native landscaping is replaced at a 1:1 ratio with the native species appropriate to the site. The remainder of the Long Beach Greenbelt project remains ruderal and disturbed; therefore, no significant impacts to these areas would occur.

Project impacts to the disturbed, ruderal, and ornamental portions of the impact area would not result in significant impacts to biological resources. In addition, as part of the project, all disturbed areas would be restored to the existing condition following construction.

BIO-3: *The proposed project would not have a substantial adverse effect on any 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; however, short-term adverse impact on water quality would occur when the coffer dam is constructed, related to an increase in suspended sediment loads, and an increase of water turbidity.*

The proposed project would result in impacts to Marine Stadium, an ACOE designated “waters of the U.S.” Construction of the outlet structure would result in ‘fill’ of a jurisdictional waterbody. Therefore, the County would be required to obtain permits from the ACOE (CWA Section 404) and RWQCB (CWA Section 401). In addition, the project would be required to comply with the regulations of the CCC, as outlined in the Long Beach LCP.

Construction of the outlet structure in Marine Stadium would involve constructing a coffer dam around the proposed construction zone, removing and replacing rip rap along the shoreline, recontouring the rip rap shoreline to depths of –5 ft MLLW around the opening of the outlet structure, and dredging approximately 250 cubic yards of bayfloor. These impacts would have a short-term adverse impact on water quality when the coffer dam is constructed, related to an increase in suspended sediment loads, and an increase of water turbidity. Resuspension of bottom sediments also has a potential to release sediment-bound contaminants back into the water column that can become available to water column and bottom-dwelling filter feeders. Impacts to water quality would be significant. Implementation of mitigation measures BIO-F through BIO-K would reduce the level of impact to less than significant. These short-term impacts would be minimized to a level less than significant by the implementation of BMPs and implementation of mitigation measures BIO-F through BIO-K. Water quality conditions would return to ambient conditions when construction activity is completed.

Impacts to marine organisms during construction would result in an initial mortality of algae and benthic invertebrates living on the rip rap and on the bayfloor, and resident benthic fishes (i.e., gobies) within the construction easement zones and within the areas where the coffer dam is constructed. There would be a permanent loss of benthic invertebrate biomass and goby biomass within the footprint of the outlet. Water column fishes such as topsmelt, black surf perch, and bottom fish such as California halibut, round sting ray, and barred sand bass would swim away from the zone of construction and would likely avoid any significant mortality to their populations. As required in mitigation measures BIO-B through BIO-E, the restoration of intertidal and subtidal rip rap, unvegetated bay soft bottom habitat, and bayfloor eelgrass habitat in the months following the completion of the outfall would allow the establishment of basic habitat requirements for other marine organisms to recolonize these areas. Once the zone within the coffer dam has been restored to tidal action, algae, eelgrass, benthic invertebrates, and benthic-dwelling gobies would recolonize the substrate, beginning immediately after construction is completed and possibly taking one to five years for full recolonization.

Short-term impacts to federally protected wetlands would be significant. Adherence to the required regulatory permits and implementation of mitigation measures BIO-B through BIO-J would reduce impacts to wetlands below the level of significance.

BIO-4: *The proposed project would not 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.*

Terrestrial

Direct impacts to terrestrial wildlife corridors would not occur from the proposed project. Urban adapted species may use the abandoned railway as a corridor; however, these species are not sensitive and are adapted to the urban environment. In addition, at the conclusion of construction, the project area would be restored to the existing conditions, and any current use by urban wildlife would resume. The project site does not serve as a high-quality wildlife corridor, and as such, the project would not result in significant impacts related to wildlife movement.

Marine

Construction activities would occur within designated EFH. Project activities that would affect identified FMP species, northern anchovy, Pacific sardine, Pacific mackerel, and jack mackerel, include increased water turbidity caused by the construction of the outlet structure, and potential temporary resuspension of any contaminants in the immediate area of the outlet during flood periods. An increase in the suspended sediment load would temporarily increase the exposure of FMP species to potentially harmful levels of contaminants. This would cause the northern anchovy to temporarily avoid the project area, thereby avoiding project impacts. There is minimal potential for mortality of larval anchovy.

All four FMP species are pelagic schooling species that 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 the Marine Stadium and the Colorado Lagoon portions 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 nearshore, outside of Alamitos Bay, at depths greater than 12 feet deep.

Based upon these determinations, the proposed project is will not have adverse effects on populations of the four identified FMP species. Mitigation measures BIO-F through BIO-J have would further reduce any turbidity and water quality impacts on these species.

BIO-5 *The proposed project would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*

Construction of the project would result in the removal of juvenile oak trees that were planted in the Long Beach Greenbelt restoration area. These trees do not meet the minimum diameter at breast height to be protected by the County's Oak Tree Ordinance; therefore, impacts to these trees would be less than significant.

3.3.4 MITIGATION MEASURES

BIO-A Should tree removal or removal of the Long Beach Greenbelt restoration area occur during the breeding season for migratory non-game native bird species (generally March 1-September 1, as early as February 15 and as late as September 15 for raptors), weekly bird surveys would be performed to detect any protected native birds in the trees to be removed and other suitable nesting habitat within 300 feet of the construction work area (500 feet for raptors). The surveys would be conducted 30 days prior to the disturbance of suitable nesting habitat by a qualified biologist with experience in conducting nesting bird surveys. The surveys would continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, DPW would delay all clearance/construction disturbance activities in suitable nesting habitat or within 300 feet of nesting habitat (within 500 feet for raptor nesting habitat) until August 31 or continue the surveys in order to locate any nests. If an active nest is located, clearing and construction with 300 feet of the nest (within 500 feet for raptor nests) shall be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area. The results of this measure would be recorded to document compliance with applicable State and Federal laws pertaining to the protection of native birds.

BIO-B Direct permanent and temporary impacts to marine sea grasses in Marine Stadium shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy. A total of 0.16 acres of eelgrass will be replanted by DPW, including at least 0.08 acres in the temporary impact area when sediment conditions stabilize following the completion of outlet construction. The remaining 0.08 acres of eelgrass shall be planted within Alamitos Bay.

BIO-C 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.

BIO-D 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.

BIO-E If barges and work vessels are used during construction, measures shall be taken 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.

BIO-F 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.

BIO-G During construction of the Marine Stadium outlet structure, floating booms shall be used to assist in containing debris discharged into Marine Stadium, and any debris discharged shall be removed as soon as possible but no later than the end of each day.

BIO-H A silt curtain shall be utilized to assist in controlling turbidity during construction of the cofferdam at Marine Stadium. The County of Los Angeles shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column.

BIO-I 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 Marine Stadium. 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.

BIO-J 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 thirty 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 U.S. Army Corps of Engineers.

BIO-K The Pacific Electric (PE) right-of-way between 7th and 8th Streets shall be replanted with native vegetation at a 1:1 ratio. A restoration and monitoring plan for the site shall be prepared and implemented at the conclusion of construction. The restoration plan shall, at minimum, include the following components:

- Prior to construction, a qualified horticulturist with experience in native plant cultivation shall supervise salvage of plants, soil, and other materials as appropriate from the Long Beach Greenbelt area in the PE right-of-way between 7th and 8th Streets. Salvaged materials shall be maintained and used in replanting of the site. Supplemental native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock) shall be used as necessary.

- Following implementation, the restoration area shall be monitored quarterly for the first two years and biannually for three more years. Success shall be defined as 80 percent survival of container plants after two years and 100 percent survival thereafter.

SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Implementation of mitigation measures BIO-A through BIO-K would reduce impacts to biological resources to a less than significant level and would promote restoration of native habitat. No significant unavoidable adverse impacts to biological resources would occur as a result of the proposed project.

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3.4 CULTURAL RESOURCES

A Cultural Resources Survey was conducted for the proposed project in January, 2006. As discussed below, the existing conditions for cultural resources are based on archival/library research and a physical survey. The information obtained in the January 2006 survey adequately reflects the existing conditions that were present at the time the notice of preparation was published for this project (May 2004). The site is located in an urbanized area and no major changes in subsurface archaeological conditions were observed or documented within the survey area between May 2004 and January 2006.

3.4.1 CUTURAL SETTING

PREHISTORIC AND HISTORIC OVERVIEW

The project is located in the City of Long Beach, approximately 1-mile inland from the coast at San Pedro Bay and one-half mile northeast of Alamitos Bay. Situated east of downtown Long Beach, the project alignment is roughly 3-miles east of the present Los Angeles River (former San Gabriel River course) and 1-mile west of the present San Gabriel River. The earliest human occupation in the greater Los Angeles area dates to at least 9,000 years before present (B.P.) (Wallace 1955; Warren 1968). At the time of European contact the present project area fell within the territory of the *Gabrieliño*, a Shoshonean people of the Uto-Aztecan language family. Occupying the southern Channel Islands and adjacent mainland areas of Los Angeles and Orange Counties, the *Gabrieliño* are reported to have been second only to their Chumash neighbors in terms of population size, regional influence, and degree of permanent settlement (Bean and Smith 1978). The *Gabrieliño* are estimated to have numbered around 5,000 in the era before significant European influence (Kroeber 1925).

Gabrieliño villages were reported by early explorers to have been most abundant near the Los Angeles River, in the area north of downtown, known as the Glendale Narrows, and those areas along the river's various outlets into the sea (Gumprecht 1999), i.e., Santa Monica and San Pedro Bays. Among the villages recorded adjacent the San Pedro Bay are *Suangña*, *Ahaungña* and *Tibahangña*, all of which were located to the west of the present project along the Los Angeles River. An early account by Hugo Reid indicates the village of *Suangña* was the largest village in all of the *Gabrieliño* territory, in terms of both geographical size and population (Gumprecht 1999).

Archaeological evidence suggests the region surrounding Alamitos Bay was heavily occupied during the prehistoric period. The estuarine environments of this area provided inhabitants with abundant subsistence resources and appear to have supported semi-permanent or permanent villages. Nearby archeological sites include but are not limited to the following: California State University, Long Beach campus (CA-LAN-234, -235 and -306) associated with the ethnohistoric village of *Puvungña,* located 1-mile east of the proposed alignment; Los Altos (CA-LAN-270) located 2-miles northeast of the alignment; and Landing Hill (CA-ORA-261, -262, -263 and -264) located approximately 3-miles east of the alignment. Human remains associated with the prehistoric occupation of this portion of the coast have also been discovered in the general area surrounding Alamitos Bay.

European contact in the Los Angeles area dates to 1542 when Juan Rodriguez Cabrillo made contact with the indigenous people of the California coast. The natives were virtually ignored until 1769 when Gasper de Portola and a small Spanish contingent began their exploratory journey along the coast from San Diego to Monterey. Missions were established in the years that followed. By the early 1800s the majority of the surviving indigenous population had entered the mission system. The *Gabrieliño* inhabiting the County were under the jurisdiction of either *Mision San Gabriel* or *Mision San Fernando*.

HISTORY OF LONG BEACH

The area now encompassing Long Beach was settled as part of a Spanish land grant to Manuel Nieto in 1784. The land grant included both the historic 28,000-acre Rancho Los Alamitos and its sister rancho, 27,000-acre Rancho Los Cerritos. In 1866, Rancho Los Cerritos was sold to the Bixby family who initiated development of the area. By 1882, the town of Willmore City (presently the City of Long Beach) was planned.

The Southern Pacific Railroad extended its line from San Francisco to Los Angeles in 1876. The completion of the second transcontinental line, the Santa Fe, took place in 1886 causing a fare war which drove fares to an unprecedented low. More settlers continued to head west and the demand for real estate skyrocketed. As real estate prices soared, land that had been farmed for decades outlived its agricultural value and was sold to become residential communities. Settlers flocked to Willmore City which in 1888 was renamed “Long Beach” (City of Long Beach California 2006).

Following the turn-of-the-century, Long Beach was the fastest growing community in the United States. The Port of Long Beach was opened in 1911. Fueled by the discovery of oil and industry associated with the port, Long Beach continued to grow rapidly into the 20th century.

PE’s interurban service began when it took over the Los Angeles to Pasadena line, building a new line to Long Beach in 1902. This new line was PE’s first line designed and laid out specifically for high speeds. The Long Beach line began at 9th and Main in Los Angeles and terminated at Seaside Park Yard until 1911 when Morgan Park Yard was built to house the Long Beach cars. Although at first serving only Compton between its Long Beach to Los Angeles run, the Long Beach line grew to be one of PE’s biggest money makers (Electric Railway Historical Association 2006).

PE regular local service began July 5, 1902 with the ticket office located at 119 Ocean Avenue (Electric Railway Historical Association 2006). Service in Long Beach continued until 1940 when all of the PE local rail lines were abandoned in favor of buses operated by the Lang Motor Bus Company. An effort to remove all the local tracks was instituted that same year and the Alamitos Bay Line and Belmont Shore Lines were removed (Electric Railway Historical Association 2006).

The Electric Railway Historical Association of Southern California (ERHA) reports that "the Long Beach Line was the first Pacific Electric line to have been conceived, designed and constructed by Henry E. Huntington and his organization." Based on Huntington's concept, numerous other lines were subsequently constructed branching out from the Long Beach Line; the Long Beach Line however, remained the "backbone of the Southern District" (Electric Railway Historical Association 2006). By 1944, 900 PE cars flowed through four counties, covered 1,150 miles, and carried over 109 million passengers (University of Southern California 2002).

HISTORY OF THE PROJECT AREA

The roughly 2-mile long linear PE right-of-way portion of the project area begins at the intersection of North Redondo Avenue and East Anaheim Street and runs southeast to its terminus at Marine Stadium, adjacent East Appian Way in the City.

The northernmost segment of the project area extends in a southerly direction from the intersection of N. Redondo Avenue and E. Anaheim Streets to the former PE Right-of-Way at 11th Street. Maps dating to 1923 (Los Angeles Public Library 1923-1950, vol. 2: 93) indicate this 2-block segment was sectioned and subdivided into lots and contained sparsely disbursed residential structures. By the 1950's (Los Angeles Public Library 1923-1950, vol. 2: 93) the area was fully developed primarily with residential structures as well as storefront businesses along Newport and Redondo Avenues to the west of the right-of-way. Maps indicate (Los Angeles Public Library 1923-1950, vol. 2: 221) the small historic development along the segment of the project which branches north from the main line following Termino Avenue, is consistent with this same pattern of residential development.

The central segment of the project area between Loma and Park Avenues encompasses the PE right-of-way. This segment of the PE right-of-way is bisected into four sections by a number of north/south-trending streets. Historic maps (Los Angeles Public Library 1923-1950, vol. 2: 93, 221, 223) reflect residential development increasing in density between the years of 1923 and 1950.

An Armstrong Nursery borders the northwest portion of the project alignment between E. 10th Street and Termino Avenue. Prior to its purchase by Armstrong Nurseries in 1993, the site was the location of Park Nursery. Park Nursery was established adjacent the project area in the1920s, sometime after 1923 (Los Angeles Public Library 1923-1950, vol. 2: 223). A greenhouse, various outbuildings, and storage sheds have been present on the property since that time. In the 1970's the Park nursery built a series of storage and delivery structures behind their facility within the PE right-of-way itself. The structures in the right-of-way were constructed for storage and plant tending and consist of cement and asphalt ramps and driveways, cinderblock building foundations and storage enclosures, and a metal-framed structure. Armstrong continued to use the structures located within the PE right-of-way until 1995 when noise complaints forced the abandonment of this portion of the facility.

The southern segment of the project area extends from Park Avenue to the Marine Stadium. Historic maps (Los Angeles Public Library 1923-1950: Key Map) indicate development to the northwest of this segment since the 1950s is associated primarily with recreation. Marine Stadium was built in 1920 by dredging the low-lying tidelands of Los Alamitos Bay, and became the first manmade rowing course in the United States (Long Beach Rowing Association 2005). Marine Stadium was unique in its design, accommodating four competing teams in one heat (Office of Historic Preservation 2004). The stadium was the location for the rowing competition of the 1932 Summer Olympics in which the U.S. team won the gold medal. Marine Stadium has since hosted several U.S. Olympic Rowing Trials, and continues to be a center for training U.S. Olympic Rowing Teams (Office of Historic Preservation 2004; Beach California 2005). Marine Stadium and the Coliseum are the only surviving 1932 Olympic structures (Long Beach Rowing Association 2005).

Marine Stadium is also the location from which Clyde Schlieper and Wes Carroll set off when they set a world record for longest sustained flight (30 days) in 1939 (Beach California 2005). Marine Stadium was designated a California Registered Historical Landmark (#1014) on April 29th, 1995 (California Landmarks CTE Computer 2006).

A small one-story building is located on the southwest corner of Ximeno Avenue and East 7th Street. The building is located on County Assessor's Parcel number 7241-002-091, and is situated on the right-of-way for the former PE railway. The building does not appear on Sanborn Fire Insurance maps, and County Assessor's records show the land was still vacant in 1983. The structure was built after 1983 and does not qualify as a historical resource.

3.4.2 EXISTING CONDITIONS

ARCHIVAL AND LIBRARY RESEARCH

Archival research was conducted on April 27, 2005 at the South Central Coastal Information Center housed at California State University, Fullerton. The records search revealed that a total of five previous cultural resources investigations were conducted within ¼-mile of the project. All five previous investigations appear to have included archaeological studies. Four of the five previous investigations involved relatively small geographical areas, i.e., the survey of cellular tower sites (LA5869 and LA5885), or the theoretical or comparative study of specific known archaeological sites (LA2795 and LA503). One of the five investigations (LA5888) involved a linear survey that covered approximately 90 percent of the present construction footprint; however, documentation relating to this investigation is not available. The previously surveyed areas within ¼-mile of the alignment are described in Table 3.4-1.

TABLE 3.4-1 PREVIOUS SURVEYS CONDUCTED WITHIN 1/4-MILE OF THE PROPOSED PROJECT

Author	Report #	Description	Date
DeSautels, R. *et al.*	LA2795	Correspondence Between R. DeSautels, K. Dixon and M. Rosen	1979
Dixon, K. A.	LA503	Archaeological Resources and Policy Recommendations of Long Beach	1974
Duke, C.	LA5869	Cultural Resources Assessment AT&T Wireless Services Facility No. 05295 Los Angeles County, California	2002
Duke, C.	LA5885	Cultural Resources Assessment Cingular Wireless Facility No. SM157-01 Los Angeles County, California	2002
Unknown	LA5888	Unknown	Unknown

As shown in Table 3.4-2, five archaeological sites have been previously recorded within the ¼-mile study area. Of these, only one (CA-LAN-700) is located within the footprint of the PE right-of-way. A site record (Dixon 1974) describes site CA-LAN-700 as "Shell and dark midden visible on both sides of right-of-way" measuring 100 meters northwest/southeast. The record indicates the site is located between the corners of Roycroft and 5th Streets and the corners of 6th and Quincy Streets.

TABLE 3.4-2 PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES WITHIN 1/4-MILE OF THE PROPOSED PROJECT

Permanent Trinomial (CA-LAN-)	P-Number (P-19-)	National Register of Historic Places Number	Other Number	Description	Date Recorded
231	-	-	-	Shell midden	1961
698	-	-	-	Shell and lithic scatter	1974
99	-	-	-	Shell midden with lithic scatter	1974
700	-	-	-	Shell midden	1974
701	-	-	-	Shell midden with lithic scatter	1974

Archival research revealed one historical resource had been previously recorded. Situated within the southern end of the project alignment, Marine Stadium (19-186115) was constructed in 1920 and is presently identified as a historic and cultural site of local significance on the City's General Plan.

ARCHAEOLOGICAL SURVEY

An archaeological field survey of the project area was conducted on January 4, 2006. Because the project occurs in a developed area, the intensive survey was limited primarily to the investigation of the PE right-of-way where soils are exposed.

The survey involved an inspection of the PE right-of-way from just north of 10th Street in the northwest to East 4th Street in the southeast. Survey of the right-of-way was conducted on-foot at roughly 10-meter transect intervals. Ground visibility was poor in over 90 percent of the right-of-way due to the presence of low lying shrubs, dead grasses or mulch. Cut banks were inspected where present. Soils identified ranged from light tan sandy clay to medium brown clotted clay. No cultural materials were identified within any of the cut banks.

Site CA-LAN-700 was relocated by archaeologists as part of the January 2006 survey. The site was originally recorded on August 1, 1974 by Keith Dixon. Site CA-LAN-700 was relocated on the northeastern side of the former PE right-of-way between Ximeno Avenue and Park Avenue. It is located along the northeastern edge of the right-of-way, between the corners of Roycroft and East 5th Streets on the southeast and the corner of East 6th and Quincy Streets on the northwest. CA-LAN-700 was originally recorded as shell and dark midden visible on the right-of-way. The record also states that when the right-of-way was widened, midden and artifacts were disturbed.

From the southwest, surveyors observed sparse scatter of shell, mainly located to the northwest and southeast and thicker grass toward the south end. The surrounding surface had no visibility due to dead vegetation. No cultural material associated with the site was evidenced in a small recently graded dirt road extending down the center of the right-of-way. No artifacts were observed by surveyors. A Department of Parks and Recreation (DPR) update form was completed for CA-LAN-700.

One new archaeological site (Termino Survey Site #1) was discovered as a result of the January 2006 survey. Termino Survey Site #1 is located within the former PE right-of-way between East 8th Street and East 10th Street at Termino Avenue, near the northeastern edge of the right-of-way. The site is directly east across from the eastern end of East 9th Street where it terminates at the right-of-way. The site is located on and around a dilapidated cinderblock foundation, an asphalt road, and a ramp, all appearing to be associated with the former nursery facility. An arbitrary site datum was established for mapping purposes at the southwest corner of the foundation.

Termino Survey Site #1 is a shell scatter measuring approximately 8.5 meters north/south and 15.5 meters east/west. Marine shell observed by surveyors include *Argopecten aequisulcatus*, *Chione sp*., *Ostrea lurida* and *Crucibulum spinosum*. The majority of the shell was fragmentary and occurred within a sandy matrix. No distinctive midden soil was observed. Due to the presence of the shell on top of the asphalt road and ramp, it is unknown if the shell is washing out of intact soil, if it was deposited from another portion of the site, or originated off-site for use at the nursery. Based on discussions with an Armstrong Nursery employee, the nursery sometimes imported soil from Lakewood Boulevard. The type of soil obtained from that location is unknown. No other artifacts or cultural materials were observed on the right-of-way. A single set of DPR forms was completed for Termino Survey Site #1.

3.4.3 REGULATORY SETTING

CALIFORNIA REGISTER OF HISTORIC PLACES

A cultural resource is considered "historically significant" under CEQA if the resource meets the criteria for listing in the California Register of Historical Resources (CRHR). The CRHR was designed to be used by state and local agencies, private groups, and citizens to identify existing historical resources within the state and to indicate which of those resources should be protected, to the extent prudent and feasible, from substantial adverse change. The following criteria have been established for the CRHR (Public Resources Code §§5024.1, Title 14 CCR, Section 4852). A resource is considered significant if it:

A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or

B. Is associated with the lives of persons important in our past; or

C. 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; or

D. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource must also have integrity to be found historically significant. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

ASSESSMENT OF SURFACE ARCHAEOLOGICAL FINDS

Archaeological sites CA-LAN-700 and Termino Survey Site #1 were evaluated for historic significance using the above criteria. The archaeological sites are not eligible under Criteria A or B because they do not appear to be associated with events or persons important to California's history or cultural heritage. Nor are the archaeological sites eligible under Criterion C due to their lack of architectural or structural association. Sites CA-LAN-700 and Termino Survey Site #1 would potentially be eligible under Criterion D for their potential to yield information important in prehistory or history.

Site CA-LAN-700

A surface evaluation of site CA-LAN-700 suggests the site may contain an intact subsurface shell midden component; however, the presence or extent of such a component is presently undetermined. No visible disturbance to the site was observed and it appears to maintain integrity. The potential for the site to yield significant information important to the local understanding of hunter/gatherer settlement/subsistence patterns in the Alamitos Bay region is likely. Site CA-LAN-700 is, therefore, assumed to be potentially eligible for listing on the CRHR pursuant to Criterion D.

Termino Survey Site #1

A surface evaluation of Termino Survey Site #1 indicates the presence of an archaeological deposit of which the origin is presently unknown. The shell deposit is located amongst structural remnants adjacent the present Armstrong Nursery. Based on the surface observations, it is unclear whether the origin of the deposit is below or adjacent one of these abandoned structures or whether the deposit is the result of imported soils for use in nursery activities. If an intact deposit exists below the abandoned structures it may maintain adequate integrity to yield significant information important to the local understanding of hunter/gatherer settlement/subsistence patterns in the Alamitos Bay region. Termino Survey Site #1 is therefore assumed to be potentially eligible for listing on the CRHR pursuant to Criterion D.

ASSESSMENT OF HISTORIC RESOURCES

Marine Stadium was constructed in 1920 and was the site of the rowing competitions in the 1932 Summer Olympics held in Los Angeles. Marine Stadium is identified as a historic and cultural site of local significance on the City's General Plan, and is therefore considered a historical resource under CEQA. Because of its association with the 1932 Olympics, Marine Stadium is also potentially eligible for the CRHR and the National Register of Historic Places (NRHP).

3.4.4 ENVIRONMENTAL IMPACTS

The following archaeology resources analysis is based on the archival and library search and archaeological surveys that were conducted for this project.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on cultural resources if it would result in one or more of the following:

- cause a substantial adverse change in the significance of a historical or archaeological resource (Cal. Code Regs., Title 14, § 15064.5);
- directly or indirectly destroy a unique paleontological resource or site; or
- disturb any human remains, including those interred outside of formal cemeteries.

IMPACTS ANALYSIS

This discussion is limited to potential impacts to archaeological 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 resources.

CUL-1 *Construction of the proposed project would cause a substantial adverse change in the significance of an archaeological resource.*

Two archaeological sites were identified as a result of the archaeological survey: CA-LAN-700 and Termino Survey Site #1. The number of sites previously identified in the vicinity of Alamitos Bay, and particularly the presence of at least three significant prehistoric archaeological sites within 3 miles of the project, suggests a strong likelihood that additional subsurface archaeological deposits may be present in the project area. Portions of the project area are developed with single and multi-unit residential structures and roadways and are likely to have suffered varying degrees of ground disturbance. Research indicates the PE right-of-way has suffered only minor ground disturbance historically and may contain intact subsurface cultural deposits. In addition, there is a potential that buried historic archaeological deposits associated with the abandoned PE railroad may be disturbed during trenching for the storm drain. Due to the extensive grading and ground disturbance required to construct the storm drain, buried prehistoric resources may be encountered during construction. Disturbance of potentially important cultural resources would be a significant impact. Mitigation measures are provided to reduce these impacts to a less than significant level.

CUL-2 *Construction of the proposed project would not cause a substantial adverse change in the significance of a historical resource.*

As discussed above, Marine Stadium is potentially eligible for the CRHR and NRHP. No above-ground structures associated with the Marine Stadium would be demolished or altered with implementation of the proposed project. With the exception of the outfall structure and low-flow pumping station, the proposed project components would all be located under ground. Of these, the outfall structure is the only component of the project that would cause visible physical alteration to Marine Stadium.

The proposed outfall structure, which would consist of head walls and wing walls, would be of a standard appearance similar to other existing storm drains that lead into the north end of Marine Stadium, including the tidal culvert that connects to Colorado Lagoon. Although the head wall and wing walls of the new outfall structure would be visible from adjacent areas, most of the structure would be submerged during high tide. At mean low tide approximately 3 to 4 feet of the head wall would be exposed, whereas, approximately 1 to 1.5 feet of the wall would be visible at mean-high tide. An unobtrusive handrail would be placed on top of the wing wall to provide access for maintenance of the outfall. The outfall structure would be below line-of-sight from the parking lot adjacent to Marine Stadium. When viewed by passing recreationalists, the outfall structure would not be particularly noticeable or memorable because of the oblique angle at which it would be viewed. The construction of the new outlet structure would not detract from the integrity of any structural elements of Marine Stadium that may contribute to its potential eligibility to the CRHR or the NRHP. Therefore, the physical alteration caused by the new outlet structure would not result in a substantial adverse change in the significance of Marine Stadium as a locally designated historical resource.

No other properties that are eligible or potentially eligible for inclusion on the NRHP (36 CFR Part 800) or the CRHR are located within the construction area. Therefore, no significant impacts on or to a property of historic significance would occur, as discussed above.

CUL-3 *Construction of the proposed project would not destroy a unique paleontological resource or site.*

The project alignment is presently developed and there are no known or recorded paleontological resources on the project site; therefore, no impacts on these resources would occur.

CUL-4 *Construction of the proposed project would potentially disturb human remains, including those interred outside of a formal cemetery.*

The project area does not contain any formal cemeteries. Although numerous prehistoric sites containing human remains are known for the Alamitos Bay region, archival research and the archaeological survey in connection with the present project did not indicate the presence of any known human remains in the project area. As discussed above, the PE right-of-way has suffered only minor ground disturbance historically and may contain intact subsurface cultural deposits. Due to the extensive grading and ground disturbance required to construct the storm drain, buried human remains could be encountered during construction. Disturbance of these remains would be a significant impact. Implementation of mitigation measures CUL-A through CUL-C would minimize the potential for any impacts to buried resources (including human remains) to less than significant level.

3.4.5 Mitigation Measures

CUL-A A qualified archaeological monitor shall be present during all ground disturbing activities within the Pacific Electric (PE) right-of-way. If archaeological materials are encountered during construction, work in the vicinity shall be immediately halted until the resource is assessed and the need for treatment is determined. The archaeological monitor may, at his/her discretion, recommend limited monitoring in portions of the PE right-of-way where clearly disturbed soil matrices or extensive native soils are observed and have no potential to yield cultural resources.

CUL-B If cultural materials are encountered during ground disturbing activities outside the PE right-of-way where archaeological monitoring is not recommended, work in the vicinity of the discovery will be halted immediately and a qualified archaeologist will be contacted to assess the find.

CUL-C If human remains are encountered on the property during grading activities, the Los Angeles County Coroner's Office shall be contacted and all activities in the vicinity of the discovery shall cease until appropriate disposition of the remains is determined.

3.4.6 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

There would be no significant unavoidable adverse impacts to cultural resources after implementation of the mitigation measures specified above.

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3.5 TRANSPORTATION AND CIRCULATION

This section summarizes the existing traffic in the project area and traffic counts conducted by the City in 2000. An average growth rate was used to estimate traffic volumes in May 2004. The purpose of this section is to describe existing and future traffic circulation and parking and to evaluate the impacts of the proposed project on local traffic and parking. The analysis is limited to the effects of the construction phase of the proposed project, since operation of the project would not generate any long-term traffic impacts.

3.5.1 ENVIRONMENTAL SETTING

REGIONAL TRANSPORTATION

The City of Long Beach is located in the South Bay area, an area that is served by several regional freeways, including Interstate 405 (I-405), which travels northwest-southeast through the City, and Interstate 710 (I-710), which travels between the City of Alhambra, east of Downtown Los Angeles, south to the Port of Long Beach (see Figure 2-1). Interstate 605 (I-605) roughly parallels I-710, traveling north-south between the Duarte/Azusa area in the foothills of the San Gabriel Mountains to the City of Seal Beach, located east of the City.

In addition to these freeways, a series of major arterial roads and highways also serve regional transportation in the vicinity of the project site (see Figure 2-2). Pacific Coast Highway (PCH), also known as State Route 1 (SR 1) travels in an east-west direction between the western edge of the City and Lakewood Boulevard, where the road travels southeast-northwest toward Seal Beach. From here, SR 1 travels along the coastline for much of its length south toward San Diego.

The northern-most segment of the proposed alignment is located approximately 5 miles south of I-405, approximately 11 miles southeast of I-710, and approximately 8 miles west of the I-405/I-605 interchange. The northern extent of the proposed alignment is approximately 1.5 miles from SR 1.

LOCAL ROADS

The proposed storm drain system crosses many roads as it travels to Colorado Lagoon and Marine Stadium. The drainage runs along or crosses a number of streets, including: Termino Avenue, 11th Street, 10th Street, 8th Street, Belmont Avenue, Roswell Avenue, Bennett Avenue, 7th Street, Ximeno Avenue, Park Street, Appian Way, Colorado Street, and Eliot Street. The streets within the project area are shown on Figure 2-3.

Levels-of-service (LOS) standards provide the basis to analyze the performance of roadway segments and intersections. The analysis of roadway segment and intersection LOS is based on the functional classification of the roadway, the maximum desirable capacity, roadway geometrics, and the existing or forecasted average daily traffic (ADT) volume. LOS qualitatively describes traffic operating conditions at intersections or street segments from a scale of "A" (representing free flowing conditions) to "F" (representing no flow or breakdown conditions). LOS "D" is characterized by high-density flow in which speed and freedom to maneuver is severely restricted. LOS "F" is characterized by a breakdown in traffic flow where extensive vehicle queues form at traffic signals and stop-and-go traffic conditions and slow speeds occur. The City has established a threshold of LOS "D" as the minimum operating level for roadway segments and at intersections. Table 3.5-1 describes the LOS concept and the operating conditions expected under each LOS for signalized intersections.

The most recent traffic count data for 7th Street in the project area is from 2000 (City of Long Beach 2006). Machine traffic counts were taken daily between March 23 and 29, 2000 on 7th Street and Ximeno Avenue. This location is immediately west of the storm drain crossing and is representative of worst case traffic flow in the vicinity of the project. Traffic counts showed that traffic on 7th Street regularly exceeds 39,000 vehicles for a 24 hour period. During the morning and evening peak hour commute periods, traffic volumes approach 2,600 to 2,900 vehicles. To account for ambient growth in the project area, an annual growth factor of 1 percent was applied to this data consistent with SCAG growth rates for the area. Adjusted to 2004 levels, the traffic volumes for 7th Street would be 40,584 vehicles for the 24-hour period, 2,705 for the morning peak hour, and 3,018 for the evening peak hour commute levels. LOS on 7th Street during the peak hour operating characteristics typically may be less than the minimum operating level of LOS "D".

TRANSIT SERVICE

Long Beach Transit (LBT) operates 35 bus lines throughout the City (LBT 2005). As indicated in Table 3.5-2, the proposed project alignment would cross a number of bus routes, including routes 181 and 182, which share the same alignment for approximately 2,000 feet along Appian Way between Colorado Avenue and Marine Stadium.

3.5.2 REGULATORY SETTING

CONGESTION MANAGEMENT PROGRAM

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (MTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways and all freeways comprise the CMP system. A total of 164 intersections are identified for monitoring on the system in Los Angeles County (MTA 2004).

TABLE 3.5-1 INTERSECTION LEVEL OF SERVICE DEFINITIONS.

LOS	Interpretation	Signalized Intersection Volume to Capacity Ratio (V/C)
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.000 - 0.600
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	0.601 - 0.700
C	Good operation. Occasionally backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.701 - 0.800
D	Fair operation. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	0.801 - 0.900
E	Poor operation. Some long standing vehicular queues develop on critical approaches.	0.901 - 1.000
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.000

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 1997.

TABLE 3.5-2 BUS ROUTES IN THE VICINITY OF THE PROPOSED PROJECT.

Bus Route Number	Location where Project Alignment Crosses Bus Route
45 and 46	Anaheim Street west of Ximeno Avenue
81	10th Street west of Ximeno Avenue
91, 92, 93, 94, and 96 ZAP	7th Street west of Ximeno Avenue
111 112	Ximeno Avenue south of 7th Street
181 and 182	Appian Way between Marine Stadium and 4th Street

Source: Long Beach Transit 2005

The CMP “Traffic Impact Analysis Guidelines” require analysis of all surface street monitoring locations where the proposed project adds 50 or more peak hour trips. The CMP also requires all freeway segments to be analyzed where the proposed project adds 150 or more trips during the peak hour. There are ten CMP intersections within the City, three of which are close to the proposed project alignment (see Table 3.5-3). Between 1992 and 2003, morning peak hour traffic volumes at all of the CMP intersections, and traffic volumes at one of the intersections (Pacific Coast Highway at Ximeno Avenue) changed the LOS from B to C. Evening peak hour traffic volumes increased at al of the CMP intersections studied between 1992 and 2003; however, these increases did not change the LOS at any of the intersections.

TABLE 3.5-3 CMP ARTERIAL MONITORING STATIONS CLOSE TO PROJECT SITE AND LEVELS OF SERVICE.

CMP Route	Cross Street	Distance & Direction from Project Site	2003 Level of Service				1992 Level of Service			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS
Pacific Coast Highway	7th Street	2.1 miles NE	1.04	F	1.13	F	1.07	F	1.00	E
Pacific Coast Highway	Ximeno Avenue	1.7 miles NE	0.73	C	0.84	D	0.69	B	0.77	C
7th Street	Redondo Avenue	1.1 miles SW	1.17	F	1.05	F	1.01	F	0.99	E

Source: 2004 MTA (Congestion Management Program for Los Angeles County, Appendix A, p.A-16)

3.5.3 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

The proposed project would have a significant effect on Transportation/Circulation if it 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 volume to capacity ratio on roads, or congestion at intersections);
- exceed, either individually or cumulatively, a level of service standard established by the County's congestion management agency for designated roads or highways;
- substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- result in inadequate emergency access; or
- result in inadequate parking capacity.

EFFECTS DISMISSED IN THE INITIAL STUDY

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that two potential transportation impacts were less than significant and did not need to be analyzed in the EIR. Specifically, the Initial Study determined that the project would not:

- 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; or

- conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

As discussed in the Initial Study, the proposed project would not result in any permanent changes in existing roadway design or any uses which would be incompatible with area traffic. As such, upon completion of project construction, traffic conditions would be expected to return to current conditions and there would be no traffic impacts during the operational phase of the proposed project. No impacts to emergency access o would occur as a result of the proposed project, and the project would not conflict with any alternative transportation programs. Therefore, no further evaluation of these issues is required.

Due to distance from the project site to the nearest commercial airport (Long Beach Municipal Airport) and the types of uses associated with the proposed project, no changes to air traffic patterns would occur. The project would not alter the number of trips during the operational phase and as such, would not conflict with the CMP Traffic Impact Analysis Guidelines.

The following discussion of impacts pertains only to the construction phase of the proposed project as no impacts on transportation and circulation would occur during operation of the project.

IMPACT ANALYSIS

TRANS-1 *The proposed project would result in an increase in traffic during construction that would create a substantial change in relation to the existing traffic load and capacity of the street system or cumulatively exceed a level of service standard established by the MTA CMA. With implementation of mitigation measures, the impact would be reduced to a less than significant level.*

During the 18 to 24-month construction phase, storm drain improvements would occur within public streets, in the abandoned PE right-of-way, and in public parking areas in the City. Heavy equipment, construction vehicles, and construction employee vehicles would use portions of the PE right-of-way, Colorado Street, Appian Way, Termino Avenue, Ximeno Avenue, 7th Street, 10th Street, and 11th Street throughout the construction period. Equipment would include excavators, heavy duty trucks, cranes, and loaders. The use and transportation of equipment would vary throughout the construction phase, and all equipment is unlikely to be used at the same time. It is expected that roadway traffic for construction vehicles would be limited, as staging areas for construction equipment would be located within the PE right-of-way and not on City streets. In addition, a relatively small number of personal vehicles would be required given that the construction crews would number approximately 20 people per day.

Storm drain construction activities would generate traffic related to hauling of excavated fill material, delivery of pre-cast culvert sections and other materials, and construction worker access to and from the construction sites. A maximum of 20 trips per day would be made by haul trucks removing excavated materials; however, trips would generate from varying locations through the proposed alignment and would not be a continuous flow of traffic from one location. The small number of daily trips resulting from haul trucks is not anticipated to significantly impact traffic conditions at the site.

Approximately 40 percent of the construction would occur in the PE right-of-way (4,048 linear feet) and parking lots (782 linear feet), with the remaining 60 percent occurring within public streets (7,104 linear feet). Although lane closures would occur during construction of the storm drain along Termino Avenue and other streets, no street closures or major detours are anticipated. However, temporary significant impacts would occur as a result of vehicle traffic delay, slowing of vehicle speeds at the roadway approaches and intersections (deterioration of roadway and intersection LOS), and restricted access to adjacent properties during the period of construction. In addition, due to the slow speed of vehicles hauling construction equipment on local roadways, the risk of vehicle accidents would increase and response times for emergency vehicles would be reduced. Impacts would be significant. However, with implementation of Mitigation Measures TRANS-A through TRANS-F, no significant traffic impacts would result.

TRANS-2 *The proposed project would increase hazards due to design features or incompatible uses during construction. With implementation of mitigation, the impact would be reduced to a less than significant level.*

The project does not propose any permanent changes in existing roadway design or any uses which would be incompatible with area traffic. Upon completion of the project, all roadways would be returned to their previous condition. The project would result in temporary hazards associated with slow moving construction vehicles and equipment, as well as closure of lanes and sidewalks. As such, construction of the proposed project would result in short-term significant impacts. However, with implementation of Mitigation Measure TRANS-A, impacts related to traffic hazards during construction would be less than significant.

TRANS-3 *The proposed project would result in inadequate emergency access during construction. With implementation of mitigation, the impact would be reduced to a less than significant level.*

During construction, temporary lane closures may occur in order to excavate the storm drain trench, place the storm drain, and backfill the trench. Impacts would include a temporary increase in response times in the project vicinity while equipment is being moved to and from staging areas for the Fire Department and Police Department. This impact is temporary and would occur only along those roadway segments as trenching is occurring. During construction, the construction contractor would be required to maintain adequate access for emergency services. The impacts to emergency access during project construction would be significant. However, mitigation Measures TRANS-F and TRANS-G would reduce this impact to a less than significant level.

TRANS-4 *The proposed project would not result in inadequate parking capacity.*

No permanent or temporary parking facilities are included as part of the proposed project, nor would any be required as a result of the proposed project. Upon completion of construction, the proposed project would not encroach or require the removal of curb parking located along street right-of-way. Therefore, no significant impacts on parking capacity would occur with implementation of the proposed project.

During construction, approximately 1,800 feet curb-parking on Termino Avenue would be temporarily removed in those areas where trenching is occurring. Based on an average parking space length of approximately 20 feet, approximately 90 curb-side parking spaces would be temporarily unavailable during construction. Only a small portion of the total parking would be removed at any one time and would only occur as construction trenching and plating proceeds along the storm drain alignment. Similarly, parking spaces along Appian Way at Colorado Lagoon and in the parking lot at Marine Stadium would be temporarily displaced during construction in the southern project area. No long-term parking would be lost. These impacts would be temporary and would result in a less than significant impact.

3.5.4 Mitigation Measures

TRANS-A Prior to construction, a construction traffic control plan shall be prepared by the contractor for review and approval by the Los Angeles County Department of Public Works. The plan shall also be submitted to the City of Long Beach for review. The plan shall include, at a minimum, advanced signing on Termino Avenue, alerting motorists to roadway construction and an increase in construction vehicle movements, signing to alert motorists to temporary or limited access points to adjacent properties, and appropriate barricades. At least one point of ingress/egress shall be maintained by the County to all properties adjacent to construction area.

TRANS-B Temporary traffic cones/barricades, temporary striping, and delineators shall be appropriately placed by the County in order to maintain one through lane in each direction during the peak hours. Lane widths within these areas may be reduced.

TRANS-C In the vicinity of storm drain crossings at abandoned PE Railroad right-of-way at Ximeno Avenue, 7th Street, 8th Street, and Termino Avenue at 10th Street and 11th Street, no lane closures would occur during the peak traffic period (6:00 AM to 8:30 AM and 3:30 PM to 6:00 PM on weekdays).

TRANS-D No construction shall on occur on 7th Street on weekdays. Construction on 7th Street shall occur on weekends at which time a minimum of one travel lane in each direction shall be open to traffic.

TRANS-E No construction shall occur at the intersection of Termino Avenue and Anaheim Street during the morning or evening peak traffic periods.

TRANS-F Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California and Caltrans's Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and Maintenance Work Zones." These guidelines provide methods to minimize construction effects on traffic flow.

TRANS-G Prior to construction, DWP shall provide written notification to City of Long Beach fire, police, and paramedic departments, regarding the schedule and duration of construction activities, and to identify alternative routes that may be used to avoid response delays.

3.5.5 SIGNIFICANCE AFTER MITIGATION

Implementation of the above mitigation measures would mitigate project traffic impacts to a less than significant level.

3.6 AIR QUALITY

This section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthful pollutant concentrations. Air pollutants of concern include ozone, carbon monoxide, particulate matter, volatile organic compounds, and oxides of nitrogen. This section analyzes the type and quantity of emissions that would be generated by the construction and operation of the proposed project.

3.6.1 ENVIRONMENTAL SETTING

REGIONAL CLIMATE

Air quality is affected by both the rate and location of pollutant emissions and by meteorological conditions which influence movement and dispersal of pollutants. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients, along with local topography, provide the link between air pollutant emissions and air quality.

The City of Long Beach is (City) within the South Coast Air Basin (Basin), which consists of four counties – San Bernardino, Riverside, Los Angeles, and Orange – all of Orange County, and the non-desert portions of Los Angeles, San Bernardino and Riverside counties. The distinctive climate of the Basin is determined by its terrain and geographic location. The Basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean to the southwest and high mountains around the rest of its perimeter. The general region lies in the semi-permanent high pressure zone of the eastern Pacific, resulting in a mild climate tempered by cool sea breezes with light average wind speeds. The usually mild climatological pattern is interrupted occasionally by periods of extremely hot weather, winter storms, or Santa Ana winds.

Compared with other urban areas in the United States, metropolitan Los Angeles has a low average wind speed. Mild sea breezes slowly carry pollutants inland. An inversion layer, which is a layer of warm air that lies over cooler, ocean-modified air, often acts as a lid, preventing air pollutants from escaping upward. In the summer, these temperature inversions are stronger than in winter and prevent ozone and other pollutants from escaping upward and dispersing. In the winter, a ground-level or surface inversion commonly forms during the night and traps carbon monoxide emitted by vehicles during the morning rush hours (SCAQMD 2005a).

EXISTING AIR QUALITY

Ambient air pollutant concentrations in the County of Los Angeles are measured at 15 air quality monitoring stations operated by the SCAQMD. The nearest air quality monitoring station to the project site is in North Long Beach, approximately 5 miles northwest of the project site. The gaseous pollutants, ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide, are monitored at this site, as well as respirable particulate matter and fine particulate matter. Table 3.6-1 presents a summary of the highest pollutant values recorded at these stations and compliance with federal and state standards from 2000 to 2004.

Ozone (O_3)

The most pervasive air quality problem in the South Coast Air Basin is high O_3 concentrations. O_3 is the principal component of smog and is formed in the atmosphere through a complex series of photochemical reactions involving volatile organic compounds (VOC) and nitrogen oxides (NO_X), which are commonly referred to as precursors of O_3 and are both considered critical in O_3 formation; NO_X includes various combinations of nitrogen and oxygen, including NO, NO_2, NO_3, etc. Significant O_3 production generally requires about three hours in a stable atmosphere with strong sunlight. O_3 is a regional air pollutant because it is transported and diffused by wind concurrent with the photochemical reaction process. Motor vehicles are the major source of ozone precursors in the air basin. During late spring, summer, and early fall, light winds, low mixing heights, and abundant sunshine combine to produce conditions favorable for maximum production of O_3. O_3 causes eye and respiratory irritation, reduces resistance to lung infection, and may aggravate pulmonary conditions in persons with lung disease. O_3 is also damaging to vegetation and untreated rubber. Control strategies for O_3 have focused on reducing emissions from vehicles, industrial processes using solvents and coatings, and consumer products. The state 1-hour ozone standard was exceeded on 3 days in 2000 and 1 day in 2003 in Long Beach from 2000 through 2004. During that period the federal 1-hour O_3 standard was not exceeded (see Table 3.6-1).

In 1997, the United States Environmental Protection Agency (USEPA) issued a new standard for O_3, using an 8-hour average. After years of litigation, the standard was approved and attainment designations were made. Los Angeles County is nonattainment for both the state and federal standards; however, neither the federal nor state standards were exceeded at the North Long Beach site between 2000 and 2004. In June 2005, the federal 1-hour O_3 standard was revoked by the USEPA.

Carbon Monoxide (CO)

CO is a colorless and odorless gas which, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. Relatively high concentrations are typically found near crowded intersections and along heavily used roadways carrying slow-moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within a relatively short distance (300 to 600 feet) of heavily traveled roadways. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. Concentrations of CO are typically higher in winter. As a result, California has required the use of oxygenated gasoline in the winter months to reduce CO emissions. CO interferes with the transfer of oxygen to the blood. It may cause dizziness and fatigue and can impair central nervous system functions. The 1-hour and 8-hour

TABLE 3.6-1 AMBIENT AIR QUALITY DATA SUMMARY (2000-2004)[1]

Pollutant	Averaging Time	California Air Quality Standards	Federal Primary Standards	Maximum Concentrations[2]					Number of Days Exceeding Federal Standard[3]					Number of Days Exceeding State Standard[3]				
				2001	2002	2003	2004	2005	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
O_3	1 hour	0.08 ppm	0.12 ppm	0.091	0.084	0.099	0.090	0.091	0	0	0	0	0	0	0	1	0	0
	8 hours	0.07 ppm	0.08 ppm	0.070	0.064	0.068	0.074	0.069	0	0	0	0	0	--	--	--	--	--
CO	1 hour	20 ppm	35 ppm	6	6	6	4	4	0	0	0	0	0	0	0	0	0	0
	8 hours	9.0 ppm(4)	9.0 ppm	4.74	4.56	4.66	3.36	3.51	0	0	0	0	0	0	0	0	0	0
NO_2	1 hour	0.25 ppm	None	0.122	0.130	0.14	0.12	0.14	--	--	--	--	--	0	0	0	0	0
	Annual	none	0.053 ppm	0.028	0.026	0.029	0.028	0.024	0	0	0	0	0	--	--	--	--	--
PM_{10}	24 hours	50 µg/m3	150 µg/m3	91	74	63	72	66	0	0	0	0	0	62	33	24	25	24
	Annual/AAM[4]	none	Revoked	37	36	32	33	30	0	0	0	0	0	--	--	--	--	--
	Annual/AGM[5]	20 µg/m3		34	33	--	--	--	--	--	--	--	--	--	--	--	--	--
$PM_{2.5}$	24 hours	None	65 µg/m3	72.9	62.7	115.2	66.6	53.8	1	0	3	1	1	--	--	--	--	--
	Annual/AAM	12 µg/m3	15 µg/m3	21.4	19.5	18.0	17.8	16.0	1	1	1	1	1	1	1	1	1	0
SO_2	24 hours	.04 ppm	.14 ppm	.009	.008	.008	.013	.010	0	0	0	0	0	0	0	0	0	0

Source: CARB 2006; SCAQMD 2006

Notes:

1 Data are from the SCAQMD monitoring station located in North Long Beach.

2 Concentration units for ozone, carbon monoxide, nitrogen dioxide, and sulfur dioxide are in parts per million (ppm). Concentration units for PM_{10} are in micrograms per cubic meter ($\mu g/m^3$).

3 For PM_{10}, calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year. For annual standards, a 1 means the standard was exceeded.

4 AAM = annual arithmetic mean;

5 AGM = annual geometric mean. In July 2003, the state annual standard for PM_{10} was changed from 30 µg/m3 to 20 µg/m3, and the method of calculation was changed to AAM.

na = data not available

average CO standards have not been exceeded at the North Long Beach Monitoring Station in the last five years (see Table 3.6-1).

Nitrogen Dioxide (NO_2)

There are two oxides of nitrogen which are important in air pollution: Nitric Oxide (NO) and NO_2. NO, along with some NO_2, is emitted from motor vehicle engines, power plants, refineries, industrial boilers, ships, aircraft, and railroads. NO_2 is primarily formed when NO reacts with atmospheric oxygen in the presence of VOC and sunlight; the other product of this reaction is O_3. Nitrogen dioxide is the "whiskey brown" colored gas, more commonly known as smog, readily observed during periods of heavy air pollution. Concentrations of NO_2 are highest during the late fall and winter. NO_2 increases damage from respiratory disease and irritation, and may reduce resistance to certain infections. The state standards for NO_2 have not been exceeded in the last five years in North Long Beach (see Table 3.6-1).

Particulate Matter (PM)

PM is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Natural sources of particulates include windblown dust and ocean spray.

The size of PM is directly linked to the potential for causing health problems. The USEPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to PM and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heart beat (USEPA 2006). Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. The USEPA groups PM into two categories:

Fine Particulate Matter ($PM_{2.5}$)

Fine particles, such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. $PM_{2.5}$ is the major cause of reduced visibility (haze) in California. Control of $PM_{2.5}$ is primarily achieved through the regulation of emission sources, such as the USEPA's Clean Air Interstate Rule and Clean Air Visibility Rule for stationary sources, and the 2004 Clean Air Nonroad Diesel Rule, the Tier 2 Vehicle Emission Standards, and Gasoline Sulfur Program; or the California Air Resources Board (CARB) Goods Movement reduction plan.

Coarse inhalable Particulate Matter (PM_{10})

Inhalable coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations, and dust from paved or unpaved roads. The health effects of PM_{10} are similar to $PM_{2.5}$. Control of PM_{10} is primarily achieved through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads.

Sulfur Dioxide (SO_2)

SO_2 is a combustion product, with the primary source being power plants and heavy industry that use coal or oil as fuel. SO_2 is also a product of diesel engine combustion. The health effects of SO_2 include lung disease and breathing problems for asthmatics. SO_2 in the atmosphere contributes to the formation of acid rain. In the South Coast Air Basin, there is relatively little use of coal and oil, and SO_2 is of lesser concern than in many other parts of the country. The federal and state standards for SO_2 have not been exceeded in the last five years in North Long Beach (see Table 3.6-1).

EXISTING AIR POLLUTION SOURCES

Air quality at the project site and in the City is affected by emissions from a variety of sources. These sources include: regional motor vehicle emissions; local motor vehicle traffic on nearby major arterial streets, such as Anaheim Street, 7th Street, and Pacific Coast Highway; and existing sources in the project area, including commercial and institutional uses. There are no known industrial sources are located within a one-mile radius of the project site.

SENSITIVE RECEPTORS

Some people are especially sensitive to air pollution emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in frequent exercise. Structures that house these persons or places where they gather to exercise are defined as sensitive receptors (SCAQMD 2005b).

Residential areas are considered to be sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

Air pollution-sensitive receptors in the immediate vicinity of the project site include Will Rogers Middle School, located immediately west of the termination of the alignment at Marine Stadium; Lowell Elementary School, located approximately 0.16 mile southwest of the termination of the alignment at Marine Stadium ; John C. Fremont Elementary School, located approximately ¼-mile southwest of the alignment's intersection with Ximeno Avenue; Woodrow Wilson High School; located approximately 0.2 mile northeast of alignment; Bryant Elementary School, located approximately 0.12 mile northeast of the termination of the Termino Avenue lateral at Anaheim Street; Jefferson Middle School, located approximately 0.12 mile southwest of the intersection of the main storm drain alignment and the Termino Avenue lateral; Willard Elementary School, located approximately 0.15 mile west of the termination of the alignment at Redondo Avenue and Anaheim Street; residences generally located adjacent to the project alignment; and recreational use areas including Recreation Park golf course, Blair Field Recreation Park, Colorado Lagoon, Marina Vista Park, and Marine Stadium. Other land uses immediately adjacent to the project site consist of office, commercial, and retail uses, which are the least sensitive to air pollution, as noted above.

3.6.2 Regulatory Setting

Federal Clean Air Act

The federal Clean Air Act (42 U.S.C. §§ 7401-7671q) (CAA) was first enacted in 1955 and has been amended numerous times, most recently in 1990. The CAA established federal air quality standards, known as the National Ambient Air Quality Standards (NAAQS), for SO_2, CO, NO_2, O_3, PM_{10}, and lead (Pb) and specified future dates for achieving compliance with these standards. The NAAQS were amended in July 1997 to include an additional standard for O_3 and to adopt a NAAQS for $PM_{2.5}$. The CAA also mandates that each state submit and implement a State Implementation Plan (SIP) for local areas not meeting the NAAQS. SIPs must include pollution control measures that demonstrate how the NAAQS will be met.

The Transportation Project-Level Carbon Monoxide Protocol, UCD-ITS-97-21, University of California, Davis, December 1997, (Protocol) provides procedures and guidelines for use by agencies to evaluate the potential local level CO impacts of a transportation project. The Protocol provides a methodology for determining the level of analysis, if any, required on a project. On April 1, 2003, the USEPA approved EMFAC 2002 for use in the State of California (USEPA 2003). As of April 3, 2003, the California Department of Transportation (Caltrans), through a notice on its web site, has required the use of EMFAC 2002 for use in all CO Hot Spot Analysis in new projects, which require their approval (Caltrans 2003).

California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the state to achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. Standards for most of the criteria and other pollutants have been set by the State of California. The

CAAQS tend to be more restrictive than the NAAQS and are based on even greater health and welfare concerns. California has also set CAAQS for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. Federal and state standards are shown in Table 3.6-2.

TABLE 3.6-2 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	NAAQS[1]		CAAQS[2]
		Primary[3]	Secondary[4]	Concentration[5]
Ozone (O_3)[6]	1-Hour	-	Same as Primary Standard	0.09 ppm (180 µg/m³)
	8-Hour	0.08 ppm (157 µg/m³)		0.070 ppm (137 µg/m³)[9]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	None	9.0 ppm (10 mg/m³)
	1-Hour	35 ppm (40 mg/m³)		20 ppm (23 mg/m³)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m³)	Same as Primary Standard	-
	1-Hour	-		0.25 ppm (470 µg/m³)
Sulfur Dioxide (SO_2)	Annual Average	0.03 ppm (80 µg/m³)	-	-
	24-Hour	0.14 ppm (365 µg/m³)	-	0.04 ppm (105 µg/m³)
	3-Hour	-	0.5 ppm (1300 µg/m³)	-
	1-Hour	-	-	0.25 ppm (655 µg/m³)
Suspended Particulate Matter (PM_{10})[7]	24-Hour	150 µg/m³	Same as Primary Standard	50 µg/m³
	Annual Arithmetic Mean	Revoked		20 µg/m³
Fine Particulate Matter ($PM_{2.5}$)[8]	24-Hour	35 µg/m³	Same as Primary Standard	-
	Annual Arithmetic Mean	15 µg/m³		12 µg/m³
Lead (Pb)	30-Day Average	-	-	1.5 µg/m³
	Calendar Quarter	1.5 µg/m³	Same as Primary Standard	-
Hydrogen Sulfide (HS)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m³)
Sulfates (SO_4)	24-Hour			25 µg/m³
Visibility Reducing Particles	8-Hour (10 am to 6 pm, Pacific Standard Time)			In sufficient amount to produce an extinction coefficient of 0.23 per km due to particles when the relative humidity is less than 70 percent.
Vinyl chloride[9]	24 Hour			0.01 ppm (26 µg/m³)

[1] NAAQS (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current federal policies.

[2] California Ambient Air Quality Standards for O_3, CO (except Lake Tahoe), SO_2 (1- and 24-hour), NO_2, PM_{10}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.

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

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

[5] Concentration expressed first in units in which it was promulgated. Ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

[6] On June 15, 2005 the 1-hour ozone standard was revoked for all areas except the 8-hour ozone nonattainment Early Action Compact Areas (those areas do not yet have an effective date for their 8-hour designations). Additional information on federal ozone standards is available at http://www.epa.gov/oar/oaqps/greenbk/index.html.

[7] Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the USEPA revoked the annual PM_{10} standard on December 17, 2006.

[8] Effective, December 17, 2006, the USEPA lowered the $PM_{2.5}$ 24-hour standard from 65 µg/m³ to 35 µg/m³.

[9] 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.

ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter

Reference: USEPA 2006 is National Ambient Air Quality Standards (NAAQS), available at http://www.epa.gov/oar/oaqps/greenbk/index.html.

Reference: CARB 2006 is California Ambient Air Quality Standards (CAAQS) available at http://www.epa.gov/oar/oaqps/greenbk/index.html.

REGIONAL AUTHORITY

In the Basin, the South Coast Air Quality Management District (SCAQMD) is the agency responsible for the administration of federal and state air quality laws, regulations, and policies. SCAQMD regulations require that any equipment that emits or controls air contaminants be permitted prior to construction, installation, or operation (Permit to Construct or Permit to Operate). The SCAQMD is responsible for review of applications and for the approval and issuance of these permits.

Included in the SCAQMD's tasks are monitoring of air pollution, preparation of the Air Quality Management Plans (AQMP) and SIP for the Basin, and promulgation of its Rules and Regulations. The SIP includes strategies and tactics to be used to attain maintain the federal standards in the Los Angeles – South Coast Air Basin area and the AQMP addresses the state standards. Every three years, SCAQMD prepares the AQMP; each iteration of the plan is an update of the previous plan and has a 20 year horizon. The Final 2003 AQMP was adopted by the SCAQMD Governing Board on August 1, 2003 (SCAQMD 2005b). The Rules and Regulations include procedures and requirements to control the emission of pollutants and to prevent adverse impacts.

Areas are classified under the Federal Clean Air Act as either "attainment" or "non-attainment" areas for each criteria pollutant based on whether the NAAQS have been achieved or not. Attainment relative to the state standards is determined by the California Air Resources Board (CARB). If an area is redesignated from nonattainment to attainment, the Federal Clean Air Act (CAA) requires a revision to the SIP, a maintenance plan which demonstrates how the air quality standard will be maintained for at least 10 years. The project site is located in the Los Angeles County portion of the Basin; federal and state attainment designations are shown in Table 3.6-3.

TABLE 3.6-3 ATTAINMENT DESIGNATIONS FOR LOS ANGELES COUNTY

Pollutant	Attainment Status	
	Federal	State
O_3 – 1-Hour	--[a]	Nonattainment Extreme
O_3 – 8-hour	Nonattainment Severe 17	
PM_{10}	Nonattainment Serious	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Nonattainment Serious[b]	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment

a- Repealed by law in June 2005.
b-Redesignation to Attainment was submitted to the USEPA for approval in February 2006.
Sources: USEPA Green Book, Criteria Pollutant Area Summary Report. Available at http://www.epa.gov/oar/oaqps/greenbk/ancl2.html. CARB *California Air Quality Area Designations*. Available at http://www.arb.ca.gov/aqd/aqd.htm

In 1999, the California Air Resources Board (CARB) identified particulate emissions from diesel-fueled engines as a Toxic Air Contaminant (TAC). Once a substance is identified as a TAC, the CARB is required by law to determine if there is a need for further control. This is referred to as risk management. The process of further studies is ongoing at ARB, with committees meeting to analyze both stationary and mobile diesel engine sources, as well as many other aspects of the problem. No guidance has been issued on impact analysis or control measures. Therefore, other than recognition of CARB actions, no analysis can be made at this time for TAC impact from diesel engine exhaust.

3.6.3 ENVIRONMENTAL ANALYSIS

Project-related emissions were estimated by use of the URBEMIS 2002 software package, version 8.7 (Jones & Stokes 2005). The emission factors and calculation methodologies contained in the URBEMIS 2002 program have been approved for use by the CARB. URBEMIS is a calculation tool designed to estimate air emissions from land use development projects based on development type and size. The model contains data that are specific for each California air basin.

Air quality impacts associated with the proposed action are caused by emissions from construction activities. Construction may affect air quality as a result of (1) construction equipment emissions, including both on-site equipment and trucks operating off-site for the import of fill and building materials and the export of demolition and grading spoils; (2) fugitive dust from grading and earth-moving; (3) emissions from vehicles driven to/from the sites by construction workers; and (4) VOC from architectural coating and asphalt application.

The URBEMIS program considers a typical development project to have three non-overlapping sequential phases of construction: demolition, grading, and building. The building phase includes separate elements for architectural coatings and paving, as well as the general use of equipment for construction of structures. A pipeline installation project is not a typical development project, and it is probable that excavation, pipeline placement, backfill, and paving would all occur simultaneously during the project. Therefore, the program elements are combined to evaluate reasonable worst-case conditions. Data relative to the proposed action are based on the description in Chapter 2 of this EIR and the following assumptions:

- Construction would begin in April 2008.
- The duration of construction would be 18 months, averaging 22 days per month. While inclement weather may extend the total duration, there would be the equivalent of 18 months of construction, or 396 days.
- Approximately 400 cubic yards of soil would be exported from the project site per day.

- Except for the initial and final phases, pavement demolition, excavation, pipe installation, form construction, concrete placement, backfill, and paving would often occur simultaneously, resulting in the reasonable worst-case day.

- The demolition of one 1,500 square-foot structure would be a short-term event that, while requiring the use of construction equipment and trucks for hauling of spoils, would not add substantially to the reasonable worst-case day.

Changes in plan layouts and area or other factors are anticipated to be within the accuracy of the estimating methodology. URBEMIS data sheets are included in this EIR as Appendix C.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on air quality if it would result in one or more of the following:

- violate any air quality standard or contribute substantially to an existing or projected air quality violation. Air quality significance thresholds established by SCAQMD are listed in Table 3.6-4;

TABLE 3.6-4. SCAQMD AIR QUALITY SIGNIFICANCE THRESHOLDS[1]

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_X	100 lbs/day	55 lbs/day
ROC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SO_X	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Hazard Index ≥ 1.0 (project increment) Hazard Index ≥ 3.0 (facility-wide)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants [a]		
NO_2	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
1-hour average	0.25 ppm (state)	
annual average	0.053 ppm (federal)	
PM_{10} 24-hour average	10.4 μg/m³ (construction) [b] & 2.5 μg/m³ (operation)	
annual geometric average	1.0 μg/m³	
annual arithmetic mean	20 μg/m³	
$PM_{2.5}$ 24-hour average	10.4 μg/m³ (construction) [b] & 2.5 μg/m³ (operation)	
Sulfate		

1 SCAQMD, http://www.aqmd.gov/ceqa/hdbk.html

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
24-hour average	25 ug/m^3	
CO	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:	
1-hour average	20 ppm (state)	
8-hour average	9.0 ppm (state/federal)	

lbs/day = pounds per day
ppm = parts per million
ug/m^3 = micrograms per cubic meter
≥ greater than or equal to
[a] Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.
[b] Ambient air quality threshold based SCAQMD Rule 403.
Table revision date: October 2006
Source: SCAQMD, *Air Quality Analysis Guidance Handbook.* Available at http://www.aqmd.gov/ceqa/hdbk.html. Accessed November 20, 2006

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

- expose sensitive receptors to substantial pollutant concentrations.

EFFECTS FOUND NOT TO BE SIGNIFICANT

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that three air quality issues were less than significant and did not need to be analyzed in the EIR. Specifically, the Initial Study determined that the project would not:

- conflict with or obstruct implementation of the applicable air quality plan;

- create or contribute to a non-stationary source "hot spot" (primarily carbon monoxide); or

- create objectionable odors affecting a substantial number of people.

As discussed in the Initial Study, operation of the storm drain system would be passive (it would not require the routine or daily use of machinery or personnel to operate), except for periodic cleaning of the storm drain catch basin screens, the operation of the pumps to divert flows to the sanitary sewer system, and intermittent trips by maintenance personnel to check system facilities. Emissions from these activities would be negligible and would not trigger any of the applicable operations thresholds. Accordingly, there would be no air quality emissions impact from operations. For example, the project would not create or contribute to a non-stationary sources "hot spot" since no operational vehicle trips would occur. Likewise, the project would not conflict with or obstruct implementation of the applicable air quality management plan as no housing or job growth would occur and no long-term emissions would be attributed to the project. Accordingly, the following impact analysis discusses potential impacts associated with construction of the proposed project only.

Additionally, the proposed project would not result in any construction or operational activities that would generate objectionable odors. Therefore, impacts associated with odors are not discussed further.

IMPACT ANALYSIS

AIR-1 *Construction of the proposed project would violate SCAQMD's air quality standards for NO_x and would contribute to an existing or projected air quality violation.*

Construction of the project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated from construction workers traveling to and from the project site. In addition, fugitive dust emissions would result from site preparation and construction activities. Mobile source emissions, primarily NO_X, would result from the use of construction equipment such as bulldozers, wheeled loaders, and cranes. During the finishing phase, paving operations would release reactive organic compounds. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. The principal sources of pollutant emissions during construction are construction equipment engine exhaust and fugitive dust.

During construction, fugitive dust would be created during demolition activities, site clearing, excavation and grading; removal of pavement; vehicle travel on paved roads and unpaved areas; and material blown from unprotected graded areas and stockpiles. Fugitive dust includes PM_{10} and $PM_{2.5}$, which are potential health hazards and often contribute to visibility and nuisance impacts, which occur when dust from construction activities is deposited on homes, vehicles, and plants. In construction equipment exhaust, the principal pollutants of concern are NO_X and VOC, the primary constituents in the formation of O_3, which is a regional nonattainment pollutant for Los Angeles County.

Construction emissions provided in Table 3.6-5 were calculated in accordance with the methodology described above. As shown in the table, estimated emissions of NO_X for the maximum day of activity are 292 pounds, which would exceed the 100 pound per day threshold. Estimated emissions of the other four pollutants, VOC, CO, PM_{10}, and $PM_{2.5}$ would be less than the applicable thresholds. The exceedance of the NO_X emissions threshold would be a significant impact. Mitigation measures AIR-A and AIR-B are included below to reduce impacts from NO_X. However, emissions of NO_X during project construction would remain above the SCAQMD CEQA significance thresholds.

TABLE 3.6-5 ESTIMATED REGIONAL CONSTRUCTION EMISSIONS – TERMINO AVENUE DRAIN[1]

	Estimated Pollutant Emissions (lbs/day)				
Activity	**ROC**	**NOX**	**CO**	**PM10**	**PM2.5**
Demolition of single structure	2	21	14	1	3
Pavement demolition	9	70	65	2	3
Conduit construction, trenching, pipe placement	18	**130**	141	0	4

Activity	Estimated Pollutant Emissions (lbs/day)				
	ROC	NOX	CO	PM10	PM2.5
Concrete trucking	1	24	4	0	1
Road bed construction	7	47	51	2	2
Paving	4	21	29	0	1
Maximum daily emissions[2]	39	**292**	290	4	11
Significance Thresholds (Table 3.6-4)	75	100	550	150	55
Threshold exceeded	No	**Yes**	No	No	No

Bold = exceeds threshold

1 See Appendix C for URBEMIS input and output data

2 Does not include demolition of single structure

AIR-2 *Construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.*

As discussed above, the Basin is designated nonattainment for state PM_{10}, $PM_{2.5}$, O_3, and CO standards, and federal PM_{10}, $PM_{2.5}$, O_3, and CO standards. Table 3.6-5 shows that the proposed project would not exceed thresholds established for PM_{10}, $PM_{2.5}$, O_3, or CO. Thresholds would only be exceeded for NO_X, which is not designated as non-attainment under federal or state standards. Impacts would be less than significant.

AIR-3 *Construction of the proposed project would not expose sensitive receptors to substantial pollutant concentrations.*

The SCAQMD has promulgated standards and methodology for calculation of impacts based on Localized Significance Thresholds (LST) (SCAQMD 2003). Calculation of LST is a voluntary procedure, but has more importance when sensitive receptors are close to sources of emissions. As residences are very close to the main storm drain work areas, the LST calculations are included in this air quality analysis.

An LST analysis is a localized air dispersion modeling analysis. Air dispersion modeling is a function of multi-variables, including local-specific meteorological conditions, site-specific air pollutant emission levels, and sensitive receptor distances to the modeling site. LST analyses utilize air dispersion modeling methodologies to predict maximum concentration levels of air pollutant emissions generated from a project site that could reach nearby sensitive receptors based on mathematic simulation of meteorological dispersion processes. The pollutants of concern are NO_2, CO, PM_{10}, and $PM_{2.5}$. The SCAQMD thresholds of significance are shown in Table 3.6-4.

In order to minimize efforts for detailed dispersion modeling, SCAQMD developed screening (lookup) tables to assist lead agencies with a simple tool for evaluating impacts from small typical projects. The use of LST lookup tables is limited to projects that are 5 acres or smaller in size, with operations during the day, limited to 8 hours of operations, and with emissions distributed evenly across the proposed site.

The Termino Avenue Drain project meets these criteria, and the look-up tables were used for analysis. The screening tables require the following information:

- **The area of the project site.** The lookup tables provide data for 1, 2, and 5-acre sites. Because the site is linear, and any single receptor would be exposed to construction activities on a limited duration when construction is in the immediate vicinity of the receptor, a 1-acre area was selected. This size would represent, for example, a work area 15 meters (50 feet) wide by 244 meters (800 feet) long.

- **Maximum daily emissions of CO, NO_X, PM_{10}, and** $PM_{2.5}$, **in pounds per day.** These data were calculated with the URBEMIS 2002, version 8.7 model, as described above. Unlike the regional emissions calculations, simultaneous construction activities would not occur in a 1-acre area near a receptor. Two scenarios were examined: trenching, pipe installation, and backfill, which would produce the greatest amount of CO and NO_X; and road building, which would produce the greatest amount of PM_{10} and $PM_{2.5}$. In the LST analysis, only on-site emissions are considered; thus, off-site emissions, such as haul trucks and worker commuting are not included. The URBEMIS data sheets are included in Appendix C to this EIR.

- **Distance from the boundary of the project to the nearest off-site receptor.** The look-up tables analyze distances of 25, 50, 100, 200, and 500 meters (82, 164, 328, 656, and 1,640 feet) from the boundary of the project to the nearest off-site receptor. The closest receptors to the project site are residences adjacent to the storm drain corridor, less than 25 meters (82 feet) away. The LST methodology states that projects with boundaries located closer than 25 meters (82 feet) from the nearest receptors should use the values for the distance of 25 meters (82 feet) away.

- **Geographic location of the construction site in terms of district source/receptor area (SRA).** These data are required because emissions thresholds are based on local pollutant measurements and meteorology. The proposed project is located in SRA 4 – South Coastal Los Angeles County.

Construction emissions for the LST analysis were calculated in accordance with the methodology described above. Results are shown in Table 3.6-6.

TABLE 3.6-6 LOCAL PROJECT EMISSIONS

Pollutant	Maximum Daily Emissions[1] lbs/day	LST Threshold[2] lbs/day	Exceed threshold?
NO_X	54.1	125/100[3]	No
CO	54.4	417	No
PM_{10}	2.1	4	No
$PM_{2.5}$	1.7	4	No

[1] See URBEMIS data sheets, Appendix C; greatest values from the two scenarios described above.
[2] LST thresholds from SCAQMD 2005d.
[3] LST thresholds for NO_X are higher than SCAQMD mass emissions thresholds; therefore the lower numbers, which are the mass emissions thresholds, apply.

According to the SCAQMD methodology, "if the calculated emissions for the proposed construction or operational activities are below the LST emission found on the LST lookup tables, then the proposed construction or operation activity is not significant" (SCAQMD 2005d). As seen from Table 3.6-6, all emissions values would be less than the LST thresholds. Accordingly, impacts from local emissions of the proposed project to sensitive receptors would not be significant.

3.6.4 MITIGATION MEASURES

Emissions of NO_X during project construction would exceed the CEQA significance thresholds set by SCAQMD, and would be significant. The principal source of NO_X emissions is diesel-engine driven construction equipment (i.e. off-road equipment). A secondary source is on-road diesel equipment, which is the trucks used to bring concrete and other materials to the site, and to transport demolition spoils from the site. The most effective means of NO_X emission reduction for diesel engines include cooled exhaust gas recirculation (EGR), diesel oxidation catalysts, lean NO_x catalysts, and low NO_x fuels. However, application of the above methods to all off-road and on-road diesel engine powered equipment on a large project would generally not be feasible due to the cost of implementation and the availability of these materials. Therefore, the mitigation strategy adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) shall be applied to the project, as follows (SMAQMD 2005).

AIR-A The project shall provide a plan, for approval by the Los Angeles County Department of Public Works, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent CARB fleet average at time of construction. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

The construction contractor shall submit to the Los Angeles County Department of Public Works a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the construction contractor shall provide DPW with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.

3.6.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

The application of mitigation measures AIR-A and AIR-B would reduce NO_X emissions; however, emissions of NO_X during project construction would remain above the SCAQMD CEQA significance thresholds. Accordingly, impacts associated with NO_X emissions would be significant and unavoidable.

3.7 NOISE

The purpose of this section is to identify, describe, and evaluate noise sources and noise impacts associated with the construction and operation of the new drainage system. The section analyzes the noise generated by the proposed project, including both the short-term construction sources and long-term operational sources, and determines whether noise levels generated by the proposed project would result in significant increases in noise levels, or noise levels exceeding State or local guidelines.

3.7.1 EXISTING CONDITIONS

Noise is most often defined as unwanted sound, and it is known to have several adverse effects on different receptors. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. These criteria are based on the known impacts of noise on people such as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed below.

HEARING LOSS

Hearing loss does not generally result from ambient or background noise. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. For example, mining employees may experience this effect. In contrast, noise levels in neighborhoods, even in very noisy airport environs, generally are not sufficiently loud to cause hearing loss.

SPEECH INTERFERENCE

Speech interference is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA, and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level. For example, the maximum sound level that permits relaxed conversation with 100 percent intelligibility is 45 dBA. This drops to 60 percent intelligibility at 70 dBA.

PHYSIOLOGICAL RESPONSES

Physiological responses are those measurable effects of noise on people which are realized as changes in pulse rate, blood pressure, etc. For example, 50 percent of people report that noise levels of 75 dBA disturb sleep. While such effects can be induced and observed, the extent to which these physiological responses cause harm or are a sign of harm is not known.

ANNOYANCE

Annoyance is a very individualized characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

TERMINOLOGY

A decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level (commonly called "sound level"), measured in dB. Environmental noise is usually measured in A-weighted decibels (dBA). A dBA is a dB corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels. In general, people can perceive a 3 dBA difference in noise levels; a difference of 10 dBA is perceived as a doubling or halving of loudness. Some representative sounds and sound pressure levels are shown in Table 3.7-1.

Several metrics have been developed for the analysis of community noise. These metrics include the Equivalent Noise Level (L_{eq}), the maximum noise level (L_{max}), the Community Noise Equivalent Level (CNEL), and the Day-Night Average Level (L_{dn}).

L_{eq} is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. L_{eq} is the "energy" average noise level. CNEL and L_{dn} are similar to L_{eq} but are noise indices that take into account differences in intrusiveness between daytime and nighttime noises within a 24-hour period. CNEL and L_{dn} values result from the averaging of hourly Energy-Equivalent Sound Levels for a 24-hour period, with a weighting factor applied to evening and nighttime L_{eq} values. For CNEL, the evening time period (7:00 PM to 10:00 PM) penalizes noise by 5 dB, while nighttime (10:00 PM to 7:00 AM) noise is penalized by 10 dB. For L_{dn}, the nighttime period is between 10:00 PM to 7:00 AM and penalizes noise by 10 dB.

TABLE 3.7-1. SOUND PRESSURE LEVELS OF COMMON SOUNDS AND NOISES

Sound Quality	dBA	Sound Sources
Threshold of Feeling/Pain	120	Rocket Engine Private Jet Turbojet: 7,000 lbs. thrust
Deafening	110	Propeller aircraft Boiler factory Nearby riveter, drop hammer, thunder Subway & elevated trains
Very loud	90	Woodsaw, punch press Loud street noises Noisy factory, Screw machine Pneumatic drill
	80	Police whistle, portable sander

Sound Quality	dBA	Sound Sources
Loud	70	Noisy office Average traffic Normal radio Average factory
Moderate	60	Noisy home
	50	Average office Ordinary conversation Quiet radio
Faint	40	Quiet home
	30	Private office Average auditorium Quiet conversation
Very Faint Threshold of Audibility	20	Rustle of leaves
	10	Whisper
	0	Sound proof room

Source: AMB Beaird, Inc. 1970.

SOUND PROPAGATION AND ATTENUATION

Sources of noise usually are typically analyzed as either "point sources" or "line sources," as explained below. The attenuation, or reduction of noise over a distance, is different for point and line sources.

Construction noise is analyzed as one or more point sources. In an area which is relatively flat and free of barriers, the sound level resulting from a single "point source" of noise decreases by 6 dBA for each doubling of distance or 20 dBA for each factor of 10 in distance. This applies to fixed sources and mobile sources which are temporarily stationary, such as an idling truck or other heavy duty equipment operating within a confined area, such as a construction site.

For a "line source" of noise, such as a heavily traveled roadway, the noise level decreases by a nominal value of 3 dBA for each doubling of distance between the noise source and the noise receptor.

The values given above are for a reflective, or "hard," site at which the terrain between the source and receptor is paved, unvegetated soil, or water. In the case of an absorptive, or "soft," site at which there is vegetation between the source and receptor, the attenuation for each doubling of distance may increase by as much as 1.5 dBA. Soft site factors do not apply where the line of sight between source and receptor is more than 10 feet above the ground, or if the noise is refracted over the top of a barrier.

NOISE SENSITIVE RECEPTORS

Noise sensitive receptors are generally considered to be human activities or land uses that may be significantly affected by interference from noise. These areas often include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries.

There are residences adjacent to nearly all sections of the proposed alignment north of Marina Vista Park. There are three elementary schools, two middle schools, and one high school located within ¼-mile of the proposed alignment. No mobile homes, hotels, hospitals, nursing homes or libraries are located in the vicinity of the proposed project.

EXISTING NOISE LEVELS

Noise levels were measured in the vicinity of the project site on May 12, 2005 between the hours of 10:00 AM and 1:00 PM. The locations and the results of the measurements are shown in Table 3.7-2.

TABLE 3.7-2. EXISTING NOISE LEVELS AT SELECTED LOCATIONS NEAR THE PROJECT SITE

Site ID	Location	Start Time	Duration (Minutes)	Leq (dBA)	Lmin (dBA)	Lmax (dBA)	Noise Source
1	Within RR ROW north of Termino and south of Grand	10:08 AM	16	47	40	52	Generally quiet with low traffic noise, other sources included birds, small propeller aircraft, an air conditioner for a cell tower, a distant table saw started up 15:15 to 15:30 seconds into measurement.
2	Within RR ROW at E. 10th St	10:34 AM	16	60	42	75	Primary noise source was traffic on E 10th, Other noise sources included a helicopter and 3 small planes passing directly overhead (not much affect on ambient noise), light maintenance in neighborhood at several homes (saws, hammers, etc.).
3	Within RR ROW centered between 8th St. and 7th St.	11:13 AM	8	56	44	74	Primary noise source was traffic on 7th St. secondary noise was traffic on 8th St, other noise sources included birds and small aircraft (no direct overflights).
4	Within RR ROW at 7th St.	11:26 PM	11	62	48	74	Primary noise source was traffic on 7th St. Church bell rang at 11:30 PM no noticeable affect.
5	Colorado Lagoon Parking Lot	12:23 PM	11	62	48	85	Primary noise source was traffic on 4th St., other noise sources would include children playing, joggers passing, birds, and distant aircraft, one jet air

Site ID	Location	Start Time	Duration (Minutes)	Leq (dBA)	Lmin (dBA)	Lmax (dBA)	Noise Source
							craft flew over the site low and dominated the traffic noise for about a minute.
6	Within RR ROW at 6th St.	12:39 PM	13	53	45	70	Generally Quiet, ambient noise primarily from traffic on surrounding streets, other noise sources included dogs barking, birds, distant small aircraft, and some hammering in distance.

The predominant noise source at the project site is from vehicles on the east-west streets crossing the project alignment. Other noise sources included occasional aircraft and local residential and commercial activities.

VIBRATION DESCRIPTORS

Vibrations caused by construction activities can be interpreted as energy transmitted in waves through the soil mass. These energy waves generally dissipate with distance from the vibration source, due to spreading of the energy and frictional losses. The energy transmitted through the ground as vibration, if great enough, can result in structural damage. To assess the potential for structural damage associated with vibration from construction activities, the vibratory ground motion in the vicinity of an affected structure is measured in terms of peak particle velocity (ppv), typically in units of inches per second (in/sec). Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.7-3 presents various vibration magnitudes and the related effect on humans and structures.

TABLE 3.7-3 REACTION OF PEOPLE AND DAMAGE TO BUILDINGS AT VARIOUS[1] CONTINUOUS VIBRATION LEVELS

Vibration Level (in/sec ppv)	Effects on People	Effects on Structures
0.006-0.019	Threshold of perception; possibility of intrusion	Unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level for ruins and ancient monuments
0.1	Threshold of annoyance	Virtually no risk of damage
0.2	Annoying to people in buildings	Threshold of risk of architectural damage to normal dwelling with plastered walls and ceilings

Vibration Level (in/sec ppv)	Effects on People	Effects on Structures
0.4-0.6	Considered unpleasant	Architectural damage and possibly minor structural damage

Source: Caltrans 2002
1 Caltrans considers most construction vibrations, with the exception of pile driving and blasting to be continuous.

Construction operations generally include a wide range of activities that can generate ground-borne vibration. In general, blasting and demolition of structures generate the highest vibrations. Vibratory compactors or rollers, pile drivers and pavement breakers can generate perceptible amounts of vibration at distances within 200 feet of the vibration sources. Heavy trucks can also generate ground-borne vibrations which vary, depending on vehicle type, weight and pavement conditions. Potholes, pavement joints, discontinuities, differential settlement of pavement, etc., all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration of normal traffic on streets and freeways with smooth pavement conditions due to its unique characteristics. Typical vibration levels for various pieces of construction equipment are shown in Table 3.7-4.

TABLE 3.7-4 REPRESENTATIVE VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment		ppv at 25 feet (in/sec)
Pile Driver (impact)	upper range	1.518
	Typical	0.644
Pile Driver (sonic)	upper range	0.734
	Typical	0.170
Large Bulldozer		0.089
Loaded Trucks		0.076
Jackhammer		0.035
Small Bulldozer		0.003

Source: FTA 1995

3.7.2 REGULATORY SETTING

COUNTY OF LOS ANGELES NOISE REGULATIONS

The County regulates noise through the County Code, Title 12, Chapter 12.08, Noise Control. The exterior noise standards established by the County are identified in Table 3.7-5. Chapter 12.08.0440 of the County Code states that no construction equipment may operate between the hours of 7:00 PM and 7:00 AM, Monday through Saturday, or at any time on Sunday or holidays, if the noise disturbance crosses a residential or commercial property line. Construction activities must comply with the noise limits identified in Table 3.7-6.

TABLE 3.7-5 LOS ANGELES COUNTY EXTERIOR NOISE STANDARDS

Land Use (Receptor Property)	Time Interval	Exterior Noise Level
Noise-sensitive area	Anytime	45 dBA
Residential properties	10:00 PM to 7:00 AM	45 dBA
	7:00 AM to 10:00 PM	50 dBA
Commercial properties	10:00 PM to 7:00 AM	55 dBA
	7:00 AM to 10:00 PM	60 dBA
Industrial properties	Anytime	70 dBA

Source: Los Angeles County, County Code, Title 12, Environmental Protection, Chapter 12.08.08.90, Exterior noise standards, 2004.

TABLE 3.7-6 LOS ANGELES COUNTY NOISE REGULATIONS FOR CONSTRUCTION NOISE

	Single-Family Residential	Multi-Family Residential	Semi-Residential/Commercial
Mobile Equipment – non-scheduled, intermittent, short-term operation (fewer than 10 days)			
Monday through Saturday 7:00 AM to 7:00 PM	75 dBA	80 dBA	85 dBA
Daily 7:00 PM to 7:00 AM and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
Stationary Equipment – repetitively scheduled and relatively long-term operation (periods of 10 days or more)			
Monday through Saturday 7:00 AM to 7:00 PM	60 dBA	65 dBA	70 dBA
Daily 7:00 PM to 7:00 AM and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA

Source: Los Angeles County, County Code, Title 12 Environmental Protection, Chapter 12.08.440, Construction noise, 2004.

City of Long Beach General Plan Noise Element

The City adopted a General Plan Noise Element in March 1975. The Noise Element recommends "that the Long Beach Planning Commission and the City's Council continue to take affirmative action to preserve the City's quietness and to reduce and control noise." Table 3.7-7 shows the recommended criteria for maximum acceptable noise in the City. The Noise Element establishes criteria based on three separate parameters, including existing ambient levels, existing land use patterns, and existing health, communication, and physical setting needs, to provide an acceptable noise environment for the City (City of Long Beach 1975). Based on these parameters, categorical recommendations were made to achieve the goals and objectives of the City.

TABLE 3.7-7 MAXIMUM ACCEPTABLE NOISE LEVELS IN dBA[1]

Land Use Type	Outdoor			Indoor
	Max. Single Hourly Peak	L_{10}(2)	L_{50}(3)	L_{dn}
Residential(4) 7 AM – 10 PM	70	55	45	45
Residential(4) 10 PM – 7 AM	60	45	35	35

Land Use Type	Outdoor			Indoor
	Max. Single Hourly Peak	L_{10}(2)	L_{50}(3)	L_{dn}
Commercial (anytime)	75	65	55	(5)
Industrial (anytime)	85	70	60	(5)

1 Based on existing ambient level ranges in Long Beach and recommended U.S. Environmental Protection Agency ratios and standards for interference and annoyance.
2 Noise levels exceeded 10 percent of the time
3 Noise levels exceeded 50 percent of the time
4 Includes all residential categories and all nose sensitive land uses such as hospitals, schools, etc.
5 Since different types of commercial and industrial activities appear to be associated with different noise levels, identification of a maximum indoor level for activity interference is infeasible.
Source: City of Long Beach 1975.

City of Long Beach Municipal Code

The City's Municipal Code (LMBC) contains the City's noise control ordinances (City of Long Beach 1977, as amended). Noise standards vary by land use districts identified by the noise control office. The proposed project site and surrounding area are within District One. It is common for noise ordinances to exempt construction noise from long term exterior noise limitations; however, the City does not make such an exemption.

LMBC Section 8.80.150 establishes requirements for exterior noise and states that "no person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the city or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:

- The noise standard for that land use district for a cumulative period of more than thirty minutes in any hour; or
- The noise standard plus five decibels for a cumulative period of more than fifteen minutes in any hour; or
- The noise standard plus ten decibels for a cumulative period of more than five minutes in any hour; or
- The noise standard plus fifteen decibels for a cumulative period of more than one minute in any hour; or
- The noise standard plus twenty decibels or the maximum measured ambient, for any period of time."

In addition, "if the measured ambient level exceeds that permissible noise standard within [the first four of the above categories], the allowable noise exposure standard shall be increased in five decibels increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth [category listed above], the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level." Exterior noise limits for District One are presented in Table 3.7-8.

TABLE 3.7-8 LONG BEACH NOISE ORDINANCE, EXTERIOR NOISE LIMITS (DISTRICT ONE)

Time Period	Noise Level (dBA)
Night: 10:00 PM to 7:00 AM	45
Day: 7:00 AM to 10:00 PM	50

Source: City of Long Beach Municipal Code, Noise Ordinance, 1977 and as amended.

LMBC Section 8.80.170 establishes standards for interior noise in various land use districts. Interior noise limits for District One are provided in Table 3.7-9.

TABLE 3.7-9 INTERIOR NOISE LIMITS (DISTRICT ONE)

Receiving Land Use Designation	Type of Land Use	Time Interval	Allowable Interior Noise Level (dBA)
All	Residential	10:00 PM to 7:00 AM 7:00 AM to 10:00 PM	35 45
All	School	7:00 AM to 10:00 PM (While school is in session)	45
All	Hospital, designated quiet zones and noise sensitive zones	Anytime	40

LMBC Section 8.80.200 regulates noise disturbances, including vibration. A violation of the noise ordinance would occur if the operation of any device which creates vibration above the "vibration perception threshold" of an individual can not occur at or beyond the property boundary of the source on private property or at 150 feet from the source on public space or right-of-way. "Vibration perception threshold" is defined as the "minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration [through] touch or visual observation of moving objects." The perception threshold is 0.001 g's in the 0 to 30 hertz frequency range and .003 g's in the 30 to 100 hertz frequency range. The threshold of perception identified by Caltrans (0.006 ppv in./sec.) from Table 3.7-3 is equivalent to the City's at the range of 15-70 hertz. Additional noise disturbances include:

- Creating or causing the creation of any sound within any noise sensitive zone, so as to exceed the specified land use noise standards set forth in sections 8.80.150 and 8.80.170; or

- Creating or causing the creation of any sound within or adjacent to any noise sensitive zone containing a hospital, nursing home, school, court or other designated use so as to interfere with the functions of such activity or annoy the patients or participants of such activity.

LMBC Section 8.80.202(a) through 8.80.202(e) establishes construction activity-noise regulations for weekdays, federal holidays, Saturdays, and Sundays. Construction activities are prohibited between the hours of 7:00 PM and 7:00 AM the following day on weekdays and federal holidays. In addition, construction activities are prohibited between the hours of 7:00 PM on Friday and 9:00 AM on Saturday and after 6:00 PM on Saturday. No construction activities may occur on Sunday unless a permit is issued from the noise control officer, and is limited to the hours of 9:00 AM and 6:00 PM Emergency work authorized by the building official is exempt from these restrictions.

3.7.3 ENVIRONMENTAL IMPACTS

Although the proposed storm drain project is being implemented by the County, the project is located on property within the City. Accordingly, the City noise standards and regulations are used in this noise analysis to determine the significance of the project's potential impacts.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on noise and vibration if it would result in one or more of the following:

- generate or expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards;
- generate or expose people to excessive groundborne vibrations or groundborne noise levels;
- create a substantial permanent increase in ambient noise levels in the vicinity of the project (above levels without the project); or
- create a substantial temporary or periodic increase in ambient noise levels in the vicinity of the project, in excess of noise levels existing without the project.

EFFECTS DISMISSED IN THE INITIAL STUDY

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that the two potential noise-related impacts were less than significant and did not need to be analyzed in the EIR. Specifically, the Initial Study determined that the project would not:

- for a project within an airport land use plan or within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- for a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

As discussed in the Initial Study, the northernmost portion of the project alignment is approximately 1.5 miles from the Long Beach Airport. The site is not within the airport land use plan, nor would the construction or operations personnel working on the project be exposed to excessive aircraft noise levels. In addition, the project site is not in the vicinity of a private airstrip. Accordingly, impacts associated with exposure to excessive noise levels from proximity to airports are not considered further.

IMPACT ANALYSIS

NOISE-1 *Construction of the proposed project would create a substantial temporary or periodic increase in ambient noise levels, including groundborne noise levels, in the vicinity of the project, in excess of existing noise levels without the project.*

Typical equipment used for construction includes compactors, front loaders, backhoes, scrapers, graders, pavers, trucks, and cranes. The noise levels from these types of equipment range from approximately 70 dBA to 95 dBA Leq at 50 feet from the source. The noise levels vary for individual pieces of equipment, as equipment may come in different sizes and with different engines. Construction equipment noise levels also vary as a function of the activity level, or duty cycle. In a typical construction project, the loudest short-term noise levels are those of earth-moving equipment under full load, which are on the order of 85 to 90 dBA at a distance of 50 feet from the source. Impact equipment used for pile driving or pavement breaking may produce louder groundborne noise levels. Noise levels from various construction equipment are identified in Table 3.7-10. Construction equipment noise is considered as a point source, with attenuation (reduction) at a rate of 6 dBA per doubling of distance. For example, a noise level of 75 dBA at 50 feet will be 69 dBA at 100 feet, 63 dBA at 200 feet, etc.

TABLE 3.7-10 DEMOLITION AND CONSTRUCTION EQUIPMENT NOISE LEVELS

Equipment Description	Lmax Noise Limit at 50 ft, dB, slow	Is Equipment an Impact[1] Device?	Acoustic Usage Factor[2]
All other equipment (5 HP or less)	85	No	50%
Auger Drill Rig	85	No	20%
Backhoe	80	No	40%
Bar Bender	80	No	20%
Blasting	94	Yes	1%
Boring Jack Power Unit	80	No	50%
Chain Saw	85	No	20%
Clam Shovel	93	Yes	20%
Compactor (ground)	80	No	20%
Compressor (air)	80	No	40%
Concrete Batch Plant	83	No	15%
Concrete Mixer Truck	85	No	40%
Concrete Pump	82	No	20%
Concrete Saw	90	No	20%

Equipment Description	Lmax Noise Limit at 50 ft, dB, slow	Is Equipment an Impact[1] Device?	Acoustic Usage Factor[2]
Crane (mobile or stationary)	85	No	20%
Dozer	85	No	40%
Dump Truck	84	No	40%
Excavator	85	No	40%
Flat Bed Truck	84	No	40%
Front End Loader	80	No	40%
Generator (25 KVA or less)	70	No	50%
Generator (more than 25 KVA)	82	No	50%
Gradall	85	No	40%
Grader	85	No	40%
Horizontal Boring Hydraulic Jack	80	No	25%
Hydra Break Ram	90	Yes	10%
Impact Pile Driver (diesel or drop)	95	Yes	20%
Insitu Soil Sampling Rig	84	No	20%
Jackhammer	85	Yes	20%
Mounted Impact Hammer (back-hoe ram)	90	Yes	20%
Paver	85	No	50%
Pickup Truck	55	No	40%
Pneumatic Tools	85	No	50%
Pumps	77	No	50%
Rock Drill	85	No	20%
Scraper	85	No	40%
Slurry Plant	78	No	100%
Slurry Trenching Machine	82	No	50%
Soil Mix Drill Rig	80	No	50%
Tractor	84	No	40%
Vacuum Street Sweeper	80	No	10%
Vibratory Concrete Mixer	80	No	20%
Vibratory Pile Driver	95	No	20%
Welder	73	No	40%

1 "Impact" equipment is assumed to produce separate discernable sound pressure maxima.
2 "Acoustic Usage Factor" represents the percent of time that equipment is assumed to be running at full power while working on site

Source: Thalheimer 2000

Typical construction projects with equipment moving from one point to another, work breaks, and idle time, have long-term noise averages that are lower than loud short-term noise events. For purposes of analysis of this project, a maximum noise level of 75 dBA L_{eq} at a distance of 50 feet from the center of construction activities is assumed to occur during excavation, pipe installation, backfill, and paving, when there may be a combination of noise from one to three pieces of equipment, including the noise of backup alarms. At locations along the alignment where removal of asphalt or concrete surfaces would be required, noise levels would be louder during pavement breaking operations, when jackhammers or back-hoe rams would be used. At Marine Stadium, a pile driver would be used to install sheet piles for a coffer dam. Impact noise levels of 90 to 97 dBA at 50 feet could occur during pile driving operations.

The nearest sensitive noise receptors to the project main alignment and laterals are residences, with some homes within 50 feet of the alignment. During pavement breaking, grading and excavation for foundations and utilities, exterior noise levels at the nearest homes may approach 90 dBA for very short periods, and may occasionally exceed 75 dBA L_{eq} for an hourly average, which would exceed measured ambient noise levels by as much as 28 dBA L_{eq}. For persons outside, these noise levels would be disturbing and would interfere with normal speech. These noise levels may also be disturbing at locations inside structures, especially if windows are open.

Aside from the mainline segment on 7th Street, all construction activity would occur between the hours of 7:00 AM and 7:00 PM Monday through Friday. Construction of the mainline segment on 7th Street would not occur between the hours of 7:00 PM on Friday and 9:00 AM on Saturday and after 6:00 PM on Saturday. No construction activities would occur on Sunday unless a permit is issued from the noise control officer, and is limited to the hours of 9:00 AM and 6:00 PM. As described, these construction activities would comply with the City's noise standards; therefore, the project would not violate the noise ordinance. However, construction noise levels at these levels would cause disturbance and interfere with daily activities, resulting in a significant impact. Therefore, project construction would required be to implement Mitigation Measures NOISE-A and NOISE-F as provided below to minimize the disturbance to nearby residents. Construction impacts would remain significant and unavoidable.

The nearest residences to the pile driving operations at Marine Stadium would be the homes on East Paoli Way. These homes would be approximately 120 feet from the pile driving activities. An instantaneous pile driving impact noise of 97 dBA at 50 feet would result in noise levels of 89 dBA at these residences. However, as pile driving is not a continuous activity the average hourly noise level would be approximately 69 dBA L_{eq}. Due to the disturbing and unusual nature of the impact noise from the pile driver, this is a significant impact. However, construction activities would occur only during allowed hours and, thus, would not violate the noise ordinance. Compliance with Mitigation Measures NOISE-B though NOISE-F would reduce the pile-driving noise at nearby residents to the extent practical; however, noise levels would still exceed City noise thresholds at the nearest residences. Construction impacts would be significant and unavoidable.

The nearest school building to the proposed construction would be Will Rogers Middle School. The closest school building would be located approximately 300 feet from main line construction and 600 feet from pile driving activities. The line of sight to construction would be either blocked by buildings or over soft terrain. Maximum exterior short term noise levels would be approximately 70 dBA, and average noise levels would be approximately 60 dBA L_{eq}. While these noise levels would be audible, they would not be disturbing to school activities. Thus, noise levels associated with construction activities would be less than significant at nearby schools.

NOISE-2 *Operation of the proposed project would not create a substantial permanent increase in ambient noise levels in the vicinity of the project.*

The operations of the storm drain system would not require the routine or daily use of machinery or personnel to operate, except for periodic cleaning of the storm drain catch basin screens and the operation of the pumps to divert flows to the sanitary sewer system. These operations would occur underground, and the noise would not be heard at sensitive receptors. No permanent increase in ambient noise levels would occur as a result of the project.

NOISE-3 *The proposed project would generate or expose people to excessive groundborne vibrations*.

Construction operations would result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, with low rumbling sounds and detectable vibrations at moderate levels, and damage to nearby structures at the highest levels. In order to assess the impact associated with vibration from construction activities, the vibratory ground motion in the vicinity of an affected structure may be measured in terms of particle displacement, velocity, or acceleration. For complex vibrations, the relationships of displacement, velocity, and acceleration are not simple. The City ordinance uses acceleration, measured in comparison to the acceleration of gravity. The unit of measure is the acceleration of gravity, or "g." Caltrans uses ppv, typically in units of inches per second or millimeters per second.

Pile driving would occur only at the Marine Stadium area. At Marine Stadium, residences are the nearest approximately 120 feet from the work areas, and maximum vibration at these receptors would be anticipated to be in the range of 0.06 to 0.14 in/sec ppv (0.009 to 0.021 g). Thus, vibrations would be perceived for short periods when the driver strikes the pile; however, there would be virtually no risk of architectural or structural damage. The anticipated maximum vibration would be less than the 0.2 in/sec ppv Caltrans standards, but would be greater than the City standard as stated in section 8.80.200 of the City's ordinances. As such, vibration from the project construction would be a significant impact. Mitigation Measures NOISE-B though NOISE-D are included in Section 3.7.4 below to minimize the disturbance to nearby residents. Construction impacts would remain significant and unavoidable.

NOISE-4 *The proposed project would expose people to noise levels in excess of standards established in a local general plan or noise ordinance, or in other applicable local, state, or federal standards.*

As described above, some noise levels during construction would exceed the standards of the Noise Element of the General Plan and sections 8.80.150, 8.80.170, and 8.80.200 of the City ordinances. Therefore, project construction noise would be a significant impact. Mitigation Measures NOISE-A and

NOISE-F are included in below to minimize the disturbance to nearby residents. Construction impacts would remain significant and unavoidable.

3.7.4 MITIGATION MEASURES

The following mitigation measures would reduce noise associated with project construction or would reduce impacts to sensitive receptors:

NOISE-A Best management practices (BMPs) for construction noise shall be implemented for the duration of construction of the proposed project. Such BMPs shall include the following:

- The project contractor shall plan and schedule construction activities to minimize the simultaneous operation of diesel-engine powered equipment near residences or other sensitive receptors, so as to minimize noise levels resulting from operating several pieces of high noise level-emitting equipment.
- Construction equipment shall be fitted with state-of-the-art noise shielding and muffling devices to reduce noise levels to the maximum extent feasible.
- Stationary sources, such as message boards for traffic control, that would be located within 500 feet of residences shall be solar or battery powered, or connected to the local power grid, i.e., not powered by an internal combustion engine.
- Equipment maintenance and staging areas shall be located as far away from the residences as feasible.

NOISE-B Pile driving and jack hammering shall be limited to the hours of 8:00 AM to 5:00 PM, Monday through Friday, and shall be prohibited on weekends and state and federal holidays.

NOISE-C The contractor shall establish a noise complaint and response procedure that includes a 24-hour telephone number for complaints, and a procedure where a field engineer/construction manager will respond to and investigate the complaints and take corrective action if necessary in a timely manner. Complaints after normal working hours may be received by voice mail.

NOISE-D All residences within 100 feet of planned jack hammering and similar pavement breaking activities shall be notified of the planned activities prior to the start of work. The notification shall advise that there will be loud noise and potentially perceived vibration associated with the construction, and shall state the date, time, and planned duration of the planned activities. The notification shall provide a telephone contact number for affected parties to ask questions and report any unexpected noise impacts.

NOISE-E Project specifications shall require the pile driving equipment to be equipped with noise reduction that would limit the maximum impact noise to 90 dBA at 50 feet. Alternatively, the contractor may erect temporary noise barriers that would limit the maximum impact noise to 80 dBA at the nearest residences.

NOISE-F All residences within 300 feet of planned pile driving activities shall be notified of the planned activities prior to the start of work. The notifications, by standard mail, shall be delivered at least two weeks prior to the start of work. The notification shall advise that there will be loud noise associated with the construction, and shall state the date, time, and planned duration of the planned activities. The notification shall provide a telephone contact number for affected parties to ask questions and report any unexpected noise impacts.

3.7.5 Significant Unavoidable Adverse Impacts

The measures described above would reduce construction noise levels and impacts to residents near the work areas. However, noise levels would remain above the standards stated in the LBMC, and would be significant. In addition, the measures described above would not reduce the potential for construction vibration to be perceived in nearby residences, in violation of the LBMC. Accordingly, construction noise and vibration levels would be significant and unavoidable.

3.8 GEOLOGY AND SOILS

3.8.1 EXISTING CONDITIONS

This section describes the regional and local geologic and soil characteristics of the proposed alignment. A *Seismic Hazard Evaluation of the Long Beach 7.5-minute Quadrangle*, prepared by the California Geological Survey (CGS 1998), was reviewed for purposes of the analysis contained in this section. The geologic information contained in the *Seismic Hazard Evaluation of the Long Beach 7.5-minute Quadrangle* adequately reflects the existing conditions that were present at the time the notice of preparation was published for the proposed project (May 2004).

REGIONAL SETTING

The proposed alignment is located west of the Santa Ana Mountains near the termination of the San Gabriel River at the Pacific Ocean. The site is in the southern portion of the Los Angeles Basin, a roughly a north-south trending depositional trough located in the northwestern portion of the Peninsular Ranges geomorphic province.

The Los Angeles Basin is bound on the north by the eastern Santa Monica Mountains, the Elysian Hills, the Montebello Hills, and parts of the Puente Hills, which have been described as overlying the Elysian Park Fold and Thrust Belt (CGS 1998). The basin is bound on the south by the Newport-Inglewood Fault Zone, which is manifested as a belt of primarily anticlinal hills that includes the Dominguez Hills, Signal Hill, and Alamitos Heights. The southern portion of the coastal plain is underlain by the broad, northwest-plunging synclinal Los Angeles Basin, which includes up to 4,200 feet of relatively unconsolidated Quaternary (a subdivision of geological time that covers the last two million years up to the present day) marine and non-marine sediments and up to 170 feet of unconsolidated non-marine sediments (CGS 1998). The elevation within the immediate project area ranges from 35 feet above sea level at the northern end of the proposed alignment (Loma Avenue and Anaheim Street) to 13 feet above sea level at the southern end (Marine Stadium).

The alignment is located within the U.S. Geological Survey (USGS) Long Beach Quadrangle, which consists predominantly of the low, gently sloping to nearly level coastal plain of the southern Los Angeles Basin. The only upland areas in the quadrangle are the Dominguez Hills and Signal Hill, which are surface manifestations of the Newport-Inglewood Fault Zone. Elevations range from seal level to about 350 feet near the crest of Signal Hill (CGS 1998).

FAULTING AND SEISMICITY

During an earthquake, the acceleration of an object attached to the earth is highly irregular. The movement can be described by its changing acceleration as a function of time. Peak ground acceleration (PGA) can be measured in g (the acceleration due to gravity) and represents the maximum acceleration experienced by the particle during the course of earthquake motion. Building codes prescribe how much horizontal force related to ground acceleration a building should be able to withstand during an earthquake. Determination of PGA is based on a 10 percent change for PGA to occur in a given time. For example, if a site has a PGA of 50 years 0.04g, than there is a ten percent chance that the site will experience a PGA of 4/10 the acceleration of gravity within 50 years.

The proposed alignment is not located within an Alquist-Priolo Earthquake Fault Zone (CGS 1986). The project site is located within Seismic Zone 4 of the Uniform Building Code (UBC) (UBC 1997). UBC Seismic Zones are based on the probability of expected intensity of ground shaking due to an earthquake. Seismic Zone 4 corresponds to regions where expected peak acceleration (as a fraction of gravity, g) is greater than 0.3g. The probabilistic approach to forecasting future ground motion at the site determines the expected peak ground acceleration level that has a 10 percent probability of exceedance over the approximate lifetime of the project (typically 50 years). This approach takes into account historical seismicity, the geological slip rate of faults within 100 kilometers (62 miles) of the property, and the site-specific response characteristics.

The California Geological Survey (CGS, formerly the California Division of Mines and Geology) conducted a probabilistic seismic hazard analysis for general soil and rock conditions which correspond to site categories defined by the UBC which are commonly found in California. The proposed alignment is located in Quaternary alluvium of varying densities. The results of the analysis performed by the CGS for alluvium conditions at a sample location between 1.5 and 2.5 miles from the alignment suggest a 10 percent probability of exceedance in 50 years ground acceleration of 0.49g. Analysis results for other sample locations nearest to the proposed alignment ranged from 0.45 to 0.48g (CGS 1998).

The fault classification system adopted by CGS for delineating Earthquake Fault Zones along active or potentially active faults, is used for structures. CGS defines an active fault (or fault zone) as a fault that has moved within Holocene time (about the last 11,000 years). Faults with no known displacement within Holocene time that showed evidence of movement during Quaternary time (the last 1.6 million years) have been defined as potentially active.

Ground surface rupture along faults, ground shaking, and liquefaction are three of the most important seismic considerations for properties in Southern California. Based on the current understanding of the geologic framework of the site area, the seismic hazard which is expected to have the highest probability of affecting the site is ground shaking resulting from an earthquake occurring along several major active and potentially active faults in Southern California. Known regional faults that could produce significant ground shaking at the site include the San Andreas fault, the Newport-Inglewood fault, the Palos Verdes Fault Zone, and the Los Alamitos fault.

San Andreas Fault Zone

The San Andreas Fault Zone extends from Northern California to near the Mexican border, a distance of about 1,000 miles. Based on its geometry, historical seismicity, and data on how it has broken in past earthquakes, the fault zone has been divided into several segments. In southern California, the San Andreas Fault consists of three segments: the Mojave, San Bernardino Mountains, and Coachella Valley segments. The alignment is located approximately 56 miles southwest of the San Bernardino Mountains segment. This segment is the most complex of the three, consisting of a series of braided fault branches that veer off from the predominantly southeast-northwest trend characteristic of the San Andreas, and bend to a more east-west direction.

The San Andreas Fault Zone is a right-lateral strike-slip fault, approximately 745 miles long, slipping about 20 to 35 millimeters per year (mm/yr). The interval between major ruptures averages about 140 years on the Mojave segment with a recurrence interval varying from under 20 years (in the City of Parkfield only, which is located directly over the most active region of the fault) to over 300 years. The last major rupture occurred on January 9, 1857 along the Mojave segment. The magnitude is estimated to have been 8.0 (SCEDC 2005). As the last large earthquake on the southern San Andreas occurred in 1857, that section of the fault is considered a likely location for a large earthquake within the next few decades (USGS 1997). Such an earthquake would produce strong ground motion throughout the Los Angeles area.

Newport-Inglewood Fault

The Newport-Inglewood fault runs south-east from Culver City to Long Beach and then follows the coastline further south. It can be observed on the surface as a series of topographic features or hills. Continuous seismic activity occurs along this zone, which is believed to pose the greatest seismic hazard to Los Angeles due to its proximity to the metropolitan area. The fault lies approximately 3 miles east of the alignment (SCEDC 2005). A major event along this zone would produce strong or intense ground motion at the project site.

The Palos Verdes Fault Zone

The Palos Verdes Fault Zone is a 50-mile long, right-reverse fault lying near San Pedro, Redondo Beach, and Torrance. The most recent surface rupture of the offshore portion occurred in the Holocene, while the most recent surface rupture of the onshore portion occurred during the Late Quaternary. The slip rate along the fault is between 0.1 and 3.0 mm/yr and the interval between ruptures is unknown. A probable magnitude of 6.0 to 7.0 has been established for this fault, with the potential for larger earthquakes depending on fault geometry. The Palos Verdes Fault Zone includes two main faults, the Cabrillo fault and the Redondo Canyon fault, both capable of producing earthquakes of greater than 6.0 in magnitude. The alignment lies approximately 6 miles east of the Palos Verdes Fault Zone (SCEDC 2005).

The Los Alamitos Fault

The Los Alamitos Fault is most likely part of the larger system, the Compton-Los Alamitos Thrust Fault. It is an inferred blind thrust fault located within the south-central portion of the Los Angeles Basin. The closest portion of the vertical surface projection of the buried thrust fault is located approximately 6 miles northeast of the alignment (SCEDC 2005). Like other blind thrust faults in the Los Angeles area, the Compton-Los Alamitos Thrust is not exposed at the surface and does not present a potential surface rupture hazard; however, the Compton-Los Alamitos Thrust should be considered an active feature capable of generating future earthquakes.

SOILS AND STABILITY

The proposed alignment is generally underlain by a sequence of alluvial deposits. The upper project area is within the older late Pleistocene (a subdivision of geologic time that covers between 1.8 million to 12,000 years before the present) terrace deposits, while the lower, Marine Stadium portion of the alignment is within the younger deposits of the Holocene (CGS 1998). Descriptions of the geologic units are discussed in Table 3.8-1 below.

TABLE 3.8-1 TERMINO DRAIN ALIGNMENT GEOLOGIC UNITS AND GEOTECHNICAL CHARACTERISTICS

Geologic Unit	Age	Lithologic Description	Occurrence
Younger Alluvium	Holocene	soft clay, silt, silty sand, and sand associated with the lowlands of the Los Angeles River, Rio Hondo, and San Gabriel River	Lower, Marine Stadium area of alignment
Older Alluvium	late Pleistocene	Dense to very dense silty sand, minor gravel	Upper portion of alignment

Source: CGS 1998

Liquefaction typically occurs when near surface (usually upper 50 feet) saturated, clean, fine-grained loose sands are subject to intense ground shaking. One of the major types of liquefaction induced ground failures is lateral spreading of mildly sloping ground. Lateral spreading involves primarily lateral movement of earth materials due to ground shaking and is evidenced by near-vertical cracks with predominantly horizontal movement of the soil mass involved. Due to the presence of loose, unconsolidated silty sands underlain by sandy silts and shallow groundwater (groundwater levels vary between 5 feet at the Marine Stadium to 15 feet below ground surface along other sections of the proposed alignment), potential liquefaction and lateral spreading risks within the lower portion of the alignment are considered high where the unit is saturated (CGS 1998). This area is included in the liquefaction hazard zone (CGS 1999). The sediment underlying the upper portion of the proposed alignment has low liquefaction and lateral spreading susceptibility and is not located within the liquefaction hazard zone (CGS 1998). The liquefaction hazard zones in the project vicinity are shown on Figure 3.8-1.

Landslides and other slope failures are common occurrences during or soon after earthquakes. The area along the proposed alignment is developed and site topography is relatively level. The possibility of a seismically induced landslide is remote (LACDPW 2001). Additionally, as shown on Figure 3.8-1, the

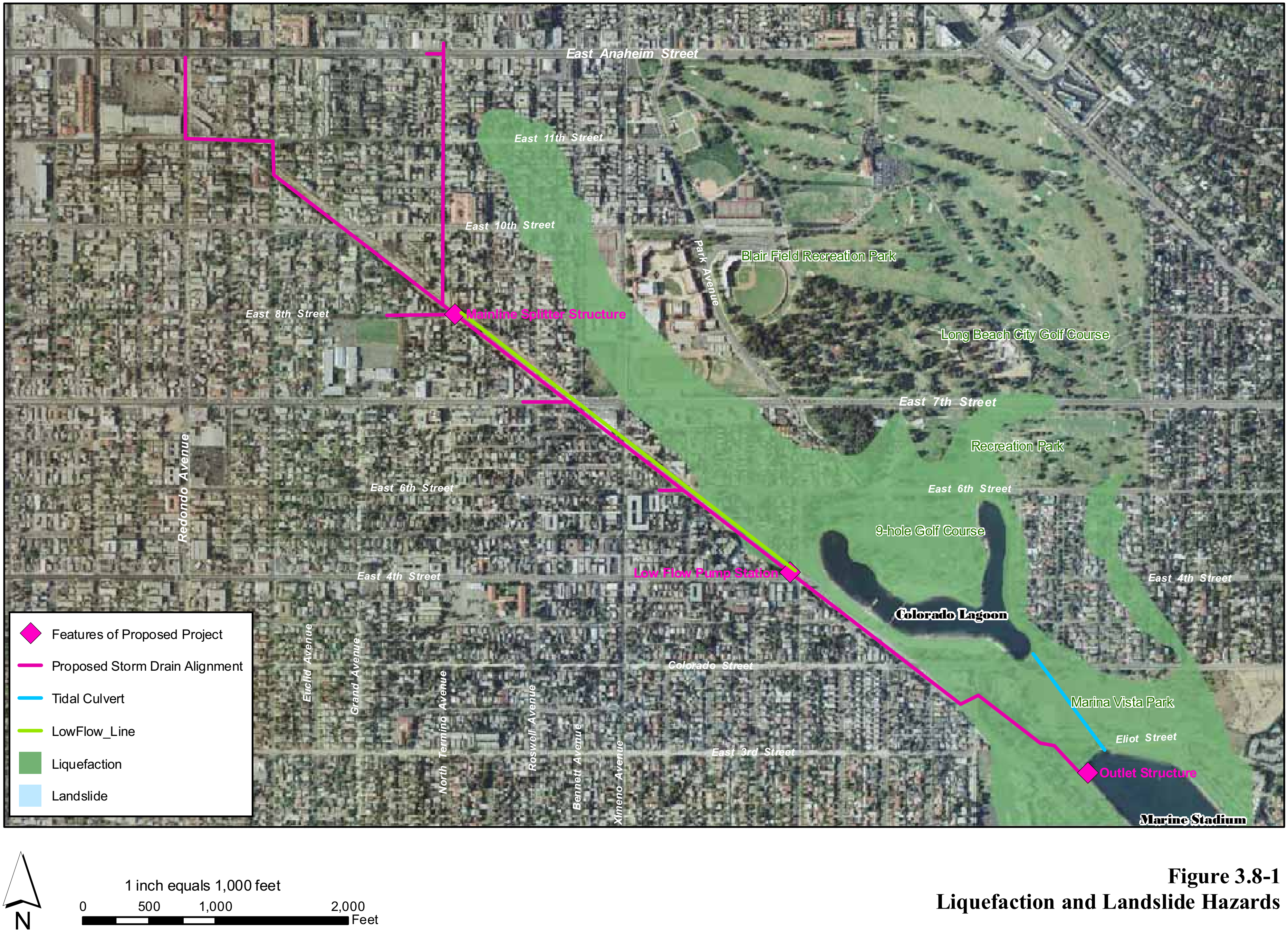

Figure 3.8-1
Liquefaction and Landslide Hazards

proposed alignment does not fall within an Earthquake-Induced Landslide Zones (CGS 1999). Subsidence is the lowering of surface elevation due to changes occurring underground. In the arid southwest, subsidence can be associated with earth fissures, cracks in the ground surface that form from horizontal movement of sediment and can be more than 100 feet deep. Because of the loose, unconsolidated silty sands and shallow groundwater table, potential subsidence risks are considered to be moderate to high (LACDPW 2001). Expansive soils generally result from specific clay minerals that expand when saturated and shrink in volume when dry. Sediments associated with the proposed alignment are not anticipated to have a high expansion potential.

3.8.2 Environmental Analysis

The following geology and soils analysis is based on review of the available technical reports and knowledge of the proposed type, intensity, and duration of project construction activities on the proposed project sites, including A *Seismic Hazard Evaluation of the Long Beach 7.5-Minute Quadrangle, Los Angeles County, California*, prepared by CGS (1998).

Thresholds of Significance

The project would have a significant effect on 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:
  - strong seismic ground shaking; or
  - seismic-related ground failure, including liquefaction.
- result in 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- 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 (1994), creating substantial risks to life or property; or

Effects Dismissed in the Initial Study

No habitable structures would be constructed as a result of this storm drain improvement project. Because the proposed alignment is not located within an Alquist-Priolo Earthquake Fault Zone, therefore, potential impacts associated with surface rupture along the alignment are not evaluated in this EIR.

Because the project is not located in a landslide hazard area, the potential for landslides along the alignment is extremely low and impacts related to these issues are not considered further. As discussed in the Initial Study, no impacts related to expansive soils are anticipated as a result of the storm drain improvements. In addition, the project does not propose septic tanks or alternative waste water disposal systems. Accordingly, impacts related to soils incapable of adequately supporting septic tank use are not considered further.

IMPACT ANALYSIS

GEO-1 *The proposed project would not expose people or structures to substantial adverse affects as a result of strong seismic ground shaking and surface displacement during a seismic event.*

The proposed alignment is located within a seismically active region and has the potential to be subjected to ground shaking hazards associated with earthquake events on active faults throughout the region. However, seismic ground shaking from major faults in the region is not anticipated to be greater than at any other sites in southern California and is not considered to pose an unusual risk to the proposed storm drain.

The project would not affect any habitable structures and no new buildings are proposed. Above-ground structures would be limited to the Marine Stadium outlet structure and minor equipment associates with the low-flow pump station in the PE right-of-way, west of Colorado Lagoon. Based on adherence to current design and construction requirements in the State of California, including the use of low shear strength backfill, the proposed storm drain would not result in a significant adverse impact by exposing people or structures to major seismic hazards beyond what is considered normal for the southern California region. Implementation of site-specific design and construction requirements would reduce impacts related to seismic ground shaking to a less than significant level.

GEO-2 *The proposed project would not lead to increased erosion or loss of topsoil as a result of excavation and grading activities.*

The project would require excavation of soils and backfilling with compacted soils along the storm drain alignment during trenching activities. All soils used in the project would be properly compacted in accordance with County specifications and the project would incorporate the use of rip rap and other erosion controls to reduce erosion and scour at the Marine Stadium outlet structure. The project would also be subject to Storm Water Pollution Prevention Plan requirements for erosion and sedimentation control during construction (see Chapter 3.9, Hydrology and Water Quality). Best management practices (BMPs) would be undertaken to control runoff and erosion from earth-moving activities such as excavation, grading, and compaction. All trenching, backfilling, and grading activities would be performed under the observation of a qualified engineer. Because the project would be required to adhere to all applicable construction standards with regard to erosion control, no significant impacts during construction would occur, and no mitigation measures are required.

The outlet structure would direct flows into the ocean. Flows into Marine Stadium would only occur during storm events; however, the force of the exiting flow could scour the sediment from underneath the outlet structure. As discussed in Section 2.4, energy dissipater blocks would be placed in the outlet opening, which would reduce the velocity of stormwater flows and a woven geotextile fabric would be placed at the outlet, which would minimize erosion. Accordingly, operational impacts to erosion would be less than significant, and no mitigation measures are required.

GEO-3 *The lower portion of the proposed alignment is located within a liquefaction hazard zone and has the potential to experience liquefaction and associated lateral spreading during seismic events. In addition, the loose, unconsolidated sediments underlain by shallow groundwater has a moderate to high level of subsidence risk.*

As shown in Figure 3.8-1, a portion of the alignment is located in a liquefaction hazard zone. Impacts to the proposed alignment from liquefaction or subsidence would occur if loose, unconsolidated sediment surrounding the underground storm drain was subjected to seismic shaking. This could cause the culvert to move and potentially rupture as the supporting sediment surrounding it failed. In addition, facilities associated with the low-flow diversion system would also be subject to damage from liquefaction or subsidence.

The proposed project would be designed and installed in accordance with the Los Angeles County Flood Control District (District) Structural Design Manual, which references the American Concrete Institute Building Code 318-63 for reinforced concrete structures. Since no habitable structures would be constructed, applicable regulations would primarily involve backfill and soil compaction requirements along the utility corridor. Soils would be excavated and properly compacted per District requirements. As such, impacts related to liquefaction, lateral spreading, and subsidence would be less than significant impact. Impacts would be less than significant, and no mitigation measures are required.

3.8.3 Mitigation Measures

No significant impacts to geology and soils would occur as a result of the project; therefore, no mitigation measures are required.

3.8.4 Significant Unavoidable Adverse Impacts

Compliance with existing seismic safety regulations would ensure a less than significant impact and no significant unavoidable adverse impacts to geology and soils would occur as a result of the proposed project.

3.9 HYDROLOGY AND WATER QUALITY

3.9.1 EXISTING CONDITIONS

This section describes surface water and groundwater hydrology and water quality characteristics within the project area. A *Hydrologic and Water Quality Analyses Report* was prepared for the proposed project (Everest 2005). In addition, a Colorado Lagoon Culvert Inspection was completed for the proposed project (Global Inshore 2005). Both documents are included in Appendix D. The information obtained these two documents adequately reflects the existing conditions that were present at the time the notice of preparation was published for this project (May 2004).

REGIONAL SETTING

The project site is located in the San Gabriel River Watershed (EPA 2005). 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. During high storm flows, the watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir. 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. Major tributaries to the river include Walnut Creek, San Jose Creek, Coyote Canyon Creek, and numerous storm drains.

The Los Angeles Regional Water Quality Control Board (RWQCB) has established ten Watershed Management Areas (WMAs) to address geographically-defined issues and priorities within the region's major watersheds. Within the San Gabriel River Watershed, the project site is located in the Los Cerritos Channel and Alamitos Bay Water Management Area (WMA). 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 comprise the main water bodies of the WMA (RWQCB 2004).

Los Cerritos Channel

The Los Cerritos Channel is concrete lined and drains a small, densely urbanized area of east Long Beach. The channel's tidal prism (the change in the volume of water between a low tide and the subsequent high tide) begins at Anaheim Road and connects with Alamitos Bay through Marine Stadium. Marine Stadium is listed as a coastal feature with beneficial uses for water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, rare, threatened, or endangered species, and shellfish harvesting (RWQCB 1994). The lower end of the channel contains wetlands and a marina (RWQCB 2004).

Alamitos Bay/Marine Stadium

Alamitos Bay, located in the southeastern portion of Long Beach near the Los Angeles County/Orange County border, consists of Marine Stadium, Long Beach Marina, a variety of public and private berths, and the Bay proper, which includes several small canals, a bathing beach, and clamming areas. Alamitos Bay has been used for recreational boating since the early 1920s, when Colorado Lagoon was originally dredged by the Channel Club and Marine Stadium was developed. Extensive dredging of Alamitos Bay occurred in 1945 and 1946, when the San Gabriel River was diverted from the bay, and a new entrance channel was developed with jetties projecting on either side of the entrance (California Department of Boating and Waterways 2003). Marina development began in the bay in the mid 1950s and the most recent marina development was completed in 2003 (Basin 8).

Marine Stadium is not an impaired water body under Section 303(d) of the Clean Water Act, and results of sediment samples collected within Marine Stadium were non-detect or within background concentrations with the exception of one occurrence of semivolatile organic compounds (Coastal Resources Management 2006).

Colorado Lagoon

Colorado Lagoon was once part of historic Alamitos Bay, which also included the Los Cerritos Wetlands (City of Long Beach 2004c). Today, Colorado Lagoon is connected to Alamitos Bay via a tidal culvert at the northern end of Marine Stadium. Colorado Lagoon is listed as an inland surface water with beneficial uses for water contact recreation, non-contact water recreation, warm freshwater habitat, commercial and sport fishing, wildlife habitat, and shellfish harvesting (RWQCB 1994). The Lagoon is a 303(d) listed waterbody impaired for chlordane, Dichloro Diphenyl Trichloroethane (DDT), dieldrin, lead, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), sediment toxicity, and zinc. No Total Maximum Daily Loads (TMDLs) have been set for the impairments (see discussion of TMDLs in the Regulatory Setting section below). A water quality assessment of Colorado Lagoon conducted by the City has also identified concerns for bacteria and nutrients (City of Long Beach 2004c). Analysis of sediment samples collected from the Lagoon concluded that significantly higher concentrations of pollutants are located at the northwest portion of the Lagoon, where the existing Termino Avenue Drain and the Project 452 drain discharge. The primary constituents of concern were lead, DDT, chlordane, and dieldrin. Secondary constituents of concern included PCBs, cadmium, copper, mercury, silver, and zinc (City of Long Beach 2004c).

SURFACE DRAINAGE CHARACTERISTICS OF THE PROJECT SITE

Colorado Lagoon and Marine Stadium are located in Basin 21 as indicated by the City's Storm Water Management Program. Basin 21 drains an area of 1,173 acres composed of 773 residential acres, 125 commercial acres, 55 institutional acres, and 219 open space acres. Colorado Lagoon and Marine Stadium serve as the terminus for several major storm drains throughout Basin 21 (Everest 2005).

Thirteen storm drains discharge into Colorado Lagoon and Marine Stadium, the majority of which are owned and operated by the City (see Figure 2-6 in Appendix D). Seven major and four minor storm drains discharge into Colorado Lagoon and drain a total area of 1,130 acres. The two major storm drains with the highest flows, the Termino Avenue Drain and the Project 452 drain, discharge into the northwest portion of Colorado Lagoon. One major storm drain and one minor storm drain discharge into the northwest portion of Marine Stadium (Everest 2005).

Colorado Lagoon is connected to Marine Stadium through a culvert (tidal culvert) that allows tidal exchange between the two waterbodies. The culvert was inspected on April 12, 2005 by Global Inshore. The inspection determined that the overall condition of the concrete surfaces is very good, with no spalling or cracks observed throughout the interior of the culvert (Global 2005) (see Appendix D). The only anomalies found were missing concrete and exposed rebar on the undersides of the soft patches/covers at each end of the culvert. Build up of biological fouling, or biofouling (the undesirable accumulation of microorganisms, plants and animals on artificial surfaces), along the walls, floor, and top of the culvert was found to be mainly clam and mussel growth. Some sand was observed mixed in with the hard buildup on the floor, until 30 feet in from the Lagoon where the floor was clean of all material.

The culvert has two openings into the Lagoon with a divider wall. Two wooden gates at the openings are in very poor condition. A 6-inch hole in the north gate, combined with the floor being spalled or chipped creates a leakage of approximately 20 percent. Holes in the south gate are less severe, with leakage of between 5 percent and 10 percent. In addition, a 3.5-foot build up of rocks is located 6 feet in from the opening of the culvert on the Marine Stadium side, impeding flow out of the Lagoon (Global 2005). Photographs of the existing conditions within the tidal culvert are provided in Appendix D.

FLOODING

The project area is located in the southern portion of the San Gabriel River watershed, which has historically had flooding problems. In 1995, severe flooding caused extensive property damage in the 596-acre sub-watershed which drains into Colorado Lagoon, which has been designated as a special flood hazard area by FEMA in 1983. Portions of the watershed are located within the FEMA-designated 100-year and 500-year flood hazard zones. The existing Termino Avenue Drain discharges into Colorado Lagoon, where the tide range is limited or shortened compared to the Pacific Ocean due to the tidal culvert connecting Colorado Lagoon and Marine Stadium. Colorado Lagoon primarily serves as a detention basin for storm flows prior to discharging into Marine Stadium via the tidal culvert. The 50-year flood water elevations for Colorado Lagoon and Marine Stadium are 6.9 feet National Geodetic Vertical Datum[1] (NGVD) and 3.6 feet NGVD, respectively (Everest 2005).

[1] NGVD is a measure of land elevation established by the US Coast and Geodetic Survey in 1929.

GROUNDWATER

The County of Los Angeles overlies fifteen groundwater basins as established by the Los Angeles RWQCB's, Water Quality Control Plan 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 site is located in the Coastal Plain of Los Angeles Groundwater Basin and overlies the West Coast Subbasin (Basin No. 4-11.03), one of the four groundwater subbasins in the area (Department of Water Resources [DWR] 2003).

The West Coast Subbasin covers an area of 142 square miles and is bounded 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. Prior to discharge into San Pedro Bay, the Los Angeles and San Gabriel Rivers cross the subbasin through the Dominguez Gap and the Alamitos Gap, respectively. 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. Additional recharge occurs from infiltration of surface inflow from the Los Angeles and San Gabriel Rivers, irrigation from fields and lawns, and industrial waters (DWR 2003).

Precipitation in the region primarily occurs during the months of December through March. Precipitation during summer months is infrequent and rainless periods of several months are common. Although precipitation generally occurs in the form of rainfall, snowfall can occur at high elevations. Annual rainfall in the subbasin averages 12 to 14 inches. Precipitation may flow into surface water bodies, reservoirs, or groundwater basins.

Groundwater monitoring data are maintained by the United States Geological Survey (USGS), the Department of Water Resources (DWR), and the Department of Health Services and co-operators. Water rights of the subbasin are regulated by the DWR. The general regional groundwater flow pattern is southward and westward from the Central Coastal Plain, toward the ocean (DWR 2003).

WATER QUALITY

Colorado Lagoon is listed by the RWQCB as an inland surface water with beneficial uses for water contact recreation, non-contact water recreation, warm freshwater habitat, commercial and sport fishing, wildlife habitat, and shellfish harvesting. Marine Stadium is listed by the RWQCB as a coastal feature with beneficial uses for water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, rare, threatened, or endangered species, and shellfish harvesting (RWQCB 1994).

Colorado Lagoon is a 303(d) listed water body with impairments to the beneficial uses due to contaminated sediment. These impairments are listed in Table 3.9-1. Marine Stadium is not a 303(d) listed water body (Everest 2005).

TABLE 3.9-1 303(d) IMPAIRMENTS FOR COLORADO LAGOON

303(d) Impairments
Clordane
DDT
Dieldrin
Lead
PAHs
PCBs
Sediment Toxicity
Zinc (sediment)

Source: SWRCB 2003

A water quality assessment of Colorado Lagoon conducted by the City (2004c) identified concerns for bacteria and nutrients, although Colorado Lagoon is not 303(d) listed for these constituents. Weekly bacteria monitoring is conducted by the City's Health Department for compliance with Assembly Bill 411 (AB 411). There are three monitoring sites along the pedestrian bridge that crosses the lagoon. Exceedances of bacteria concentrations above the AB 411 criteria have resulted in beach postings for Colorado Lagoon. Periodic decreased dissolved oxygen levels (< 5 mg/L) and algae blooms indicate excess nutrients. Visual observations of the lagoon water suggest the lagoon water is degraded compared to Marine Stadium and Alamitos Bay (City of Long Beach 2004c).

A pollutant loading analysis was conducted to determine the pollutant loading following a 10-year flood flow within Colorado Lagoon and Marine Stadium (Everest 2005). The average pollutant concentration within Colorado Lagoon is reduced by 25 percent within one day of a storm event. The average pollutant load is reduced by 50 percent within three days following the end of the storm flow. Within Marine Stadium, the peak occurs after the end of the storm flow as pollutants move out of Colorado Lagoon and into Marine Stadium. The average concentration is reduced by 50 percent in about one day following a storm event (Everest 2005).

3.9.2 REGULATORY SETTING

FEDERAL

The National Pollutant Discharge Elimination System (NPDES) stormwater permitting program, under Section 402(p) of the Federal Clean Water Act (CWA), is administered by the RWQCB on behalf of the U.S. Environmental Protection Agency (EPA). Because construction activities associated with the proposed project would result in the disturbance of more than 1 acre, compliance with the statewide NPDES stormwater general permit for construction activity would be required. The NPDES stormwater permit would require the following:

- elimination or reduction of non-stormwater discharges to stormwater systems and other waters of the United States;

- development and implementation of a Storm Water Pollution Prevention Plan (SWPPP) for temporary construction activities;
- consideration of permanent post-construction water quality best management practices (BMPs); and
- inspection of stormwater control structures and pollution prevention measures.

The CWA requires states, territories, and authorized tribes to: 1) develop water quality standards for all surface waters; 2) monitor these waters; and 3) identify and list those waters not meeting water quality standards. A water quality standard is the combination of its designated use and the water quality criteria designed to protect that use. Examples of designated uses include recreational activities (fishing and swimming), drinking water supply, and oyster propagation and harvest. Historically, the 303(d) list has been a report of a jurisdiction's impaired surface waters. An impairment is identified when water quality monitoring data suggest that a water body (river, lake, estuary or ocean) does not meet or is not expected to meet water quality standards. When a water body is listed, the cause (pollutant) of the impairment and the priority are identified. Waters scheduled for TMDL development in the next two years are also identified in the list.

STATE

The State Water Resources Control Board (SWRCB) and nine associated RWQCBs enforce State of California statutes, which are equivalent to or more stringent than the federal statutes. The Los Angeles RWQCB issues permits for activities, including construction activities that could cause impacts on surface waters and groundwater. The Los Angeles RWQCB is also responsible under Section 303(d) of the CWA for protecting surface waters and groundwater from both point and non-point sources of pollution within the project site and for establishing water quality standards and objectives in its Basin Plan that protect the beneficial uses of various waters. To protect the beneficial uses of its waters, the State develops TMDLs, which is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet Water Quality Objectives (WQOs) established in the Basin Plan.

LOCAL

Municipal stormwater discharges from the City are regulated by the City municipal separate storm sewer system (MS4) permit issued by the Los Angeles RWQCB (Permit No. CAS004003, Order No. 99-060). Under the City's NPDES stormwater permit requirements, development construction projects must implement at a minimum, BMPs to reduce pollutants to the Maximum Extent Practicable (MEP) for water quality protection.

3.9.3 ENVIRONMENTAL IMPACTS

The following hydrology and water quality analysis is based on the *Hydrologic and Water Quality Analysis Report* prepared by Everest International Consultants, Inc. (Everest 2005), the *Colorado Lagoon Culvert Inspection* prepared by Global Inshore (Global 2005), visual inspections, and knowledge of the proposed type, intensity, and duration of project construction activities on the project site (see Appendix D). As discussed above, the condition of the tidal culvert is based on inspections conducted in April 2005. In 2004, LADPW completed hydrology and flooding analyses for the proposed project. The Everest report was based on the data from these analyses modeling results. As part of the Everest Report, a hydrologic analysis was conducted to determine the flood impacts to Colorado Lagoon and Marine Stadium from the proposed project using a hydrodynamic model. In conjunction with a water quality model, the hydrodynamic model, which simulates tidal conditions and flood flows, also provided hydrodynamic conditions used during the water quality analysis. The models were used to simulate the 10-year and 50-year flood flows, tidal conditions, and corresponding initial decrease and subsequent recovery of salinity levels in Colorado Lagoon and Marine Stadium. In addition, sediment samples were collected to generalize pollutant loading characteristics from the storm drains.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on hydrology and water quality if it would result in one or more of the following**:**

- violate any water quality standards or waste discharge requirements;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site;
- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- otherwise substantially degrade water quality or adversely affect populations of sensitive species.

EFFECTS DISMISSED IN THE INITIAL STUDY

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that potential several hydrology and water quality impacts were less than significant and did not need to be analyzed in the EIR. Specifically, the Initial Study determined that the project would not:

- substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;

- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or
- place within a 100-year flood hazard area structures which would impede or redirect flood flows.

As discussed in the Initial Study, the proposed project site is not a designated groundwater recharge area and would not require the extraction of groundwater. In addition, the storm drain would not come in contact with groundwater under normal operation. Overall, the area of impervious surfaces would not be increased as a result of the project and there would be no depletion of groundwater supplies or interference with groundwater recharge. As such, impacts associated with the depletion of groundwater supplies are not evaluated further in this EIR.

The proposed project would provide storm drain system improvements in order to accommodate the 50-year flood conditions in the project area. Accordingly, the project would not create or contribute runoff which would exceed the capacity of stormwater drainage systems and impacts associated with this criterion are not analyzed further.

No housing or other habitable structures would be constructed as part of the proposed project. In addition, the proposed storm drain would improve the level of risk associated with flooding in the project area as it would increase the existing storm drain system capacity. The proposed storm drain would be constructed to accommodate the 50-year flood conditions. Accordingly, impacts associated with placing houses or structures within the 100-year flood hazard area are not evaluated further.

Impacts associated with flooding within Colorado Lagoon and Marine Stadium are addressed below. Hydrology and water quality impacts requiring further evaluation in this EIR are discussed below. Impacts related to the adverse effects of water quality on sensitive species are discussed in Chapter 3.3, Biological Resources.

IMPACT ANALYSIS

HYDRO-1 *Operation of the proposed project would not alter the existing drainage pattern of the project area in a manner that would result in significant silt scour and erosion impacts.*

Storm water currently discharges directly into Colorado Lagoon and Marine Stadium via thirteen storm drains; seven major and four minor storm drains empty into Colorado Lagoon and one major and one minor storm drain empty into Marine Stadium (Everest 2005). The proposed project would alter the existing drainage pattern by redirecting storm water runoff currently discharging into Colorado Lagoon through the existing Termino Avenue Project 452 Drains to flow through one 4,100-foot long conduit and into Marine Stadium via an 11-foot by 8-foot outlet structure. As a result, the total volume of storm water would increase by approximately 37.5 acre feet. In addition, the peak storm water volumes discharged directly into Marine Stadium would increase by approximately 209 acre feet, and the storm water discharges into Colorado Lagoon would decrease by approximately 130 acre feet. The increased volume of discharge into Marine Stadium is accounted for by the larger drainage area captured by the proposed project. As discussed in Section 2.4, a low-flow diversion pump would divert dry weather flows to an existing County sanitary sewer line.

Storm drain discharges have the potential to result in localized high velocities near the storm drain outfalls, which can re-suspend sediment into the water column (create turbidity) and cause erosion in the area surrounding the outfall structure. As part of the hydrology study (see Appendix D), the velocities resulting from a 10-year storm event were evaluated under the proposed project conditions. [Note: the discussion in Appendix D refers to the proposed Project as "Alternative 1".] Figure 3.9-1 shows the resulting velocities during a 10-year storm event. These velocities were compared to the critical velocities required to re-suspend the site specific sediments in Colorado Lagoon and Marine Stadium. In general, the surfaces sediment within the vicinity of the outfall structure is fine bay mud sediment underlain by silty sand. Resuspension of silts would occur in areas where velocities are above 0.7 feet per second (ft/sec), the critical velocity.

The analysis determined that while the proposed project would decrease velocities in Colorado Lagoon and in Marine Stadium in the vicinity of the tidal culvert, it would increase velocities in the immediate vicinity of the Marine Stadium outfall structure and would potentially result in localized silt scour and other erosion impacts. The changes in the maximum velocity distribution from existing conditions are shown on Figure 3.9-2.

However, as described in Section 2.4, energy dissipater blocks would be placed in the outlet opening to reduce the velocity of stormwater flows and a woven geotextile fabric would be placed at the outlet to minimize erosion and scour. These project features would greatly reduce the effects of scour and erosion at the Marine Stadium outfall location. Accordingly, the incorporation of these project design features would minimize silt scour and other erosion effects. Impacts would be less than significant, and no mitigation measures are required.

HYDRO-2 *Construction and operation of the project would not violate any water quality standards or waste discharge requirements or otherwise degrade water quality.*

Construction

As described in Section 2.4, the proposed Termino Avenue Storm Drain mainline would consist of 8,090 linear feet of storm drain conduit varying in size from 48-inch reinforced concrete pipe to 11 by 8-foot double reinforced concrete box conduit. In addition to the mainline, the proposed drain would include six lateral lines totaling 4,290 linear feet of conduit and ranging in size from 48 to 36-inches. During construction, activities such as grading, excavation, and backfilling would result in the disturbance of soil. During storm events, stormwater runoff could carry sediments and other substances from construction activities, resulting in erosion and stormwater pollution discharges to the storm drain system and, ultimately, Colorado Lagoon and Marine Stadium.

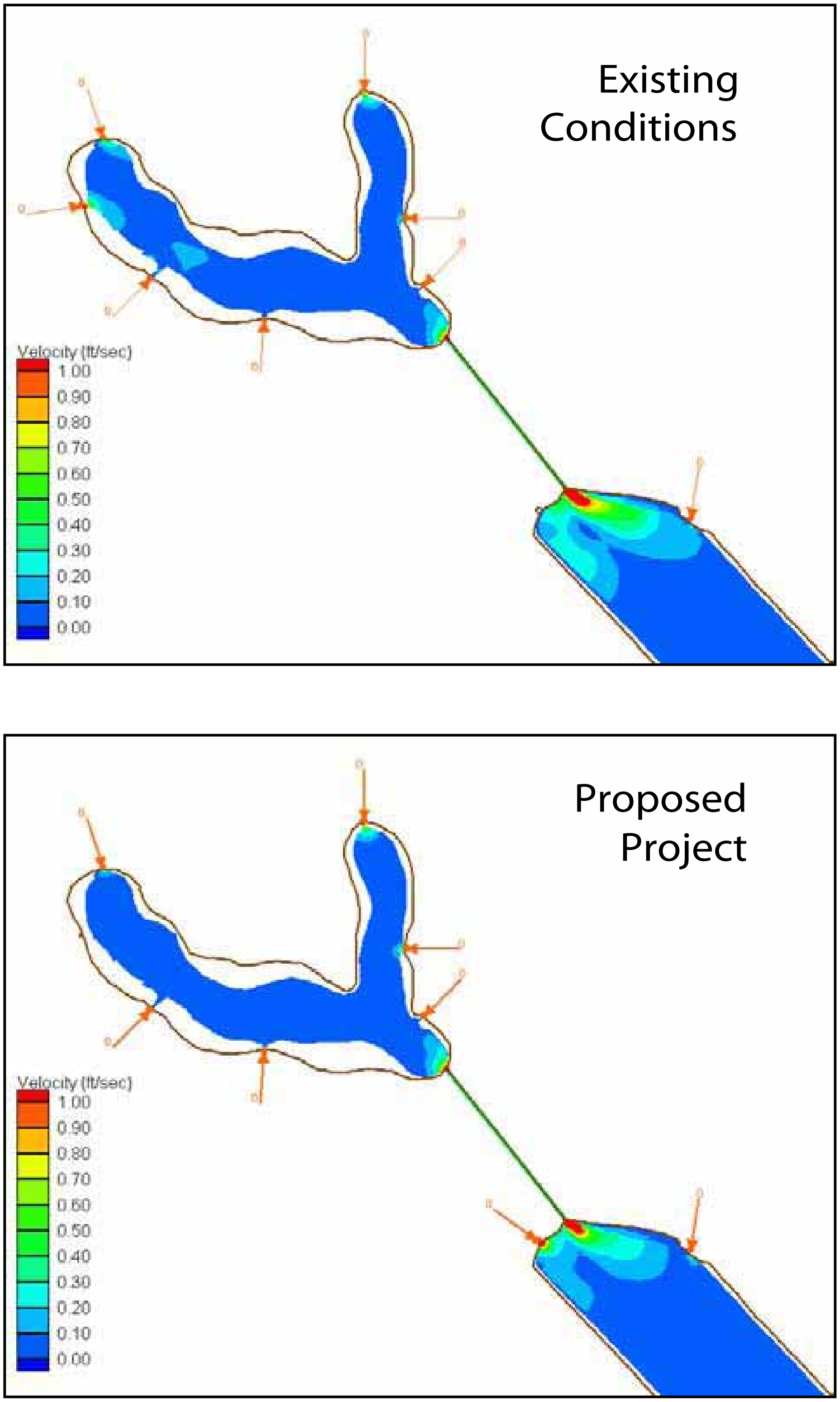

Figure 3.9-1
Maximum Velocity Distribution During 10-Year Flood Event

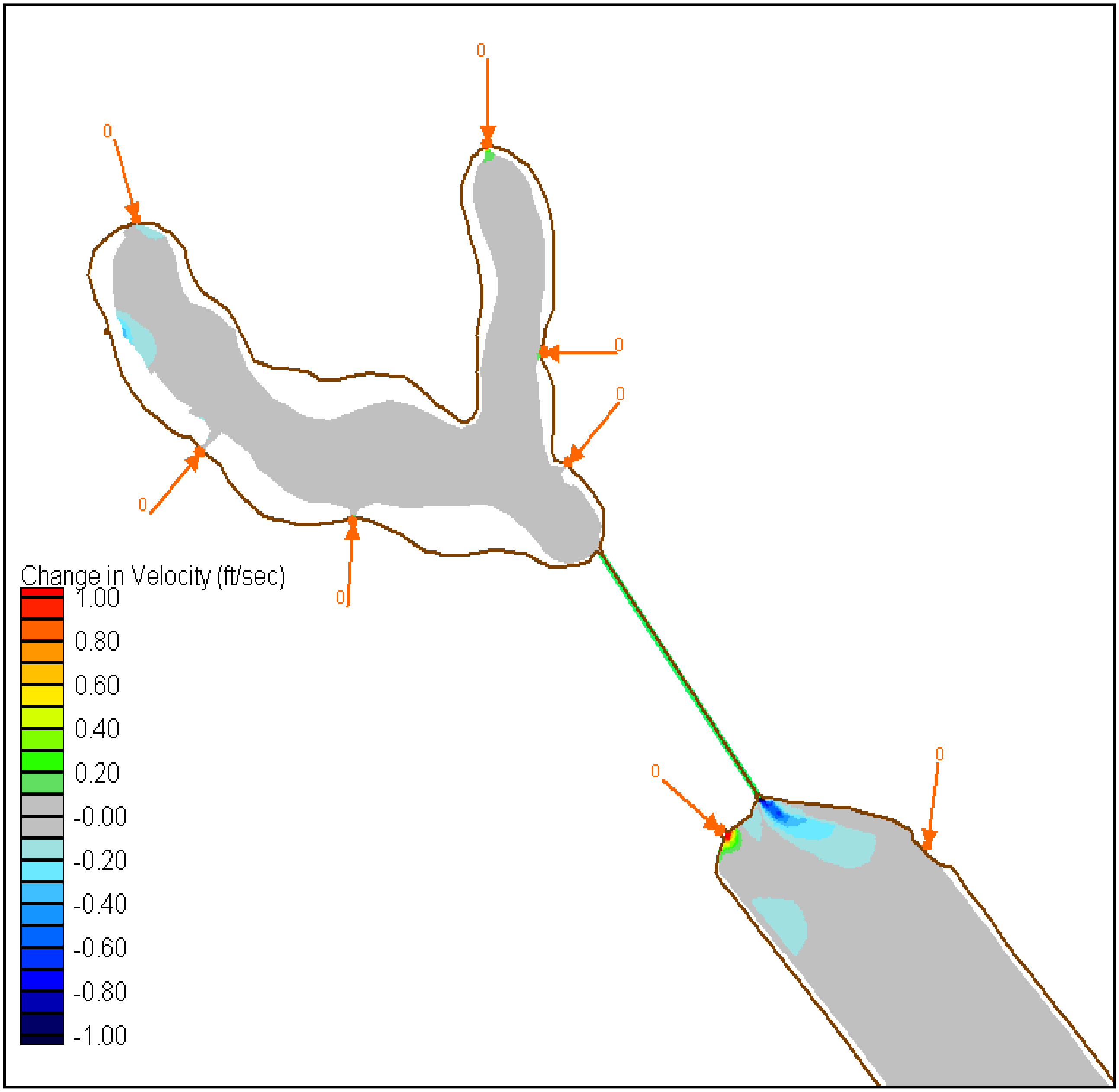

Figure 3.9-2
Change in Maximum Velocity Distributions from Existing Conditions

In accordance with RWQCB regulations, the proposed project would implement applicable stormwater pollution prevention measures as specified under NPDES permit requirements for the control of stormwater pollution during construction. Specific requirements include, at a minimum, BMPs for sediment control, construction materials control, site management, and erosion control. In addition, a SWPPP would be developed for construction materials and waste management as the proposed project would require disturbance of more than one acre of land.

Installation of the coffer dam in Marine Stadium would involve dredging and dewatering activities within Marine Stadium. As discussed in Chapter 3.10, Hazards and Hazardous Materials, sediments samples collected from beneath Marine Stadium were non-detect for contaminants within the vicinity of the coffer dam. In addition, Marine Stadium is not a 303(d) listed water body. Accordingly, no impacts from release of contaminated groundwater and soil during installation of the coffer dam would occur. However, dredging activities would suspend sediment in the water column, leading to an increase in turbidity. A discussion of turbidity impacts and mitigation to reduce impacts to a less than significant level are provided in Chapter 3.3, Biological Resources.

Adherence to the above-mentioned requirements would reduce sediment-laden runoff, prevent the migration of contaminants from construction areas to Colorado Lagoon and Marine Stadium, and ensure that stormwater discharges would not violate applicable water quality standards. However, impacts from turbidity would be significant. Implementation of the mitigation measures provided in Chapter 3.3, Biological Resources, would reduce turbidity impacts during installation of the coffer dam to a less than significant level.

Operation

Currently, all low-flow dry-weather flows drain into Colorado Lagoon. As discussed above, the Lagoon is a 303(d) listed waterbody and analysis of sediment samples collected from the Lagoon concluded that significantly higher concentrations of pollutants are located at the northwest portion of the Lagoon, where the existing Termino Avenue Project 452 Drains discharge (City of Long Beach 2004c). Implementation of the proposed project would redirect non-stormwater flows to an existing County sanitary sewer line, significantly decreasing contaminant loadings into Colorado Lagoon compared to the existing conditions.

As discussed above, a pollutant loading analysis was conducted as part of the Hydrologic and Water Quality Analysis Report to determine the existing conditions under the 10-year flood flow within Colorado Lagoon (see Appendix D). As a result of tidal mixing and dilution, the average pollutant concentration is reduced by 25 percent within one day of a storm event. The average pollutant load is reduced by 50 percent within three days following the end of the storm flow (Everest 2005).

Implementation of the proposed project would not alter the pollutant load in the watershed; however, approximately 70 percent of the flood flows would be redistributed away from Colorado Lagoon to Marine Stadium. As a result, the proposed project would decrease pollutant loadings in Colorado Lagoon and increase pollutant loadings into Marine Stadium. The pollutant load analysis determined that following implementation of the proposed project, the recovery pattern following a 10-year storm flow into Colorado Lagoon would be similar to existing conditions; however, the peak average pollutant concentration following an event would be half of that which currently occurs within the lagoon (Everest 2005). In addition, because of the much greater volume of tidal exchange between Colorado Lagoon and Marine Stadium, the analysis determined that the 50 percent reduction time within Marine Stadium following a 10-year storm flow would not increase as a result of the proposed project and would remain at approximately one day (see Figure 5.13 in Appendix D). Therefore, pollutant dispersal for the overall Colorado Lagoon and Marine Stadium system would improve. Average peak concentrations of pollutants would be approximately half of what they are under existing conditions in Colorado Lagoon (see Figure 5.12 in Appendix D). In addition, dry weather conditions would also improve due to the diversion of dry weather flows to the sanitary system, and pollutant loads would be reduced due to the proposed storm drain catch basin screens (Everest 2005).

In addition to the pollutant loadings, the majority of the impaired water bodies on the 303(d) list are a result of sediment loading. Storm water discharges from the new outfall structure would cause a scour effect in Marine Stadium, and sediments would be re-suspended in the water column. Existing pollutants would also be re-suspended during storm flows and have the potential to contribute to additional pollutant loadings. However, as discussed under HYRDO-1, energy dissipater blocks and a woven geotextile fabric would be installed as project design features to reduce impacts from high velocity storm water flows and erosion. Accordingly, impacts to water quality would be less than significant, and no mitigation measures are required.

The hydrology and water quality study also used the hydrodynamic and water quality models to simulate salinity level recovery following a 10-year storm event in Colorado Lagoon and Marine Stadium. Impacts related to salinity changes in Colorado Lagoon and Marine Stadium are discussed in Chapter 3.3, Biological Resources.

HYDRO-3 *Operation of the project would not significantly alter the existing drainage pattern of the project area or substantially increase the amount of surface runoff which would lead to flooding on or off-site.*

The proposed project would increase the magnitude of the peak flows, as well as the frequency with which the flood flows would enter Colorado Lagoon and Marine Stadium (detailed flood modeling results, including hydrographs, are included in Appendix D). A hydrologic analysis of 50-year flood conditions conducted for the proposed project determined that the project would divert approximately 200 acre-feet of water from Colorado Lagoon directly to Marine Stadium (Everest 2005). Accordingly, the 50-year flood water elevations for Colorado Lagoon would be decreased to 4.2 feet NGVD, which is below the lowest perimeter elevations surrounding the Lagoon, confining flood water to within the Lagoon (see Figure 4.3 in Appendix D). The proposed project would decrease flood flows to Colorado Lagoon by diverting them to Marine Stadium. However, because of the substantial capacity within the receiving waters of Marine Stadium, the hydrologic analysis concludes that the flooded area of Marine Stadium would not increase and the 50-year flood water elevation in Marine Stadium would remain at 3.6 feet NGVD (see Figure 3.9-5). Because the proposed project would improve flooding conditions, no impact from on- or off-site flooding would occur as a result of the proposed project.

3.9.4 MITIGATION MEASURES

No significant impacts would occur to hydrology and water quality and no mitigation would be required.

3.9.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

No significant unavoidable adverse impacts to hydrology and water quality would occur as a result of the proposed project.

3.10 HAZARDS AND HAZARDOUS MATERIALS

This section addresses the potential for the proposed project to expose people to hazards and hazardous materials. The environmental and regulatory setting is described below, followed by a discussion of the regulatory setting, environmental impacts, and mitigation measures for the proposed project.

3.10.1 ENVIRONMENTAL SETTING

Hazardous substances are defined by state and federal regulations as substances that must be regulated in order to protect the public health and the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive. The term "hazardous substances" encompasses every chemical regulated by both the United States Department of Transportation's (DOT) regulations, including emergency response. Hazardous materials generally are chemicals that have the capacity of causing a health hazard or harm to the environment during an accidental release or mishap. The California Code of Regulations (CCR) Title 22, Chapter 11, Article 2, Section 66261 provides the following definition:

> A hazardous material is a substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed.

According to Title 22 (Chapter 11, Article 3, CCR), substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered hazardous. Hazardous wastes are hazardous substances that no longer have a practical use, such as materials that have been abandoned, discarded, spilled, or contaminated, or that are being stored prior to disposal. They are a by-product of processes and/or activities that can pose a substantial or potential hazard to human health or the environment when improperly managed.

Toxic substances may cause short-term or long-term health effects, ranging from temporary effects to permanent disability or death. Examples of toxic substances include most heavy metals, pesticides, benzene, gasoline, hexane, sulfuric acid, lye, explosives, pressurized canisters, and radioactive and biohazardous materials. Soils may also be toxic because of accidental spilling of toxic substances.

SOILS AND GROUNDWATER

A search of federal, state, and local agency database listings was conducted to identify potentially hazardous sites within one-quarter-mile of proposed alignment. The database search, included in Appendix E, was compiled pursuant to Government Code Section 65962.5 and in accordance with

American Society for Testing and Materials (ASTM) Practice E 1527. Table 3.10-1 summarizes the results of the database search.

TABLE 3.10-1 SUMMARY OF HAZARDOUS WASTE SITES SEARCH

Source	No. of Sites
Comprehensive Environmental Response, Compensation, and Liability Information System-No Further Remedial Action Planned (CERCLIS-NFRAP)	2
Resource Conservation and Recovery Information System Large Quantity Generator (RCRIS-LQG)	3
Resource Conservation and Recovery Information System Small Quantity Generator (RCRIS-SQG)	27
Cortese	9
Leaking Underground Storage Tank (LUST)	10
Underground Storage Tank (UST)	60
California Facility Inventory Database (CA FID)	12
Historical Underground Storage Tank (HIST UST)	14
Facility Index System (FINDS)	27
Toxic Chemical Release Inventory System (TRIS)	1
Drycleaners (CLEANERS)	5
Proposed and Existing School Sites under contamination review (SCH)	1
Emissions Inventory Data	2
DTSC Referral (REF)	2
Hazardous waste manifest information (HAZNET)	20
Los Angeles County industrial waste and UST sites (LA Co. HMS)	1

Source: EDR 2005

Based on topography, the groundwater gradient along the alignment is anticipated to flow south, towards Long Beach Harbor. Accordingly, the greatest groundwater contamination hazards posed to the project site are those located to the north of the alignment. A summary of the sites of potential concern identified by the database search within the vicinity of the alignment is shown in Table 3.10-2.

TABLE 3.10-2 SUMMARY OF SITES OF POTENTIAL CONCERN

Site of Potential Concern	Databases	Status
Akin Investment Co. Inc. 4029 East Anaheim Street Long Beach, CA	CERC-NFRAP, RCRA-SQG, FINDS, REF	Generated infectious waste; preliminary assessment done; no action required; no violations found.
Exxon/Mobil Oil Corporation 3400 East Anaheim Street Long Beach, CA	RCRA-LQG, Cortese, LUST, UST, CA-FID, HIST-UST, HAZNET	Active UST; prior leaking tank-soil removed; case closed in 1991; 4 previous USTs; generates organic liquid mixture and solvent mixture; no violations found.
One Hour Photo 3270 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS, HAZNET	Generates photoprocessing chemicals; no violations found.
Dry Cleaners 3427 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS, CLEANERS, HAZNET	Generates halogenated solvents associated with cleaners; no violations found.
East Long Beach Brake Service 4401 East Anaheim Street	RCRA-SQG, FINDS, HAZNET	Generates solvent mixture and oil/water separator sludge; no violations found.

Site of Potential Concern	Databases	Status
Long Beach, CA		
1 Hour Photo Work 4339 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Ness German Auto 4417 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Joes Auto Repair 3909 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
East Anaheim Auto Clinic 3636 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS, HAZNET	Generates aqueous solution; no violations found.
Long Beach Moped 4138 East Anaheim Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Discount Tire Center 3340 East Anaheim Street Long Beach, CA	Cortese, LUST, UST, HAZNET	Diesel leak found during UST removal in 1990; generates oil containing waste and aqueous solution; no further information.
T & T Arco, Ocean Oil #2 4235 East Anaheim Street Long Beach, CA	Cortese, LUST, UST, CA-FID, HIST-UST	Gasoline impacted soil discovered in 1996 from leaking UST; excavation; no action required; site undergoing monitoring; 3 active USTs.
Vacant 3543 East Anaheim Street Long Beach, CA	UST	Active UST.
King Textile 3530 East Anaheim Street Long Beach, CA	UST	Active UST.
Belmont Auto Spa/ Big Ef's Car Wash 3525 East Anaheim Street Long Beach, CA	UST, CA FID, HIST-UST	Inactive UST; 4 active USTs.
Parks & Recreation 3500 East Anaheim Street Long Beach, CA	UST	Active UST.
Tank Under Paved Street 3342 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 3339 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 3327 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 3321 East Anaheim Street Long Beach, CA	UST	Active UST.
Mcdonald's Restaurant 3302 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown	UST	Active UST.

Site of Potential Concern	Databases	Status
3441 East Anaheim Street Long Beach, CA		
El Pollo Loco 3425 East Anaheim Street Long Beach, CA	UST	Active UST.
Pro Tire & Wheel Inc. 4390 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 4343 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 4340 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 3927 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 4005 East Anaheim Street Long Beach, CA	UST	Active UST.
Unknown 3715 East Anaheim Street Long Beach, CA	UST	Active UST.
Coastal Paint & Decorating Inc. 4127 East Anaheim Street Long Beach, CA	UST	Active UST.
Best Washington Uniform Supply 1347 Redondo Avenue Long Beach, CA	RCRA-LQG, HAZNET, CLEANERS	Industrial launderers; generates waste oil, oil-containing waste, and laboratory waste chemicals; no violations found.
Hamer Automotive 1333 Redondo Avenue Long Beach, CA	RCRA-SQG, HAZNET, FINDS	Generates organic liquids; no violations found.
Dewey Pest Control 1391 Redondo Avenue Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Deno's/ Murre Cleaners 1100 Redondo Avenue Long Beach, CA	UST, Emissions Inventory Data, CLEANERS	Active laundry facility and dry cleaning facility; active UST.
William Cowan Roofing 1144 Redondo Avenue Long Beach, CA	UST	Active UST.
Continental Baking Company 1208 Redondo Avenue Long Beach, CA	UST	Active UST.
Church of God-Cleveland Tennessee 1216 Redondo Avenue Long Beach, CA	UST	Active UST.
Tidy Didy Diaper Service 1330 Redondo Avenue Long Beach, CA	UST, HAZNET, HIST-UST, CA-FID	3 former USTs; 1 active UST; generates hydrocarbon solvents and organic solids.
Exxon/Mobil Oil Corporation	RCRA-LQG	Generates waste oil; no violations found;

Site of Potential Concern	Databases	Status
4700 East 7th Street Long Beach, CA		minor leak in 2003; no action required.
McFarland Energy Inc. 5003 7th Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Batshon Service Center #3 4770 East 7th Street Long Beach, CA	RCRA-SQG, LUST, UST, CA-FID, HAZNET, HIST-UST, FINDS	Active UST; 4 former USTs.
Southland Corp. #25800/Starr Dry Cleaning 4400 East 7th Street Long Beach, CA	Cortese, LUST, UST	Gasoline impaction detected in 1986; excavation and removal; case closed in 1996; Active UST.
Long Beach Unified School 4345 East 7th Street Long Beach, CA	Cortese, LUST	Gasoline release in 1992; case closed in 1996.
Anthony's Studio 7 4640 East 7th Street Long Beach, CA	UST	Active UST.
Belmont Auto Service 3720 East 14th Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
JB Hanover Company 4116 East 10th Street Long Beach, CA	RCRA-SQG, FINDS, HAZNET	Generates aqueous solution and solvent mixture waste; no violations found.
Long Beach USD-Wilson High School 4400 East 10th Street Long Beach, CA	RCRA-SQG, Cortese, LUST, UST, FINDS, SCH, HAZNET, LA Co. HMS	Isolated diesel impacted soil removed; no action required at site as determined by DTSC; case closed; generates inorganic solid waste and asbestos-containing waste; no violations found.
Aram's International Car & Tire 3940 East 10th Street Long Beach, CA	Cortese, LUST, UST, CA-FID, HIST-UST	Active UST; hydrocarbon impacted soil discovered in 1990; case closed in 1996; 8 active USTs.
Armstrong Garden Center 3842 East 10th Street Long Beach, CA	UST	Active UST.
Unknown 1347 Loma Avenue Long Beach, CA	UST	Active UST.
Unknown 1353 Loma Avenue Long Beach, CA	UST	Active UST.
Unknown 1203 Loma Avenue Long Beach, CA	UST	Active UST.
Jim Bland Masonry Inc. 1228 Loma Avenue Long Beach, CA	UST, HAZNET	Active UST; generates waste oil.
Art Decal Corp. 1145 Loma Avenue Long Beach, CA	FINDS, TRIS, HAZNET	Generates photoprocessing waste.

Site of Potential Concern	Databases	Status
California Cars 1202 Loma Avenue Long Beach, CA	HAZNET	Generates aqueous solution.
Woodstock Furniture Inc. 1395 Coronado Avenue Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Best Washington Uniform Supply 1342 Coronado Avenue Long Beach, CA	UST	Active UST.
Unknown 1356 Coronado Avenue Long Beach, CA	UST	Active UST.
Belmont Auto Service 3720 East 14th Street Long Beach, CA	RCRA-SQG	No violations found.
Johnie Walker Printing 1344 Newport Avenue Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Unknown 1360 Newport Avenue Long Beach, CA	UST	Active UST.
Long Beach USD-Bryant Elementary 4101 East Fountain Street Long Beach, CA	RCRA-SQG, FINDS	No violations found.
Advance Metals 3710 East Fountain Street Long Beach, CA	UST, CA-FID, HIST-UST	Active UST.
Unknown 5150 East Colorado Street Long Beach, CA	UST	Active UST.
Huffman Trucking 3866 East 9th Street Long Beach, CA	HIST-UST	Former UST.
Fire Station 12 5200 Eliot Street Long Beach, CA	UST	Active UST.

Source: EDR, 2005

Sixty-six up-gradient sites were identified within ¼-mile of the proposed alignment on federal, state, and local hazardous materials databases. As shown in Table 3.10-2, 32 of these sites are listed on databases for currently operating an active UST, one is listed on the HIST-UST for a formerly active UST, and two sites are listed for both former and currently active USTs. An additional 22 of the sites are listed as small or large quantity generators of hazardous or acutely hazardous materials, with two of the sites currently operating active USTs. No violations or accidental spills or releases have been reported for any of these sites and none of them are listed on the Cortese list, which tracks a variety of known contaminated sites.

Nine sites have had known spills or leaks, cleanup, or the Department of Toxic Substances Control (DTSC) assessment. Five of the sites have undergone remediation and their cases have been closed. The Exxon/Mobil Oil Corporation site (3400 East Anaheim Street) received case closure in 1991, the

Southland Corp. #25800/Starr Dry Cleaning site (4400 East 7th Street) received case closure in 1996, the Long Beach Unified School site (4345 East 7th Street) case was closed in 1996, the Long Beach USD-Wilson High School site (4400 East 10th Street) was closed by DTSC, and the Aram's International Car & Tire site (3940 East 10th Street) case was closed in 1996. Following site assessment at three sites, it was determined that no action was required; the Akin Investment Co. Inc. site (4029 East Anaheim Street), the Exxon/Mobil Oil Corporation site (4700 East 7th Street), and the T & T Arco/Ocean Oil #2 site (4235 East Anaheim Street), which is currently undergoing monitoring. These sites were not required to undergo remediation activity as decided by DTSC and do not pose a threat to groundwater or soil beneath the proposed alignment. However, diesel and gasoline leaks were detected during a UST removal at the Discount Tire Center site (3340 East Anaheim Street) in 1990 and no further information is available.

A Preliminary Phase II investigation was conducted for the Termino Avenue Drain Project in March 2000 to determine whether any Special Excavation Criteria Areas (SECAs) exist along the alignment and the suitability of excavated soil for backfilling and/or recycling. Soil samples were collected from locations along the proposed alignment and analyzed for Total Petroleum Hydrocarbons as gasoline (TPHG), Total Petroleum Hydrocarbons as Diesel (TPHD), Volatile Organic Compounds (VOCs), Total Petroleum Hydrocarbons (TPH), and metals. Laboratory results were non-detect or insignificant for TPH throughout the majority of the alignment. However, samples collected from near Marine Stadium indicated high levels of hydrocarbons with significant levels of diesel at depth. All of the samples collected contained detectable levels of metals; however, all positive results were below the Total Threshold Limit Concentration (TTLC), which dictates the regulatory limits (Los Angeles County Department of Public Works 2000a). A subsequent Supplemental Phase II in July 2000 confirmed the previous analytical results (Los Angeles County Department of Public Works 2000b). Although the proposed alignment has been modified between Colorado Street and Marine Stadium, the samples still represent the anticipated subsurface conditions of the general project area. The Phase II analysis is provided in Appendix E.

In June 2005, an additional limited Phase II was conducted to further assess the condition of sediments under Marine Stadium (Petra, 2005). Samples were analyzed for metals, polychlorinated biphenyls (PCBs), TPH, semi-volatile organic compounds (SVOCs), and organo-chlorine pesticides. Samples were collected at three locations within Marine Stadium, including the proposed outlet structure location. TPH, PCBs, and organo-chlorine pesticides were not detected in any of the three samples and metals were within anticipated background levels. SVOCs were detected in one sample location in Marine Stadium approximately 540 feet east of the proposed outlet location; however, the locations nearest to the outlet structure were not found to contain SVOCs. The 2005 limited Phase II, provided in Appendix E, identifies the location of the sampling locations and provides the detailed sampling data summarized above.

OTHER HAZARDS

Asbestos-containing materials (ACMs) and lead-based paints (LBP) are commonly encountered in older buildings. Asbestos fibers are considered a hazardous air pollutant, and the removal, transportation, and disposal of asbestos must comply with federal, state, and local regulations. Asbestos fibers, if inhaled, can cause disabling respiratory diseases and specific types of cancer. Lead is a heavy, ductile metal that was commonly included in products used in and around the home. Many structures built before 1978 have paint that contains lead. Human exposure to lead has been determined to be an adverse health risk by agencies such as the Federal Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA). Records indicate that the small building located on the corner of Ximeno Avenue and East 7th Street was built after 1983.

Safety hazards to people residing and working in the proposed project area can arise from proximity to public airports or private airstrips. The project is not located within an Air Installation Compatible Use Zone (AICUZ). The nearest public airport is the Long Beach Municipal Airport located approximately 3.5 miles north of the proposed alignment. The closest private airstrip is the Goodyear Blimp Base Airport located approximately 10 miles northwest of the proposed project.

Exposing people or structures to potential wildland fires can result in loss, injury, or death. The proposed project is located in a highly urbanized area and no wildlands are located within proximity to the proposed alignment.

There are four elementary schools, two middle schools, and one high school located within ¼ mile of the proposed alignment. Lowell Elementary School (5201 East Broadway Avenue) is located approximately 0.16 mile southwest of the termination of the alignment at Marine Stadium, John C. Fremont Elementary School (4000 East 4th Street) is located approximately ¼-mile southwest of the alignment's intersection with Ximeno Avenue, Bryant Elementary School (4101 East Fountain Street) is located approximately 0.12 mile northeast of the termination of the Termino Avenue lateral at Anaheim Street, Willard Elementary School (1055 Freeman Avenue) is located approximately 0.15 mile west of the termination of the alignment at Redondo Avenue and Anaheim Street, Will Rogers Middle School (356 Monrovia Avenue) is located 0.1 mile west of the termination of the alignment at Marine Stadium, Jefferson Middle School (750 Euclid Avenue) is located approximately 0.12 mile southwest of the intersection of the main storm drain alignment and the Termino Avenue lateral, and Woodrow Wilson High School (4400 East 10th Street) is located approximately 0.2 mile northeast of alignment.

3.10.2 REGULATORY SETTING

FEDERAL

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

CERCLA, commonly known as Superfund, provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste at these sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified.

Resource Conservation and Recovery Act (RCRA)

RCRA provides the Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave". This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also sets forth a framework for the management of non-hazardous wastes.

STATE

Title 22 of the California Code of Regulations (CCR)

Title 22 of the CCR includes state hazardous waste regulations enforced by the DTSC and local Certified Unified Program Agencies (CUPAs). Authority from the state was delegated to local CUPAs to establish a unified hazardous waste and hazardous materials management program for hazardous waste generators, treatment of hazardous waste subject to tiered permitting, facilities with USTs and ASTs, risk management and prevention plans, and hazardous materials management plans and inventory statements required by the Uniform Fire Code.

California Health and Safety Code

State hazardous waste control laws enforced by the DTSC are included in the California Health and Safety Code. These regulations identify standards for the classification, management, and disposal of hazardous waste.

Occupational Safety

Federal and state occupational safety and health regulations also contain provisions on hazardous materials management as it relates to worker safety, worker training, and worker right-to-know. The applicable federal law is the OSHA. Under OSHA, authority to administer the Act is delegated to states that have developed a plan with provisions that are at least as stringent as those provided by OSHA. California is a delegated state for federal OSHA purposes. The California Occupational Safety and Health Act and regulations and programs authorized are commonly referred to as Cal/OSHA.

LOCAL

Long Beach/Signal Hill Unified Program Agency (CUPA)

Since July 1, 1997, the CUPA)combines both Fire Department and Health Department programs related to hazardous materials management into one Agency function. CUPA covers the following programs:

- Hazardous Waste Generator Inspection Program (Health)
- Hazardous Materials Inspection/Business Plan Program (Fire)
- Underground Storage Tank Program

  - Tank monitoring/Installs and Removals (Fire)

  - Site Mitigation (Health)
- California Accidental Risk Prevention (CalARP) Program (Health)
- Above Ground Storage Tank Spill Prevention Program (Health/Fire)

The Hazardous Waste Generator Inspection Program conducts routine facility inspections on an annual basis and oversees the handling, storage and disposal of all hazardous chemical waste generated in the cities of Long Beach and Signal Hill.

The Hazardous Materials Inspection/Business Plan Program conducts inspections of business facilities, which generate hazardous materials, every three years. Businesses in the program are required to submit a Business Plan to the Fire Department on a bi-annual basis, detailing emergency response planning and training of employees. Chemical inventories are required to be submitted annually.

Annual inspections of USTs are conducted under the UST Program and are required at all UST facilities. These inspections oversee the monitoring and detection equipment and operator records. Where underground storage tanks were removed and petroleum contamination was identified, the Health Department is responsible for clean-up oversight. Both Site Characterization and Site Remediation Permits are required.

The CalARP Program addresses the accidental release of extremely hazardous chemicals as listed by chemical and quantity in the California Health and Safety Code. The law requires businesses to prepare a Risk Management Plan (RMP) to identify worst case scenarios of chemical releases, and to document preventive measures and emergency response plans. Community meetings conducted by the businesses to present the contents of the plans are also required.

The Above Ground Storage Tank Spill Prevention Program requires that all facilities that have above ground storage tanks containing hazardous materials have spill prevention plans on the premises.

3.10.3 ENVIRONMENTAL IMPACTS

For the purposes of this analysis, the typical use of hazardous materials and their effects were qualitatively assessed through review and evaluation of available documents that identified potential contaminants and hazardous materials uses within the proposed project area, such as the *Termino Avenue Drain Supplemental Phase II Environmental Investigation* and the *EDR Radius Map with GeoCheck Termino Avenue Alignment*. In determining the level of significance, the analysis assumes that construction and operation of the proposed project would comply with relevant federal and State laws and regulations, as well as County and City General Plan policies and ordinances. This analysis evaluates potentially adverse environmental impacts of the proposed project against the significance thresholds for hazards and hazardous materials.

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on hazards and hazardous materials if it would result in one or more of the following:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- creates 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; or
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

EFFECTS DISMISSED IN THE INITIAL STUDY

The Initial Study (see Appendix A) issued for the proposed project in May 2004 determined that several potential hazards and hazardous materials impacts were less than significant and did not need to be analyzed in the EIR. Specifically, the Initial Study determined that the project would not:

- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area;
- for a project within the vicinity of a private airstrip, result 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; or

- expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

As discussed in the Initial Study, the alignment of the project is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and potential impacts associated with this criterion are not considered further.

The small building to be demolished on the corner of Ximeno Avenue and East 7th Street was not built prior to 1978, and therefore, would not contain ACMs or LBP coated materials. Accordingly, impacts associated with the demolition of the building are not considered further.

The project would not interfere with a current emergency response plan or an emergency evacuation plan for local, state, or federal agencies as access to all roads would be maintained during construction and operation (see mitigation measures TRANS-A through TRANS-F). In addition, any emergency procedures would be implemented within local, state, and federal guidelines during construction and operation of the proposed project. Furthermore, mitigation measure TRANS-G requires LADPW to coordinate with local emergency service providers prior to initiation of construction activities. Accordingly, potential impacts associated with interference with emergency response or evacuation are not considered further.

The site is located within urbanized areas with no wildlands on or adjacent to the proposed project. Therefore, the proposed project would not contribute to wildland fire hazards or expose people or structures to wildland fires.

There are no public airports or private airstrips within the vicinity of the proposed project. Because the project would not result in a safety hazard regarding proximity to public and private airports and airstrips, potential impacts associated with these criteria are not considered further.

IMPACT ANALYSIS

HAZ-1 *The proposed project would not involve the routine transport, use, or disposal of hazardous materials.*

The proposed project would install a storm drain conduit in order to convey non-storm flows to the County Sanitation Districts sewer treatment plant and to convey 50-year flood waters to Marine Stadium. Maintenance activities would include routine inspections of the storm drain, pumping station, catch basin screens, and outlet structure. There would be no routine transport, use, or disposal of hazardous materials and accordingly, no impacts would occur. No mitigation measures are required.

HAZ-2 *The proposed project would create a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment*

Construction

As discussed above, the sixty-six up-gradient hazardous waste sites identified within ¼-mile of the proposed alignment are not anticipated to have impacted soils or groundwater beneath the proposed alignment. Samples collected from the previous alignment location, just north of the new alignment, indicated high levels of hydrocarbons with significant levels of diesel at depth. Due to minor variations in groundwater flow direction, such contamination could potentially be located under the proposed alignment in this area as well. Accordingly, the potential exists for hydrocarbon and diesel contamination to occur beneath the proposed alignment between Colorado Street and Marine Stadium. As such, excavation of impacted soils and groundwater would potentially expose workers to contamination. Soil exposure pathways would include inhalation of particles, absorption through skin from contact, and inhalation of vapors from VOCs in soil during construction activities such as excavation and dredging. Groundwater encountered during excavation and dredging activities would create exposure pathways through the absorption of pollutants through skin and the inhalation of vapors from the contaminated water. Construction impacts would be significant. Mitigation measures HAZ-A and HAZ-B are provided in order to reduce impacts associated with contamination in the vicinity of Marine Stadium. Construction impacts would be reduced a less than significant level with implementation of mitigation.

Operation

During a storm event, stormwater would flow through the proposed storm drain into Marine Stadium. The force of the water exiting the pipe has the potential to scour the bottom of Marine Stadium. Because contaminants were not detected in the soil samples collected near the proposed outlet structure location, no contaminants from the soil would be released into the water. In addition, project design features, such as energy dissipater blocks and woven geotextile fabric, as discussed in Chapter 2.0, Project Description, would reduce scour effects at the outfall location. Accordingly, no impacts would occur during operation of the proposed project, and no mitigation measures are required. Long-term water quality impacts, including the effects of polluted storm water runoff in Marine Stadium, are discussed in Chapter 3.9, Hydrology and Water Quality.

HAZ-3 *The proposed project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of a school.*

As discussed above, four elementary schools, two middle school, and one high school are located within ¼ mile of the proposed alignment; Lowell Elementary School, John C. Fremont Elementary School, Bryant Elementary School, Willard Elementary School, Will Rogers Middle School, Jefferson Middle School, and Woodrow Wilson High School. However, construction of the proposed project is not anticipated to generate hazardous emissions or store hazardous materials or chemicals that would pose a significant public health risk with the exception of those materials required for operation of construction equipment (fuel, lubricants, etc.). All on-site construction activity would be required to adhere to all OSHA established guidelines for proper use and storage of fuels and lubricants used for construction equipment. In addition, the operational use of the proposed project would be limited to storm waster conveyance and the project would not involve hazardous materials, substances, waste, or emissions. Accordingly, impacts would be less than significant, and no mitigation measures are required.

3.10.4 MITIGATION MEASURES

HAZ-A Groundwater Monitoring. Prior to any excavation activities within the proposed storm drain alignment south of Colorado Street, groundwater monitoring wells shall be installed to quantify the groundwater flow and to collect samples to be tested for contaminants. Site specific Maximum Contaminant Levels (MCLs) shall be applied by the RWQCB. Should groundwater contamination levels exceed RWQCB MCLs, any water encountered during excavation or dewatering activities shall be handled using one of three methods: discharge to a sanitary sewer system, transport offsite using a disposal contractor, or discharge into a storm drainage system in compliance with a National Pollution Discharge Elimination System (NPDES) permit. The County shall chose any of these three methods, as they are all acceptable to RWQCB and are all equally effective at contaminant removal. Specific mitigation requirements for each of the three options are discussed below.

Disposal in Sanitary Sewer System

Prior to construction, the construction contractor would coordinate with the County Sanitation Districts to determine the applicable disposal requirements. A written agreement would be obtained describing the testing, monitoring, and disposal requirements for the dewatering effluent. Based on the level of contamination identified at the site, best available technology (BAT) economically achievable would be implemented to ensure that pollutant concentrations in the wastewater discharge did not exceed the disposal requirements. If the treated effluent is discharged only into the sanitary sewer system, an NPDES permit would not be required; however, a permit would be required from the Sanitation Districts.

Transport Offsite

Under this option, dewatering effluent would be removed from the site by a licensed commercial transportation, storage, and disposal (TSD) contractor. If all dewatering effluent is transported offsite to an approved disposal facility, an NPDES permit would not be required.

Discharge into Storm Drainage System

Under this option, the construction contractor would coordinate with the Regional Water Quality Control Board (RWQCB) regarding the disposal of dewatering effluent in local storm drains. If contamination levels exceeded RWQCB effluent limitations, the project must comply with RWQCB's Order No. 97-043. Best Management Practices (BMPs) and BAT would be implemented to ensure that pollutant concentrations in the wastewater discharge would not cause violation of any applicable water quality objective for the receiving waters, including discharge prohibitions. In addition, BAT would be implemented to ensure that the discharges would not cause acute nor chronic toxicity in receiving waters. If groundwater contamination is found in the dewatering effluent, water would be treated by granular activated carbon (GAC) or other accepted treatment to remove dissolved-phase hydrocarbons. If necessary, a second absorption media consisting of clay would be used to remove methyl tertiary-butyl ether (MTBE) and other fuel oxygenates. Dewatering activities would be monitored under RWQCB's Monitoring and Reporting Program.

HAZ-B **Soil Contamination.** The site manager and equipment operators shall survey the work area at the beginning of each workday and routinely throughout each day during soil excavation and dredging to check for the presence of potentially impacted soil and contaminant sources. Hydrocarbon-impacted soils can be identified in the field (1) by a petroleum odor, (2) by a darker appearance than surrounding soil, and (3) through screening with an organic vapor analyzer (OVA) or other field equipment. Equipment operators, management, and other field personnel shall be notified of any potential impacted soils and contaminant sources within the work area. These areas shall be clearly marked.

If contaminated soils are encountered during construction, operations shall be stopped in the vicinity of the suspected impacted soil. Surface samples shall be analyzed using appropriate collection and sampling techniques. Once an area of contamination is identified, soils shall be segregated, sampled, and tested to determine the appropriate disposal and treatment options. If the soils exceed the applicable screening criteria established by the RWQCB or are classified as hazardous (according to RCRA and CCR Title 22), soils shall be hauled to a Class I landfill or other appropriate soil treatment and recycling facility.

3.10.5 SIGNIFICANCE AFTER MITIGATION

Implementation of Mitigation Measures HAZ-A and HAZ-B would provide precautions and procedures to be undertaken in the event that hazardous materials are identified. Testing of the ground water and soils would ensure that no hazardous materials would be released, thereby reducing the impacts associated with groundwater and soils contamination to below the level of significance during project construction. There would be no residual significant hazards or hazardous materials impacts during project operation.

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3.11 RECREATION

The purpose of this section is to identify the recreation areas near the proposed project and to determine if they would be impacted during construction or operation of the project.

3.11.1 ENVIRONMENTAL SETTING

There are 10 parks within a 1-mile radius of the proposed project (Table 3.11-1). The proposed project is within the boundaries of 3 of these parks: Colorado Lagoon, Marina Vista Park, and Marine Stadium Park.

Table 3.11-1 Parks within One-Mile of the Proposed Project

Park Name	Distance from Project (miles)	Direction	Park Type*
Los Altos Plaza Park	0.75	northeast	Mini Park
Long Beach City Golf Course	0.25	east	Golf Course
Recreation Park	0.12	east	Community Park
Recreation Park 9-hole Golf Course	0.10	east	Golf Course
Colorado Lagoon	0	--	Special Use Park
Marina Vista Park	0	--	Neighborhood Park
Marine Stadium Park	0	--	Special Use Park
Will Rogers Mini Park	0.10	south and east	Mini Park
Rose Park	0.50	west	Mini Park
Orizaba Park	0.25	northwest	Neighborhood Park

*As designated by the City of Long Beach General Plan Open Space and Recreation Element

Amenities at Colorado Lagoon include picnic areas, play equipment, and model sailboat races; Marina Vista Park offers soccer, tennis, and softball facilities as well as picnic areas, play equipment, and swimming; and Marine Stadium offers vessel launching, water skiing, and a sand beach for recreation.

REGULATORY SETTING

The City of Long Beach General Plan Open Space and Recreation Element

The Open Space and Recreation Element of the City of Long Beach General Plan provides guidelines in the following four areas: open space for the preservation of natural resources; open space for the managed production of resources; open space for public health and safety; and open space for outdoor recreation and recreation facilities. The purpose of the project pertains to open space for public health and safety, specifically for maintaining sufficient open space for adequate projection of lives and property against natural safety hazards. The construction and operation of the project pertains to open space for outdoor recreation and recreation facilities, specifically to maintaining the City's public recreation resources.

3.11.2 ENVIRONMENTAL ANALYSIS

THRESHOLDS OF SIGNIFICANCE

The project would have a significant effect on recreation if it would result in one or more of the following:

- increased the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

IMPACT ANALYSIS

REC-1: *The proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities.*

Because the proposed project would upgrade an existing storm water system, and would not result in the construction of new residences or facilitate the development of residences, the project would not result in increased population. Therefore, the proposed project would not increase demand for neighborhood or regional parks or other recreational facilities. Existing recreational facilities within the project vicinity would not be impacted by operation of the proposed project, and would maintain service to current users. The proposed project would not increase use of existing park or recreation facilities. Impacts to existing parks and recreation facilities would be less than significant.

REC-2: *The proposed project does not include recreational facilities or require the construction or expansion of recreational facilities.*

The proposed project would not result in the creation of any new recreational facilities or expansion of existing recreation facilities, and would not cause an increase in demand on parks and recreational facilities. Construction of the storm drain would occur adjacent to Will Rogers Mini Park and Marine Stadium; however, no construction activities would occur within the parks and all amenities would be available to park users during project construction and operation. As such, existing park amenities within the project area would be unaffected by the proposed project. Water-related recreational activities at Marine Stadium (i.e., fishing and water skiing) would remain available during construction of the proposed project, as only a small portion of the stadium would be affected by construction activities. Once constructed, the new outlet structure at Marine Stadium would not affect any existing recreational activities.

No recreational facilities would be constructed as part of the proposed project, nor would the project result in the need for new or expanded recreational facilities. The City of Long Beach has indicated that a park would be constructed along the PE right-of-way upon completion of the storm drain project; however, this is not a component of the proposed project. Because the alignment would be returned to its existing condition, the project would not preclude the development of a future park along the PE right-of-way and no impacts are anticipated. Impacts to existing and proposed recreational facilities would be less than significant.

3.11.4 MITIGATION MEASURES

Impacts to recreation would be less than significant; therefore, no mitigation measures are required.

3.11.5 SIGNIFICANCE AFTER MITIGATION

No impacts to recreation have been identified and no mitigation proposed; therefore, impacts on recreation would be less than significant without mitigation.

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4 IMPACT OVERVIEW

This chapter provides an overview of the environmental effects of the proposed project, including significant unavoidable adverse impacts, impacts not found to be significant, cumulative impacts, significant irreversible environmental changes, and growth-inducing impacts. Cross-references are made throughout this chapter to other sections in this EIR where more detailed discussions of impacts of the proposed project can be found.

4.1 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

This section is prepared in accordance with Section 15126.2(b) of the *CEQA Guidelines*, which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated but cannot be reduced to a less than significant level. An analysis of environmental impacts caused by the proposed project has been conducted and is contained in this EIR. Eleven issue areas were analyzed in detail in Chapter 3. Two issues have been found to result in significant unavoidable adverse impacts – Air Quality (construction NO_x) and Noise (construction noise and vibration).

4.2 EFFECTS NOT FOUND TO BE SIGNIFICANT

Sections 15128 and 15143 of the *CEQA Guidelines* require the identification of impacts of a project that were determined not to be significant and that were not discussed in detail in the impact section of the EIR. For this project, it was determined that significant impacts would not occur in the following resource categories: Agricultural Resources, Mineral Resources, Population and Housing, Public Services, and Utilities and Service Systems. An Initial Study (Appendix A) was prepared which outlines the reasons why these effects were found to be not significant. The following discussion summarizes these findings.

4.2.1 AGRICULTURAL RESOURCES

Based on farmland mapping provided by the Natural Resources Conservation Service, there is no designated farmland within the project area; therefore, no impacts to Prime, Unique, or Statewide Important Farmland would occur (DLRP 2004). There are also no Williamson Act contract lands in the project area. The project site is zoned as planned development, residential, parks and recreation, and commercial (City of Long Beach, Planning Bureau 2004). Therefore, the project would not conflict with any existing agricultural zoning, and no agricultural activities occur on-site. No impacts would occur.

4.2.2 MINERAL RESOURCES

There are no known mineral deposits of economic importance to the state or region underlying the project site. The project site is not located in any City-designated mineral resource or mineral resource extraction zones (City of Long Beach, Planning Bureau 2004). The construction of the proposed project would not result in the loss of availability of any known mineral resource.

4.2.3 POPULATION AND HOUSING

The site of the proposed storm drain system is currently occupied by existing greenspace, roadway, parking lot, and sidewalk. No housing units or persons would be displaced as a result of the storm drain construction. The storm drain would not require new homes, nor would it encourage people to move to the project area. The new system would be intended to protect the existing drainage area, and would not provide infrastructure that would directly or indirectly result in population growth. No new jobs would be created upon completion of the project. Operation of the drainage system would therefore not induce employment growth or household formation. Therefore, the proposed project would not induce population growth in the project area.

4.2.4 PUBLIC SERVICES

FIRE PROTECTION

Fire protection in the project area is provided by the Long Beach Fire Department, which operates 23 stations grouped under 19 divisions within 4 bureaus. The nearest stations to the project site are Fire Station No. 4 (411 Loma Avenue), located approximately 0.5 mile northeast of the proposed project and Fire Station No. 14 (5200 Elliot Avenue), located immediately east of the proposed alignment. Construction activities and staging areas would not impact operation at the fire stations nor would operation of the proposed project require additional fire protective services. Adequate notification of lane closures would be provided to the Long Beach Fire Department. Impacts would be less than significant.

POLICE PROTECTION

The project area is served by the Long Beach Police Department, East Division. The proposed improvements would not induce development resulting in increased response time or the need for additional staffing and equipment. Upon completion of the 18-month construction period, the alignment would be returned to its existing condition and no changes to vehicular or pedestrian access would occur. During construction, some lane closures would occur along Termino Avenue, 10th Street, 7th Street, Anaheim Street, Ximeno Avenue, and Apian Way would occur. This would result in temporary impacts as a result of vehicle traffic delay, slowing of vehicle speeds at the roadway approaches and intersections (deterioration of roadway and intersection LOS), and restricted access to adjacent properties during the period of construction. In addition, due to the slow speed of vehicles hauling construction equipment on local roadways, the risk of vehicle accidents would increase and response times for emergency vehicles would be reduced. Mitigation measures TRANS-A through TRANS-G (see Section 3.5, Transportation and Circulation) would reduce the potential impacts to police protection services to a less than significant level.

SCHOOLS

The proposed project area is within the Long Beach Unified School District (LBUSD). There are six schools located within ¼ mile of the proposed alignment. Lowell Elementary School (5201 East Broadway), John C. Fremont Elementary School (4000 East 4th Street), Bryant Elementary School (4101 East Fountain Street), Will Rogers Middle School (365 Monrovia Avenue), Jefferson Middle School (750 Euclid Avenue), and Woodrow Wilson High School (4400 East 10th Street). Development of the proposed project would not generate additional students within LBUSD nor would it increase the demand for schools, as the project would not induce substantial population growth. Schools would not be impacted by the proposed project.

PARKS

There are four parks located within a 1-mile radius of the proposed project: Will Rogers Mini Park, located east of the intersection of Appian Way and Nieto Avenue, immediately southwest of the proposed project; Marina Vista Park, located immediately east of the proposed project, between Colorado Street and Marine Stadium; Colorado Lagoon Park, located approximately 175 feet west of the proposed project; and Recreation Park, which included Blair Field, an 18-hole golf course, and a 9-hole golf course, approximately 0.25 mile west of the proposed project. Construction impacts would temporarily alter pedestrian access to some recreational areas due to lane closures, road construction, and PE right-of-way construction; however, alternative access would be provided during construction and all of the parks would still be available for use by the community. No operational impacts to parkland are expected to occur.

The proposed project would not increase the need for park facilities, nor would it reduce existing parks or recreational facilities. As the project would not induce substantial population growth or directly affect any parks, no adverse impacts would occur to existing parks. See Chapter 3.11, Recreation, for a more complete discussion of the impacts of the project on recreation.

OTHER PUBLIC FACILITIES

The nearest libraries to the project site are the Brewitt Library (4036 East Anaheim Street), located immediately to the east of the terminus of the lateral at Termino Avenue and Anaheim Street, and the Bay Shore Library (195 Bay Shore Avenue), approximately 0.6 mile south of the proposed project. Construction and operation of the proposed project would not restrict access or prevent residents from using these libraries, nor would it increase use of these libraries. The proposed project would not result in the need for additional library services; therefore, impacts to library services would not occur.

4.2.5 UTILITIES AND SERVICE SYSTEMS

The proposed project would use water only during construction for dust control and for personal use by construction personnel. The contractor would supply the water necessary to accommodate project construction. All required water and wastewater connections are currently constructed and in operation. The project would not require the need for expanded facilities, and therefore no impact would occur.

The project is exempt from wastewater treatment requirements of the RWQCB or NPDES regulations relating to wastewater discharge because no point source discharge of wastewater would occur. Approximately 80 gallons per minute of stormwater would be diverted to the County sanitary sewer line and treated. The County of Los Angeles Sanitation Department has indicated that there is adequate capacity to treat the stormwater. The project would not require additional drainage systems, nor would it result in the need for expanded off-site drainage facilities.

During construction, small quantities of debris and materials would be hauled to an approved solid waste disposal facility. Given the small quantity of material, the project would not substantially affect the capacity of existing land fills in the project area. Upon completion of construction, the project would not generate solid waste.

4.3 CUMULATIVE IMPACTS

According to Section 15355 of the *CEQA Guidelines*, cumulative impacts refer to:

> "Two or more individual effects which, when considered together, are considerable or which compound or increase other environmental effects. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment that results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time."

Sections 15130(a) and 15130(a)(3) of the *CEQA Guidelines* state that:

> "An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(c). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable."

According to Section 15130 (b)(1)(A) of the *CEQA Guidelines*, a list of past, present, and probable future projects producing related or cumulative impacts may be used as the basis of the cumulative impacts analysis. The "list" approach was used for the cumulative impacts discussion in this EIR. Table 2-4 provides a list of related projects in the City within one mile of the proposed alignment, based on information provided by the City of Long Beach Planning Department. Figure 2-6 shows the locations of the related projects within one mile of the project site. A radius of 1-mile was selected based on several factors, including:

Location: The project involves underground storm drain improvements in a highly urbanized area. The project would create short-term impacts along the proposed alignment during the construction phase; however, the most of the project components would not be visible after the project is constructed, since the new storm drain would be buried underground. Construction activities would primarily affect the immediate right-of-way; therefore, the 1-mile radius would capture all cumulative projects that would contribute to short-term construction-related impacts.

Project type: As discussed in this EIR, the project's operational impacts would be minimal, since the storm drain would be located underground, would require very limited maintenance, and would not create new land uses in the project area. Based on this project type, a 1-mile radius for cumulative projects was determined by DPW to adequately capture the past, present, and probable future projects that would potentially contribute to cumulative impacts.

4.3.1 LAND USE

The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative land use impacts. Upon completion, the storm drain would be buried underground and the proposed alignment would be returned to its pre-project condition. No land use patterns or land use designations would be altered as a result of the project. Development of other cumulative projects in the City of Long Beach would result in further urbanization and redevelopment in the surrounding metropolitan area. The proposed project would not change any land use or zoning designations or alter land use patterns in the City of Long Beach. Each cumulative project is subject to independent environmental review, which would include land use conformity analyses, to ensure that no significant cumulative impacts related to land use compatibility and consistency would occur. The proposed project would not contribute to cumulative land use impacts.

4.3.2 AESTHETICS, LIGHT AND GLARE

No projects are located within a one- to two-block radius of the project site which would create a cumulative aesthetic impact. Any project located at a greater distance than one or two blocks would not have a view of the proposed project site. Three of the five projects located within one-mile from the project area are residential developments that are consistent with the types of uses within their respective area and, therefore, are not anticipated to have the potential to combine with the proposed project to create a cumulative aesthetic impact. The fourth project, a 6,200 square-foot commercial expansion to an existing Ralph's Supermarket would also be consistent with the existing use of the area and is not expected to result in a cumulatively considerable aesthetic impact when considered conjunctively with the related projects. The fifth project, the Colorado Lagoon Restoration Project, consists of activities to improve water quality within Colorado Lagoon and would not result in visual impacts which would create a cumulative aesthetic impact when combined with the proposed project. As discussed in Chapter 3.2, Aesthetics, the majority of the project would be located underground and no visual impacts are anticipated.

4.3.3 BIOLOGICAL RESOURCES

The project site is situated in a heavily urbanized area and is not linked to any migration corridors, significant ecological areas, or other protected natural areas. The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative biological resource impacts. Related projects are unlikely to result in significant impacts to biological resources due to the disturbed and/or developed condition of the area. After construction of the project, the Pacific Electric (PE) right-of-way would be restored to its existing condition. Impacts to terrestrial habitats along the right-of-way would be mitigated to less than significant levels and no impacts to regionally significant resources would occur. The analysis in Chapter 3.3, Biological Resources, evaluates impacts to marine biological communities in Marine Stadium and Colorado Lagoon. Mitigation measures are also provided for the proposed project to replace the affected eelgrass habitat in Marine Stadium.

In addition, both the proposed project and the Colorado Lagoon project include the installation of catch basin screens and a low-flow diversion system to divert non-storm water flows to the County Sanitation District sewer line, which would improve water quality within Marine Stadium and Colorado Lagoon by reducing the amount of pollutants and trash they receive from dry weather runoff. The Colorado Lagoon Restoration Project would clean out the tidal culvert between Colorado Lagoon and Marine Stadium, improving tidal flushing. The improved water and sediment quality resulting from the low-flow diversion system and the removal of the bio-fouling from the culvert would potentially improve the biological resources within the Colorado Lagoon by attracting a more diverse invertebrate and fish community and supporting valuable species, including eelgrass (City of Long Beach 2004). As none of the other projects involve impacts to Marine Stadium and the Colorado Lagoon Restoration project would improve water quality by cleaning out the existing tidal culvert, no cumulative impacts would occur.

4.3.4 CULTURAL RESOURCES

The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative cultural resource impacts. The proposed project, in conjunction with other cumulative projects in the area, could result in the disturbance of archaeological and/or historic resources in the area. However, each cumulative project would be responsible for implementing the necessary measures to protect any existing cultural resources in the area. Mitigation measures are provided for the proposed project in the event that buried cultural resources are encountered during construction. Therefore, no significant cumulative impacts are anticipated to occur on these resources.

4.3.5 TRANSPORTATION/CIRCULATION

The proposed project, in conjunction with other cumulative projects in the area, would not add traffic to local intersections within a one-mile radius of the project site. As discussed in Chapter 3.5, Transportation and Circulation, traffic volumes under the operational conditions would not change from the existing conditions. During construction, a limited number of construction vehicles would travel to the site, as construction crews would number approximately 20 people per day. Four of the five related projects located near the project site are small residential or commercial developments and the fifth consists of water quality improvement measures which would have no impact on traffic. These projects, in addition to the proposed project, would not result in a cumulative traffic impact.

4.3.6 AIR QUALITY

The proposed project, in conjunction with other cumulative projects in the area, would generate short-term air pollutant emissions from construction. No long-term emissions would result from operation of the project. Each of the related projects would have construction emissions and would generate additional vehicle trips in the project vicinity, contributing to existing air quality violations. All projects would be required to comply with the SCAQMD's air pollution control measures and rules. Implementation of these measures would reduce air emissions; however, cumulative air quality impacts related to NO_x emissions from construction of the project and other cumulative projects in the area would be significant and unavoidable. Operation of the project would not contribute to cumulative air quality impacts.

4.3.7 NOISE

Construction-related sound levels and groundborne noise and vibration attenuate rapidly from their source. Typically, noise produced by construction equipment is reduced at a rate of about 6 dB per doubling of distance. Accordingly, the one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative noise impacts. The project would not contribute to long-term cumulative impacts due its limited maintenance and operational requirements. Short-term impacts would be limited to the immediate project area, since construction activities would generally be confined to the proposed construction corridor. The project would not contribute to cumulative noise impacts outside of the 1-mile radius.

Increased levels of traffic associated with cumulative development would result in increased noise on local roadways. As the proposed project would not generate traffic in operation, no cumulative operational impacts would occur. During construction, project impacts would be significant and unavoidable due to the proximity to sensitive receptors. Three of the five related projects are located more than two blocks away from the proposed alignment and would not contribute to cumulative noise effects during construction. However, a fourth project (the 29 unit condominium project at 4200 E. Anaheim Street) is located two blocks, approximately 2,500 feet, to the east and the fifth project is located adjacent to the project site within Colorado Lagoon. Since construction activities for the condominium units and Colorado Lagoon Restoration projects may occur at the same time as the proposed project and in the same vicinity, these project, when combined with the proposed project, would contribute to the already significant short-term noise impacts of the proposed project and such impacts would be cumulatively significant. The Colorado Lagoon Restoration Project would involve the installation of water quality improvement features and no long term operational impacts would be anticipated. While the condominium units project would result in an operational increase to noise from additional traffic, the increase would not be expected to be significant due to the relatively low number of units associated with the project.

4.3.8 Geology and Soils

The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative geologic impacts since construction activities would generally be confined to the proposed construction corridor. The project would not contribute to long-term cumulative impacts due its limited maintenance and operational requirements. Short-term impacts would be limited to the immediate project area. The project would not contribute to cumulative geology and soils impacts outside of the 1-mile radius.

The proposed project would not result in the exposure of new structures and people to seismic hazards. All new structures for related projects would incorporate the required seismic safety standards to reduce impacts associated with seismic hazards to less than significant levels. There are no cumulative geologic impacts anticipated as a result of the proposed project or the projects listed in Table 2-4.

4.3.9 Hydrology and Water Quality

The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative hydrology and water quality impacts. Short-term impacts would be limited to the immediate project area, since construction activities would generally be confined to the proposed construction corridor and Marine Stadium outlet area. The project would not contribute to long-term cumulative impacts due its limited maintenance and operational requirements. The hydrology model evaluated the project's impacts to the entire Alamitos Bay system and it was determined that it would not contribute to cumulative hydrology and water quality impacts outside of the 1-mile radius.

The proposed project site would be restored to the existing conditions at the conclusion of construction. No substantial changes in absorption rates, surface and groundwater quality, groundwater flow and the quantity of groundwater are anticipated to occur as a result of implementation of the proposed project and other cumulative projects. The project would improve storm water runoff and flooding conditions in the project area, thereby improving the existing hydrologic conditions in the project area. Related projects would be required to comply with water quality and waste discharge requirements to ensure that no impacts to groundwater or surface water quality would occur. No cumulative hydrology impacts would occur.

In addition, the Colorado Lagoon Restoration Project would consist of activities that would improve hydrology and water quality. The related project would remove the biofouling and sediment within the culvert to improve tidal exchange between Colorado Lagoon and Marine Stadium, install bioswales along the golf course fence-line and at drain outlets to reduce the amount of pollutants entering the Lagoon, and install a low-flow diversion system to divert non-storm water flows to the sanitary sewer line, reducing the amount of pollutants entering the Lagoon. Removal of the biofouling and sediment from the tidal culvert would potentially improve the flow capacity of the tidal culvert, thereby reducing flood water elevations within Colorado Lagoon (City of Long Beach 2004) by allowing the Lagoon to drain more quickly during storm events. The proposed project would redirect a portion of the peak flood flow from the Lagoon to Marine Stadium, thereby reducing flood water elevations within the Lagoon. Therefore, the related project, when considered together with the proposed project, would reduce impacts to hydrology and water quality.

4.3.10 HAZARDS AND HAZARDOUS MATERIALS

The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative hazards and hazardous materials impacts since construction activities would generally be confined to the proposed construction corridor. The project would not contribute to long-term cumulative impacts due its limited maintenance and operational requirements. Short-term impacts would be limited to the immediate project area. The project would not contribute to cumulative hazards or hazardous materials impacts outside of the 1-mile radius.

The proposed project and other cumulative projects within one-mile of the project are not expected to use large quantities of hazardous materials that would create a potential risk to public health and safety. The cumulative projects may use small quantities of commonly used hazardous materials, such as cleaning solvents, paint, fertilizers, etc., which pose no unwarranted risks to public health and safety with proper handling and storage. When considered together, development of cumulative projects would not affect, interfere with, or alter the County's emergency evacuation routes. Therefore, no significant cumulative impacts to public health and safety are anticipated.

In addition, the proposed project, when considered together with the Colorado Lagoon Restoration project, would reduce human hazards related to flooding by improving the storm water drainage system so that it is suitable to convey a 50-year flood event and lowering the flood level within the lagoon. Hazards related to exposure to contaminants through contact with water would also be cumulatively reduced through the improved water quality resulting from the installation of low-flow diversion systems with both projects and the installation of bioswales and cleaning of the tidal culvert as part of the related project. Accordingly, the proposed project, when considered together with the Colorado Lagoon Restoration project, would improve potential hazards in the project area.

4.3.11 RECREATION

The one-mile cumulative project radius adequately captures the past, present, and probable future projects that would potentially contribute to cumulative recreation impacts since construction activities would generally be confined to the proposed construction corridor. The project would not contribute to long-term cumulative impacts due its limited maintenance and operational requirements. Short-term impacts would be limited to the immediate project area. The project would not contribute to cumulative recreation impacts outside of the 1-mile radius.

The proposed project is within the boundaries of three parks: Colorado Lagoon, Marina Vista Park, and Marine Stadium Park. No construction activities would occur within the parks. All amenities would be available to park users during project construction and operation and would not affect the provision of recreational services in the area. Temporary indirect impacts to the golf course (i.e., increased dust and noise during construction) would occur as a result of the Colorado Lagoon Restoration project; however, these will be minor and would not be cumulatively significant. No cumulative impacts to recreation would occur as a result of the project.

4.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Section 21100(b)(2)(B) and Section 15126.2(c) of the *CEQA Guidelines* require that an EIR analyze the extent to which the proposed project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations will not be able to reverse.

Construction of the proposed project would result in the irreversible commitment of nonrenewable resources, including fossil fuels; natural gas; water; and building materials such as lumber, concrete, and steel. However, the proposed project is not anticipated to consume substantial amounts of energy in a wasteful manner, and it is unlikely to result in significant impacts as a result of consumption of utilities.

Operation of the proposed project would also consume small amounts of nonrenewable resources including energy to operate the diversion system pump, which would limit the availability of these resources for future generations or other uses during the life of the project. However, the small amounts of resources consumed during operation of the proposed project are considered to be negligible. Although irreversible environmental changes would result from the proposed project, such changes would not be considered significant.

4.5 GROWTH-INDUCING IMPACTS

According to Section 15126.2 (d) of the *CEQA Guidelines*, growth-inducing impacts of the proposed project shall be discussed in the EIR. Growth-inducing impacts are those effects of the proposed project that might foster economic or population growth or the construction of new housing, either directly or indirectly, in the surrounding environment. Means by which a project may induce growth include creating jobs that attract economic or population growth to the area, promoting the construction of homes that would bring new residents to the area, or removing an existing obstacle that impedes growth in the area. According to CEQA, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place without implementation of the proposed project. The growth-inducing potential of a project would be considered significant if it results in growth or population concentration that exceeds those assumptions included in pertinent master plans, land use plans, or projections made by regional planning authorities. However, the creation of growth-inducing potential does not automatically lead to growth, whether it would be below or in exceedance of a projected level. Under CEQA, it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Any environmental effects of induced growth would be secondary or indirect impacts of the proposed project. Secondary effects of growth could result in significant, adverse environmental impacts, which could include increased demand on community or public services, increased traffic and noise, degradation of air and water quality, and conversion of agricultural land and open space to developed uses. If significant, indirect environmental effects of growth may occur, the final question is whether those effects have already been considered and mitigated, or overridden if unavoidable, in a completed CEQA process, or whether they instead need to be disclosed and analyzed in the proposed action's EIR. If the induced growth is consistent with an approved general plan or community plan for the area, and a CEQA document on that plan adequately addresses the effects of growth in the plan, the environmental effects of growth induced by the proposed action have already been evaluated. In this case, the EIR for the proposed action can refer to the completed CEQA document for the impact analysis and need not evaluate it in detail again. A project that would induce growth that is not consistent with general or community plans could indirectly cause additional significant environmental impacts beyond those evaluated in the earlier

CEQA document on the plan. In this case, the EIR for the proposed action would need to disclose and evaluate potential additional significant effects and propose mitigation for those effects, if feasible.

Implementation of the proposed project would not directly induce growth, as it is an infrastructure project that would serve existing and planned development in the project area. In addition, the project site and its immediate vicinity are already developed with urban land uses, including planned development, commercial and residential uses, and public facilities. Upon completion of the underground storm drain project, the alignment would be returned to its existing condition. As discussed in Chapter 3.1 and in the Initial Study (Appendix A), the project would be consistent with the Land Use Element of the City's General Plan, the City's Zoning Ordinance, and the Long Beach Local Coastal Program. No housing would be removed or created as a result of the project and no permanent jobs would be created. Construction activities would result in a temporary increase in jobs and population related to construction, which could increase demand for local services and housing. However, these temporary increases would be minimal, since the project would be expected to employ construction workers already living and working in the area. As such, the proposed project would not provide for or induce a population or job growth in the vicinity.

The project would not directly or indirectly introduce new uses inconsistent with the surrounding uses or create new housing or residential land uses which would cause an increase in population. No significant impacts would occur to public services or utilities which would require an increase in service or coverage which would require the employment of additional staff, and no increase in the use of adjacent areas would occur as a result of the construction or operation of the proposed project.

The proposed project could indirectly induce some growth within the City due to reduced flooding conditions; however, this growth would be limited, since the drainage area is already highly developed. Population growth would not occur as a result of the improved flooding conditions in this portion of Long Beach; therefore, the project is not expected to significantly induce growth in the City and surrounding communities. Secondary impacts associated with the construction and operation of the project would be less than significant.

5 PROJECT ALTERNATIVES

In accordance with Section 15126.6(a) of the *CEQA Guidelines*, an EIR must discuss a range of reasonable alternatives to the project ". . . which would feasibly attain most of the basic objectives of the project . . . and evaluate the comparative merits of the alternatives." The factors that can determine feasibility are site suitability, other plan or regulatory limitations, and jurisdictional boundaries. An EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. The alternatives analysis must also include a comparative evaluation of the No Project Alternative per Section 15126.6(e) of the *CEQA Guidelines*. Through comparison of the alternatives, the advantages and disadvantages of each alternative compared with the proposed project can be weighed and analyzed.

This chapter of the EIR is organized into three sections. Section 5.1 includes a discussion of alternatives considered but rejected. Section 5.2 provides a detailed description of the alternatives considered and discusses the environmental effects of each of the alternatives. Section 5.3 identifies the environmentally superior alternative.

5.1 ALTERNATIVES CONSIDERED BUT REJECTED

Section 15126.6(c) of the *CEQA Guidelines* requires that an EIR identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency's determination. Among factors that may be used to eliminate alternatives from detailed consideration in the EIR are (1) failure to meet most of the basic project objectives, (2) infeasibility, and (3) inability to avoid significant environmental impacts.

The following presents a brief description of the alternatives that were identified but eliminated from further analysis and consideration.

5.1.1 ALTERNATE MARINE STADIUM OUTLET STRUCTURE LOCATION

Public comments during the scoping meeting suggested relocating the outlet structure to a location further south in Marine Stadium. This alternative would have extended the alignment of the storm drain an additional 2,000 feet south along Paoli Way and relocated the outlet structure away from the residential area to an area with lesser amounts of eelgrass. A public bathroom and a utility shack are located along Paoli Way, approximately 300 feet south of the location of the outlet structure under the proposed project. This alternative would require construction and installation of an additional 2,000 feet of storm drain within the vicinity of the bathroom and utility shack. This would interfere with the structural integrity of the storm drain, and major shoring of the bathroom building and possible relocation would be required. In addition, an 8-foot sewer line and an 8-foot high pressure gas line would require relocation under this alternative.

The *CEQA Guidelines* require that alternatives to the proposed project be considered which would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." This alternative would lessen the impact to biological resources by removing less eelgrass; however, impacts associated with the relocation of the utility lines and the potential relocation of the bathroom building would be greater. In addition, this alternative would result in greater impacts to potentially historic resources at Marine Stadium, since additional landscape features and above-ground structures associated with the Marine Stadium would be demolished or altered. This would detract from the integrity of structural elements that contribute to its potential eligibility to the CRHR or the NRHP. Although this alternative would reduce the project's direct impacts to biological resources, new cultural resource impacts would be created. In addition, the cost of construction and installation of 2,000 additional feet of storm drain would be approximately $2.5 million, while the potential cost of the utility and bathroom building relocation would be approximately $500,000. Therefore, this alternative was not considered a feasible alternative and was eliminated from further consideration in this EIR.

5.1.2 ALTERNATE STORM DRAIN ALIGNMENT AND OUTFALL LOCATIONS

Several alternate alignments along 8th and 11th Streets were assessed in order to maximize development potential at the Ximeno Avenue/7th Street intersection. This alternative would relocate a portion of the storm drain from the abandoned PE right-of-way to city streets. The length of the storm drain located within city streets would be substantially increased. While this alternative would slightly lessen impacts to cultural resources, the relocation of sections of storm drain into public streets and residential areas away from the abandoned right-of-way would increase impacts associated with aesthetics, light, and glare, traffic and transportation, air quality, and noise. In addition, impacts from the proposed project to cultural resources would be less than significant after mitigation. Accordingly, this alternative does not substantially lessen any significant effects of the project and was eliminated from further consideration in this EIR.

An alternative to convey stormwater directly to the Pacific Ocean, completely bypassing Colorado Lagoon and Marine Stadium, was also considered. This alternative would have added approximately 6,000 linear feet to the storm drain. Placing the outfall structure at the Pacific Ocean would increase impacts to aesthetics, light, and glare, biological resources, hydrology and water quality, and recreation when compared to the proposed project. The increase in the length of the storm drain would substantially increase impacts to traffic and transportation, air quality, and noise during construction of this alternative. In addition to the increase in environmental effects, this alternative was eliminated from further consideration to do infeasible costs associated with the additional right-of-way, utility relocation, and construction requirements.

5.1.3 Alternative Flood Control Facilities

Two alternatives were considered which would construct an above-ground detention basin at Jefferson Middle School or a below-ground detention basin at Woodrow Wilson High School. The above-ground detention basin at Jefferson Middle School would be approximately 11 acres in size. Although this alternative would reduce impacts to biological resources, impacts to aesthetics, light, and glare would be greater with an above-ground detention basin. The below-ground detention basin at Woodrow Wilson High School would be 450 feet by 300 feet by 16 feet. This alternative was eliminated from further evaluation in this EIR due to insufficient area available to construct a gravity flow system with an outlet to the storm drain. In addition, the cost of this alternative would be significantly higher than the cost associated with the proposed project, not including right-of-way costs. Due to the excessively high construction and operating costs, combined with the environmental impacts to the schools, this alternative was deemed infeasible and was eliminated from further consideration in this EIR.

5.2 ALTERNATIVES CARRIED FORWARD FOR DETAILED ANALYSIS

In addition to the proposed project, one other alternative was carried forward for detailed analysis because it would feasibly attain most of the basic objectives for the proposed project and would avoid or substantially lessen significant environmental effects. In addition, the "No Project" alternative was evaluated, as required under CEQA. Based on the environmental analysis conducted for the proposed project, significant unavoidable impacts have been identified regarding air quality and noise. Significant impacts requiring mitigation were identified for Biological Resources, Cultural Resources, Hazards and Hazardous Materials, and Transportation and Circulation.

5.2.1 Overview of Alternatives and Impacts

In accordance with *CEQA Guidelines* Section 15126.6(d), each alternative was evaluated in sufficient detail to determine whether the overall environmental impacts would be less, similar, or greater than the corresponding impacts of the proposed project. **Table 5-1** provides a comparison of Alternatives 1 and 2 to the proposed project.

5.2.2 No Project Alternative (Alternative 1)

According to the *CEQA Guidelines* (Section 15126.6(e)(3)(B)), the No Project Alternative is defined as the "circumstance under which the project does not proceed." The impacts of the No Project Alternative shall be analyzed "by projecting what would reasonably be expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services." The purpose of describing and analyzing the No Project Alternative is "to allow decision makers to compare the impacts of approving the proposed project with the impacts of not

TABLE 5-1 COMPARISON OF IMPACTS FOR THE PROPOSED PROJECT AND THE ALTERNATIVES

Impact Area	Proposed Project	Alternative 1: No Project	Alternative 2: Colorado Lagoon Outlet Structure
Land Use	IV	IV (Similar)	IV (Similar)
Aesthetics, Light, and Glare	III	IV (Less)	III (Greater)
Biological Resources	II	IV (Less)	II (Greater)
Cultural Resources	II	IV (Less)	II (Similar)
Transportation and Circulation	II	IV (Less)	II (Similar)
Air Quality: Construction Operation	I IV	IV (Less) IV (Similar)	I (Similar) IV (Similar)
Noise and Vibration	I	IV (Less)	I (Similar)
Geology and Soils	III	IV (Less)	III (Similar)
Hydrology and Water Quality	III	IV (Less)	III (Greater)
Hazards and Hazardous Materials	II	IV (Less)	II (Greater)
Recreation: Construction Operation	III IV	IV (Less) IV (Similar)	III (Similar) IV (Similar)

Notes:

I: Significant Unavoidable Impact
II: Significant Impact Unless Mitigated
III: Less Than Significant Impact
IV: No Impact

Less: Impact is lower in magnitude than impacts of the proposed project
Similar: Impact is similar in magnitude to impacts of the proposed project
Greater: Impact is greater in magnitude than impacts of the proposed project
Mixed: Some impacts are less than, similar to, and/or greater in magnitude than impacts of the proposed project

approving the proposed project." Under the No Project Alternative, the proposed new drainage system would not be constructed. The environmental characteristics would generally be the same as those described in the environmental setting sections of Chapter 3.0.

Impacts associated with the proposed project would be avoided because no construction would occur under the No Project Alternative. Because the proposed excavations would not occur, no impacts related to aesthetics, biological resources, cultural resources, geology and soils, water quality, and transportation/traffic would occur. Additionally, no construction-related air quality and noise impacts associated with the construction of the storm drain system would occur.

However, the No Project Alternative would not benefit from the positive features of the proposed project in that it would not convey the 50-year flood; would not address flood-related damage to properties in the low-lying portions of the sub-watershed; would not convey non-storm low flows to the Los Angeles County Sanitation Districts sewer treatment plant; and would not be a feasible alternative or provide mitigation to address watershed flooding issues.

The No Project Alternative would not provide an adequate storm drain system for the project area and would not improve water quality by continuing to direct untreated low flow and storm flows into Colorado Lagoon. The No Project Alternative would also not address the issue of housing located within the existing 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map but would instead result in a continued risk of loss, injury or death involving flooding, to people and structures located within the 50-year floodplain.

5.2.3 COLORADO LAGOON OUTLET STRUCTURE ALTERNATIVE (ALTERNATIVE 2)

The proposed alignment for Alternative 2 is shown on **Figure 5-1**. As with the proposed project, the storm drain would be sized to accommodate the 50-year frequency storm event.

The proposed storm drain conduit would connect to the existing drainage system at various locations. North of the intersection of East 4th and Park Streets, Alternative 2 would follow an identical alignment to that of the proposed project. South of East 4th and Park Streets, however, the main line would convey heavy storm flows into Colorado Lagoon, not Marine Stadium. Approximately 50 percent of the storm runoff would bypass Colorado Lagoon in a smaller storm drain and flow southeast along East Appian Way to East Colorado Street, where the alignment would veer east for approximately 810 feet. Approximately 140 feet west of the tidal culvert inlet at Colorado Lagoon, the alignment would veer southeast through Marina Vista Park, to an outlet structure approximately 125 feet southwest of the existing tidal culvert inlet at Marine Stadium.

Alternative 2 would require the construction of two outlet structures: one into Colorado Lagoon, and another into Marine Stadium. The outlet structure at Marine Stadium would be located west of the tidal culvert as shown on **Figure 5-2**. The outlet structure in Colorado Lagoon would replace the existing

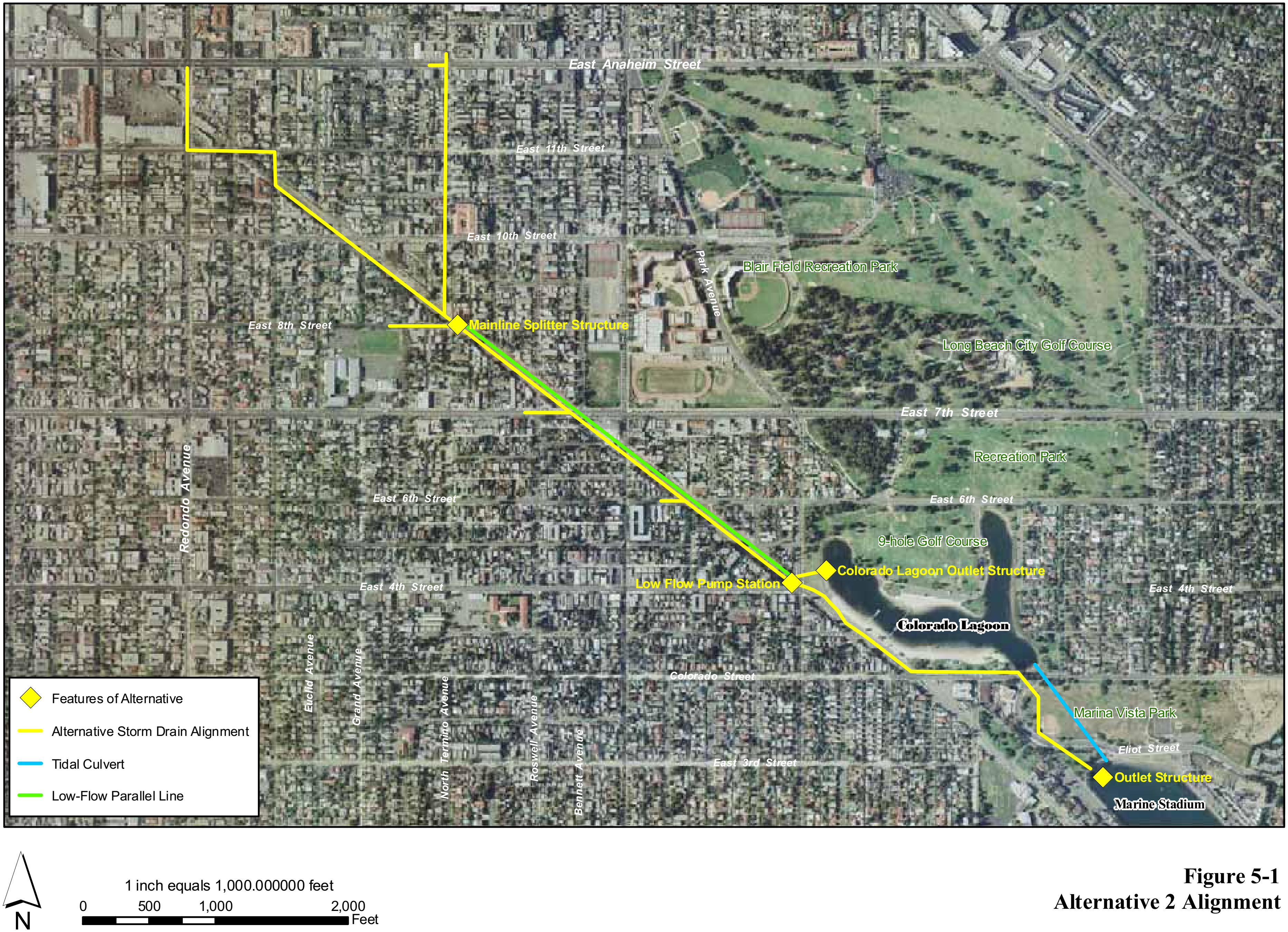


Figure 5-1
Alternative 2 Alignment

Termino Avenue Drain outlet structure on the west side of the lagoon, which is shown on Figures 3.2-9 and 3.2-11. The location of the outlet structure at Colorado Lagoon is shown in Figure 5-3. As with the proposed project, a woven geotextile fabric would extend into Marine Stadium and Colorado Lagoon from the terminus of each outlet to minimize erosion. Architectural treatments for the proposed outlet structure at Marine Stadium would be compatible with the color and texture of the surrounding rip rap-lined bank. The structure at Marine Stadium would also include architectural treatments to blend with the surrounding environment (i.e., earth tones and contoured surfaces). Temporary cofferdams would be constructed at both outlet structure locations.

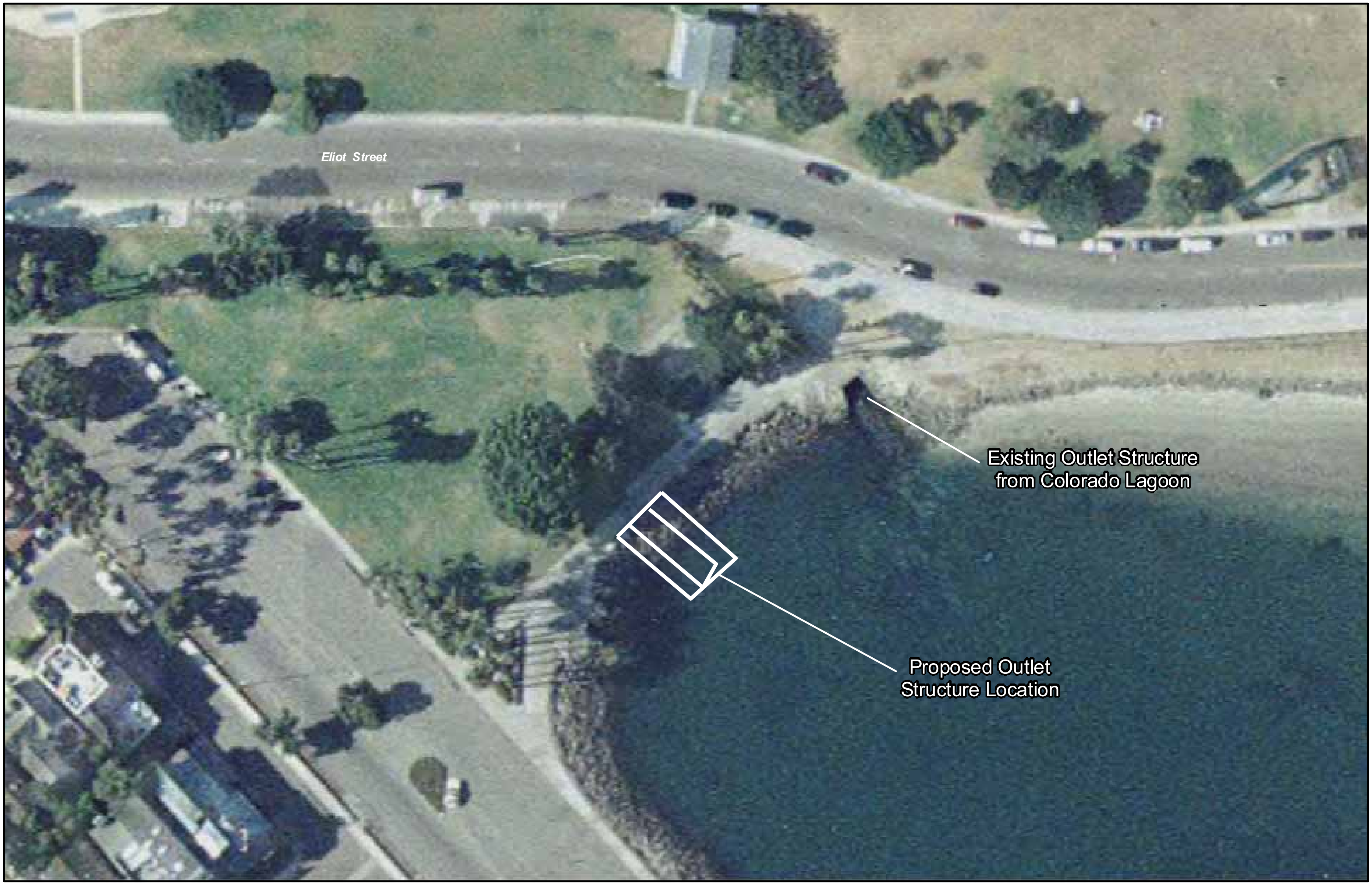
As with the proposed project, this alternative would include a diversion system that would divert the non-storm flows, primarily a result of irrigation, from the storm drain and direct them into an existing County sanitary sewer line. Catch basin screens would also be installed at all catch basins. Low flows would be diverted via the low-flow bypass pump into the Los Angeles County Sanitation Districts treatment system. Alternative 2 would require approximately 18 to 24 months to construct. This alternative may require fewer utility relocations than would the proposed project, since the storm drain to Marine Stadium would be smaller.

As with the proposed project, construction of the mainline would require removal of a one-story detached commercial structure on the southwest corner of Xemino Avenue and 7th Street. The building occupies approximately 1,500 square feet. Similarly, the Long Beach Greenbelt would be revegetated with native species.

The construction process and requirements for this alternative would be similar to the proposed project. Construction of the proposed new drainage system would occur over a period of approximately 18 to 24 months. No construction other than emergency work would take place on Saturdays, Sundays, or national holidays. Construction activities would not occur before 7:00 AM or after 7:00 PM on weekdays. The equipment that would be used to build the storm drain would be similar to the list provided in Table 2-2. Construction staging for the alignment would take place mostly within the PE right-of-way, but, in some areas, staging would occur on local streets. Construction crews would implement standard BMPs during construction and adhere to all applicable construction safety guidelines.

LAND USE AND PLANNING

Land use impacts would be essentially the same as those described for the proposed project. This alternative would not conflict with any surrounding land uses, established communities, or general plans. As with the proposed project, mitigation measures provided in Chapter 3.6, Air Quality, and Chapter 3.7, Noise, would reduce impacts to residential areas from construction; however, short-term impacts would remain significant and unavoidable.



Source: Aerial base from City of Long Beach. Eelgrass survey by Coastal Resources Management, May 2005

N

0 50 100 Feet

Figure 5-2
Alternative 2 Marine Stadium Outlet Structure

Figure 5-3
Alternative 2 Colorado Lagoon Outlet Structure Location

AESTHETICS, LIGHT AND GLARE

Aesthetic and visual impacts associated with this alternative would be similar to those associated with the proposed project; however, impacts would be greater at Colorado Lagoon, since a new outlet structure would be constructed at this location. The new outlet structure would be larger than the existing structure and would be visible from several public vantage points at Colorado Lagoon and from the adjacent golf course. No significant aesthetic impacts would be anticipated, due to the County design requirements for the outlet structure discussed above and the lack of designated scenic resources in the area.

Alternative 2 would not result in alterations to the scenic quality of any buildings or other scenic resources and would not affect designated scenic views. As the majority of the storm drain would be below-grade, it would not create substantial shade and shadow effects, introduce new sources of nighttime light, or reflect natural sunlight, resulting in glare. As with the proposed project, this alternative would have temporary, limited effects on the visual character of the site during construction and the appurtenant structures would have a less than significant impact on the surrounding visual quality. Accordingly, no mitigation is required and similar to the proposed project; impacts would be less than significant.

BIOLOGICAL RESOURCES

Alternative 2 would result in discharge of storm runoff to both Colorado Lagoon and Marine Stadium. A new, smaller outlet structure would be constructed at Marine Stadium, further north than for the proposed project, and construction of the cofferdam would reduce the impact area from 0.13 acre to 0.02 acre. This alternative would direct the majority of storm flows to Colorado Lagoon, whereas the proposed project would direct all flows to Marine Stadium.

Although the area of disturbance in Marine Stadium would be smaller, this alternative would still result in direct and indirect impacts to eelgrass requiring mitigation. As with the proposed project, implementation of mitigation measure BIO-B through BIO-J would reduce impacts to eelgrass at Marine Stadium to a less than significant level. Given the close proximity to the outlet structure identified for the proposed project, similar construction water quality effects would be anticipated for this alternative and the same mitigation measures would be required. However, the magnitude of these impacts would be reduced, since the outlet structure would be smaller and construction activities would disturb a smaller footprint.

The temporary cofferdam at Colorado Lagoon would create new impacts to biological resources that would not occur under the proposed project. Impacts to marine benthic organisms and fish associated with construction of the cofferdam in Marine Stadium would be similar in Colorado Lagoon. In addition, construction in Colorado Lagoon would impact shoreline pickleweed habitat, which would be removed during construction. Impacts to pickleweed would require additional mitigation measures to reduce adverse impacts to a less than significant level.

In addition, the cofferdam would be located at the western arm of Colorado Lagoon, which is heavily contaminated based on sediment sampling results (City of Long Beach 2004b). The dredging required for construction of the cofferdam would release contaminated materials into the water column, which would result in adverse impacts to marine benthic organisms and fish in Colorado Lagoon.

As discussed under Hydrology and Water Quality below, there would be greater reductions in salinity levels in Colorado Lagoon during storm events, and the time required for return to normal salinity levels would be greater than under the proposed project. Implementation of construction BMPs and mitigation measures as required for the proposed project would be expected to reduce biological resource impacts to a less than significant level.

As with the proposed project, DPW would be required to obtain permits from the ACOE, CWA Section 404 and RWQCB, CWA Section 401 for this alternative. In addition, this alternative would be required to comply with the regulations of the CCC, as outlined in the LCP.

CULTURAL RESOURCES

Similar to the proposed project, this alternative would not significantly affect the cultural significance of the existing buildings or landscape on the site. Mitigation measures would still be required to reduce impacts to buried archaeological resources to a less than significant level.

TRANSPORTATION/CIRCULATION

Impacts to Transportation and Circulation would be similar for this alternative as for the proposed project. Neither alternative would result in any permanent changes in existing roadway design or any uses which would be incompatible with area traffic. Upon completion of project construction, traffic conditions would return to current conditions and there would be no traffic impacts during the operational phase of the proposed project. Mitigation measures provided in Chapter 3.5, Transportation and Circulation, would reduce impacts from this alternative to traffic load, design feature hazards, and emergency access to a less than significant level. Accordingly, as with the proposed project, impacts would be less than significant.

AIR QUALITY

The amount of grading and type of construction activities would be similar to the proposed project; therefore, air pollutant emissions during construction under this alternative would be approximately the same as those estimated for the proposed project. Daily construction and operation activities would be similar under this alternative as for the proposed project, and impacts to air quality would be less than significant, with the exception of NO_x levels during construction, which would remain significant and unavoidable.

Noise

Similar to the proposed project, this alternative would increase noise levels in the project vicinity to unacceptable levels during project construction. Since there are residential uses immediately adjacent to the project site, these uses may experience construction noise levels exceeding City of Long Beach noise level limits, particularly during pavement breaking, grading, and excavation activities. Although this impact would cease after the completion of construction activities, this would be considered a short-term significant unavoidable impact to these uses. As with the proposed project, no noise impacts would occur during operation of this alternative.

Geology and Soils

As with the proposed project, Alternative 2 is not located within an Alquist-Priolo Earthquake Fault Zone or a landslide hazard area and would not involve the installation of septic tanks or construction of habitable structures. Similar to the proposed project, this alternative would be required to adhere to all applicable construction standards with regard to erosion control and applicable seismic design codes and building requirements for use of proper backfill and compaction techniques to reduce impacts associated with loss of topsoil and liquefaction, respectively, to a less than significant level.

This alternative would have similar geotechnical and geological impacts as identified for the proposed project because the construction footprint and the proposed construction activities would be similar to those for the proposed project. As with the proposed project, impacts to geology and soils would be less than significant and no mitigation would be required.

Hydrology and Water Quality

Alternative 2 would increase stormwater flow volume and velocity at the Colorado Lagoon and Marine Stadium outfall structures. This alternative would also include energy dissipater blocks and woven geotextile fabric at the outfall structures to reduce storm water flow velocity and prevent erosion. As such, impacts from erosion from drainage alteration would be less than significant for this alternative.

Construction-related water quality and hydrology impacts would be similar to the proposed project; however, additional impacts would occur at Colorado Lagoon, where a new outlet structure would be created for this alternative. Colorado Lagoon is a 303(d) listed water body with impairments to the beneficial uses due to contaminated sediment (lead, organochlorine pesticides, polychlorinated biphenyls, and metals) in the western arm of the lagoon near the proposed outfall location. Dredging and installation of the temporary cofferdam would suspend sediment in the water column, leading to an increase in turbidity and possible migration of contaminated sediments. However, these localized impacts would occur in an already-contaminated area and would not be significant if Mitigation Measures BIO-F through BIO-J are implemented during construction.

During construction, adherence to the BMPs established in the SWPPP would reduce sediment-laden runoff, prevent the migration of contaminants from construction areas to Colorado Lagoon and Marine Stadium, and ensure that stormwater discharges would not violate applicable water quality standards. As such, construction-related impacts to water quality from stormwater runoff would be reduced to a less than significant level for this alternative

As with the proposed project, Alternative 2 would increase pollutant loadings in Marine Stadium and decrease loadings in Colorado Lagoon as this alternative would divert approximately 50 percent of flood flows to Marine Stadium. Similar to the proposed project, there would be a 50 percent reduction of pollutants due to tidal dilution in Marine Stadium within one day following a storm flow, and overall system water quality would improve. In addition, the catch basin screens and diversion of low flows to the sanitary system would improve water quality by diverting dry flows, and pollutant loading due to re-suspension during high velocity storm flows would be reduced with the implementation of the energy dissipater and geotextile fabric. Impacts to water quality during project operation would be less than significant under Alternative 2, as with the proposed project.

This alternative would decrease flood elevations only slightly within Colorado Lagoon when compared to existing conditions. Alternative 2 would only divert approximately 93 acre-feet of water from Colorado Lagoon, reducing the maximum 50-year flood elevation in the lagoon to 6.4 feet NGVD from 6.9 feet NGVD. Because the lowest point surrounding the lagoon is at an elevation of 5.5 feet NGVD, flooding would still occur under Alternative 2. Flooding would be reduced under this alternative compared to existing conditions; however, impacts would be greater than the proposed project.

As with the proposed project, Alternative 2 would not place housing or structures that would impede flow in the 100-year flood zone, interfere with groundwater recharge, or create runoff which would exceed the capacity of storm drains. Overall, impacts to hydrology and water quality would be less than significant under Alternative 2 as it would represent an improvement over the existing condition. Impacts would, however, would be greater for this alternative than for the proposed project.

HAZARDS AND HAZARDOUS MATERIALS

As with the proposed project, Alternative 2 would not involve the routine use, transport, or disposal of hazardous materials and would not emit or handle hazardous substances within ¼ mile of a school. Impacts related to the handling of hazardous materials would be less than significant for Alternative 2. This alternative would also potentially encounter contaminated soils or groundwater during construction. Previous investigations have detected high levels of hydrocarbons beneath the alternative alignment. As with the proposed project, mitigation measures HAZ-A and HAZ-B would reduce impacts associated with contaminated soil and groundwater during construction to a less than significant level.

Similar to the proposed project, Alternative 2 would have no impact on emergency response plans or emergency evacuation plans for local, state, or federal agencies, as access to all roads would be maintained during construction and operation, and any emergency procedures would be implemented within local, state, and federal guidelines during construction and operation of the proposed project. In addition, the site is not listed on a hazardous materials site list and is not adjacent to any wildlands or public or private airstrips. As such, no impacts would occur from onsite hazardous materials, wildland fires, or interference with air traffic, respectively, as a result of Alternative 2.

Unlike the proposed project, which would discharge storm water flows into Marine Stadium, Alternative 2 would also discharge storm flows into Colorado Lagoon. Sediment sampling in the vicinity of the proposed outlet structure in Colorado Lagoon has indicated significantly higher concentrations of lead, organochlorine pesticides, polychlorinated biphenyls, and metals (City of Long Beach 2004). Energy dissipater blocks and geotextile fabrics would be installed at the outlet structure and impacts from operational-related hazardous material release from scour and re-suspension would be reduced to a less than significant level; however, workers would be exposed to contaminated soils and groundwater during dredging and dewatering activities associated with installation of the coffer dam. Mitigation measures HAZ-ALT-A and HAZ-ALT-B would reduce impacts associated with contaminated soil and groundwater to a less than significant level for this alternative.

HAZ-ALT-A Soil excavated from within Colorado Lagoon shall be segregated from other stockpiles of excavated soils. The potentially contaminated stockpiles shall be sampled in a random and representative manner by the contractor or qualified environmental subcontractor. To establish waste classification, samples shall be taken to a State-certified environmental laboratory and analyzed for heavy metals, pesticides, and polychlorinated biphenyls. If the soils exceed the applicable screening criteria established by the Regional Water Quality Control Board (RWQCB) or are classified as hazardous (according to the Resource Conservation and Recovery Act [RCRA] and California Code of Regulations [CCR] Title 22), soils shall be hauled to a Class I landfill or other appropriate soil treatment and recycling facility. The soil shall be handled in accordance with all applicable standards and disposal would be undertaken in accordance with California Integrated Waste Management Board (CIWMB) CCR Titles 14 and 27 under the oversight of a regulatory agency, such as Unified Program Agency (CUPA).

If the soil is non-hazardous but still exceeds levels that can be returned to the excavation, a less costly non-hazardous transporter and soil recycling facility shall be used if no hazardous constituents are present above their respective action levels.

HAZ-ALT-B All dewatering activities would be monitored under RWQCB's Monitoring and Reporting Program. Water collected during dewatering activities shall be temporarily stored in large Baker-type tanks, sampled by the contractor or the qualified environmental subcontractor, and analyzed by a State-certified environmental laboratory selected by the contractor. If the water quality falls within guidelines established by the RWQCB, water shall be discharged to the storm drain system under National Pollution

Discharge Elimination System (NPDES) permit. Should water quality contaminant levels exceed RWQCB guidelines, dewatering effluent shall be removed from the site by a licensed commercial transportation, storage, and disposal (TSD) contractor to an approved offsite disposal facility.

RECREATION

Impacts to recreation under Alternative 2 would be similar to those under the proposed project. Construction of the storm drain would occur adjacent to Will Rogers Mini Park and Marine Stadium; however, no construction activities would occur within the parks and all amenities would be available to park users during project construction and operation. In addition, no operational impacts to recreation would occur under Alternative 2.

5.3 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The "No Project" alternative would be the environmentally superior alternative. However, in accordance with Section 15126.6(e)(2) of the *CEQA Guidelines*, if the environmentally superior alternative is the No Project Alternative, then the EIR shall also identify an environmentally superior alternative among the other alternatives. Impacts associated with Alternative 2 would be similar to the proposed project for land use, cultural resources, transportation and circulation, air quality, noise and vibration, geology and soils, recreation. However, some impacts would be slightly greater than the proposed project, including aesthetics, biological resources, hydrology and water quality, and hazards and hazardous materials (see Table 5.3-1). These additional impacts are associated with the construction of the Colorado Lagoon outlet structure, which would not occur under the proposed project. Although none of the significance determinations would change for this alternative, the impacts would be increased for the categories described. Alternative 2 would reduce impacts to eelgrass and marine resources in Marine Stadium and would reduce aesthetic impacts at Marine Stadium by reducing the size of the outfall structure. Due to the additional impacts associated with construction at Colorado Lagoon, Alternative 2 would not be environmentally superior to the proposed project.

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7 AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED

US ARMY CORPS OF ENGINEERS

Josh Burnam, Environmental Scientist

NATIONAL MARINE FISHERIES ADMINISTRATION

Bryant Chesney, Fishery Biologist

CALIFORNIA COASTAL COMMISSION

Chuck Posner, California Coastal Commission

CITY OF LONG BEACH

Tom Leary, Stormwater Management Division Officer
Jeannine Critie, Office of Frank Colona, Councilmember, Third District

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8 ACRONYMS AND ABBREVIATIONS

µg/m3	micrograms per cubic meter
AAM	annual arithmetic mean
ACMs	Asbestos-containing materials
ACOE	US Army Corps of Engineers
ADA	Americans with Disabilities Act
ADT	average daily traffic
AGM	annual geometric mean
AICUZ	Air Installation Compatible Use Zone
AQMD	Air Quality Management Plans
ASTM	American Society for Testing and Materials
B.P.	years before present
BAT	best available technology
BMPs	Best Management Practices
CA FID	California Facility Inventory Database
CAA	Clean Air Act
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CARB	California Air Resources Board
CCA	California Coastal Act
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDS	Continuous Deflective Separation
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
cfs	cubic feet per second
CGS	California Geological Survey
CIWMB	California Integrated Waste Management Board
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agencies
CUPA	Unified Program Agency
CWA	Federal Clean Water Act
dB	decibel
dBA	A-weighted decibels
DDT	Dichloro Diphenyl Trichloroethane
DIP	ductile iron pipe
DOT	US Department of Transportation

DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EFH	Essential Fish Habitat
EGR	exhaust gas recirculation
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ERHA	Electric Railway Historical Association of Southern California
FEMA	Federal Emergency Management Agency
FHWA	*Federal Highways Administration*
FINDS	Facility Index System
FMP	Fisheries Management Plan
GAC	granular activated carbon
GPS	Global Position System
HAZNET	Hazardous waste manifest information
HCP	Habitat Conservation Plan
HIST UST	Historical Underground Storage Tank
I-405	Interstate 405
I-605	Interstate 605
IS	Initial Study
KOPs	Key Observation Points
LA Co HMS	Los Angeles County industrial waste and UST sites
LBP	lead-based paints
LBT	Long Beach Transit
LBUSD	Long Beach Unified School District
LCP	Local Coastal Program
Ldn	Day-Night Average Level
Leq	Equivalent Noise Level
Lmax	maximum noise level
LMBC	Long Beach Municipal Code
LOS	Levels-of-service
LQG	Large Quantity Generator
LST	Localized Significance Thresholds
LUST	Leaking Underground Storage Tank (LUST)
MBTA	Migratory Bird Treaty Act
MEP	Maximum Extent Practicable
mm/yr	millimeters per year
MMRP	mitigation monitoring and reporting program
MND	Mitigated Negative Declaration
MS4	municipal separate storm sewer system
MTA	Metropolitan Transportation Authority
MTBE	methyl tertiary-butyl ether
NAAQS	data not available
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plans
NFRAP	No Further Remedial Action Planned
NGVD	National Geodetic Vertical Datum

NMFS	National Marine Fisheries Service
NMFS	National Marine Fisheries Service
NO2	Nitrogen Dioxide
NOP	Notice of Preparation
Nox	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
O3	Ozone
OSHA	Federal Occupational Safety and Health Administration
OVA	organic vapor analyzer
PAH	polycyclic aromatic hydrocarbons
Pb	Lead
PCBs	polychlorinated biphenyls
PCH	Pacific Coast Highway
PE	Pacific Electric
PGA	Peak ground acceleration
PM10	Respirable Particulate Matter
PM2	Fine Particulate Matter
pp,	parts per million
ppt	parts per thousand
ppv	peak particle velocity
RCP	reinforced concrete pipe
RCRA	Resource Conservation and Recovery Act
RCRA	Resource Conservation and Recovery Act
RWQCB	Regional Water Quality Board
SCAQMD	South Coast Air Quality Management District
SECAs	Special Excavation Criteria Areas
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO2	Sulfur Dioxide
SQG	Small Quantity Generator
SR 1	State Route 1
SR 55	State Route 55
SR 91	State Route 91
SRA	source/receptor area
SVOCs	semi-volatile organic compounds
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control
TAC	Toxic Air Contaminant
TMDL	Total Maximum Daily Load
TPH	Total Petroleum Hydrocarbons
TPHD	Total Petroleum Hydrocarbons as Diesel
TPHG	Total Petroleum Hydrocarbons as gasoline
TRIS	Toxic Chemical Release Inventory System
TSD	transportation, storage, and disposal
TTLC	Total Threshold Limit Concentration
UBC	Uniform Building Code

USEPA	U.S. Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
V/C	Volume to Capacity Ratio
VOC	volatile organic compounds (VOC
VOCs	Volatile Organic Compounds
WMA	Watershed Management Area
WQO	Water Quality Objectives

9 EIR PREPARERS

The following firms, individuals, and agency staff contributed to the preparation of this EIR:

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Draft EIR
Technical Appendices

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February 2007

TECHNICAL APPENDICES

APPENDIX A

NOTICE OF PREPARATION, INITIAL STUDY, AND

RESPONSES TO NOTICE OF PREPARATION

NOTICE OF PREPARATION AND
NOTICE OF PUBLIC SCOPING MEETINGS

To: State Clearinghouse, Responsible and Trustee Agencies, and Interested Individuals

Subject: Notice of Preparation of an Environmental Impact Report and **Two Scoping Meetings** for the **Termino Avenue Drain Project**

Project Title: **Termino Avenue Drain Project**

Lead Agency: **County of Los Angeles, Department of Public Works**
P.O. Box 1460
Alhambra, CA 91802-1460
Contact: Mr. James Yang, Project Manager

The County of Los Angeles Department of Public Works, as the lead agency, will be preparing an Environmental Impact Report for the proposed project described below. Public Works is soliciting input from members of the public, organizations, and government agencies on the scope and content of the information to be included and analyzed in the Environmental Impact Report. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project.

The project description, location, and potential environmental effects of the proposed project (to the extent known) are described in this Notice of Preparation. **Two public scoping meetings will be held in May 2004 to solicit input from interested parties on the scope and content of the Environmental Impact Report in conformance with Section 21083.9 of the Public Resources Code.**

The first meeting will be held on Wednesday, May 19, 2004, from 7 p.m. to 8:30 p.m.
Location: Lowell Elementary School
Auditorium
5201 East Broadway
Long Beach, CA 90803

The second meeting will be held on Saturday, May 22, 2004, from 10 a.m. to 11:30 a.m.
Location: Jefferson Leadership Academies
Auditorium
750 Euclid Avenue
Long Beach, CA 90804

The same information will be presented at both meetings.

Scoping comments on the Environmental Impact Report should be sent to Public Works ***no later than 30 days*** after the posting of this notice, which will occur on May 10, 2004. Accordingly, letters should be postmarked by June 9, 2004. Please send your written response to Mr. James Yang, Project Manager, Public Work, at the address shown above. Responses should include the name of a contact person.

Project Location/ Description

The proposed project is located in the City of Long Beach (see attached Project Vicinity map, Figure 1). The project area is included on the USGS 7.5 Minute Topographic Long Beach quadrangle. The project involves the construction of a new underground storm drain system, which is intended to provide increased flood protection in the project area. The majority of the storm drain project construction would be within portions of the abandoned Pacific Electric Railroad right of way, which is currently owned by the City of Long Beach. At the southern end of the Pacific Electric right of way, the mainline would continue along Appian Way to Marine Stadium Park parking lot and terminate at a newly constructed outlet at Marine Stadium. The proposed storm drain system also includes the construction of an in-line trash screening device to remove trash from the low flows prior to discharging into Marine Stadium. In addition, a sewer diversion system will also be constructed to take the "nonstorm" flow to a nearby sewage treatment plant for treatment. A map of the proposed alignment is attached (Figure 2).

Potential Environmental Effects

Based on the resource characteristics of the project area, the following potentially significant environmental effects will be addressed in the Environmental Impact Report:

- Impacts to eel grass, aquatic organisms, and other biological resources at Marine Stadium due to a change in water quality parameters during high flows.
- Impacts to biological resources at Colorado Lagoon from the change in freshwater input.
- Water quality impacts at Marine Stadium due to the increased concentrations of stormwater and pollutant loads during high flows.
- Aesthetic impacts of the proposed outlet structure at Marine Stadium for the nearby residential community and Marine Stadium recreational users.
- Temporary air quality impacts on nearby residential areas from earthwork and operation of heavy equipment during construction.
- Temporary increase of noise levels in the residential areas from the use of heavy equipment during construction in the Pacific Electric right of way.
- Potential impacts to cultural resources along the Pacific Electric right of way during construction.
- Temporary impacts to recreational users at Marine Stadium during construction of the outlet structure.
- Temporary recreation impacts during construction due to closed or limited access to recreation areas along the proposed alignment.

If you have any questions regarding the project, please contact Mr. James Yang, our Project Manager, at (626) 458-5152, JYANG@ladpw.org, or TDD (626) 282-7829 between the hours of 7:15 a.m. and 5 p.m., Monday through Thursday. **In case of an emergency, please contact our help desk at (800) 675-4357**.

Si necesita asistencia con la traducción a Español, por favor comuniquese con el representante del departamento de Obras Públicas del Condado de Los Angeles, Sr. Jose Pou (626) 458-3962.

Upon 72 hours' notice, Public Works can provide program information and publications in alternate formats or make other accommodations for people with disabilities. In addition, program documents are available at our main office in Alhambra (900 S. Fremont Ave.), which is accessible to individuals with disabilities. To request accommodations ONLY or for more Americans with Disabilities Act information, please contact our departmental Americans with Disabilities Act Coordinator at (626) 458-4081 or TDD (626) 282-7829, Monday through Thursday, from 7 a.m. to 5:30 p.m.

Attachments: Project Vicinity Map (Figure 1); Project Alignment Map (Figure 2)

Figure 1
Regional Map

Source: Thomas Bros. 2003

NORTH
NO SCALE

Figure 2
Vicinity Map

County of Los Angeles
Department of Public Works

Termino Avenue Drain Project
CEQA Initial Study

1. **Project title:** Termino Avenue Drain Project

2. **Lead agency:** Los Angeles County Department of Public Works
   900 South Fremont Avenue
   Alhambra, CA 91803

3. **Contact person:** Ed Dingman
   County of Los Angeles Department of Public Works
   Programs Development Division
   P.O. Box 1460
   Alhambra, CA 91802-1460
   Phone: (626) 458-3933

4. **Project location:** The proposed project is located in the City of Long Beach (see Figure 1). The mainline of the proposed project would run along Termino Avenue between 8th Street and 11th Street, along a former Pacific Electric (PE) Railway right-of-way, across several streets, along Appian Way, terminating at Marine Stadium. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. The project area is included on the USGS 7.5 Minute Topographic Long Beach quadrangle.

5. **General plan designation:** The General Plan land use designation for the project area is: Open Space/Parks - Marine Stadium and Colorado Lagoon; Right-of-Way - PE Railroad; Townhomes, Moderate Density Residential, and Mixed Style Homes - Portions of Termino Avenue; and Mixed Office/Residential Strip - Connection at Anaheim Street.

6. **Zoning:** The project area is zoned as: Planned Development (PD1) - Marine Stadium; Park (P) - Colorado Lagoon; Two-family Residential, standard lot (R-2-N) - adjacent to abandoned PE Railroad right-of-way; Community Commercial pedestrian-Oriented (CCP) and Community R-4-N Commercial (CCN) at Anaheim, Street; and Low-Density Multi-family Residential, small lot (R-3-S) and Low-density multi-family residential (R-3-4) along Termino Avenue.

7. **Description of project**: The proposed project entails the construction of a new underground storm drain system, which is intended to provide increased flood protection within the project area. The majority of the storm drain project construction would be within portions of the abandoned PE Railroad right-of-way, which is currently owned by the City of Long Beach. At the southern end of the PE right-of-way, the mainline would continue along Appian Way to Marine Stadium Park parking lot and outlet to Marine Stadium. The alignment would include crossings at Anaheim Street, 11th Street, 10th Street, 8th Street,

Termino Avenue, Roswell Avenue, Bennett Avenue, 7th Street, Ximeno Avenue, 6th Street, and Park Avenue. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. The drainage system would convey flows directly to Marine Stadium and an in-line trash screening device and a low-flow treatment pumping station would be installed for water quality improvement. The in-line trash screening system would remove suspended solids and floatables from the urban runoff and light storm flows. The low-flow treatment would also improve water quality by diverting non-rainy season low flows to the County's sewage treatment system. A map of the proposed alignment is shown on Figure 2.

Several alternatives have been considered for this project, including alternative storm drain alignments, outfall locations, and flood control facilities. Pursuant to CEQA, a reasonable range of potentially feasible alternatives will be evaluated in the EIR, including an alternative that would discharge heavy storm flows into Colorado Lagoon.

8. **Surrounding land uses and setting:** Immediate surrounding land uses adjacent to the storm drain alignment are primarily residential, which includes high density, medium density, and single family homes. Commercial businesses are located at a few of the street intersections where the storm drain crosses. The land use at the storm drain outlet to Marine Stadium is recreation. Marine Stadium is a rectangular inlet within Alamitos Bay.

9. **Other public agencies whose approval is required:** (e.g., permits, financing approval, or participation agreement.)

   Prior to implementation of the proposed project, a series of approvals, permits, and notifications must be obtained from several federal, state, and local area regulatory agencies. The required permits and approvals for the proposed project include, but are not limited to those described in Table 1 below. In addition, the County will initiate informal consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service under Section 7 of the Endangered Species Act.

TABLE 1. PROJECT ENTITLEMENTS AND REGULATORY PERMITS

Agency	Permit/Action
Federal	
U.S. Army Corps of Engineers	Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) Permit for the discharge of dredged or fill material into Marine Stadium.
State	
California Coastal Commission (City of Long Beach Department of Planning and Zoning)	Coastal Development Permit for development within a coastal zone.

Agency	Permit/Action
California Regional Water Quality Control Board, Los Angeles Region	Section 401 Certification and National Pollutant Discharge Elimination System (NPDES) permit for discharge of stormwater into Marine Stadium; Stormwater Pollution Prevention Plan (SWPPP) for construction activity; waste discharge permit for construction dewatering if groundwater is encountered during construction.
City	
City of Long Beach, Department of Public Works	Various approvals (e.g., utility relocation, grading, drainage, and traffic control).

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

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

Signature ______________________________ **Date** ____________________

Printed Name Ed Dingman

EVALUATION OF ENVIRONMENTAL IMPACTS:

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

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

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

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

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

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

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

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

9. The analysis of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and

   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS - Would the project:				
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?		X		
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

The proposed storm drain project is located in the City of Long Beach. The majority of the storm drain facilities would be constructed underground and would not be visible upon completion of the project. After the project is constructed, manhole covers would be visible in the roadway and along the PE right-of-way (ROW). Some vegetation would be removed during construction; however, no large trees would be removed. In the southern portion of the alignment, some visual changes would occur including the construction of a new storm drain outlet structure. The new outlet structure would be located on the western side of Marine Stadium along the existing riprap bank. The visual impacts associated with the outlet structure will be evaluated in the EIR and mitigation measures will be identified, if necessary, to reduce these impacts to a less than significant level. Renderings of the proposed outlet structure will also be provided in the EIR.

There are no designated state scenic highways near the project site; the nearest designated state scenic highway is the Angeles Crest Highway (Highway 2), located approximately 30 miles north of the project site in the San Gabriel Mountains. Two eligible state scenic highways, Pacific Coast Highway (PCH) from Venice Boulevard (near Santa Monica) to Highway 101 (near Oxnard) and Topanga Canyon Boulevard (State Route 27) in the Santa Monica Mountains, are located approximately 24 and 30 miles to the northwest, respectively. Therefore, impacts related to scenic highways would not occur.

There are no designated scenic vistas open to the public within the project area that would be affected, nor would the project result in any buildings or other obstructions to scenic resources. In general, the project site currently includes arterial streets and local residential streets and built-up residential and commercial developments that would not be affected by the buried storm drain facilities. However, the construction of the proposed project has the potential to alter the existing visual quality near Marine Stadium. For example, a new outlet structure would be constructed at Marine Stadium which would be visible from some surrounding areas. The new outlet structure would be constructed along the western bank of Marine

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Stadium and the design of the structure would be visually harmonious with existing riprap slopes. Further analysis of these potential impacts will be undertaken in the EIR.

The proposed project would not introduce any new sources of light and would not use construction materials that would reflect natural sunlight or otherwise result in glare. No further evaluation of impacts related to light and glare is required.

II. AGRICULTURAL RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural and farmland. Would the project:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

Geographic Information System (GIS) coverages of the affected project area were overlain with farmland mapping information provided by the California Department of Conservation (2000). There is no designated farmland within the project area; therefore, no impacts to Prime, Unique, or Statewide Important Farmland would occur. Similarly, no conflicts with existing zoning for agricultural uses would occur. No further evaluation of this issue is necessary.

III. AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emission which exceed quantitative thresholds for ozone precursors)?		X		
d. Expose sensitive receptors to substantial pollutant concentrations?		X		
e. Create objectionable odors affecting a substantial number of people?			X	

The project is located in the South Coast Air Basin, which is designated nonattainment for state particulate matter (PM_{10}), ozone (O_3), and carbon monoxide (CO) standards, and federal PM_{10}, O_3, and CO standards. The closest air monitoring station to the site is located in north Long Beach, approximately 5 miles northwest of the project site. CO, nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) standards have not been exceeded at this monitoring station in the last five years. PM_{10} levels periodically exceed the state standards, but have not exceeded the federal standard in the past five years. The state and federal ozone standards have not been exceeded in the past two years and have not exceeded the standards for more than three days per year in the past five years.

Air quality impacts from construction and operation of the Termino Avenue Drain will be evaluated using the thresholds of significance established by the South Coast Air Quality Management District (SCAQMD) as presented in the *CEQA Air Quality Handbook* (SCAQMD 1993). Short-term emissions would result from the use of construction equipment and trips generated by construction workers and haul/material delivery trucks. These emissions, which may temporarily increase pollutant concentrations in the area, may result in the violation of air quality standards or the exceedance of air quality thresholds of significance, which may contribute to the existing or projected air quality violation. The air quality impacts associated with project construction will be calculated and analyzed in the EIR, including impacts associated with diesel construction vehicles. Operation of the proposed project would not result in long-term emissions that would significantly impact air quality in the project area.

Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to locate. These land uses may

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

include residences, schools playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The majority of land uses bordering the alignment are comprised of single-family residences, which are not typically defined as sensitive receptors. Some sensitive receptors are located near the proposed alignment, including at least four schools within ¼ mile of the construction area. Construction and operation of the proposed project may expose these sensitive receptors to substantial pollutant concentrations. Air quality impacts will be evaluated in the EIR, and mitigation measures would be required.

IV. BIOLOGICAL RESOURCES - Would the project:

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X			
b. Have a substantial adverse impact on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, other means?		X		
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?		X		
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Biological surveys will be conducted for the entire project area and the project's impacts to biological resources will be evaluated in the EIR. To the north of Colorado Lagoon, the proposed alignment follows the PE right-of-way and several paved roads; therefore, impacts to biological resources resulting from the project would be minimal and less than significant, due to the urbanized nature of the area. The in-line trash screening device and low-flow pumping station would be constructed near Park Avenue and 4th Street; however, the proposed project would not involve any construction in or around Colorado Lagoon.

The proposed outlet structure would be located on the west side of Marine Stadium, southwest of End Beach Mitigation site. Construction of the new outlet structure at Marine Stadium may require mitigation measures or design modifications to avoid impacts to marine biological resources. Southern tarplant and eel grass are located within the boundaries of End Beach and could be impacted by construction of the storm drain. Furthermore, California least tern and brown pelican forage at End Beach and rely on eel grass habitat. Impacts to End Beach and the sensitive species that occur within Marine Stadium would require further analysis in the EIR. Mitigation measures may be necessary to protect the biological resources during construction.

The project would improve water quality in the project area by diverting the dry season flows to the County's sewer system for treatment. A Continuous Deflective Separator (CDS) would also be used to remove suspended solids and floatables during low flow conditions; however, water quality in Marine Stadium could still be degraded by some polluted low-flow runoff. This could negatively affect some aquatic resources near the outfall. Also, adverse water quality impacts could occur at Marine Stadium resulting from the increased concentration of wet weather flows being discharged directly from the new outlet structure. The faster rate of flow delivery could result in changes to water quality parameters (e.g., salinity) that might adversely impact the aquatic organisms in Marine Stadium, especially in the vicinity of the eelgrass mitigation area.

The EIR will evaluate the project's impacts on wetlands and "waters of the U.S." under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) and the California Department of Fish and Game (CDFG). The EIR will also evaluate the consistency of the project with local policies and ordinances protecting biological resources.

Although some benefits to water quality would occur as a result of the project, some potentially significant impacts to biological resources may occur at Marine Stadium and Colorado Lagoon. Accordingly, impacts to biological impacts will be further evaluated in the EIR.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES - Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d. Disturb any human remains, including those interred outside of formal cemeteries?				X

No properties that are eligible or potentially eligible for inclusion on the National Register of Historic Places (36 CFR Part 800) or the California Register are located within the construction area. Marine Stadium was constructed in 1920 and was the site of the rowing competitions in the 1932 Summer Olympics held in Los Angeles. Marine Stadium is identified as a historic and cultural site of local significance on the City's General Plan (City of Long Beach 2002). The proposed project would not demolish or alter any historic structures at Marine Stadium; therefore, no impacts are anticipated. The project alignment is presently developed and there are no known or recorded paleontological resources, unique geologic features, or recorded cemeteries on or near the project site; therefore, no impacts on these resources would occur. There are no known or recorded archaeological sites in the vicinity of the project alignment. However, portions of the abandoned PE railroad alignment have not been disturbed since the track bed was removed. Since portions of the abandoned PE right-of-way contain native undisturbed soil, there is a potential that buried historic or historic archaeological deposits associated with the abandoned PE railroad may be disturbed during trenching for the storm drain. Impacts to cultural resources will be further evaluated in the EIR and mitigation measures may be required.

VI. GEOLOGY AND SOILS - Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b. Result in substantial soil erosion or the loss of topsoil?				X
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

The project is located within a seismically active region and new development will be subject to ground shaking hazards associated with earthquake events on active faults and other faults throughout the region. However, these hazards are not unique to the project. The most significant fault within the City and the project area is the Signal Hill uplift which is a portion of the Newport-Inglewood fault zone. Segments of this fault zone extend from the cities of Newport Beach to Beverly Hills. The fault zone varies in width between ¼ mile and 3 miles. The maximum probably earthquake magnitude (M) for the Newport-Inglewood fault is 6.5 M, which is capable of producing property and structural damage. Several segments of this fault zone have a history of moderate to high seismic activity, but no surface faulting has been attributed to this activity. The alignment is not located within an Alquist Priolo Earthquake Fault Zone. Seismic ground shaking from other major faults in the region is not expected to be greater than at other sites in southern California and is not considered to pose an unusual risk to the proposed storm drain. The project would not affect any habitable structures and no new buildings are proposed.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Potential impacts during a seismic event would be a rupture of the storm drain that would occur as a result of surface displacement during a seismic event. Based on adherence to current design and construction requirements in the State of California, including the use of low shear strength backfill (such as sand), the proposed project would not result in a significant adverse impact by exposing people or property to major seismic hazards beyond that which is considered normal for southern California. Implementation of the site-specific design features and adherence to all applicable seismic design codes and building requirements would reduce impacts related to seismic ground shaking to a less than significant level.

The project area along the alignment is currently developed and site topography is relatively level; the possibility of a seismically-induced landslide is remote. Additionally, the site is located near any known historical landslides. According to the California Department of Conservation's Seismic Hazard Zones Map for the Long Beach quadrangle (released March 25, 1999), the project area does not fall within any Earthquake-Induced Landslide zones. No further evaluation of this issue is required.

The project would require excavation of soils and backfilling with compacted soils along the storm drain alignment. This work would be associated with trenching for the storm drain. Since all soils used in the project would be properly compacted in accordance with DPW specifications, no significant impacts related to soil erosion or loss of topsoil would occur. The project design incorporates the use of rip rap and other erosion controls to reduce erosion and scour at the Marine Stadium outlet structure. Accordingly, no further evaluation of this issue is required.

Due to the presence of loose unconsolidated silty sands underlain by sandy silts and a shallow groundwater table (groundwater levels vary between 5 feet at Marine Stadium to 15 feet below ground surface along other sections of the alignment) potential subsidence and liquefaction risks are considered moderate to high. According to the California Department of Conservation's Seismic Hazard Zones Map for the Long Beach quadrangle (released March 25, 1999), portions of the alignment are located in an area of liquefaction potential. As a standard practice, a soils report would be prepared for this project which would provide design recommendations to minimize the potential for liquefaction impacts. Because the site is located in a liquefaction hazard zone, mitigation measures, as defined in Public Resource Code 2693(c), would be required for construction of the storm drain facilities. Implementation of the site-specific mitigation measures and adherence to all applicable seismic design codes and building requirements would reduce impacts related to liquefaction to a less than significant level. No habitable structures are proposed for the project.

The project is not underlain by expansive soils nor would the project use expansive soils as defined by Table 18-1-B of the Uniform Building Code. No further evaluation of this issue is required.

The project does not propose septic tanks or alternative waste water disposal systems; therefore no further evaluation of this of this issue is required.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		X		
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

The project would require excavation of soils in order to construct the storm drain trench. These trenching activities may intercept shallow groundwater in some areas. A Phase II Environmental Site Assessment (County of Los Angeles 2000) prepared for the project's original MND detected hydrocarbon contaminated soil in the vicinity of Colorado Street. Accordingly, potentially significant impacts associated with excavating contaminated soils and dewatering could occur during construction. Surface and groundwater quality could be degraded if soils were to come into contact with water. This may create a significant hazard to the public or the environment during site clearance and construction. In addition, there are three elementary schools and one high school within ¼ mile of the proposed alignment. Impacts associated with hazardous materials encountered during construction will be further evaluated in the EIR.

The project is not located on the list of hazardous materials sites pursuant to Government Code Section 65962.5. The project site is not located within a 2-mile radius of any public airport or private airstrip. Accordingly, the proposed project would not result in a safety hazard for people residing or working in the project area. No further evaluation of this issue is required.

The proposed project would not interfere with a current emergency response plan or an emergency evacuation plan for local, state, or federal agencies. Access to all local roads would be maintained during construction and project operation. Any emergency procedures would be implemented within local, state, and federal guidelines during construction and operation of the proposed project. No further evaluation of this issue is required.

As previously mentioned, the project site is located in a urbanized area; no areas of wildlands are located on or adjacent to the project site. Accordingly, the proposed project would not contribute to wildland fire hazards. No further evaluation of this issue is required.

VIII. HYDROLOGY AND WATER QUALITY - Would the project:

a. Violate any water quality standards or waste discharge requirements?				X
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?		X		
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				X
f. Otherwise substantially degrade water quality?	X			
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j. Inundation by seiche, tsunami, or mudflow?				X

The proposed project includes a diversion line system which would collect the nuisance dry weather flows from the low-flow drain and direct the nuisance flows into an existing County sanitary sewer line. A pump unit would be constructed to convey the stormwater due to differences in elevation between the diversion system and the sanitary sewer line. The diversion system would be located southeast of the Colorado Lagoon outfall at Eliot Street. The County Sanitation District would be responsible for treating the stormwater at existing sewage treatment plants. The City would be responsible for the operation and maintenance of the diversion system.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Implementation of the project would improve water quality during dry weather via diversion of nuisance flows into the County sewer line. None of the contaminants associated with dry weather flows (e.g., trash, oil & grease, nutrients) that currently enter the Colorado Lagoon through this storm drain would enter the lagoon. Accordingly, the project would improve the water quality within Colorado Lagoon. The reduction in storm water flows into the lagoon during storm events would reduce the amount of freshwater in the lagoon. This will be further evaluated in the EIR.

Since all storm flows would be directed to Marine Stadium, there would be beneficial impacts to water quality within Colorado Lagoon. However, there could be adverse impacts on the water quality within Marine Stadium resulting from the increased concentration of storm flows being discharged directly to Marine Stadium. The faster rate of flow delivery could result in changes to water quality parameters (e.g., salinity) that might adversely impact the aquatic organisms in Marine Stadium, especially in the vicinity of the eelgrass mitigation area located adjacent to the ocean outlet of the tidal culvert that connects Colorado Lagoon and Marine Stadium. Due to much greater volumes of seawater in Marine Stadium compared to Colorado Lagoon, and no restrictions on mixing, the low salinity effects would be diluted relatively quickly in the larger Marine Stadium waters. The water quality modeling for the EIR will quantify and evaluate the anticipated impacts at Marine Stadium resulting from the discharge of storm water flows directly into Marine Stadium.

The project is not anticipated to violate any water quality standards or waste discharge requirements; however, some adverse impacts to water quality (e.g., increased turbidity and contaminant resuspension) may occur during project construction. The proposed construction activities, individually or cumulatively, could have a significant impact on the water quality if construction material is allowed to enter the drainage systems that flow to Marine Stadium or Colorado Lagoon. Construction activities, if uncontrolled, could also result in the discharge of disturbed sediment/soils into the ocean, and/or release petrochemicals from construction equipment. To address potential water quality impacts during construction, a National Pollution Discharge Elimination System (NPDES) permit and a Stormwater Pollution Prevention Plan (SWPPP) would be required for the project. In addition, project-specific mitigation measures may also be required to address construction-related water quality impacts. Water quality impacts from project construction will be further evaluated in the EIR.

Groundwater levels would not be affected by the project. The project site is not used as a groundwater recharge basin. Construction of the storm drain facilities would not alter regional groundwater flow characteristics and storm water flows would not contact groundwater during normal operation. The project would not result in the use of any water that would result in a net deficit in aquifer volume or lowering of the groundwater table. As such, the project would not affect groundwater quality, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.

The project would result in a new outlet structure and increased discharge into the Pacific Ocean via Marine Stadium, which be examined in the EIR. Although the project would not alter the course of any streams or rivers, existing drainage patterns would be changed as a result of the project. The project would improve storm water conveyance by replacing inadequate storm drain facilities in the City of Long Beach;

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

however, further evaluation of the potentially significant drainage impacts will be required in the EIR.

No housing or other habitable structures would be constructed. The project would provide increased flood protection for the watershed by increasing the capacity of the storm drain system to accommodate the 50-year frequency storm conditions. All wet weather storm flows would drain into Marine Stadium thereby reducing potential flood risks in the project area.

IX. LAND USE AND PLANNING - Would the project:

	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?				X
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?				X

The project site is located in an area that is already developed with a mix of uses. Construction would be generally confined within the existing City streets and PE right-of-way. Since the storm drain would be underground, the project would not introduce a physical barrier that would divide an established community. No further evaluation of this issue is required.

The proposed project area is under the jurisdiction of the City of Long Beach General Plan Land Use Element, as well as the approved Local Coastal Program (LCP) and associated Resource Management Plan (RMP). The project area crosses a mix of land uses and zoning designations, and involves one body of water. Project consistency with the adopted General Plan Land Use Element and LCP will be evaluated in the EIR. The project is expected to comply with all applicable plans, policies, and regulations.

Due to the fact that the project is within a highly developed urban area there are no applicable habitat conservation or natural community conservation plans in effect within the proposed alignment and therefore no conflicts with such plans would occur. No further evaluation of this issue is required.

X. MINERAL RESOURCES - Would the project:

	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

There are no known mineral deposits of economic importance underlying the project site. Construction and operation of the new drainage system would not result in the loss of availability of any known mineral resource. No further evaluation of this issue is required.

<u>XI. NOISE</u> - Would the project result in:

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Construction of the proposed drainage system would result in temporary noise impacts to the surrounding residents and park visitors. Construction would not involve groundborne vibration or noise levels. Operation of the drainage system would result in infrequent noise disturbance during maintenance activities or in the event of an emergency; however, this minor noise increase would not be typical of project operation. Noise impacts generated by the construction of the proposed project and their effects on

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

adjacent sensitive receptors will be evaluated in the EIR.

There are no public airports or private airstrips in the project vicinity. No further evaluation of this issue is required.

XII. POPULATION AND HOUSING - Would the project:

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and business) or indirectly (for example, through extension of roads or other infrastructure)?			X	
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

The proposed project does not involve any residential uses, nor would it displace any homes that would result in the need for replacement housing. The project would provide flood control features that would further protect the increased population levels that are expected to occur in the region. It would not provide infrastructure that would directly or indirectly result in population growth. No new jobs would be created upon completion of the project. Operation of the drainage system would therefore not induce employment growth or household formation. Construction personnel would be drawn from the existing labor force. No further evaluation of this issue is required.

XIII. PUBLIC SERVICES

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?			X	

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Police protection?			X	
Schools?				X
Parks?			X	
Other public facilities?				X

The City's Fire Department provides fire protection services within the project area. The nearest fire station is located immediately adjacent to the storm drain on Eliot Street at Colorado Street. Construction would occur directly in the immediate vicinity of the fire station; however, the construction activities and staging areas would not impact operations at this fire station. Impacts to fire protection would be less than significant; no further evaluation of this issue is required.

The proposed improvements would not induce development resulting in increased response time or the need for additional staffing and equipment. Impacts to police protection would be less than significant and no further evaluation of this issue is required.

The closest schools to the project are Lowell Elementary School and Rogers Middle School, both located adjacent to Marine Stadium. Wilson High School and Jefferson Middle School are also located in the vicinity of the alignment near 7th street. The proposed project would replace an existing storm drain and would not generate additional students within the City's Unified School District. No direct impacts to schools would occur other than potential traffic impacts during construction. No further evaluation of this issue is required.

Colorado Lagoon Park, Recreation Park, Marina Vista Park, and Marine Stadium Park are in the immediate vicinity of the proposed project and operated and maintained by the City's Parks, Recreation and Marine Department. Temporary pedestrian access restrictions within the construction area would occur at Colorado Lagoon Park and Marina Vista Park. Construction activities would not impact the golf course. Upon completion of construction, all areas physically disturbed would be returned to their existing condition. As a result, no permanent impacts to parklands are expected to occur and no further evaluation of this issue is required.

No impacts to other public services would occur. No further evaluation of this issue is required.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

XIV. RECREATION

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

The four parks in the project area, as mentioned above, are Colorado Lagoon Park, Recreation Park, Marina Vista Park, and Marine Stadium Park. Recreational activities at these parks consist of playground facilities, golf, walking, jogging, swimming, and other water activities at Colorado Lagoon and Marine Stadium. Temporary impacts to recreation may occur during construction; however, no long-term significant impacts would occur. Impacts to recreational facilities and recreational users in the project vicinity will be further evaluated in the EIR.

The project is not expected to induce population growth or create demand for new housing in the project area; therefore, no increase in localized or area-wide demands for recreational facilities would occur. In addition, the proposed project does not include recreational facilities and would not require expansion or construction of new recreational facilities. No further evaluation of this issue is required.

XV. TRANSPORTATION/TRAFFIC - Would the project:

a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?		X		
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e. Result in inadequate emergency access?				X
f. Result in inadequate parking capacity?				X
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

Operation of the proposed drainage facilities would not increase traffic or alter traffic circulation patterns in the project area. The proposed project is not a transportation project, nor would it alter roads adjacent to the site from the existing conditions. No impacts to emergency access, parking capacity, or alternative transportation programs would occur and no further evaluation of this issue is required.

Construction of the proposed project would result in temporary impacts to traffic. Heavy equipment, construction vehicles, and construction employee vehicles would use portions of the PE right-of-way, Colorado Street, Appian Way, Termino Avenue, Ximeno Avenue, 7th Street, 10th Street, and 11th Street during the 18 to 24 month construction period. Further analysis and mitigation measures would be required in the EIR to reduce impacts resulting from project construction to a less than significant level.

<u>XVI. UTILITIES AND SERVICE SYSTEMS</u> - Would the project:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			X	

The proposed project would not result in point source discharge of wastewater. However, the project would convey stormwater directly into Marine Stadium; therefore, a NPDES permit would be required for project operation. All required water and wastewater connections are currently constructed and in operation. The project would not require the need for expanded facilities.

The purpose of the project is to replace and expand the existing storm drain in order to adequately convey off-site stormwater flows for the 50-year frequency storm event. The project would not require additional drainage systems, nor would it result in the need for expanded off-site drainage facilities. The project has been designed to reduce flooding. Therefore, no significant impacts to storm drain facilities would occur.

Operation of the proposed project would not require use of water, generate wastewater, or create solid waste. Solid waste would not be created by the proposed project; however, the CDS would collect the trash that enters the storm drain. The trash would be routinely cleaned from the CDS. Construction activities would require minimal use of water and solid waste would be generated. Construction waste would be disposed of at a local landfill. Given the small quantity of material, the project is not expected to substantially affect the capacity of existing landfills in the project area. No further evaluation of this issue is required.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a		X		

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?				
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)		X		
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Based on this Initial Study, the proposed project is not anticipated 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. Impacts to aquatic resources at Marine Stadium (including eel grass habitat) will need to be further analyzed in the EIR to determine if mitigation measures are required to reduce the impacts to a less than significant level.

The proposed project is not expected to eliminate important examples of the major periods of California history or prehistory; however, further cultural resource investigations must be conducted in order to verify this conclusion.

The cumulative impacts of the proposed project will be evaluated in the EIR. The cumulative impact analysis will be consistent with the appropriate CEQA Guidelines, including the requirements for determining reasonably foreseeable projects.

Although the proposed project is not anticipated to degrade the quality of the environment, as mentioned above, the proposed project may have significant environmental effects (e.g., air quality, noise, recreation) on human beings, either directly or indirectly. These environmental effects will be evaluated in the EIR.

PUBLIC SCOPING MEETING

WEDNESDAY, MAY 19, 2004

7:00 P.M.

LOWELL ELEMENTARY SCHOOL

AUDITORIUM

5201 EAST BROADWAY

LONG BEACH, CALIFORNIA 90803

APPEARANCES

TOM LARKIN
ERIC WILSON
DAVID CANNON
ZAHID ATASHZAY
FRANK COLONNA
ED DINGMAN
JAMES YANG
KIM HAVENS

INTRODUCTION

MR. LARKIN: Thanks, everybody, for coming this evening. This is a public scoping meeting for the Termino Drain Flood Control Improvement Project. I'm Tom Larkin with EDAW. We're a consulting firm to the County. The Department of Public Works is the sponsor for the project and agenda showing on the screen.

Briefly, we'll go through introductions. We'll give a brief description of the project and the background of the project, then talk about what some of the environmental issues may be that we want to address in the environmental section, then explain to you what the environmental review process is and how you can participate.

Then we'll open it up for public comment. So we should have plenty of time for everybody to speak and give us your concerns about the environmental issues as we get going on the project.

So, I'd like to first introduce the staff. As I said, I'm with EDAW, a consulting firm for the County. Ed Dingman is the environmental manager for the County in charge of the environmental review process. James Yang is the engineer for the County. And Sahid is also an engineer for the flood hydraulic studies for the County.

We'd also like to thank Frank Colonna, the vice mayor for Long Beach, for helping us set up the meeting.
Frank, do you want to say something?
MR. COLONNA: You guys have seen enough of me. It's a good evening for all of us. I think this has been through what, probably three presidential administrations.
MR. LARKIN: Thanks to Frank and the City staff for helping us set up this meeting, and there will be another meeting on Saturday. It will be identical to this, so you don't need to attend that. You're certainly welcome to attend. Or if any of your family and friends or neighbors were not able to attend tonight, Saturday morning will be the identical same scoping meeting to receive your comments and present to you the information about the project.
So I'd like to start with a brief discussion of the background of the project.
(PRESENTATION)
MR. LARKIN: One thing I also want to mention that the board of supervisor's hearing is one final chance for you to also present your comments and concerns about the project either for or against at the board hearing.
So we'd now like to open up the meeting to hear your comments. We have given you an opportunity to fill in written comments if you're uncomfortable speaking. We

can take written comments. You can send us letters over the next couple of weeks until the end of the scoping period. And we have about an hour and a half. I think that should be plenty of time for everybody to present their issues and concerns. You can come up and speak in the mike. We can probably move it over here where it would be more convenient. Just come up one at a time and please state your name and address and then give us your comments. If we can keep it to three or four minutes, that will probably be best.

And we can open up it now. If you want to give me a show of hands of who would like to speak so we know approximately how many. We don't have too many speakers. So we shouldn't have any trouble at all in terms of time. If you want to come up one by one over here on this aisle we can give you this microphone.

MS. VERRECCHIA: My name is Yolanda Verrecchia, and I live in the area that's flooded. And I'm sure a lot of people here know me. I want to understand, there were changes from the first proposed project to the one that you're presenting tonight; is that right?

And the changes are no water is going to be going into the Colorado Lagoon? Did I hear that correct?

MR. LARKIN: That's correct.

MS. VERRECCHIA: No water, no flow. So the outlet in the Colorado Lagoon is not going to be changed at all. It remains as is -- the outlet?

MR. LARKIN: We should clarify. There is an outlet that serves this area now that discharges to Colorado Lagoon. This new proposed project would replace that outlet so that although the outlets may remain in place, there will be no flows through that. All those flows that currently go into the lagoon will be diverted to the new system and carried to Marine Stadium.

MS. VERRECCHIA: Thank you.

MR. OUTTEN: May name is Tom Outten. I live at 5277 Appian Way. I thought that this project was defeated basically two years ago, and I'm surprised to see it come back again.

There are a lot more people that live along the surrounding Marine Stadium than that lived around the Colorado Lagoon. And I think you'll find more people using the Colorado -- the Marine Stadium, Mother's Beach and area for recreation than you do in the Colorado Lagoon. So I think you'll probably find more friends of Marine Stadium that would object to this project than it was two years ago.

And I can't understand why you don't take the obvious route and take it directly to the ocean so you don't bring all the pollution and the sediment into the

Marine Stadium, Mother's Beach, Long Beach Marina and Alamitos Bay area instead of just taking it directly to the ocean.

MR. LARKIN: Thanks. There is an alternative that has been looked at preliminarily by the County in terms of taking it more due west in this general direction. And the engineering feasibility of that because of the additional cost and length was determined not to be feasible. We will address that in the Environmental Impact Report.

Also, I just want to make sure you all know that there is a court reporter so we're going to have a transcript of the hearing tonight and all of your comments, and those will be addressed specifically as we go forward in the Environmental Impact Report.

MR. MAGREE: I'm Alan Magree. I live on 3rd Street in Long Beach. If you could clarify something, are there two proposals? There's a proposed project and the Colorado Lagoon alternative that will be looked at in the EIR?

MR. LARKIN: The Marine Stadium on the top is the proposed project, and so that's what is proposed by the County. We will look at the other alternative and give it a thorough analysis, as well. So there will be a comparison of the two, but one is proposed right now.

MR. MAGREE: Couple questions for hydrology.

Will the hydrology do a study on the sediments to determine whether or not the scouring could suspend lead, DET, etc., etc., that might be in either the alternative plan in Colorado Lagoon or in Marine Stadium?

MR. LARKIN: Yes. Dave talked about that, that there would be a study of erosion and sedimentation effects from the alternative.

MR. MAGREE: But will there be specific studies that determine how much lead or how much DET are in those sediments?

MR. LARKIN: Maybe I better let him answer that.

Did you hear that, Dave?

MR. CANNON: No.

MR. LARKIN: He wanted to know the detail of the study in terms of lead and other contaminants in the sediments.

MR. MAGREE: In both Marine Stadium and Colorado Lagoon.

MR. CANNON: The contaminants that have been identified in the lagoon previously, that is one of the things that we have to assess as part of the water quality and the sediment quality portion of the project.

MR. MAGREE: And then as part of the alternative plan, will you look at mitigation for the possible

flooding in Colorado Lagoon enlarging the tidal culvert to
Marine Stadium?

MR. CANNON: I'm not sure. Enlarging the tidal
culvert to Marine Stadium?

MR. MAGREE: Right. So that if there is -- for
instance, if the alternative plan goes through and there
is a significant amount of water that goes in
Colorado Lagoon that could cause flooding, would enlarging
the tidal culvert to Marine Stadium be part of that plan?

MR. LARKIN: We have added more data since the
original study on the capacity of that tidal culvert.
That was one of the issues raised earlier. That will be
input into Dave's model.

In terms of whether that is an alternative
previously proposed or evaluated, we need to evaluate it.
We're here to listen to your comments, and we really don't
have the answers for everything at this point.

MR. MAGREE: Right. But my question is will it be
addressed in the EIR?

MR. LARKIN: We'll work with the County on that as an
alternative.

MR. MAGREE: Will there be any upstream measures that
are being looked at to cut down on BOCs or bacteria or
trash that will flow into or through the Termino Avenue
Drain Project other than the low-flow bypass?

MR. LARKIN: That's something that the County has looked at in terms of catch basins at the inlet, and that's something we will talk to them about, as well, in terms of evaluating whether that's necessary or feasible for this project.

MR. MAGREE: Thank you.

MR. THOMPSON: My name is Ben Thompson. I live at 635 St. Joseph. And really I just have one question, and it concerns your in-line trash screening device that you show on some of these various diagrams.

And I guess what I'm wondering is, is this really a device or is this a facility? Is it bigger than a bread box? Is it going to have to be emptied every five minutes? Are we going to have sanitation trucks coming and maintaining it and pumping it out? In other words, what is the localized environmental impact of having that trash being removed at that particular spot?

MR. LARKIN: I'm not sure I can answer that, but that's something we would evaluate. We would get the impacts of maintenance of the facility as well as construction of the facility and what effect that would have on the neighborhood.

MR. THOMPSON: So that's something that's yet to come?

MR. LARKIN: Yes.

MR. ATASHZAY: The location of the proposed device to remove the trash would be in the PE right-of-way which is away from street and residential. So this way if the maintenance crew, they are getting into it, it will be less disturbance or noise to the neighborhood.

But nevertheless, we are going to look into it to see how often it needs to be cleaned. So those are the factors that are going to be analyzed later on.

MR. KINCAID: Andrew Kincaid. 5275 Paoli Way. And my question had to do with the culvert, the outflow. What's its footprint and what's its profile?

MR. LARKIN: We will describe that. I don't have the specs right here, but that will be clearly defined. It will be a large storm discharge.

MR. ATASHZAY: Again, this is very preliminary, but the initial size we have, it's about 11 foot by 8 foot wide double box, which is 20 feet wide by 8 foot outlet structure. It's an enforced concrete box. But nevertheless, more than half of it will be submerged.

And, again, we're going to look into it to see how are we going to locate that to have the least exposures, but that's the size of the box.

How we're going to design the aesthetic, we haven't got to that. But generally the size of the box is going to be 11 foot by 8 double box. Which "double" means two boxes next together about 20 feet wide by 8 feet high.

MR. KINCAID: So does that mean -- when you say "8 foot high," does that mean 8 foot above mean high tide or 8 foot above the sidewalk? What does that mean?

MR. ATASHZAY: That's the height of opening. But how far it's going to be, I think again the preliminary design we have is about minus five. And your high tide is around 4. -- 4 feet.

So the inverse is about 10 foot below the high tide, the bottom of it. So if you add 8 feet to it, that would be plus 3. So the top of it will be 1 to 2 feet below the high tide. The top of the box.

MR. KINCAID: Okay.

MR. THORPE: I'm Darwin Thorpe. 4532 Peckwood Avenue. I'm a member of the Board of Long Beach Organy. This study, I think you said, was only regarding flood control.

Are there any projections to do a study of the recouping any of the water, the high flood exit to put in a cistern to recoup some of that water for use in Long Beach Garden? We have a 1,000-gallon cistern at our nursery. Is there anything like that that will be studied in the EIR?

MR. LARKIN: We haven't currently proposed that, but that's something that we'll take your comment into account and see how that could be commented on. Thank you.

MS. PEKAR: Good evening. My name is Nadine Pekar. I live at 4665 East 4th Street. It's known as Bridgeport Condominiums.

And have there been any studies done on what you will do after -- let's say you do the storm drain. What are you going to do to Pacific right-of-way after you're done? Because this is my main concern. Do you have plans for it?

MR. LARKIN: There are several short-term leases. Currently people use it for various uses. And they understand that there are -- there's a right-of-way easement to allow us to put the storm drain in.

The area will be restored to the existing condition at the completion of the project. So that will be part of our study of what the impact of construction and how will it be restored to at least the quality of the existing condition.

MS. PEKAR: But the existing condition is deplorable. And I was hoping that since you will be allowed to put in this wonderful storm drain, why don't you give us a park on top of that? I mean if you're going to spend all this money, give us a park.

MR. LARKIN: We will work with the County and the City in terms of what their plans will be for restoration of that.

MS. PEKAR: Thank you.

MR. COLONNA: I'll just insert that in. That is actually our goal is to once the project is completed to make a pedestrian-friendly walkway with native trees and bus partnering the college and having a botanical walk.

We would look into grant fundings. It's just that the project's been taking such a long time that the partnership we had with the organization that helped just to sort of maintain the native plant side of it has just been basically minimal. And the Parks and Recreation Department just took that over about a year ago.

So once the project is done, there will be funds that will be used in order to make it more pedestrian friendly and basically cleaning it up. And it's actually a connection from Colorado Lagoon all the way up to about 10th Street. So it does qualify for grant funding to allow communities to basically either have a bike path in there or walking trail to get to the ocean.

So we have significant more funding available. So it's not going to be left the way it is just in disrepair. Or what we'd like to think of it now as gone to native habitat where --

MS. PEKAR: It's gone to mud.

MR. COLONNA: And it's been that way for many, many,

many years. So the objective is we've been waiting to get something resolved with the flooding, as Yolanda pointed out, upstream and then resolve that matter and come back and the City will take the project over once the County is done with it.

MS. PEKAR: Thank you.

MR. GUACCI: Gary Guacci. I live at 601 Quincy Avenue. Besides the storm system -- storm drain system collecting storm runoff in the upstream portion of the storm drain, does this also tie into other storm drains downstream to collect runoff in those areas, as well? Flooding areas down in that area?

MR. LARKIN: I don't know the answer to that. That's something we'll evaluate.

MR. COLONNA: Those are City-owned drains.

MR. GUACCI: In the 1995 flood there was about 3 feet of water over the Quincy and Prospect area, and a lot of it comes down actually from 4th Street down Fremont Avenue across the right-of-way down to that small storm drain.

MR. COLONNA: You're going to increase the capacity.

MR. LARKIN: Yeah. The capacity of this system will be increased, but I don't know if it --

MR. GUACCI: Ties in or intercepts. I can send you some photos.

MR. PIRAZZI: Good evening. My name is Dave Pirazzi.

I live at 445 Los Altos Avenue in Alamitos Heights which borders on the edge of Colorado Lagoon. I'm also on the board of directors for the Alamitos Heights Improvement Association.

I want to thank you for coming here and doing this tonight. I think you got a really good presentation. I'll tell you that our whole neighborhood is very interested in the progress and will be following the EIR and the things that follow on afterwards very closely.

I did have a specific question. I know there are some additional drains going into the lagoon along the side where the proposed new drain would be, and I haven't heard anything tonight about whether you're going to pick those up additionally and take that runoff that normally goes into the lagoon and put that into your new drain.

MR. LARKIN: As I understand it, the design would pick up the drainage up from the northwest, but it is not going to pick up other -- intercept other runoff into the lagoon. So those other storm drains would remain in place.

MR. PIRAZZI: Maybe a suggestion because it looks like that route is actually going to cross some of these drains that are running into the lagoon. It might be something that can be done without too much additional resources. So it might be something you might want to look at and study.

MR. LARKIN: Thank you.

MS. VERRECCHIA: My name is Yolanda Verrecchia, and I live at 1133 Ximeno Avenue. The original design up north in the north area of the neighborhood, you were going to have some catch basins that filter out the trash over there, too. About 150 or 100 catch basins were going to be filtered, also.

Is that going to remain the same?

MR. LARKIN: I don't believe a decision has been made on that. It's been looked at. That's something that will be evaluated as we go forward whether those catch basins as well as the diversion to the sewer both are needed or not. We don't have an answer to that, but we'll evaluate that.

MS. VERRECCHIA: Thank you.

MR. LARKIN: Any other questions or comments or concerns want to be raised? There is another meeting on Saturday morning. It will be at another school in the neighborhood. And so if you have other comments or if you have neighbors or family or friends that would like to come to the meeting, that would be identical to this and we'd like to encourage you to have other people attend and give us their comments.

MS. REED: Thank you. Alicia Reed, 335 St. Joseph, Long Beach. My question is I just picked up the initial study for the proposed project, and I'd like to find out how far in the CEQA, in the EIR process, would your firm be evaluating other alternatives?

MR. LARKIN: In terms of the process we're just getting started. This is the notice of preparation period. We will evaluate these two alternatives shown in detail. There were several others that were mentioned today, the catch basins, the alternative to take it to the ocean. So, we will look at those perhaps not in quite as much detail. But there will be a variety of alternatives that will be evaluated from here on through in the Environmental Impact Report.

MS. REED: So it won't be concurrently?

MR. LARKIN: Yes. It will be one document that looks at a variety of alternatives.

MS. REED: Will there be a separate initial study prepared for the other alternatives?

MR. LARKIN: No. This is the initial study for the project and the --

MS. REED: The proposed project.

MR. LARKIN: Yes. And from that we'll look at the project and alternatives from here on out.

MS. REED: Thank you for clarifying that.

SPEAKER: Harold (inaudible). 400 Monrovia Avenue, Long Beach. Seems like you're on the right track to me. I'm glad to see it.

One thing I'd like to see you keep in mind foremost is try to improve the water quality in the lagoon and Marine Stadium. There are so many children that swim in there all year long. They used to have swim races for the kids every summer. They don't have those anymore. The water quality has deteriorated over the past 20 or 30 years. It's really bad. Every time the Bay checks the pollution in the lagoon, it gets terrible grades. You're afraid to stick your toe in it. So maybe your solution is going to help, and keep the water quality in mind.

Thank you very much.

MR. LARKIN: Thank you.

MS. PIRAZZI: My name is Tina Pirazzi. I live at 445 Los Altos Avenue. And thank you very much. I can tell you've done a lot of work and both alternatives look interesting.

I would just like to include on public record another proposal, and perhaps it's one that you're already considering. But that would be to consider opening up the culvert between Marine Stadium and the Colorado Lagoon. And granted you would sacrifice a little bit of park space, but what it would do for tidal flushing in exchange I think would solve a lot of the problems. And we'd just like that to be put on public record.

MR. LARKIN: So you're saying an open channel as opposed to a larger pipe.

MS. PIRAZZI: Right. Just completely open it up.

MR. LARKIN: Yes.

MS. WOOD: My name is Barbara Wood. I live at 4th Street and Monrovia. I'm wondering, do I understand correctly that all the existing drains emptying into the lagoon will remain as is which includes the runoff from the golf course creating an awful lot of scum?

MR. LARKIN: All but one. We're replacing the major one on the west side of Colorado Lagoon. That's what this project is about. The other storm drains would remain in place.

MS. WOOD: Now, my east and wests aren't that great.

Does that include controlling the runoff from the golf course?

MR. LARKIN: No, it does not.

MS. WOOD: So we still get those nitrogens in the water.

MR. LARKIN: That's correct. This project would not address runoff from the golf course.

MS. WOOD: Thank you.

MR. LARKIN: Any other comments? Questions?

SPEAKER: Can I ask a question from right here? Is there a reason why this project does not include in its scope demolition of the existing outlet to the Termino Avenue drain?

MR. LARKIN: I would say primarily cost. There is a separate study for restoration of Colorado Lagoon by the Coastal Conservancy, and that project is just getting started. So in terms of evaluating restoration of the lagoon, removal of that outlet may be considered at that time. But it is not proposed currently for removal by the County. It would just simply be abandoned in its place.

MS. DAVIS: How long once they go through everything is the time limit proposed for completing all of this and the construction that goes on and the digging that goes on? Barbara Davis, 328 Granada.

MR. LARKIN: I don't have that. That is something we would specifically address. The construction impacts in the city streets in the right-of-way and down to the lagoon, that would be a significant concern. So we will analyze what equipment is necessary, the duration of the construction and how long it would be in each segment of the alignment. But that will be specifically addressed. Air quality, noise, traffic disruption, those sorts of effects as we go through with the construction.

MS. DAVIS: Thank you.

MR. LARKIN: Okay. Thank you very much for coming and, again, there's a meeting Saturday morning, and we've got the details on that.

(At 8:00 P.M., the proceeding was concluded.)

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STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, LISA L. GROOM, C.S.R. No. 11765, do hereby certify:

That said proceeding was taken before me at the time and place therein set forth and was taken down by me in shorthand and thereafter was transcribed into typewriting under my direction and supervision, and I hereby certify the foregoing transcript is a full, true and correct transcript of my shorthand notes so taken.

I further certify that I am neither counsel for nor related to any party to said action nor in any way interested in the outcome thereof.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 28th day of May, 2004.

____
LISA L. GROOM, CSR #11765
Registered Professional Reporter

PUBLIC SCOPING MEETING

SATURDAY, MAY 22, 2004

10:00 A.M.

JEFFERSON LEADERSHIP ACADEMIES

AUDITORIUM

750 EUCLID AVENUE

LONG BEACH, CALIFORNIA 90804

APPEARANCES

ERIC WILSON
DAVID CANNON
ED DINGMAN
JAMES YANG
ZAHID ATASHZAY
KIM HAVENS

PAGE

INTRODUCTION

MR. WILSON: We're going to go ahead and get started. I opted not to use the microphone this morning. If everyone can hear me back there, is it okay if I don't use the microphone?

The reason we're here this morning is for the public scoping meeting. This is the second of two meetings. We had a meeting on Wednesday night down on the southern portion of the alignment. This is a meeting being held pursuant to CEQA, the California Environmental Quality Act, to solicit public comments on the Environmental Impact Report that's being prepared. This is the very beginning of the EIR process, and I'll talk a little bit about that more later this morning. But, initially, we're just starting the process tonight for the environmental analysis of the Termino Avenue storm drain project.

My name is Eric Wilson. I'm with EDAW. We're a consultant that's been hired by Los Angeles County Department of Public Works to prepare the environmental document for the project.

And by way of some introductions, the County folks here this morning are Ed Dingman and James Yang. And I'd like to thank Jeanine of Frank Colonna's office for helping set up this meeting. And we've got a few EDAW staff here, as well.

With that I'd like to talk about how we're going to form this morning's discussion. Ed from the County will talk a little bit about the project and some of the history of the project. Some of you are probably familiar with the evolution of this project, and we'll talk a little bit about that in a few moments.

I'm going to then continue with David Cannon of Everest International. He'll talk a little bit about the key environmental issues. There are a number of issues associated with the project that we're going to evaluate and then finish off talking about the environmental review process and how you guys are going to be involved in that process as we move forward. There are going to be a number of opportunities to comment.

And then we're going to open the microphone up to you to talk a little bit about your concerns. There aren't too many people here today. We're going to try to keep it to three minute per comment. I'll talk a little about that in a moment.

So, without further ado I'd like to pass it to Ed to talk about the project.

(PRESENTATION)

MR. WILSON: Can I have a show of hands who might want to comment today?

SPEAKER: Can we ask questions?

MR. WILSON: There will be a question-and-answer component, but it's essentially more clarifications on the project itself versus answering what the impact will be because we don't necessarily know that yet.

MS. VERRECCHIA: I went to the Wednesday meeting. And my name is Yolanda Verrecchia, and I live at 1133 Ximeno. Maybe you would like to tell the people the time frame you're talking about.

MR. WILSON: Sure. Are you asking a time frame for the construction of the project or this process?

MS. VERRECCHIA: This process and what happens after that process.

MR. WILSON: So the time frame for the CEQA process is sometime probably in the late summer. We'll put the document forward for the 45-day public review period. So we'll spend the next several months preparing the EIR. And if some of you aren't familiar with the EIR, it's a fairly thick document and it's a very comprehensive analysis. But a lot of that document is the technical support, and we boil that down to user-friendly language for the EIR. So, it's going to take a couple months to prepare that document. Probably be ready for your review by late summer.

And then the 45-day public review period will start. So that will take another couple months, and then we'll move forward with the final EIR process which would probably conclude sometime early in 2005.

So with that I guess we'll ask for public comments.

MR. BALDWIN: Comments would be questions?

MR. WILSON: Can you also -- I'm sorry. Everyone that's going to comment, please state your name and your address or where you live for the record because these will be included in the public record for the project.

MR. BALDWIN: My name is Richard Baldwin. I live at 5279 East Paoli in Long Beach. I have several questions.

First of all, what is the timetable for the project -- for the total project?

No. 2, you're going to have to have a pumping station, as I understand. Where will that be located? What will the noise level from that be?

I want to know, also, you're going to have to have trash rates or some sort of a trash removal system. Who will maintain that and what will be the effect of that? I think I already asked where the pumping station would be located. We need to do that. Thank you.

MR. WILSON: Ed, do you want to address some of those or should we -- to answer your question about the location of the pumping station it will be in the PE right-of-way.

James, you want to --

MR. YANG: The location of the low-flow diversion to the sewer or PE right-of-way or the parking area adjacent to Colorado Lagoon, we haven't figured out exactly where it is. It's going to be away from the residents, and it's going to be buried underground. And the noise is no louder than a pump for your swimming pool.

And regarding the trash screens and separation system, it's going to be maintained by the City of Long Beach. It's either going to be located on the PE right-of-way or the parking area adjacent to Colorado Lagoon. So it's going to be away from homes.

And the maintenance, it's not going to stop traffic either because it's going to be outside the street right-of-way.

And regarding the construction, the project can take -- construction downstream and all the way upstream can take anywhere from 12 months to 24 months. We don't have an exact number yet because we don't know what alternative we're going with and what features we have to include as part of our project at this point. So rough time frame is 12 months to 24.

MR. WILSON: I'd just like to add one more thing.

Your question about the noise impacts, James mentioned it's a small pump similar to a swimming pool, but we'll actually do noise calculations in the EIR. We'll do ambient noise measurements near the sight of the pumping station. And then based on modeling will be predicted noise levels and see if that would break any thresholds of any local noise ordinances. We will analyze that.

Next.

MR. KLOTZ: This pumping station what -- my name is Ed Klotz, 517 Roycroft. The pumping station, is that going to be run by natural gas? Is it going to be diesel or is it going to be electrical?

MR. YANG: It's going to be electrical.

MR. KLOTZ: What if there's an electrical power failure and is there a way to divert the water -- all the water to a sanitation district?

MR. YANG: Are you talking about all the storm water? Because the low-flow diversion system is only for the summer, dry weather runoff. When you water your lawn the excess runoff, that's what we use it for.

So we will have a backup generator at the site, will be probably solar-powered. But if those fail, then occasionally it may -- the summer, dry weather storm may bypass the local diversions.

MR. KLOTZ: During the early part of a storm, how are you going to divert the first runoff the first hour? Does that go directly into Marine Stadium?

MR. YANG: That goes through the trap screening device. That's a gravity system.

MR. KLOTZ: So, any kind of hydrocarbon or anything else, there's no station to divert water in case of a spill?

MR. YANG: If there's a spill, no.

MR. KLOTZ: Another question, this is my first meeting I've attended. Over the past 35 years or 40 years, where has the storm drains and why haven't the storm drains -- I mean have they always flowed into the Colorado Lagoon or did they go to some other direction besides the Colorado Lagoon?

MR. YANG: Actually, there's a city storm drain service in the area right now. They all ultimately end in the Colorado Lagoon, being a natural roll spot. And, ultimately, everything ends in Marine Stadium because Colorado Lagoon breaks off Marine Stadium. That's where the flow goes.

MR. KLOTZ: Now, you mentioned the flooding in '95. I was here and my house was flooded up to a foot deep of water in the garage area and the alley area. All the water at that time, I believe, was going directly into the Colorado Lagoon. And the tide gates that separate the

Colorado Lagoon from the Marine Stadium were closed at that time. And I was wondering why they weren't open.

And that was one of the reasons there was flooding. The sewers backed up and flooded this whole area.

MR. YANG: I don't have a record of that, and I work for the County. The culvert is operated by the City of Long Beach. You might want to check with them.

MR. KLOTZ: I notice this because I came over immediately from where I live in Huntington Beach to the property and --

MR. YANG: We have no record of the culvert being closed, because we don't operate that through the tide gate.

MR. KLOTZ: That's what I observed.

MR. YANG: In the future we will take it directly to Marine Stadium, so that won't be an issue.

MR. KLOTZ: Well, we're going to have a higher volume of flow with this new storm drain system than what we would have normally had in the past.

MR. YANG: Yes. It's going to be a much larger system.

MR. KLOTZ: And it's going to go directly into the Marine Stadium.

MR. YANG: That's one of the alternatives.

MR. KLOTZ: And if it's extremely high tide at that particular time --

MR. YANG: It still will work.

MR. KLOTZ: It will work?

MR. YANG: Yes. Designed to work that way.

MR. KLOTZ: That's all I have for now.

MS. VERRECCHIA: Because this is my neighborhood association, I just want to make everything clear.

The difference between the project proposed now and the project proposed a year and a half ago is that all the water will now be diverted to Marine Stadium. No water will be going to the Colorado Lagoon. Low flow, high flow, medium flow. Everything will be going to Marine Stadium. But low flow, I think that water is going to go to the sanitation district, okay.

Is that right, James?

MR. YANG: Yeah. The summer dry weather flows will go to the sanitation district. The low flows from the storm runoff will go through the trash screening system and then goes to Marine Stadium directly.

With regarding to the high flows, we won't have any in-line trash screening system which we can treat that. That's relatively clean water. After the first hour or so of the storm, the water is very clean.

MR. KLOTZ: That's why I wondered, if you divert it for the first hour and then let it go, if it goes in the first flow, you're going to have all kinds trash going through.

MR. YANG: It's a in-line system. So everything during the first -- I don't want to use the first hour because I'm not sure exactly how much flow we can divert. But we will divert the majority of the low flow through an in-line screening system, trash separating system. And then we'll come back to the main line, and it goes to the Colorado Lagoon. Once the capacity of that system is reached, then everything just goes to Marine Stadium directly.

MS. VERRECCHIA: Another thing I'd ask the County is that last year or a year and a half ago, they suggested putting in these flood basins, a system where it would catch all the trash at the local sewage drains or water drains. And I asked if that's still being in mind or designed, and they're going to keep that in mind.

MR. YANG: We're going to look at it because our understanding is originally we quoted a catch basin. We would provide some kind a screening device for the catch basins.

But since we don't have a trash separation system downstream, we're going to look at it as a duel system is needed or not. We may get rid of the screens and catch basins. But we're going to look at it in more detail through the EIR process.

MR. HAMBLETON: Larry Hambleton. 5273 Appian Way. What type of bacteria monitoring system do you have?

MR. YANG: In the storm drain system?

MR. HAMBLETON: Yeah. Are you going to shut it down when bacteria increases to the maximum threshold allowed?

MR. YANG: Right now we don't have anything in mind. We'll look at it to see if it's necessary through the EIR process.

MR. DINGMAN: There are no real thresholds right now for bacteria delivering into the storm drain. Are you asking are we going to have a monitoring system in the storm drain?

MS. VERRECCHIA: Can I ask, it's important that you go up to the mike and ask these questions for the record so we don't have any back slashes on this project. It's important that we get everything documented.

MR. YANG: We don't have anything proposed right now. We will look at it to see if there's any legal responsibility upon us to put in such a system as you suggest.

MS. GARVEY: Kim Garvey. 389 Haines Avenue. I have one comment and two questions.

First comment is as part of the process I'd like to see addressed the aesthetics of the screening device, the pump station, the outlet structure in the Marine Stadium. So that wasn't talked about. You talked about the noise. But I think that's also an important factor because it is a very natural environment and you need to create something that fits into the natural environment.

Second two questions are -- one is -- and they're both related -- if you are driven to go back to the alternative where you would have to divert directly into the Colorado Lagoon, would this process start over again? Would you have another one of these scoping meetings and would it start over again? And when would be the opportunity to comment should that alternative come?

And then the second related question is what do you foresee would drive you to have to go back to a diversion into the Colorado Lagoon? What would be the negative impacts that you would see coming out of the Marine Stadium diversion that would drive you to have to go back into the Colorado Lagoon?

MR. WILSON: I'll answer the first two, and then on the third one maybe, James, you can take that.

The first aesthetic question, it is an important question, and it is something that will be analyzed. In the initial study we talk about the studied impacts of the different components. We probably didn't mention this enough but most of this project, probably 90 percent of it, is underground. These are structures that will be buried and you won't see them. They'll be within the PE right-of-way.

But things like the pumping station and this outlet at Marine Stadium will be visible. And maybe, James, you can talk about how visible that will be.

MR. YANG: The pumping station will be also buried. So it won't be visible other than you'll see the manholes on the ground.

The outer structure will be visible, but we will work with the community regarding the aesthetics of it. And we definitely want to build something that's not too intrusive. So we'll go through the EIR process, and we'll work with you guys.

MR. WILSON: And then, too, you had a question about the alternatives being analyzed if that would restart the process.

The second alternative on the bottom is the same project that was analyzed in the MND, the main dec that was prepared in the past. And that will be included as an alternative that will be analyzed in the EIR for this project. So you can comment on this EIR and comment on the merits of that alternative. So it will be evaluated. The impact itself will be evaluated in this document as an alternative.

MS. GARVEY: But if it's selected, the process won't start over again?

MR. WILSON: No, it won't.

MR. YANG: Correct me if I'm wrong, Eric, through this process the alternative could become the preferred at the end.

MR. WILSON: It could be approved. It could be selected as the project if decision-makers were so inclined. But generally in the EIR process you evaluate a preferred alternative and then look at alternatives because you're required under the CEQA process to look at alternatives.

So the County's mandated in this case to look at a reasonable range of feasible alternatives, and that fits within that range. So it will be looked at and analyzed. It won't be analyzed as the preferred project. It will be analyzed as an alternative. To answer the ultimate question, it could be approved.

MS. GARVEY: And if it's approved, what's the opportunity to comment on that?

MR. WILSON: This is your opportunity to comment. This process is your opportunity to comment on that as well as the preferred.

MS. GARVEY: Need to be clear to everybody.

MR. CANNON: If I can mention also the permitting process is another chance for public comment.

MR. WILSON: Correct. And after the EIR process is done there will be other regulatory permit actions that will be required. The County will have to go through and actually acquire permits through the U.S. Army Corp of Engineers, California Department of Fish and Game potentially. And that would be another process for you to evaluate those permits.

MS. GARVEY: There was another question that I had which is what would drive you to go to that alternative?

MR. YANG: If the environmental impacts through the EIR process we come to a conclusion, the environmental impact at Marine Stadium is much greater than Colorado Lagoon, then we may go back to the Colorado Lagoon option.

MR. WILSON: But we have looked at this preliminarily and compared the two, and preliminarily the Marine Stadium alternative results in less environmental impacts than putting the flows in the Colorado Lagoon.

MS. KINNEY: Frances Kinney. 507 Roycroft Avenue. I'm not sure this is part of this project, but what is the concern about the neighbor who overlooks the dirt path called the railroad running in this project eating the dirt every day while you put the pipes in? Unacceptable. I'm getting older. You know what I mean? But come on. I mean this is a major issue.

MR. YANG: We will look at air quality issues regarding your construction.

MS. KINNEY: Dirt.

MR. YANG: Yes. The dust level might be elevated during construction. We'll look through some mitigation measures, see what we can do to keep the dust levels down. That's going to be looked at through the EIR process.

MS. KINNEY: Thanks.

MS. DAVAR: Thank you. My name is Laurel Davar. I have apartment buildings at 1032 and 1038 Roswell. I live in Los Alamitos.

I've been attending meetings on this subject since before the last big hundred-year flood. I've surveyed the neighborhood. I took photographs which were used in the initial studies.

I can say that I'm kind of tired of waiting. My tenants have had cars lost in the floods. I've had three feet of water in my front yard. So while everybody's talking about not in my backyard, it's already in my front yard, and I'm kind of tired of it. And I'm tired of paying flood insurance. I'm tired of cleaning up the messes. I'm tired of people having to move because they're afraid that toddlers might get caught in it or that they'll lose another BMW or even a big size car.

So my comment is that this can't happen fast enough, and it's a great exercise and the best possible solution for the longest term for Long Beach. But I think all of us should be thinking about what's best for the overall community. What is the best possible overall situation with the least amount of impact. Everybody's going to get a bit of dust. I've been eating water for several years, and I think it's my turn to have the water moved away. Thank you very much.

MS. GIBBONS: My name is Maryann Gibbons. I live at 2534 Lomis in Lakewood. My mother and father live at 1220 Termino. I just wanted to make a comment.

My mother and father are getting way beyond their years of having to sandbag. Everybody -- I sympathized with the people in the lagoon area and the Marine Stadium. But like this nice young lady said here, how long does this have to go on before something is done?

I've been attending these meetings for year and a half now. And every time there's a meeting, there's an obstacle or some sort of stoppage to allow this project to continue forward to continue on. Something needs to be done. We cannot continue to have flooded houses, flooded garages, flooded appliances. I mean it's got to stop.

And I want to know how long it's going to take.

I mean my husband and I, we don't mind, but we have to continually go over to my mother and father's house and sandbag the house two feet high. When is it going to stop? How long will this go on? Five years from now we'll all be standing here with no conclusion yet to this problem, and I want to know how long it's going to be.

MR. WILSON: Well, I think James gave the construction length, and that's the period -- the length of time with regard to construction of the project.

As I mentioned earlier the CEQA process, there are certain statutory limitations in terms of the review periods. But as the County consultant, we're going to be moving forward as fast was we can to process the document.

SPEAKER: Maxine (inaudible). 5279 East Paoli.

If there's no concern about the bacteria level, I think that your notice hasn't gone out to enough of the community because the water-skiers, the rowers, the swimmers in Marine Stadium, the human element will all be affected by bacteria flowing unless there is something put into the system to check the bacteria. You're going to have more ill effect on humans than you are on the environment and the wildlife surrounding.

MR. CANNON: I just want to make it clear, it's not -- there is concern for bacteria. We will be looking at that. We will be looking at what impacts does the project have on the bacteria levels that are getting to the Lagoon and Marine Stadium with the project compared to existing conditions now. So that will be looked at.

SPEAKER: I don't think the notice is sufficient if you are only notifying the people in the general area because that Marine Stadium is used by people all over Long Beach. I don't think your notice legally has gone out to everyone within the city of Long Beach.

MR. WILSON: The notices did go to the City of Long Beach. There are certain requirements for actually drafting the notices. And the County has prepared the notice -- and, Ed, correct me if I'm wrong -- within how many hundred feet of the alignment?

MR. YANG: Almost a thousand feet.

MR. WILSON: So the mailing list --

SPEAKER: That's not sufficient.

MR. WILSON: I'm going to get there. It's also sent to a number of agencies that are required to receive notices. Regional Water Quality Control Board, number of jurisdictions.

And the point of this process, why we're here today is to hear exactly what you're saying. Get those people involved early in the process so they'll be added to the mailing list. We'll go back and do the same thing. If you've got notification addresses you'd like us to send it to, this is the time to do it because we're in the very beginning of the process now.

SPEAKER: Don't you think that all the water-skiers, they don't all live right within a thousand feet of that Marine Stadium.

MR. WILSON: That's correct.

SPEAKER: I think you need to address the fact that the water quality isn't going to change all that much. The water that's going there now to the lagoon goes to the Marine Stadium and gets diluted as it travels to the ocean. We're not putting more water with more bacteria. We're just diverting it past the lagoon.

SPEAKER: Right. So it --

SPEAKER: It won't flood it. This is a myth and I think if you read it yourself -- if you sit down and read the Environmental Impact Report when it comes out and if you read the history on this project, you will find that this area of bacteria in the water has been a primary concern from day one. And it's been a concern where people are talking about simple things like dog feces that gets into the lagoon and so on.

Well, wild bird feces gets in there, too. Nobody seems to be concerned about that when they're swimming in it. The same stuff is in the Marine Stadium on it's way to the ocean. The water-skiers and water aquatic life and people who do their rowing and so on in that area are not going to be so greatly affected. I doubt very much if they will even notice a difference.

But what's happening today is an announcement that these studies addressing bacteria and other things way broader than has ever been addressed before is now about to happen. And I think that we should applaud the fact that it's moving forward and that you should come to these meetings as we all have for years and especially the next one when the results of these studies actually are known. Right now we're all hypothetical.

But the next meeting is going to be the one that you should attend to satisfy your concerns.

MS. VERRECCHIA: I just wanted to add, the water going to Marine Stadium is going to be a lot cleaner than what's going in there right now, no doubt.

SPEAKER: What about the flooding of Marine Stadium?

SPEAKER: There won't be flooding.

MR. CANNON: That will be looked at as part of the document. As I mentioned before, flooding of Marine Stadium as well as Colorado Lagoon from the different alternatives is one of the things we're going to address, looking at the water levels and things either with or without project. So that will be addressed.

Because there are a number of things that are being talked about, I think one of your primary concern about the water quality was notifying the different people that would use it like the water-skiers. That issue will be addressed. As Eric's saying, if you have certain people to notify, great, let us know.

But, also, when we look at water quality using the model. One of our goals is looking at how are the concentrations of bacteria affected by the project? There are certain standards and criteria for bacteria levels that are for different user groups such as swimmers, such as people in boats, water-skiers. So that is considered in the analysis that we're going to do is will the water quality be -- will there be a significant impact of water quality relative to water-skiers or wildlife, as well. So that will all be addressed.

SPEAKER: Is your notice sufficiently legally going to those people?

MR. CANNON: From a process standpoint, yes.

MR. WILSON: Yeah. I think legally the notices so far for the phase of the project that we're in, legally the notices have gone out according to the letter of the law. But, like I said earlier, that's exactly why we're here to expand that list. And everyone who signed up today will be on that list, and everyone who is added including recreation users in Marine Stadium which we will investigate who to add to that list after this meeting. That's exactly why we're here tonight. So legally, yes, the County has performed their obligations.

SPEAKER: In and out every weekend.

SPEAKER: They can put a sign there.

SPEAKER: It's been in the Press Telegram for years, this whole issue. I don't think you can notify any water-skiers that come from every area. The only thing you can do is follow the parameters of the letter of the law and move it forward so that people are abreast of the situation and attending meetings. We're talking about a situation that's so greatly improved from what it was before that I think you'll be very happy in the long run.

SPEAKER: You don't face Marine Stadium, we do, and the trash that comes through --

SPEAKER: It's going to be improved is what we're trying to tell you.

SPEAKER: -- that's not filtered at this point.

SPEAKER: Yeah. That's right. And they have this system at great expense to improve that for you. You won't be seeing it float around.

MR. CANNON: From a process standpoint, if I can explain how it works is right now the water comes in the

Colorado Lagoon with the levels of trash and other constituents, goes through the tidal culvert and into the Marine Stadium during a flood.

SPEAKER: There's no removal.

MR. CANNON: The proposed project is for what's going in, that is going to be screened. The low flow will be diverted. During a storm event there's going to be screening of the trash at the beginning of the flood. So some of that trash will be taken out. And the cleaner water will be sent to Marine Stadium. So there's less of it coming out. So it's not going through Colorado Lagoon to a tidal culvert to Marine Stadium. It's going directly.

And that's what we're going to be analyzing is that an impact -- a significant impact or not? That's what we're going to look at. But the overall, there's a lowering of the concentration of trash relative to what's there that's coming down to that. That's what we're doing.

MR. ATASHZAY: I just want add, of course you guys know there's an existing 36 and 43-inch drain, and that's the drain we are trying to replace and upgrade. And although we are extending furthermore and enlarging the capacity, but nevertheless all the pollutants and trash and oil which directs to Colorado and Marine Stadium, it happens at the lower stage of the flow because that's where at the first flush you have all this oil.

So the existing drain is capable of bringing all this trash and contaminants. And although we are enlarging the capacity but most of those contaminants are the same. So we are not really bringing more stuff except by adding those trash separation systems and also the system that at summertime it diverts the low flow which contains all those bacteria and goes to sewer system. We are removing.

But in a sense although the system it enlarges to make sure to minimize the flooding, but nevertheless it's improved the water quality of the flow which would have been diverted either to Colorado or Marine Stadium.

SPEAKER: And primarily the water that is travelling in the winter months that's the rainy season which is the months that these big floods occurred when people in our area have been flooded, there aren't any water-skiers or swimmers or any of these people out. There are boaters at that time of year. But generally you're not going to have an impact.

But what we're talking about is a greatly vastly improved -- this is a state of the art operation that's going on here. And it's going to be something that's talked about all over California once it gets accomplished. I think we'll greatly improve your living environment and the view of the trash that you now see.

SPEAKER: It's been filthy for years.

MR. WILSON: In the spirit of what we're here today for, I'd really like to make sure that we do keep this to people one at a time commenting. Because the dialogue, there are a lot of issues that we still have to analyze in the document. And I don't want to get too carried away with discussion.

I mean your points are valid. We're going to look at those in the EIR. But what these folks are saying are correct in that there currently are no physical features in this -- in line in the system that remove those pollutants, and the project would put those there. So by virtue of the fact that there would be new components, it would be an improvement to the existing conditions.

And David's models will quantify that, will tell us what those changes will be. So it's going to be a very informational document. It's going to come out in --

SPEAKER: Without any pumps to assist this flow, I'd like to know when it's high tide and we have a real high tide again and a heavy storm system rolls in, how do you expect that gravity flow system to maintain the flow from these flood areas? It's still going to back up, and I don't care how big a sewer pipe you put in.

SPEAKER: You've got a vastly widened channel that will take that water.

MR. ATASHZAY: We've looked into it. As you go up the stream, the elevation of the ground increases. And the impact is it forces us to put much larger system in order to compensate for the hydraulic loss or prevention we have at the end. But nevertheless we check into it.

Because the issues, you have actually those low quantity areas on Roosevelt, Bennett and Redondo, and those are actually the areas that get flooded the most. And definitely when we designed, we make sure that in a sense that the high tide which eventually gets affected, the level should be below this ground surface wherever you are. So as it gets below the ground surface the catch basins or those collector systems will be able to function.

So definitely that's part of our objective when we do hydraulic calculation, make sure that the hydraulic system are going to work at the worst situation.

SPEAKER: So are you going to eliminate the old system completely?

MR. YANG: We're going to replace it.

SPEAKER: But the old system will not be active at all?

MR. YANG: Basically, we replace the old system with the same alignment with the larger system. Because the old system is too small to handle the flow of the project area. So we're basically enlarging it.

Right now it flows. It's just too much water, and it's not adequate enough, not large enough to carry the water to Colorado Lagoon and Marine Stadium. So we're just basically enlarging the existing system. In a sense everything goes there right now, all the trash.

SPEAKER: To me it would seem like you'd put in better catch basins, monitoring system, sampling systems where people would be monitoring the water; put in some pumps and pump it out instead of on a gravity flow.

MR. ATASHZAY: You're talking about a large amount of flow. And besides we normally do that. We put pump station if again hydraulic-wise we have problem with flowing the flow.

But you don't have the situation. And, again, I just want to clear this up, when we say existing system, you are talking about two 36 and 42-inch pipe where they come together. Because there are other drains that we are not touching those. But in brief we are adding more than 100 catch basins on the street that you don't have. So we can see the significance of those intakes that we are adding on the streets to make sure that they are going to catch.

MR. WILSON: State your name, please.

SPEAKER: Just a quick question. When you talk about enlarging the system, are talking about also the culvert between the lagoon and the --

MR. YANG: No.

MR. WILSON: Yes.

MR. CAIRO: My name is Joe Cairo. Last name is C-a-i-r-o. I live at 800 Mira Mar, right across the street. And it's a tough puzzle.

First of all, you have to balance, obviously, the potential destruction to property with the destruction of habitat of environment, so it's not an easy thing to do. I have a couple of questions.

And, first of all, I run the youth programs at the police athletic league up on Freeman in Anaheim, and I work with the park department in that regard, and I've been given permission by my bosses to submit an interim use right-of-way that you'll be using to construct this which is right here behind the Armstrong Nursery connecting 10th to Termino.

I'm a firm believer in garden-based education and after school programs. I like to teach when I have an opportunity to use science to teach. I notice that in the map here that you've got the in-line trash screening device and low-flow pumping station at the end of the right-of-way closest to the lagoon.

What is the volume of low-flow summertime water that's flowing to that? Do you have an idea of what that is?

MR. YANG: We are trying to get a better answer for that. We are going to work with Long Beach Water Department to see if there's anything better than they gave us last time. It's roughly -- I believe it was 200 GP.

MR. CAIRO: Do we have any idea -- I would imagine the toxicity of that low-flow water would be very high.

MR. YANG: It typically fluctuates because we do a lot of these diversions in the urbanized part of the county now because we believe that's the most polluted water. You look at the rain storm in the summer. People will irrigate. There's a lot of nitrogens coming up and also the street has a lot of dust and so forth and trash. And that gets into the storm drain, and that somehow makes it's way into the ocean. So a lot of the summer dry weather pollution that's occurring in the beach areas will typically go away.

MR. CAIRO: Has there been any thought about diverting some of this low-flow summer water above ground and maybe try and create a riparian environment to sort of recharge and mitigate some of the water flowing into that area. If the lagoon is indeed a low spot and it would act as a tributary, if you will in a sense, and maybe to help to remediate that water going into the lagoon.

MR. YANG: We can look at it. You are talking about some kind of natural treatment system that's bio-eco type of system.

MR. CAIRO: At least for that portion of the water flowing into that summer low flow.

MR. YANG: We can definitely look at it. But the thing is the availability of land regarding this type of system, but we can look at it.

MR. CAIRO: Park and Recs has some claim to that right-of-way after the project is completed. And to my knowledge their plans are, first of all, based on your time schedule and not necessarily set in stone as to what type of recreational use there would be for Park and Recs to take that land and develop it later.

MR. YANG: We will look at it through the EIR process. If it's possible submit it as comment, and we'll definitely look at it and see how feasible it is. Because these type of situations requires a large -- you need a lot of land to develop this type of system.

MR. CAIRO: And it's sitting right there waiting.

MR. YANG: You're talking about the PE right-of-way.

MR. CAIRO: Absolutely.

MR. YANG: We may need more right-of-way than that, but we will look at it.

And there is also other issues that we are waiting to pass. You're saying some kind of meandering stream and vegetation that will -- not everybody likes that. With that, you will have other environmental issues. So we will look at it through the EIR, see if it's a feasible alternative or not.

MR. CAIRO: Last thing, anyone who surfed in these waters -- and I grew up here in Long Beach. Anyone who uses the ocean to recreate understands that if you enter the ocean after a storm, you do so at your own risk because the pollution levels in the ocean after a storm are substantial. And so I don't know of many people who would enter into the water after a storm without knowing that there is some apparent physical risk doing that, health risks.

And as far as Marine Stadium goes as flooding, I'm not an engineer, but I would think that a flooding aspect comes in when you have a large flow of water coming into a limited space that can't empty quickly. But it seems to me that Marine Stadium is pretty much open. And I would be hard pressed to figure out how you could flood Marine Stadium. That's a lot of water.

SPEAKER: Go over the rocks at high tide.

MR. YANG: We will look at it through the EIR regarding if Marine Stadium will be flooded. And right now we believe our project will improve the water quality in Colorado Lagoon and in Marine Stadium, but it's only our assumption right now. It's through our preliminary analysis. And we will look at it in detail if our assumption is true or not through the EIR process.

Just wanted to add, right now the perimeter of the Marine Stadium is at such an elevation that at high tide gets close to the surface, that has nothing to do with amount of flow that's coming in and going out. The amount of flow coming in does not really affect that. That's just the high tide elevation which gets to a certain elevation which, I believe, is 7 inches below the perimeter. So you're going to have that situation during the summer which is the same and during winter when it rains. So that's the way the elevation of the surrounding has been set.

SPEAKER: So you're saying that the flow of the water coming through the drains is not going to raise the level of Marine Stadium.

MR. WILSON: That's something that we're going to look at, as David mentioned, in his model. We're going to actually quantify the amount of water in a computer model and see the amount of water coming in through the system, the most at full capacity. And we're going to look at that impact, and we're going to actually numerically answer your question for you.

But what they're trying to say now, it's essentially connected to the ocean and the flooding should really -- it's going to be a drop in the bucket. But it's something we're going to analyze.

SPEAKER: We're going to verify the drop in the bucket.

MR. WILSON: Yes.

MR. ATASHZAY: So, pretty much what we're saying, if the amount of flow entering ocean is going to affect the ocean. It's pretty much the same, but we're going look into it.

MR. WILSON: We have a question up here.

MS. BUTLER: I'm Ellen Butler. I'm at 4450 East 6th.

I don't know if this is in the scope of this project to answer, but I'm concerned to know if the drain is built what will happen to the existing greenbelt that's on the right-of-way? And what is the plan for the right-of-way between Ximeno and Park once it's built?

MR. YANG: The right-of-way is owned by the City of Long Beach. We will be working with the City of Long Beach exactly what we will do with the greenbelt and what the City of Long Beach plans is regarding future improvement within the PE right-of-way.

But as of now whatever improvement that happens in PE right-of-way is under some type of lease with the City of Long Beach Park and Rec Department. And they are all aware our project might be coming in the next few years, and they all know the impact that they won't have to relocate their facility if they do choose to put something within the next several years before our project.

MS. BUTLER: I didn't get an answer. I'm sorry.

Do you know what's going to happen to the greenbelt?

MR. YANG: I don't because I work for the County, and the right-of-way is owned by the City.

MS. VERRECCHIA: I'm part of the greenbelt board member and I don't know if you know this, but the greenbelt has been dissolved -- the greenbelt committee. But what we did is we turned the greenbelt over to the City. And in the agreement when this project goes to the greenbelt, the County has to restore the greenbelt to what it was when they started the digging. It will be restored.

MS. BUTLER: And between Ximeno and Park is still --

MS. VERRECCHIA: It's still open and to be honest with you, I heard that the City might be putting a park there.

MS. BUTLER: Thank you.

MS. VERRECCHIA: I just want you to know, I just heard. I'm not going to promise you. But the Parks and Recreation did take over that area. The greenbelt committee was leasing that area from the City. But I think the City eventually will put a park there between Ximeno and Park.

MR. WILSON: Are there comments or questions?

Well, thanks for coming today. We appreciate it, and please make sure and sign in if you want to be on the mailing list for future notices.

(At 11:20 A.M. the proceeding was concluded.)

-o0o-

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, LISA L. GROOM, C.S.R. No. 11765, do hereby certify:

That said proceeding was taken before me at the time and place therein set forth and was taken down by me in shorthand and thereafter was transcribed into typewriting under my direction and supervision, and I hereby certify the foregoing transcript is a full, true and correct transcript of my shorthand notes so taken.

I further certify that I am neither counsel for nor related to any party to said action nor in any way interested in the outcome thereof.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 7th day of June, 2004.

____
LISA L. GROOM, CSR #11765
Registered Professional Reporter

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

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818 West Seventh Street
12th Floor
Los Angeles, California
90017-3435

t (213) 236-1800
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www scag ca gov

June 8, 2004

Mr. James Yang
Project Manager
County of Los Angeles
Department of Public Works
P. O. Box 1460
Alhambra, CA 91802-1460

RE: SCAG Clearinghouse No. I 20040310 Termino Avenue Drain Project

Dear Mr. Yang:

Thank you for submitting the **Termino Avenue Drain Project** for review and comment. As areawide clearinghouse for regionally significant projects, 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.

We have reviewed the **Termino Avenue Drain Project**, and have determined that the proposed Project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and California Environmental Quality Act (CEQA) Guidelines (Section 15206). Therefore, the proposed Project does not warrant comments at this time. Should there be a change in the scope of the proposed Project, we would appreciate the opportunity to review and comment at that time.

A description of the proposed Project was published in SCAG's **May 16-31, 2004** Intergovernmental Review Clearinghouse Report for public review and comment.

The project title and SCAG Clearinghouse number should be used in all correspondence with SCAG concerning this Project. Correspondence should be sent to the attention of the Clearinghouse Coordinator. If you have any questions, please contact me at (213) 236-1867. Thank you.

Sincerely,

Jeffrey M. Smith

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

WATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
www.lacsd.org

JAMES F. STAHL
Chief Engineer and General Manager

May 25, 2004

File No: 03-00.04-00

Mr. James Yang, Project Manager
Department of Public Works
County of Los Angeles
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Yang:

Termino Avenue Drain Project

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report and a Notice of Public Scoping Meetings for the subject project on May 14, 2004. The proposed project area is located within the jurisdictional boundaries of District No. 3. We offer the following comments:

1. The proposed project will impact several existing and/or proposed Districts' trunk sewers and facilities in public right of way and within easements. The Districts cannot issue a detailed response to or permit construction of the proposed project until project plans and specifications that incorporate Districts' sewer lines are submitted. In order to prepare these plans, you will need to submit a map of the proposed project alignment, when available, to the attention of Mr. Darrell Hatch of the Districts' Planning Section at the address shown above. The Districts will then provide you with the plans for all Districts' facilities that will be impacted by the proposed project. Then, when revised plans that incorporate our sewers have been prepared, please submit copies of the same for our review and comment. Approval to construct improvements within a Districts' sewer easement is required before construction may begin. A copy of the Districts' buildover procedures and requirements is enclosed for your information. For additional information regarding the buildover procedure, please contact Mr. Hatch at extension 2766.

If you have any questions, please contact the undersigned at (562) 699-7411, extension 2717.

Very truly yours,

James F. Stahl

Ruth I. Frazen

Ruth I. Frazen
Engineering Technician
Planning & Property Management Section

RIF:eg
Enclosure
c: D. Hatch

345913.1

Recycled Paper

COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
1955 Workman Mill Road / P.O. Box 4998 / Whittier, California 90607-4998 / (562) 699-7411

BUILDOVER PROCEDURES AND REQUIREMENTS

The Districts do not encourage the building of improvements over sewer easements as such encroachments may result in limited access or damage to the underlying sewers. The Districts consider "buildover" proposals on a case-by-case basis. The following explains the Districts' procedure for processing buildover requests.

A developer or property owner (applicant) desiring to construct an improvement over a Districts' sewer easement is required to obtain a "Buildover Agreement" (BOA) from the Districts. Four (4) sets of the following information are required from the developer or property owner in order for Districts' staff to evaluate the proposal:

1. A vicinity map showing the general location of the proposed improvements in relation to the surrounding streets;
2. A grading plan* and site plan showing the location of the sewer easement, sewer line, and manholes in relation to the proposed improvement. Include information regarding the removal and replacement of unsuitable soil along with cut/fill depths;
3. The calculated footing** and/or traffic loadings resulting from the project, project-related activity, and post-construction activity. A list of construction equipment to be used at the site and a soils report for the project are also required; and
4. A foundation plan and a footing detail,** showing the elevations* and locations of the footings for the improvement(s). Also include profile and/or cross section drawings showing the proposed improvement(s) in relation to the sewer line.

NOTE: Your request will not be processed unless the above-specified information is provided.***

This information is simultaneously forwarded to various departments within the Districts for review. Their comments serve as the basis by which the Districts' acceptability of a proposed buildover case is determined.

Subsequent to the Districts' review of the proposed buildover request, the applicant will be advised in writing of the Districts' decision. The applicant is then required to submit six (6) sets of plans that incorporate corrections, as applicable. The submitted plans must include the following note:

No grading, soil removal, soil fill, or construction activity shall be performed within the Districts' easement without on-site approval of the proposed activity by a Districts' inspector. Contractor shall contact Mr Phil Friess, Sewerage System Manager, at (310) 638-1161, a minimum of two weeks prior to the start of construction to make the necessary arrangements.

Upon receipt of the final plans, the Districts will mail a BOA detailing the conditions under which the proposed improvement is acceptable to the Districts. It shall be the responsibility of the fee owner of the property to sign the BOA (the signature must be notarized) and return it to the Districts. The BOA is subsequently executed by the Districts' Chief Engineer (or designee) and is submitted to the Los Angeles County Recorder's Office for recordation. After the recorded BOA is received from the Recorder's Office, a copy of the document along with one set of final plans is returned to the applicant.

Under normal conditions, approximately six to eight weeks are required for Districts' staff to properly evaluate a buildover proposal. It is recommended that the Districts be contacted as early as possible during planning of the project. If you have any further questions regarding Buildover Procedures and Requirements, please contact Mr. Darrell Hatch at (562) 699-7411, extension 2766, or by e-mail at *dhatch@lacsd.org*.

*All elevations must be based on U.S.G.S. datum.
**All plans must be prepared by a registered Civil/Structural Engineer in the State of California.
***For proposed minor surface improvements, contact the Districts prior to submittal. Some of the information requirements may be waived.

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES CALIFORNIA 90063-3294

(323) 890-4330

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

July 22, 2004

James Yang, Project Manager
Los Angeles County Department of Public Works
P O Box 1460
Alhambra, CA 91802-1460

Dear Mr. Yang:

NOTICE OF PREPARATION FOR A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED CONSTRUCTION OF THE TERMINO AVENUE DRAIN PROJECT, "CITY OF LONG BEACH" -- (EIR #2013/2004)

The Notice of Preparation for a Draft Environmental Impact Report for the aforementioned project has been reviewed by the Planning Division, Land Development Unit, and Forestry Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION – SERVICE RESPONSIBILITY:
The subject property is totally within the City of Long Beach and does not appear to have any impact on the emergency responsibilities of this Department. It is not a part of the emergency response area of the Consolidated Fire Protection District.

LAND DEVELOPMENT UNIT:
This project is located entirely in the City of Long Beach Therefore, the City of Long Beach Fire Department has jurisdiction concerning this project and will be setting conditions.

This project is located in close proximity to the jurisdictional area of the County of Los Angeles Fire Department. However, this project is unlikely to have an impact that necessitates a comment concerning general requirements from the Land Development Unit. Should any questions arise, please contact Inspector Marvin Dorsey at (323) 890-4243.

FORESTRY DIVISION:

The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. These issues should be fully addressed in the Final Environmental Impact Report.

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

Very truly yours,

David R. Leininger

DAVID R LEININGER, CHIEF, FORESTRY DIVISION
PREVENTION BUREAU

DRL:lc

Jim Clark
781 Roswell Ave.
Long Beach, CA 90804
562.439.3960
jimclark@jimclark.org

Mr. James Yang – Project Manager
Los Angeles Dept. of Public Works
P. O. Box 1460
Alhambra, CA 91802-1460

May 21, 2004

Re: Termino Avenue Drain Project

Dear Mr. Yang,

This letter is to offer my scoping comments on the **Initial Study for the Environmental Impact Report for the Termino Avenue Storm Drain** project currently under development by the Dept. of Public Works.

My concerns focus primarily on the work and mitigation to be done on the Pacific Electric Right-of-Way portion of the project, from Loma Ave. to 4th St. & Park Ave. Details, ordered in reference to your CEQA Initial Study, are as follows:

General Plan Designation (page 1)
The Initial Study lists the area as having a "right-of-way" (ROW) designation in the general plan. It appears you are working from an outdated version because, as of Oct 15, 2002, the ***Open Space Element of the Long Beach General Plan*** was updated. The former Pacific Electric Right-of-way was re-designated as parkland with the City Council approval of this document. This will directly affect the "public services" portion of your CEQA analysis, however it will not modify the necessity of an E.I.R.

Other Public Agencies (page 2)
In the environmental documents for the previous design of a few years ago, the area of the ROW between 7th and 8th Streets was erroneously described as "landscaped." The Long Beach Greenbelt is, in fact, a habitat restoration project of both coastal sage scrub and riparian communities. This successful project currently supports the return of both native insect and bird species. As such, this area may come under the jurisdiction of the US Fish and Wildlife Service. It will also require more detailed study and mitigation efforts.

Aesthetics (page 6)
The Initial Study states "there are no....scenic highways" or "vistas" within the project area. The Long Beach Greenbelt was designated a *White House Millennium Trail* in 1999. This may not technically fall under the standards of CEQA, but it most certainly falls within the spirit of the environmental evaluation.

Land Use and Planning (page 18)
The Initial Study lists "no impact" in response to "Conflict with any applicable habitat conservation plan..." The Long Beach **Open Space Element**, mentioned above, states, as policy, "[to] promote the creation of new and reestablished natural habitats....including....native plant communities"

Public Services (page 20)
Considering the rezoning of the area as parkland, the response to this item, should read "Potentially significant impact" under the "Parks" element.

Transportation/Traffic (page 22)
Currently, the Long Beach Greenbelt is a regularly utilized pedestrian easement. It connects a densely populated neighborhood in the north to a recreation area at Colorado Lagoon. This easement will be significantly impacted during construction and its importance must be considered during post-construction design considerations.

Additional suggestions
For the protection of the reconstructed habitat portion of the Greenbelt during construction, the section between 7th and 8th streets should not be used for staging of either equipment or materials in order to minimize demolition by the easement footprint.

Whereas this project's primary concern is storm water containment and control, and whereas a significant portion of the project is to be located below open space, it becomes obvious that any post-construction design factors should include landscaping contours that facilitate the containment of storm water runoff.

Thank you in advance for your consideration on these issues. I urge you to work closely with the Long Beach Department of Public Works and the Department of Parks, Recreation and Marine to construct a practical and efficient project in a cost effective way while preserving and enhancing the surrounding aesthetics and environment.

Regards,

Jim Clark

CC: Frank Colonna – Long Beach Vice-Mayor & 3rd District Councilmember
Phil Hester -- Director, Long Beach Parks, Recreation & Marine
Christine F. Andersen – Director, Long Beach Dept. of Public Works
Ken Cory – U. S. Department of Fish and Wildlife

May 31, 2004

Mr. James Yang, Project Manager
County of Los Angeles Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

Re: Notice of Preparation: Termino Avenue Drain Project, Long Beach

Dear Mr. Yang:

Please consider these comments on the proposed NOP for the Termino Avenue Drain Project, with the anticipation that they will be addressed in the EIR:

1. The former Pacific Electric right-of-way is subject to a rental agreement for a tree farm, pumpkin patch and other seasonal uses. Please describe the impacts of the proposed project on these uses, and if any relocation of these uses to another site for the duration of construction is planned.

2. The construction of the project will require substantial trenching to the streets, particularly along Appian Way east of Park Avenue. Please describe the planned street improvements, i.e. whether the project contemplates the complete resurfacing of the streets once construction is finished, versus just patching the trenching areas.

3. How long is construction anticipated to occur? Please identify the truck haul routes and the hours of construction.

4. Please identify the length and duration of street closure patterns in the vicinity of the Appian/Park and Appian/Colorado intersections.

5. Figure 2: Alignment Map did not clearly indicate the route of the storm drain between Colorado Avenue and Nieto Avenue. Please provide more details of the storm drain route. Does the route go through the Marine Stadium parking lot and access road?

6. Please identify impacts to emergency vehicle circulation from the Long Beach Fire Station located adjacent to Marina Vista Park. In particular, describe the impacts to emergency vehicles on the Appian/Park, Appian/Colorado and Appian/Nieto intersections.

7. The proposed project will remove the substantial landscape improvements along the Pacific Electric right-of-way along the Greenbelt, between 10th

Street and 7th Street. Please identify the proposed improvements to the Greenbelt after construction, including replacement of vegetation, if any.

8. Please describe the regular maintenance program associated with the proposed in-line trash screening device, which would remove trash from the low flows prior to discharging into Marine Stadium. Identify the frequency of maintenance of this screening device, i.e. how often County employees would clean it out, etc. I ask this question because in other areas of Long Beach, the County has been negligent in maintaining the County-owned storm drain infrastructure, and the burden of the maintenance often falls on the City of Long Beach. If the County cannot or will not maintain the trash screening device on a regular basis, please identify alternatives for the City of Long Beach to recoup the cost of their involvement.

9. What will happen to the existing outlet into Colorado Lagoon, just east of Park Avenue? Will that outlet be closed?

Thank you for the opportunity to comment on the proposed scope of the EIR. Please consider this letter a request to be included on the mailing list for future meetings and for review of the EIR.

Sincerely,

A Bodek & M Hewitt

A. Bodek and M. Hewitt
341 Roycroft Avenue
Long Beach, CA 90814

C:\Documents and Settings\User\My Documents\Amy's files\LACounty termino EIR.doc

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by June 9, 2004)

Name: Elizabeth Reyburn
Organization (if any):
Address: 345 Corona Ave
City, State, Zip: Long Beach, CA 90803
Phone (optional):
E-mail (optional):

	Yes	No
Would you like to remain on our mailing list to receive future project updates?	X	

Comments Dear Mr. Young

I was unable to attend the last meeting re: this issue but a neighbor gave me a copy of the Environmental Impact Report & I was stunned at what I was reading re impact on biological resources & water quality.

My husband & I live very near Marine Stadium & have done so for the past 31 yrs I walk there almost daily & rarely do I see it not being utilized by multiple groups. - I cannot understand why this project is being considered given the potential of doing great harm to this wonderful water resource. I certainly don't want to diminish my support of

Comments continued Cleaning up Colorado Lagoon as I see that also as something very worth saving but not at the expense of another recreational asset -

Marine Stadium hosts so many events that bring people to Long Beach:

Rowing competitions
Dragon boat races
L.B. Marathon goes through Marine Stadium
Summer band concerts @ Marina Vista Park bringing multiple concert goers via boat
Boat races etc. etc.

To risk polluting this area which is also adjacent to two schools is ridiculous. Surely there must be an alternative to creating turbid water, chasing the water fowl away, + detracting from all the improvements (new Rowing Center - Jack Dunster Center) that have taken place.

Please don't do this!!! Roger + Elizabeth Reyburn
345 Corona Ave. L.B. 90803

Please fold in thirds

Tape it closed, affix a 37 cent stamp and mail by June 9, 2004 Thank you!

Roger and Liz Reyburn
345 Corona Ave.
Long Beach, CA 90803

PR06

County of Los Angeles, Department of Public Works
P.O. Box 1460
Alhambra, California 91802-1460
Attn: **Mr. James Yang, Project Manager**

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TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by June 9, 2004)

Name: LAUREL DAVAR
Organization (if any): OWNER 4PLEX 1032, 1034, 1036, 1038 Roswell
Address: 12461 INTERIOR CIRCLE
City, State, Zip: LOS ALAMITOS, CA 90720
Phone (optional): 562-594-5589
E-mail (optional): ljdavar@aol.com

Would you like to remain on our mailing list to receive future project updates? Yes ☑ No ☐

Comments This project can't happen fast enough. It is my opinion that the first plan where water went to the Colorado LAGOON WAS THE MOST COST EFFECTIVE. THIS LATEST PLAN, WHILE IT IS STATE OF THE ART AND THE BEST LONG TERM PLAN MAY WELL BE TOO AMBITIOUS FOR THE RESOURCES AVAILABLE AND GET SIDELINED AS A RESULT

Roswell Ave has been flooding and ruining cars and property for 30 years that I know of.

DON'T BE FOOLED BY THE COLORADO LAGOON PEOPLE WHO PUBLICLY STATE THEY ARE FOR A Project. IN PRIVATE THEY CLAIM VICTORY OVER DEFEATING THIS PROJECT.

Comments continued

AND FOR WHAT? I DOUBT VERY MUCH THAT WATER QUALITY IN THE LAGOON WILL IMPROVE IF THIS AREA IS BYPASSED.

IT MAY EVEN BECOME MORE STAGNANT AND CREATE EVEN MORE PROBLEMS.

SO WHILE SOLVING THIS PROBLEM MAY BE AN ENGINEERS DREAM — TAKING IT TO COMPLETION HAS BEEN MY NIGHTMARE.

PRESS ON

---------- Please fold in thirds ----------

affix a 37 cent stamp and mail by June 9, 2004 Thank you!

Ms Laurel Davar
12461 Interior Cir
Los Alamitos, CA 90720-5106

County of Los Angeles, Department of Public Works
P.O Box 1460
Alhambra, California 91802-1460
Attn: **Mr. James Yang, Project Manager**

91802+2460

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by June 9, 2004)

Name: PERRY D. GRIFFITH

Organization (if any):

Address: 4424 Vermont St.

City, State, Zip: Long BEACH, CA 90814

Phone (optional):

E-mail (optional):

	Yes	No
Would you like to remain on our mailing list to receive future project updates?	X	

Comments

We just like to learn more about this Project.

Sincerely

Perry D Griffith

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by June 9, 2004)

Name: HERMINE A. BURG

Organization (if any): —

Address: 364 XIMENO AVENUE

City, State, Zip: LONG BEACH, CA 90814-2945

Phone (optional):

E-mail (optional):

	Yes	No
Would you like to remain on our mailing list to receive future project updates?	☒	☐

Comments

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by June 9, 2004)

Name: Mr & Mrs Paul Gibbons

Organization (if any):

Address: 2534 Loomis St

City, State, Zip: Lakewood, California 90712

Phone (optional): 562) 422-1273 or 562) 773-7876

E-mail (optional): Puchocky@aol.com

Would you like to remain on our mailing list to receive future project updates? Yes ☒ No ☐

Comments

Our parents live at 1220 Termino Ave. They have lived in this home since 1970 and have had to deal with flooding issues since then. They should not have to keep sand-bagging every time it rains. They are also too old to have to worry about flooding and damage to their property year after year. Why keep pro-longing the issues of the Termino Ave Drain Project. Just do the work necessary. I guess you'll be here years from now discussing the same issues. Want to see some pictures of what my parents have to go through every rainy season?

Maryanne Gibbons

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by June 9, 2004)

Name: Frances Kinney
Organization (if any):
Address: 507 Roycroft Ave
City, State, Zip: Long Beach CA 90814
Phone (optional): 562-438-5654
E-mail (optional):

Would you like to remain on our mailing list to receive future project updates? Yes ☑ No ☐

Comments Please keep in mind when the project starts, how the dirt 'flying' in the air affects the surrounding homes. Please use ~~[illegible]~~ wetting down the dirt daily during the project

F. Kinney

From: Kim Havens
To: Eric Wilson
Date: 6/7/2004 8:32:31 AM
Subject: Fwd: RE: Termino Ave Drain Scoping Meeting

FYI

>>> "joe cairo" joecairo@hotmail.com> 6/3/2004 8:04:07 PM >>

mail them to:
Joe Cairo
800 Mira Mar Ave. #1
Long Beach, 90804
(562)439-1869

I still think that a bioremediation component for low-flow would make perfect sense for the drain project.

I'm forwarding a reply eMail that I got from Dennis Eschen at Long Beach Parks. They are researching a man-made wetland for El Dorado Regional Park and this would fit in nicely with that mindset.

I'm going to push for a public discussion of this idea so kindly alert your colleagues to this eventuality. Sooner or later, someone is going to have to PROVE why this won't work.

It seems to me, being new to the process, that just advocating a "do no harm" approach to the environment isn't going to cut it. Protecting property and ENHANCING the environment is far more enlightened and bound to draw a greater number of supporters. win-win-win. Very symmetrical.

Parks would love it because the post-construction phase would leave the parcels better than how they are now. And the teaching opportunities are boundless.

Anyway, that's my story and I'm sticking to it.

joe cairo

APPENDIX B

BIOLOGICAL TECHNICAL REPORT

DRAFT
BIOLOGICAL TECHNICAL REPORT
FOR THE
TERMINO AVENUE DRAIN PROJECT
LONG BEACH, CALIFORNIA

Prepared for:

Los Angeles County Department of Public Works
900 South Fremont Avenue
Alhambra, California 91803

Prepared by:

EDAW, Inc.
3780 Wilshire Boulevard, Suite 250
Los Angeles, California 90010

February 2006

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CHAPTER 1.0
INTRODUCTION

The County of Los Angeles Department of Public Works (County) is proposing storm drain improvements in southeastern Long Beach (Figure 1). The project area is located in the southern portion of the San Gabriel River watershed, which has historically had flooding problems. The project would include the construction of a new underground storm drain system to provide increased flood protection within the project area. The proposed storm drain components are described further below.

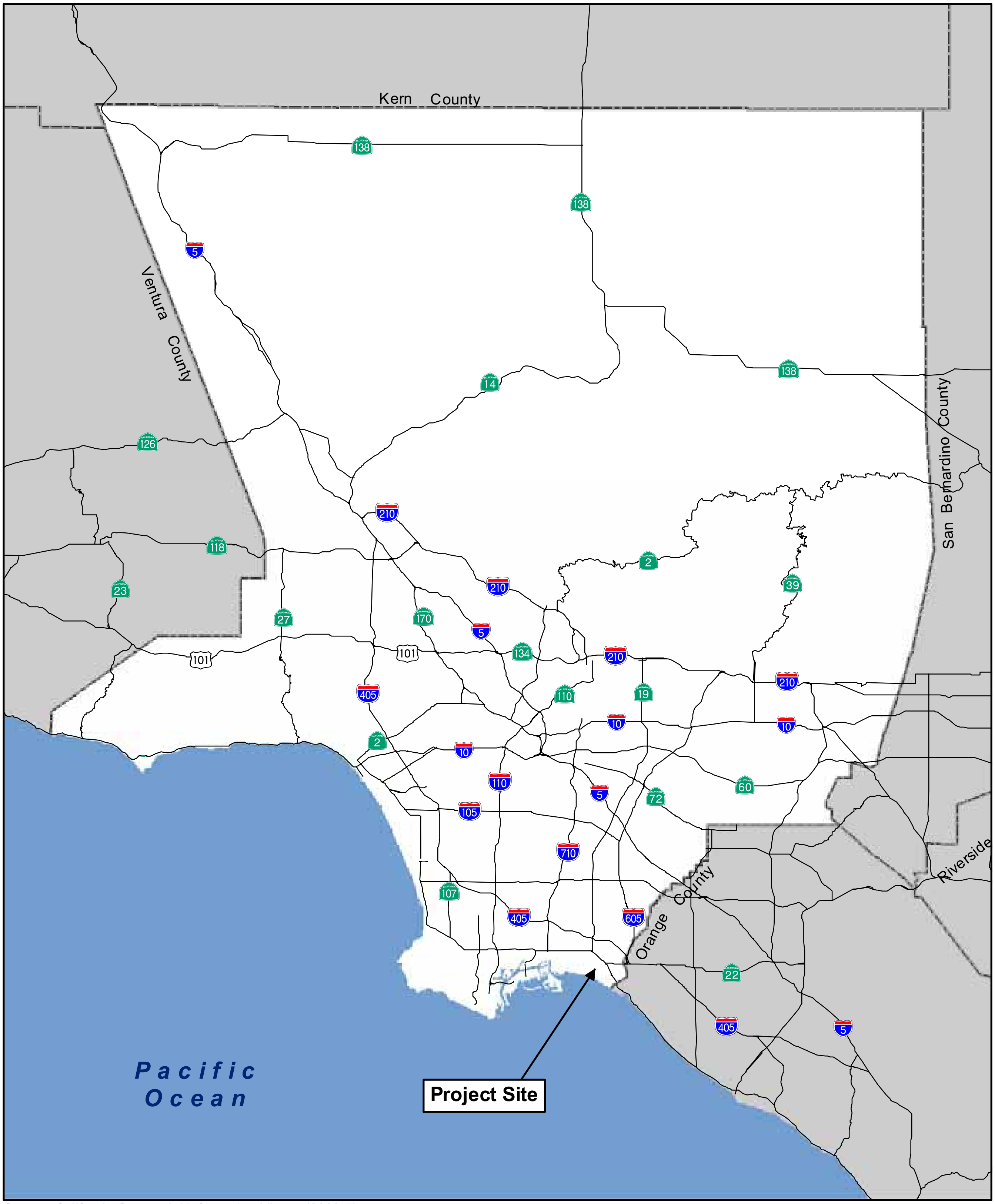
The purpose of this analysis is to characterize the current biological resources within the project area and determine whether development of the storm drain would result in significant impacts to biological resources. In addition, mitigation measures are recommended that would reduce potentially significant impacts.

PROJECT LOCATION AND DESCRIPTION

The proposed project is located in southern Los Angeles County within the City of Long Beach. The proposed storm drain alignment generally falls within existing roads and a former Pacific Electric (PE) Railway right-of-way (Figure 2). The mainline of the proposed project would run along Anaheim Street, southerly on Termino Avenue between 8th Street and 11th Street, along the PE right-of-way, across several streets, and along Appian Way, terminating at Marine Stadium. A lateral storm drain would extend from Termino Avenue along the PE right-of-way across several streets and terminate on Redondo Avenue just north of Anaheim Street. Other short lateral drains would connect to the mainline along 6th Street, 7th Street, and 8th Street. The project area is shown on the USGS-7.5 Minute Topographic Long Beach quadrangle.

The project addresses a 596-acre sub-watershed that drains into Colorado Lagoon. In 1995, severe flooding caused extensive property damage in this area, which has been designated as a special flood hazard area by the Federal Emergency Management Agency. The existing drainage system in this portion of the watershed is not sufficient to control the runoff that would occur in a 50-year flood event.

The project entails the construction of a new underground storm drain system, which would provide increased flood protection within the project area. The new drainage system would



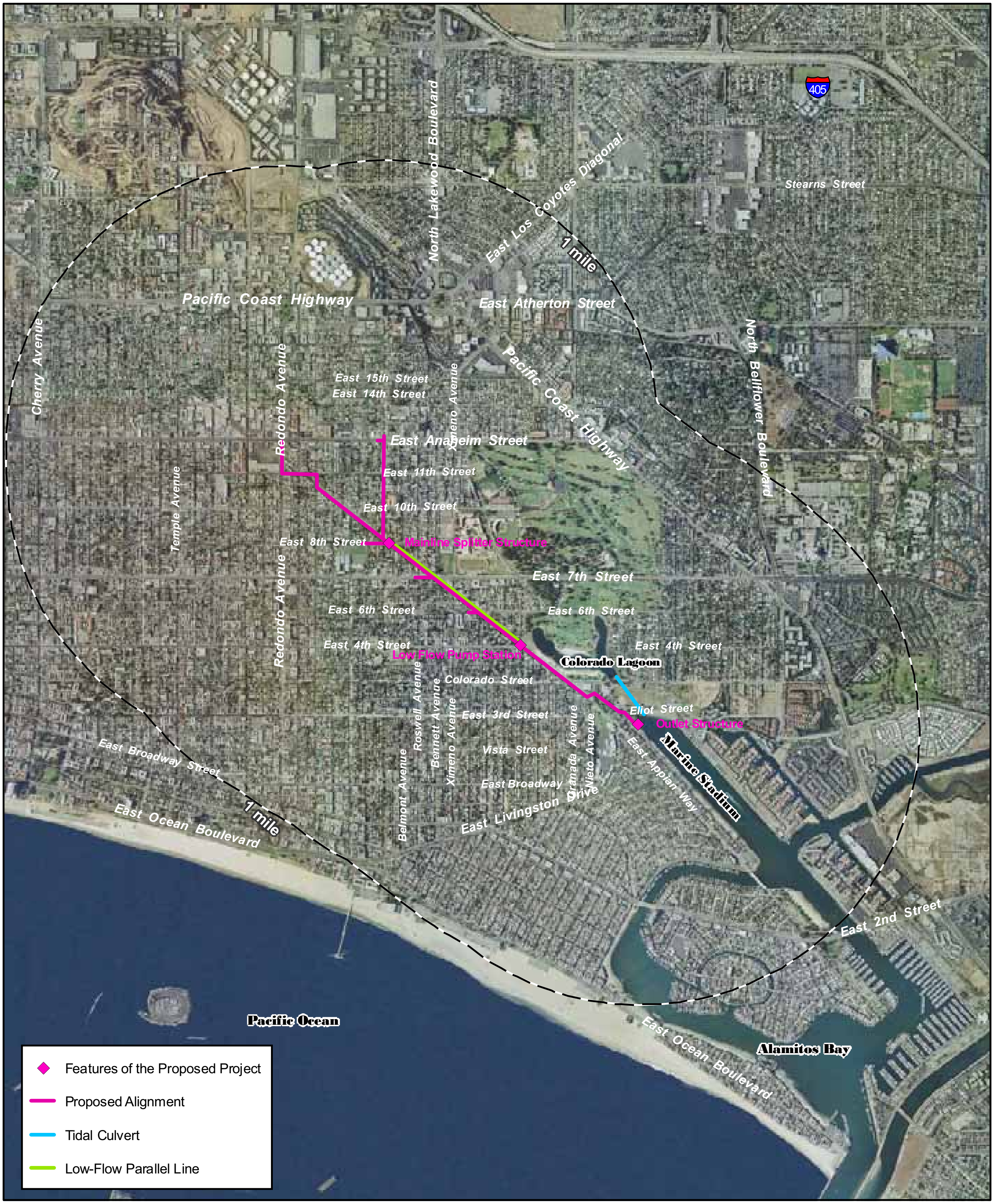
Source: California Geospatial Information Library (2003-5)

1 inch equals 12 miles

Miles
0 3 6 12 18 24

N

Figure 2-1
Regional Location Map



Source: City of Long Beach, 2004; California Geospatial Information Library (CalGIS), 2003-2005

1 inch equals 0.5 mile

0 0.25 0.5 1 Miles

N

Figure 2
Project Area Map

convey storm flows directly to Marine Stadium and would have the capacity to convey the 50-year frequency storm event. The mainline of the proposed drainage system would run along a former PE right-of-way and across several streets. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. Aside from the new outlet structure at Marine Stadium, the proposed storm drain components would all be located underground. Upon completion of the project, the alignment would be returned to its existing condition. In particular, following the conclusion of construction, the planted native landscaping area in the PE right-of-way between 7th and 8th Streets, called the Long Beach Greenbelt, would be revegetated with native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock). To the extent feasible, plants, soil, and woody material from the areas to be impacted would be made available for salvage and use in planting efforts. Only the portion of the PE right-of-way between 7th and 8th Streets would be replanted with the native upland scrub vegetation.

The project would improve water quality by eliminating an existing source of urban runoff into Colorado Lagoon. In addition, an in-line trash screening device and a low-flow treatment pumping station would be installed for water quality improvement. The in-line trash screening system would remove suspended solids and floatables from the urban runoff and light storm flows. The low-flow treatment would improve water quality by diverting non-rainy season low flows to the County's sewage treatment system.

The proposed new drainage system is currently surrounded by a mix of residential, commercial, and recreational land uses. The upstream portion of the alignment is predominantly characterized by residential and commercial development; whereas, the downstream portion of the alignment near Colorado Lagoon and Marine Stadium mostly includes open space and recreational uses. The project activity within Marine Stadium is limited to the outfall location.

METHODOLOGY

Background research for the project included a literature review, which included use of data collected during surveys previously conducted at Colorado Lagoon. These include *Colorado Lagoon Watershed Impacts Report, City of Long Beach, Colorado Lagoon Restoration Feasibility Study* (HDR and CGvL 2004); *Special Status Species Considerations for the Colorado Lagoon Restoration Feasibility Study for the City of Long Beach* (Chambers Group 2004a); and *Habitat Assessment for the Colorado Lagoon Restoration Feasibility Study for the City of Long Beach* (Chambers Group 2004b). In addition, EDAW biologists conducted vegetation mapping, general wildlife surveys, and rare plant surveys according to the schedule in Table 1. No focused surveys were conducted.

Table 1
Biological Surveys Conducted for the Termino Avenue Drain Project

Survey Date	Survey Purpose	Field Personnel
July 2, 2003	Rare Plant Survey, Vegetation Mapping	EDAW
June 16 through August 27, 2004	California Least Tern and California Brown Pelican Surveys	Keane Biological Consulting
May 9, 2005	Eelgrass Survey	Coastal Resources Management
May 10, 2005	Eelgrass Survey	Coastal Resources Management
May 11, 2005	Eelgrass Survey	Coastal Resources Management
November 17, 2005	General Wildlife Survey, Vegetation Mapping, Rare Plant Survey	EDAW

Terrestrial Vegetation Mapping

Vegetation mapping for the project site, including a 100-foot buffer, was conducted twice during the months of July and November. Separate communities were mapped onto an aerial of the project site and the results were subsequently transferred to geographic information system (GIS) data to calculate acreages.

Marine Data Collection

Eelgrass vegetation was mapped using a Global Position System (GPS) by a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel. The scuba-diving biologist first located the beginning of an eelgrass bed and marked it with a yellow buoy. The surface support biologist working from a kayak then initiated tracking of the biologist diver using GPS technology as the diver swam the perimeter of the individual eelgrass bed. Once the diver returned to the beginning point, the GPS track was terminated. Eelgrass patches that were too small to survey or considered distinct growth centers were referenced as a GPS "patch" and a size of the eelgrass patch was estimated by the diver.

In addition, Everest International Consultants (2005) conducted hydrologic and water quality analyses, including salinity analysis, to determine potential impacts of the project on Colorado Lagoon and Marine Stadium.

Wetland Delineation

A federal wetland delineation was not conducted for the project. However, Marine Stadium is an ocean outlet and is therefore determined to be "waters of the U.S." under the jurisdiction of the U.S. Army Corps of Engineers (ACOE). Permits will be obtained from the ACOE and the Regional Water Quality Control Board (RWQCB).

Sensitive Plant Surveys

The project site, including a 100-foot buffer, was surveyed for the presence of sensitive plant species during the months of July and November. This involved searching for target sensitive species expected in the region by walking meandering transects through all habitats on and immediately surrounding the site. Several of the potentially occurring sensitive plant species may not have been detectable during the November survey because it was outside of their blooming periods; however, the July survey was conducted during the appropriate time for blooming plants.

Wildlife Surveys

California Least Tern and California Brown Pelican Surveys

Surveys for California least tern and California brown pelican were conducted at the north end of Marine Stadium and Colorado Lagoon. Surveys were conducted by observing foraging areas over a period of 2 months.

General Wildlife Survey

The project site, including a 100-foot buffer, was surveyed for the presence of wildlife species in November 2005. This involved walking meandering transects throughout the project study area and recording observed or detected terrestrial species. Marine species were recorded during eelgrass surveys.

CHAPTER 2.0
EXISTING CONDITIONS

TOPOGRAPHY

Marine Stadium is an outlet to the Pacific Ocean and therefore is at sea level. The eastern end of the project near Anaheim Street is at an elevation of 36 feet. A park and pedestrian walkway surround the stadium. The proposed storm drain alignment is located within an existing PE right-of-way and residential streets, which have relatively flat topography.

SALINITY

Hydrological and water quality testing were conducted in Colorado Lagoon and Marine Stadium by Everest International Consultants (2005). As part of the testing, the salinity of the water was recorded. The results of this study and an analysis of the potential effects to marine species are discussed in *Eelgrass (Zostera marina) Habitat Mapping Survey and Environmental Assessment for the County of Los Angeles Termino Avenue Storm Drain Outlet Study, Los Alamitos Bay (Long Beach), California* (CRM 2005a).

SOILS

The watershed consists of two similar types of soil series, the Ramona Series and the Tujunga Series (HDR/CGvL 2004). Typically, Ramona soils have brown, slightly acid and medium acid, sandy loam and fine sandy loam A horizons; reddish brown and yellowish-red, slightly acid, sandy clay loam B2t horizons; and strong brown, neutral, fine sandy loam C horizons. Ramona soils dominate the watershed. The Ramona Series is well-drained, slow to rapid runoff and has moderately slow permeability. The Tujunga Series consists of very deep, somewhat excessively drained soils formed in alluvium weathered mostly from granitic sources. Tujunga soils are on alluvial fans and floodplains and have slopes of 0 to 9 percent. Tujunga soils are found directly adjacent to Colorado Lagoon. They are somewhat excessively or excessively drained and have negligible or very low runoff and rapid permeability. Flooding is none to frequent.

VEGETATION COMMUNITIES AND OTHER COVER TYPES

Vegetation types or communities are assemblages of plant species that usually coexist in the same area. The classification of vegetation communities is based upon the life form of the dominant species within that community and plant physiognomy. Due to the urban and disturbed nature of the project area, minimal natural habitat is present on the site. Much of the project study area is developed and therefore unvegetated. Other unvegetated areas, e.g., the beach area of Colorado Lagoon, also coincides with the project study area. There are six vegetation communities and other cover types within the project study area.

- Marine
- Native Landscaping
- Disturbed Habitat
- Ornamental
- Developed
- Other

The biological resources that occur within the study area are depicted in Figures 3 and 4. Vegetation communities and other cover types are described below.

Marine

The marine portion of the study area is within Marine Stadium, which was used for the 1932 Olympic rowing competition and is now used for water skiing, high performance boat racing, crew competition, and outrigger canoe competition. Marine habitats in Marine Stadium include sand beach, mudflat, intertidal and subtidal rip rap, and subtidal soft bottom. The project area shoreline consists of protective quarry rock rip rap on the west side of Marine Stadium. A storm drain and a tidal culvert are located within this section of shoreline. This shoreline grades into a sandy beach (End Beach) on the east side of the tidal culvert, which was used as a mitigation site for eel grass. The entire length of the Marine Stadium's eastern shoreline is rock rip rap. This vegetation community and the associated acreage calculations do not include the shoreline and upland habitats of Marine Stadium, which are included below as 'Other'.

The subtidal soft bottom of Marine Stadium provides habitat for eelgrass (Zostera marina) beds. Eelgrass is a flowering marine plant that forms meadows in southern California embayments. This species of seagrass grows in Alamitos Bay between the ocean entrance channel and Marine

Stadium at depths between 0.0 feet MLLW and -12 feet MLLW. Figure 3 maps the existing eelgrass in Marine Stadium. Eelgrass vegetation was mapped using a Global Position System (GPS) and a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel/safety diver (CRM 2005a). The eelgrass canopy (consisting of shoots and leaves approximately two to three feet long) attracts many marine invertebrates and fishes, and the added vegetation and the vertical relief it provides 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 sportsfish value (California halibut and barred sand bass). A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) lives within the soft sediments that cover the root and rhizome mass system. Eelgrass meadows are also critical foraging centers for seabirds (such as the endangered California least tern) that seek out baitfish (i.e., juvenile topsmelt) attracted to the eelgrass cover. 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. Approximately 0.13 acres of eelgrass habitat occur within the project area. Marine habitat, including the eelgrass habitat and a 500-foot buffer around the outlet structure, occupies approximately 5.57 acres of the project area.

Native Landscaping

An area of native landscaping exists within the PE right-of-way, which includes California buckwheat (Eriogonum fasciculatum), California sagebrush (Artemisia californica), and various sage species (Salvia sp.) typical of southern California native scrublands. In addition to the above species, the area is dominated by species such as goldenbush (Isocoma menziesii var. vernonioides), coyote brush (Baccharis salicifolia), and big saltbush (Atriplex lentiformis ssp. lentiformis). The native landscaping area is not naturally occurring, and was planted, at least in part, in November of 2000. The plantings appear to be healthy and thriving. The native landscaping area is encroached upon by many escaped ornamental plants, has a significant cover of mulch, and experiences foot-traffic from recreational trail users. Approximately 2.54 acres of this habitat occur within the project area shown on Figure 4.

Disturbed Habitat

Disturbed habitat is any land that has been permanently altered by previous human activity, including grading, repeated clearing, intensive agriculture, vehicular damage, or dirt roads. Disturbed land is typically characterized by more than 50 percent bare ground and an absence of

Source: Aerial base from City of Long Beach. Eelgrass survey by Coastal Resources Management, May 2005

Figure 3
Eelgrass Map

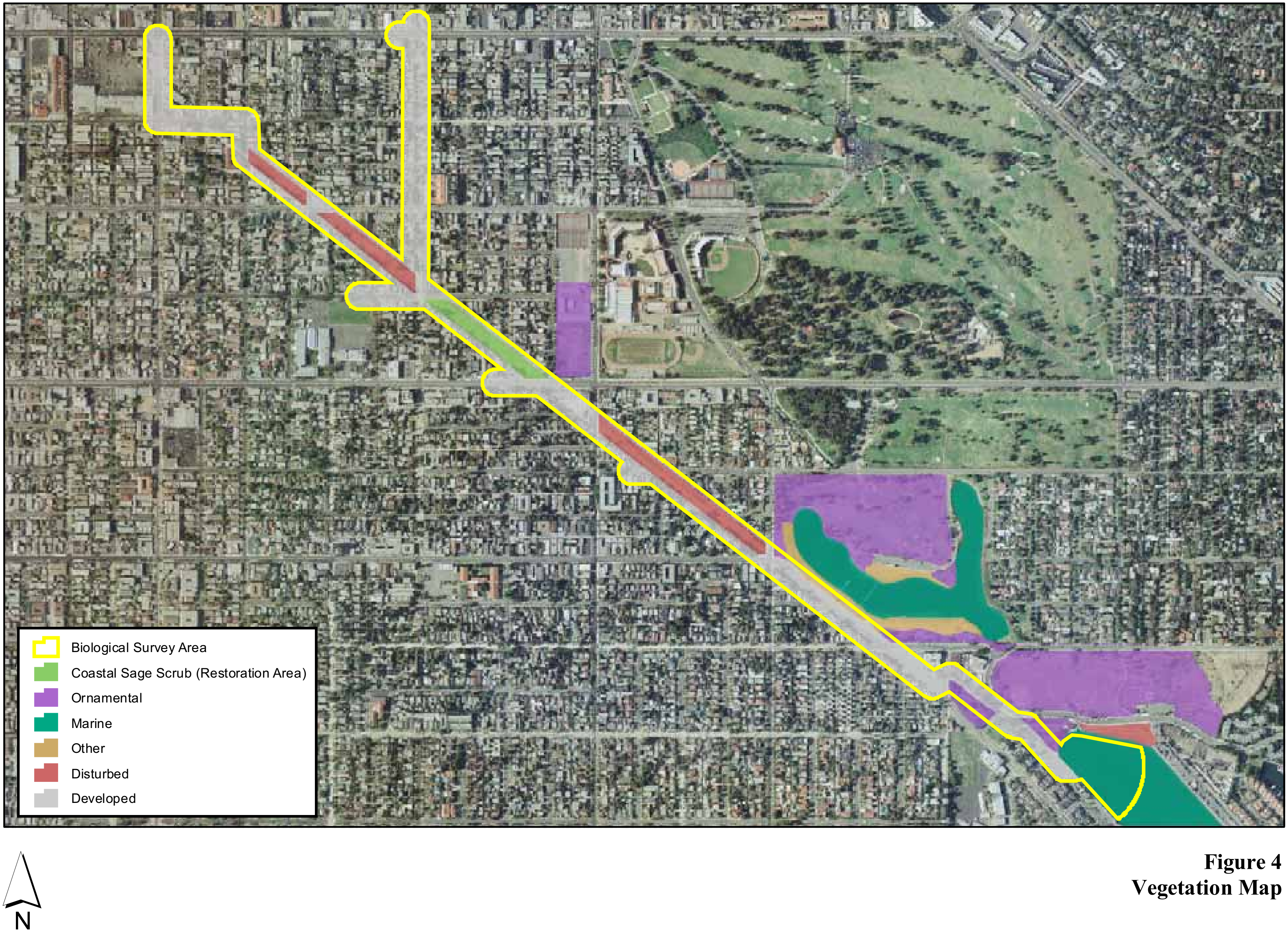


Figure 4
Vegetation Map

remnant native vegetation. In addition, the previous disturbance was severe enough to eliminate future potential biological value of the land without active restoration. Such areas can include dirt trails and cleared areas. Disturbed habitat in the project area is characterized by mowed, non-native species such as Bermuda grass (*Cynodon dactylon*) and wild radish (*Raphanus sativus*) and patches of bare ground. Approximately 7.27 acres of this habitat occur within the project study area.

Ornamental

Ornamental areas can be characterized as sites that are dominated by commercially available, exotic species, most of which were planted for aesthetic purposes. Ornamentals have been planted throughout the parks of the project area for aesthetic or landscaping purposes and to function as visual screens. Eucalyptus and Bermuda grass, both exotic species, are examples of common species within the ornamental areas. Approximately 1.66 acres of this habitat occur within the project study area.

Developed

Developed areas include roadways, residences, and commercial development. Ornamental landscaping associated with these facilities, if minimal in area, is also included in this category (more extensive areas of ornamental landscaping are mapped as ornamental, as described above). There are few or no native plant species in developed areas. The developed areas include invasive, exotic species such as eucalyptus (*Eucalyptus* sp.) and iceplant (*Carpobrotus edulisi*) that have been used as ornamentals and in some instances slope stabilization. Approximately 43.89 acres of developed areas occur within the project study area.

Other

A portion of the 100-foot buffer in the study area includes the unvegetated beach area of Colorado Lagoon. This beach sand area is an additional cover type. This area is heavily used for recreational purposes. Approximately 0.75 acre of this habitat occurs within the project study area.

FLORA

A total of 71 plant species, of which 18 species (approximately 25 percent) are native, were observed on the property. The more common species are listed in the descriptions of the vegetation communities in the preceding section. A complete floral species list is included as Appendix A.

FAUNA

The project study area includes a variety of urban terrestrial species as well as bird species at Colorado Lagoon and Marine Stadium. Several marine species frequent Marine Stadium near the outfall. During the general wildlife and eelgrass surveys, a total of 52 bird species, 2 terrestrial species, and 16 marine species were detected in the project area. A faunal inventory was compiled of species encountered or detected during the surveys and is included as Appendix B to this document.

SENSITIVE BIOLOGICAL RESOURCES

The property was evaluated for the extent, quality, and significance of existing sensitive biological resources. The surveys provide an update to the previous environmental studies conducted for the project site. Special status plant and wildlife species are species that are either legally protected under the federal and state Endangered Species Acts (ESAs) or other regulations, or species considered by the scientific community to be sufficiently rare to qualify for such listing. Special status species include species listed or proposed for listing as endangered or threatened under the federal ESA (USFWS 1999), the California ESA (CDFG 2005 a, b), or the California Native Plant Protection Act. Also included below are species that are of special concern to the California Department of Fish and Game (CDFG 2005c), species of special concern to the U.S. Fish and Wildlife Service (USFWS 2005), and species covered under the Migratory Bird Treaty Act (MBTA). For this report, all birds included in the sensitive species list are protected under the MBTA. Furthermore, it is mandatory that California Native Plant Society (CNPS) lists 1A, 1B, and 2 species be fully considered during the preparation of environmental documents relating to the California Environmental Quality Act (CNPS 2001) as they meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California ESA). Finally, species listed as sensitive by the Western Bat Working Group are considered below as well. All species identified through California Natural Diversity Database (CNDDB) searches as known to occur or known to have occurred within the project vicinity are considered below.

Sensitive Vegetation Communities

Sensitive habitats are those considered rare within the region, support sensitive flora and/or fauna, or function as linkages for wildlife movement. Although the native landscaping within the PE right-of-way includes plants that are typically associated with southern California native scrublands, there are no naturally occurring sensitive habitats in the project area. Non-naturally occurring sensitive habitats in the project vicinity include southern coastal bluff scrub and southern coastal salt marsh.

Sensitive Plant Species

A CNDDB search of the Long Beach and seven adjacent quadrangles – Inglewood, South Gate, Whittier, Los Alamitos, Seal Beach, San Pedro, and Torrance – resulted in a total of 25 plant species known to occur in the general area of the project site (CDFG 2005d). All sensitive plant species that were determined to have a potential to occur on the property, their sensitivity status, and descriptions of their general habitat are listed below in Table 2. Only one sensitive species, the southern tarplant (*Centromadia parryi* ssp. *australis*), a CNPS 1B species, was observed near the project area during the 2003 biological survey; however, this species has since been replaced with ornamental vegetation and is outside of the 100-foot buffer. In addition, no sensitive plant species were observed in surveys undertaken in 2004 (Chambers Group 2004a).

Table 2
Sensitive Plant Species Known to Occur, or with the Potential to Occur, in the Vicinity of the Termino Avenue Drain Survey Area

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
aphanisma *Aphanisma blitoides*	CNPS: 1B	Beach dunes, coastal bluffs, and coastal bluff scrub. Most of the existing populations located on the Channel Islands.	Low potential to occur due to lack of suitable habitat present.
Ventura marsh milk-vetch *Astragalus pycnostachyus* var. *lanosissimus*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Found in coastal dunes and coastal scrub, as well as coastal marshes and swamps. Occurs almost always under natural conditions in wetlands.	Low potential to occur due to lack of suitable habitat present.
coastal dunes milk-vetch *Astragalus tener* var. *titi*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Sandy areas of coastal bluff scrub, coastal dunes, and mesic areas of coastal prairie. Known from only one occurrence on the Monterey Peninsula.	Low potential to occur due to lack of suitable habitat present.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
south coast saltscale *Atriplex pacifica*	CNPS: 1B	Coastal bluff scrub, coastal dunes, coastal scrub, playas. Rare throughout its range.	Moderate potential to occur due to potentially suitable habitat. Nearest occurrence is on a beach in Torrance.
Parish's brittlescale *Atriplex parishii*	CNPS: 1B	Chenopod scrub, playas, and vernal pools. Known only from three occurrences in southern California.	Low potential to occur due to lack of suitable habitat present.
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	CNPS: 1B	Coastal bluff scrub and alkaline areas of coastal scrub.	Low potential to occur due to lack of suitable habitat present.
Santa Barbara morning-glory *Calystegia sepium* ssp. *binghamiae*	CNPS: 1A	Coastal marshes and swamps. Probably extirpated.	Low potential to occur due to presumed extinction in California. Nearest historical occurrences were in Bolsa Chica and Cienega.
southern tarplant *Centromadia parryi* ssp. *australis*	CNPS: 1B	Marshes and swamps (margins), valley and foothill grassland, vernal pools. From southern California and Baja California. Often in disturbed sites near the coast; also in alkaline soils sometimes with saltgrass; also vernal pools.	Moderate potential to occur based on suitable habitat. This plant was formerly located in a patch between Marine Vista Park and Marine Stadium.
salt marsh bird's-beak *Cordylanthus maritimus* ssp. *maritimus*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Coastal dunes and coastal salt areas of marshes and swamps. Higher reaches of coastal salt marshes to intertidal and brackish areas influenced by freshwater input.	Low potential to occur due to lack of suitable habitat present.
Catalina crossosoma *Crossosoma californicum*	CNPS: 1B	Chaparral and rocky areas of coastal scrub. Most known occurrences are on San Clemente Island.	Low potential to occur due to lack of suitable habitat present.
island green dudleya *Dudleya virens* ssp. *insularis*	CNPS: 1B	Coastal bluff scrub and rocky areas of coastal scrub.	Low potential to occur due to lack of suitable habitat present.
Mexican flannelbush *Fremontodendron mexicanum*	USFWS: Endangered CDFG: Rare CNPS: 1B	Closed-cone coniferous forest, chaparral, cismontane woodland. Gabbroic, metavolcanic, or serpentinite soils.	Low potential to occur within the survey area due to lack of suitable habitat.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	CNPS: 1B	Marshes and swamps, playas, vernal pools.	Low potential to occur due to lack of suitable habitat present.
Santa Catalina Island desert-thorn *Lycium brevipes* var. *hassei*	CNPS: 1B	Coastal bluff scrub, coastal scrub (coastal salt).	Low potential to occur due to lack of suitable habitat present.
mud nama *Nama stenocarpum*	CNPS: 2	Marshes and swamps (lake margins, riverbanks). Intermittently wet areas.	Moderate potential to occur based on potentially suitable habitat.
spreading navarretia *Navarretia fossalis*	USFWS: Threatened CNPS: 1B	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools.	Low potential to occur due to lack of suitable habitat present.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
prostrate navarretia *Navarretia prostrata*	CNPS: 1B	Coastal scrub, meadows and seeps, alkaline areas of valley and foothill grassland, vernal pools and/or mesic areas.	Low potential to occur due to lack of suitable habitat present.
coast wooly-heads *Nemacaulis denudata* var. *denudata*	CNPS: 1B	Coastal dunes.	Low potential to occur due to lack of suitable habitat present.
California Orcutt grass *Orcuttia californica*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Vernal pools. Known only from southern California and Baja.	Low potential to occur within the survey area due to sparse presence or lack of suitable habitat.
Lyon's pentachaeta *Pentachaeta lyonii*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Chaparral, valley and foothill grassland. Edges of clearings in chaparral, usually at the ecotone between grassland and chaparral or edges of firebreaks.	Low potential to occur within the survey area due to sparse presence or lack of suitable habitat.
Brand's phacelia *Phacelia stellaris*	CNPS: 1B	Coastal dunes, coastal scrub.	Low potential to occur due to lack of suitable habitat present.
Sanford's arrowhead *Sagittaria sanfordii*	CNPS: 1B	Marshes and swamps (assorted shallow freshwater areas).	Low potential to occur due to lack of suitable habitat present.
salt spring checkerbloom *Sidalcea neomexicana*	CNPS: 2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas / alkaline, mesic.	Low potential to occur due to lack of suitable habitat present.
estuary seablite *Suaeda esteroa*	CNPS: 1B	Marshes and swamps (coastal salt).	Low potential to occur due to lack of suitable habitat present.
San Bernardino aster *Symphyotrichum defoliatum*	CNPS: 1B	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, valley and foothill grassland (vernally mesic) / near ditches, streams, springs.	Low potential to occur due to lack of suitable habitat present.

[1]Sensitivity Status Key

Federal U.S. Fish and Wildlife Service (USFWS)
State California Department of Fish and Game (CDFG)
Other California Native Plant Society (CNPS)
1A: Plants presumed extinct in California
1B: Plants rare, threatened, or endangered in California and elsewhere
2: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants more information is needed for
4: Plants of limited distribution – a watch list

Detailed descriptions are provided below for the three non-listed, sensitive plant species that had a moderate potential to occur; none were detected on-site. All other listed and sensitive species were determined to have a low potential to occur on the site. See Table 2 for information on habitat affinities and notes on why these species were considered to have lower potentials to occur on the property.

South coast saltscale – *Atriplex pacifica*

USFWS Status:	None
CDFG Status:	None
CNPS rating:	List 1B
Natural History:	South coast saltscale is an annual plant of the goosefoot family (Chenopodiaceae). It has a mat-like form with prostrate to decumbent stems and ascending branches. Its leaves are elliptic to oblanceolate and are greenish above and gray to white-scaly below (Hickman 1993). This is a summer-blooming (March-October) annual plant.
Distribution:	The south coast saltscale is known from Ventura County south to Baja California, and including the Channel Islands. In Los Angeles County, the species is known from Redondo Beach and San Pedro (CNPS 2005).
Habitat:	South coast saltscale occurs on bluffs and shrubland at elevations of less than 300 feet (Hickman 1993). There is at least one known occurrence of this species in beach habitat.
Conservation Status:	Remaining populations are threatened by urbanization and recreation.
Status On-site:	This species was not detected during focused surveys. Habitat on-site may be suitable.

Southern tarplant – *Centromadia parryi* ssp. *australis*

USFWS status:	None
CDFG Status:	None
CNPS rating:	List 1B
Natural History:	Southern tarplant is a mildly scented annual plant of the sunflower family (Asteraceae). The plants are generally erect and are densely glandular, especially above (Hickman 1993). It is a summer-blooming (May-November) species. Its ray flowers are yellow, often becoming more orange with age, and its disk flowers have brown or black anthers (Hickman 1993).
Distribution:	This species is distributed throughout the southern coast and northern Baja California (Hickman 1993). The nearest current location is in Seal Beach.
Habitat:	Southern tarplant occurs in seasonally moist (saline) grassland at elevations of less than 650 feet (Hickman 1993).

Conservation Status:	This species is threatened by development, urbanization, and foot traffic from recreational use.
Status On-site:	Multiple southern tarplant were observed on the north end of Marine Stadium during the 2003 biological survey; however, it has since been replaced with ornamental vegetation. Habitat on-site remains suitable for the southern tarplant.

Mud nama – *Nama stenocarpum*

USFWS status:	None
CDFG Status:	None
CNPS rating:	List 2
Natural History:	Mud nama is a taprooted annual of the waterleaf family (Hydrophyllaceae). It is short-soft-silky-hairy and short-glandular-hairy with some stiff hairs at its base. It has a white to cream-colored funnel-shaped flower with bristly petals and its leaves have wavy margins. The mud nama blooms from approximately January to July (CNPS 2005).
Distribution:	This species is distributed in southwestern California and Texas and Mexico (Hickman 1993). The nearest location to the project site is in Seal Beach.
Habitat:	Mud nama occurs in intermittently wet areas at elevations of less than 1,700 feet (Hickman 1993). It occurs within muddy embankments at the edge of rivers and lakes.
Conservation Status:	This species is threatened by development and recreational use.
Status On-site:	This species was not detected on-site during focused surveys. Habitat on-site may be suitable. However, it has a low to moderate potential to occur on-site due to negative survey results during the appropriate survey period.

Sensitive Wildlife Species

A CNDDB search of the Long Beach and seven adjacent quadrangles resulted in a total of 35 sensitive animal species known to occur in the general project area. All sensitive wildlife species that were detected or have a potential to occur on the property are listed below in Table 3, including their sensitivity listings, habitat requirements, and probabilities for occurrence. Eight sensitive species listed below have been observed directly in the project area (Table 3). Seven additional threatened or endangered wildlife species have a potential to occur within the project area based on the presence of suitable habitat and/or the proximity of known populations, including four with a moderate potential to occur, and three with a low potential to occur.

Finally, an additional 20 sensitive wildlife species are known to occur in the project vicinity, but are not expected to occur on or near the project site due to a lack of suitable habitat.

Table 3
Sensitive Wildlife Species Known to Occur, or with the Potential to Occur, in the Vicinity of the Termino Avenue Drain Survey Area

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
Invertebrates			
Palos Verdes blue butterfly *Glaucopsyche lygdamus palosverdesensis*	USFWS: Endangered	Shrubland and chaparral.	Low. No habitat exists in the project vicinity. Has been observed approximately 3 miles from the project site but adequate habitat does not occur on the project site.
Amphibians			
western spadefoot *Spea hammondii*	CDFG: Species of Special Concern	Temporary ponds, vernal pools, and backwaters of slow-flowing creeks. Also upland habitats such as grasslands and coastal sage scrub where burrows are constructed.	Moderate. Not observed during surveys; suitable habitat is present on-site.
Reptiles			
southwestern pond turtle *Emys marmorata pallida*	CDFG: Species of Special Concern	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 600 feet. Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks; also needs suitable nesting areas.	Low. Habitat occurs within the project area but geographic distribution limits probability of occurrence.
San Diego horned lizard *Phrynosoma coronatum blainvillei*	CDFG: Species of Special Concern	Suitable habitat consists of mixed chaparral and scrub habitats with rocky or sandy soils.	Moderate. Not observed during surveys; suitable habitat is present on-site.
Birds			
Cooper’s hawk *Accipter cooperi*	CDFG: Species of Special Concern	Variety of mixed woodlands and urban areas.	Detected. Species observed during previous survey (Bonterra Consulting 2002).
sharp-shinned hawk *Accipter striatus*	CDFG: Species of Special Concern	Woodlands or streamside groves.	Moderate. Species may occur as migrant. Suitable roosting but no breeding habitat.
tricolored blackbird *Agelaius tricolor*	CDFG: Species of Special Concern	Suitable habitat for this species includes emergent wetland with dense cattails or dense riparian willow vegetation.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
burrowing owl *Athene cunicularia*	CDFG: Species of Special Concern	(Burrow sites) open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, depends upon burrowing mammals, most notably, the California ground squirrel.	Low. No habitat exists due to the developed nature of the area. No recorded observations.
Rhinoceros auklet *Cerorhinca monocerata*	CDFG: Species of Special Concern	Common along west coast in winter in large numbers near shore.	Low. No habitat exists due to the developed nature of the area.
Vaux's swift *Chaetura vauxi*	CDFG: Species of Special Concern	Woodlands near water.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
western snowy plover *Charadrius alexandrinus nivosus*	USFWS: Threatened CDFG: Species of Special Concern	Beaches with dry mud or sandflats, along sandy shores of rivers, lakes, and ponds. Nests on ground in open beaches with scattered clumps of vegetation.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
western yellow warbler[2] *Dendroica petechia brewsteri*	CDFG: Species of Special Concern	Wet habitats, open woodlands, gardens, and orchards.	Detected. Species observed during current survey.
common loon *Gavia immer*	CDFG: Species of Special Concern	Nests on large lakes. Migrates over land. Winters in coastal waters or on ice-free inland lakes.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
salt marsh yellowthroat *Geothlypis trichas sinuosa* (nesting)	CDFG: Species of Special Concern	Grassy fields, shrubs, marshes, reeds.	Moderate. Not observed during surveys; suitable habitat is present on-site.
California horned lark *Eremophila alpestris actia*	CDFG: Species of Special Concern	Dirt fields, gravel ridges, and shores.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
American peregrine falcon *Falco peregrinus anatum*	CDFG: Endangered	Open wetlands near cliffs; also nest on bridges and tall buildings.	Moderate. Not observed during surveys; suitable habitat is present on-site.
western least bittern *Ixobrychus exilis hesperis*	CDFG: Species of Special Concern	Reeds, wetlands.	Low. No habitat exists due to the developed nature of the area.
California gull *Larus californicus*	CDFG: Species of Special Concern	Beaches, coastal areas.	Detected. Species observed during current survey.
loggerhead shrike *Lanius ludovicianus*	CDFG: Species of Special Concern	Open or brushy areas.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
long-billed curlew *Numenius americanus*	CDFG: Species of Special Concern	Nests in wet and dry uplands; during migration can be found in wetlands	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
osprey (nesting) *Pandion haliaetus*	CDFG: Species of Special Concern	Coastal lagoons, rivers, bays, reservoirs.	Detected. Species observed during recent survey (Chambers Group 2004b).
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	CDFG: Endangered	Herbaceous wetlands and salt - marshes. Nests on ground in natural depressions primarily in pickleweed above highest reach of spring tides.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
California brown pelican *Pelicanus occidentalis californicus*	USFWS: Endangered CDFG: Endangered	Coastal salt water lagoons, beaches, bays, marshes, and open ocean.	Detected. Species observed during current survey.
double-crested cormorant *Phalacrocorax auritus*	CDFG: Species of Special Concern	Coastal salt water lagoons, beaches, bays, marshes, and open ocean.	Detected. Species observed during current survey.
coastal California gnatcatcher *Polioptila californica californica*	USFWS: Threatened CDFG: Species of Special Concern	A permanent resident of coastal sage scrub in arid washes, mesas, and slopes.	Low. A small amount of habitat occurs in the revegetated area between 7th Street and 8th Street but is disconnected from contiguous habitat.
light-footed clapper rail *Rallus longirostris levipes*	USFWS: Endangered CDFG: Endangered	Herbaceous wetlands, cordgrass-pickleweed salt marshes. Nests in clumps of pickleweed or in cordgrass slightly above ground.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
black skimmer *Rynchops niger*	CDFG: Species of Special Concern	Primarily along coastal waters, bays, lakes, or estuaries. Nests on sandy beaches and shell banks.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
California least tern *Sterna antillarum browni*	USFWS: Endangered CDFG: Endangered	Sand dunes, sea coasts, bays, estuaries, lagoons, lakes, and rivers. Nests on open flat beaches along lagoons or estuary marshes.	Detected. Species observed during previous survey (Keane Biological Consulting 2004). Suitable roosting and foraging but no breeding habitat.
elegant tern *Sterna elegans*	CDFG: Species of Special Concern	Sea coasts, bays, estuaries, lagoons.	Detected. Species observed during previous survey (Keane Biological Consulting 2004).
Mammals			
pallid bat *Antrozous pallidus*	CDFG: Species of Special Concern WBWG: H	Rock crevices, trees, shrubs, and grasslands	Moderate. Not observed during surveys; suitable habitat is present on-site.
western yellow bat *Lasiurus xanthinus*	WBWG: H	Roosts in trees, generally palms, but is also associated with riparian woodland.	Moderate. Not observed during surveys; suitable habitat is present on-site.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
big free-tailed bat *Nyctinomops macrotis*	CDFG: Species of Special Concern WBWG: M	Bare rock/talus/scree, cliffs, desert, and hardwood woodlands.	Moderate. Not observed during surveys; suitable habitat is present on-site.
Pacific pocket mouse *Perognathus longimembris pacificus*	USFWS: Endangered	Burrows in loose soil, shrubland with firm sand or soil; coastal dunes, river alluviums, and coastal sage.	Low. No habitat exists due to the developed nature of the area.
southern California saltmarsh shrew *Sorex ornatus salicornicus*	CDFG: Species of Special Concern	Coastal marshes, specifically fallen logs and woody debris.	Low. No habitat exists due to the developed nature of the area.
American badger *Taxidea taxus*	CDFG: Species of Special Concern	Cropland/hedgerow, desert, chaparral, grassland/savana; burrows in loose soil.	Low. No habitat exists due to the developed nature of the area.

[1] **Sensitivity Status Key**

<u>Federal</u> U.S. Fish and Wildlife Service (USFWS)
<u>State</u> California Department of Fish and Game (CDFG)
<u>WBWG</u> Western Bat Working Group Conservation Priority (H) High, (M) Medium, and (L) Low

[2] The subspecies of yellow warbler considered a CDFG species of special concern is *brewsteri*. It has been determined by multiple sources (Unitt 2004) that the subspecies of yellow warbler nesting and migrating within California is *morcomi*. It is assumed that the CDFG status intends to cover subspecies of yellow warbler occurring within the state despite taxonomic arguments.

In addition, Marine Stadium is considered Essential Fish Habitat (EFH), defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The proposed project is located within an area designated as EFH for one Fisheries Management Plan (FMP), the Coastal Pelagics Management Plan. Of the 86 species managed under all of the FMP, 4 are known to occur in the San Pedro Channel area, and potentially within Alamitos Bay (Table 4) (CRM 2005b).

Species accounts for those federally and state-listed species and other special status species detected on-site are provided below. Discussions of those species that have a moderate to high potential for occurring are also provided below.

Threatened and Endangered Wildlife Species Observed On-site

Two listed wildlife species have been observed on-site, the federal and state endangered California brown pelican and the California least tern. Species accounts for these species are included below. Seven additional threatened or endangered wildlife species have a potential to

Table 4
Coastal Pelagic Management Plan Species Potentially Affected by the Termino Avenue Drain Project

Common Name	Scientific Name	Comment
Northern anchovy	*Engraulis mordax*	Common to abundant during each of 11 surveys between 1972 and 1997. Second 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.

[1] MBC 1997
[2] MEC 1988
[3] MEC 1999
[4] Intersea Research Corporation 1981
Source: CRM 2005b

occur within the project area based on the presence of suitable habitat and/or the proximity of known populations, including four with a moderate potential to occur, and three with a low potential to occur (Table 3).

California brown pelican - *Pelecanus occidentalis californicus*

USFWS Status: Endangered

CDFG Status: Endangered

Other Status: MBTA covered

Listing Data: This species was federally listed as endangered on June 2, 1970, for all of the U.S. populations, and the southeastern U.S. population was later removed from endangered status (50 Federal Register 4938). The California population remains a federally listed endangered species. A recovery plan was published for the California brown pelican (USFWS 1983). Critical habitat has not been designated. The state of California listed the California brown pelican as endangered on June 27, 1971.

Distribution: The California brown pelican is found primarily within 12 miles of shore, but regularly up to 100 miles away from the coast. The pelicans are common along the coast throughout the year. The area extent of the foraging range of the brown pelican off the California coast is greatest in the South California Bight. This wide distribution is likely tied to the presence of several offshore islands that provide roosts and subsea topography that enhances thermal upwelling, which both support healthy populations of prey items.

Habitat: The brown pelican is found in estuarine, marine, subtidal, and marine pelagic waters. The brown pelican requires water, rocky cliffs, jetties, sandy beaches or mudflats for roosting, and open water for foraging. Nesting colonies occur on the Channel Islands and on the Coronado Islands (Garrett and Dunn 1981). Within California, nesting is restricted to these rocky islands, although onshore nesting has been noted to occur in Baja California. The brown pelican will rest on water or inaccessible rocks. It will not roost overnight on water (Briggs et al. 1981).

Natural History: The brown pelican is a yearlong diurnal species. It breeds from March to early August. The brown pelican forages mainly in early morning or late afternoon, or when the tide is rising. The species feeds almost entirely on fish, caught by diving from 6 to 12 meters in the air. The primary food item of the California brown pelican in southern California is northern anchovy (*Engraulis mordax*), although it also feeds on crustaceans, carrion, and other fish. The brown pelican builds a nest shaped as a small mound of sticks or debris on rocky, or low, bushy slopes of undisturbed islands (Cogswell 1977). The species usually nests on the ground, and less often in bushes (Palmer 1962). Clutch size is usually three eggs (Granholm 2005a). Young are altricial and tended by both parents. Young are capable of breeding at approximately 2 to 3 years old. After breeding, individuals will leave the nesting colonies and disperse along the entire California coast. Gulls and vultures are typical nest predators.

Comments: The brown pelican population declined sharply in the 1960s due to the introduction of pesticides such as DDT into the food chain, although the population trend is currently increasing. Current threats include oil spills and entanglement in fishing tackle.

Status On-site: Observed on-site during wildlife surveys. California brown pelicans forage in the lagoon and were observed roosting on pedestrian bridges, beaches, and other areas of Colorado Lagoon.

California least tern - *Sterna antillarum browni*

USFWS Status:	Endangered
CDFG Status:	Endangered (nesting colony)
Other Status:	MBTA covered
Listing Data:	The California least tern was listed by the USFWS on October 13, 1970 (Federal Register 35 FR 16047). This listing status applies to the entire population of *S. a. browni*. Critical habitat has not been determined by the USFWS, although there is an approved recovery plan for the species. The state listed the subspecies as endangered on June 27, 1971.
Distribution:	The California least tern is migratory in California. The species breeds from San Francisco Bay south to Baja California. Wintering areas are thought to be along the Pacific coast of South America.
Habitat:	The species historically nested colonially on beaches that are undisturbed, sparsely vegetated, flat areas with loose, sandy substrate. Few beach nesting areas remain and least terns are now found in varied habitats ranging from mudflats to airports. Adults roost primarily on the ground. They typically forage in areas with water less than 60 feet in depth (Atwood and Minsky 1983).
Natural History:	This small migratory tern begins nesting in mid-May and is present at nesting colonies from April through August. The species nests in loose colonies in areas relatively free of human or predatory disturbance. Nests are on barren to sparsely vegetated sites near water, usually with a sandy or gravelly substrate. Least terns lay from one to four eggs, which are incubated for 20 to 25 days by both adults. Young fledge 28 days after hatching and are fed by adults for an additional 2 weeks. The terns abandon the nesting colonies by mid-August and generally migrate south by mid-September. Banding returns indicate that least terns exhibit fidelity to the site where they first bred successfully. Prey items include northern anchovy, topsmelt, killifish, mosquitofish, shiner, surfperch, and mudflat gobies. Significant predators include burrowing owls and American kestrels (Collins and Bailey 1980).
Comments:	Human disturbance has displaced the least tern from much of its traditional nesting habitat. Accelerated silting in of lagoons has also eliminated some former nesting sites. Populations appear to have increased over the last quarter of the 20th century. However, development along the California coastline continues to threaten the species' survival as no alternatives to its current nesting sites remain.

Status On-site: Species was observed during Keane Biological Consulting surveys of Colorado Lagoon in 2004. Roosting and foraging habitat occurs on-site but nesting is not expected due to the highly developed nature of the area and high probability of human disturbance.

Non-listed, Sensitive Wildlife Species Detected On-site

Six additional sensitive species have been observed on-site during recent surveys: Cooper's hawk, western yellow warbler, California gull, osprey, double-breasted cormorant, and elegant tern. Species accounts for all six species are included below.

Cooper's Hawk - *Accipiter cooperii*

CDFG Status: Species of Special Concern (nesting)

Other Status: MBTA covered

Distribution: The Cooper's hawk is a breeding resident throughout wooded areas of California (Polite 2005a). The species ranges in elevation from sea level to above 8,850 feet. Outside of the breeding season, it disperses widely from southern Canada to northern Mexico. The species is sparser in the mountains than at lower elevations.

Habitat: Cooper's hawks nest primarily in oak woodlands but occasionally in willows or eucalyptus. The species most frequently prefers dense stands of live oak, riparian deciduous, or other forest habitat near water. The species usually nests and forages near open water or riparian vegetation.

Natural History: The Cooper's hawk is mostly a yearlong resident. Winter visitors occur in San Diego County from September to March. This species breeds from January through June in the county. Cooper's hawks build nests high in trees but beneath the canopy. Sometimes they will nest in riparian willows, but oaks and eucalyptus trees are the species' most common nest sites (Asay 1987). The Cooper's hawk will catch small birds, especially young during nesting season, and small mammals. They will also take reptiles and amphibians. Cooper's hawks will catch their prey in the air, on the ground, and in vegetation. Cooper's hawks hunt in broken woodland and habitat edges. The average distance between Cooper's hawk nests ranges from approximately 0.5 to 2.5 miles apart (Asay 1987; Polite 2005a). Young are born altricial.

Comments: This species has declined as a breeding species in California because of destruction of riparian woodland, contamination with pesticides and shooting. Numbers appear to be increasing as the species adapts to the urban environment.

Status On-site: Cooper's hawk was observed in the vicinity of Colorado Lagoon during Bonterra Consulting surveys in 2002.

Yellow warbler - *Dendroica petechia morcomi*

USFWS Status: None

CDFG Status: Species of Special Concern (nesting)

Other Status: MBTA covered

Distribution: The yellow warbler is a common to uncommon summer visitor and a rare but regular winter visitor (in coastal areas) in California. In southern California, it is uncommon and localized as a breeding species, but common and widespread as a migrant. The species is also a common migrant on Channel and Farallon islands in spring and fall (DeSante and Ainley 1980; Garrett and Dunn 1981).

Habitat: This species nests in mature riparian woodland from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada. Specifically, it prefers to nest in mature cottonwood, willow, alder, and ash trees. The yellow warbler will also breed in montane chaparral, and in open ponderosa pine and mixed conifer habitats with substantial amounts of brush. In general, the species frequents open to medium-density woodlands and forests with a heavy brush understory in breeding season. At low elevations the species is more confined to larger streams; in the foothills and mountains, it will inhabit narrow strips and patches of riparian trees. Migratory stopovers include a variety of dense woodland and forest habitats.

Natural History: The yellow warbler a nocturnal migrant. The species typically arrives in southern California during late March. Migration of populations heading farther north will occur later from April through June. Fall migration occurs from mid-August through mid-October. The species builds an open cup nest placed in upright forks of twigs in a deciduous sapling or shrub 2 to 35 feet above ground. Territories often include tall trees for singing and foraging and a heavy brush understory for nesting (Ficken and Ficken 1966). Territory size has been recorded as 0.08 acre to 0.9 acre. The species is known to drink from a water source regularly in desert environments (Smyth and Coulombe 1971). The yellow warbler feeds mostly on insects and spiders. It will glean and hover in the upper canopy of deciduous trees and shrubs. It will also occasionally pick insects from

	the air or eat berries (Bent 1953; Ehrlich et al. 1988). The yellow warbler breeds from mid-April through early August with peak activity occurring in June. Pairs breed solitarily. Typically, three to six eggs are laid and incubated by the female for approximately 11 days. Altricial young are tended by both parents until fledging at 9 to 12 days (Harrison 1978). Young will breed the following year.
Comments:	Like least Bell's vireo, the yellow warbler is a frequent victim of the brown-headed cowbird (Rothstein et al. 1980; Verner and Ritter 1983; Airola 1986). The species is also subject to predation by small mammals, accipiters, corvids, and snakes. The numbers of breeding pairs have declined in recent decades in many lowland areas (southern coast, Colorado River, and San Joaquin and Sacramento valleys). The species is now considered rare to uncommon in many lowland areas where formerly common (McCaskie et al. 1979; Garrett and Dunn 1981). Declines are due to habitat destruction and fragmentation and pesticide use. Populations in the west have been shown to increase where reduction of grazing and cessation of herbicide spraying of willows have led to regrowth of riparian vegetation (Ehrlich et al. 1988).
Status On-site:	Observed foraging during recent survey in ornamental trees between Colorado Lagoon and Marine Stadium.

California gull - *Larus californicus*

CDFG Status:	Species of Special Concern (nesting colony)
Other Status:	MBTA covered
Distribution:	In the United States the California gull occurs along the Pacific coast. The northern extent of the range reaches northwestern Canada, and as far south as Baja California Sur. In southern California, the California gull is most concentrated along the coast during the winter.
Habitat:	Wintering habitats include coasts, estuaries, lakes, and rivers. Individuals use shorelines and islands to roost. During the breeding season, the California gull migrates to inland prairie habitat, consisting of open annual grasslands with less than 5 percent woody cover. The species is also a fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades. The species needs undisturbed, isolated islands for nesting with food supplies nearby.
Natural History:	The California gull is an opportunistic feeder, foraging on whatever is available. It frequently feeds in garbage dumps, ingests fruits, preys on

small mammals, and is considered a major predator at waterfowl nesting areas. Adults roost in large concentrations. This colonial species breeds from mid-April through mid-August in low flat nests. Nesting California gulls will eat its neighbor's eggs whenever possible. Nests are scrape lined with grasses, feathers, or rubble, on sparsely vegetated portions of isolated islands. Clutch size is one to three eggs (Harrison 1978). The species has one brood per season and both parents incubate. Young are precocial (Smith and Diem 1972). It is a migratory species, departing for breeding grounds in April. After breeding, the California gull will move northwest to the coast as far north as British Columbia, and west and southwest to the coast of California.

Comments: Threats include receding waters at nesting sites, which allow mainland predators to access and destroy populations. Overall, population size appears to be increasing through the second half of the 20^{th} century (Conover 1983; Shuford and Ryan 2000).

Status On-site: Observed during multiple recent surveys in Colorado Lagoon. Individuals utilize beach areas for roosting and forage in garbage cans, dumpsters, and other opportunistic scenarios.

Osprey - *Pandion haliaetus*

CDFG Status: Species of Special Concern (nesting)

Other Status: MBTA covered

Distribution: Ospreys breed throughout California around large bodies of water but are more common in northern California and along the coast. The species is an uncommon year-round resident and more common winter migrant in southern California.

Habitat: Nests are generally built near water, often in large trees, snags, and dead-topped trees in open forest habitats for cover. The species requires clear, open waters for foraging.

Natural History: The osprey is a yearlong, diurnal species. It preys mostly on fish but will also take mammals, birds, reptiles, amphibians, and invertebrates. The osprey breeds from March through September. An average clutch size is one to four eggs (Polite 2005b). Colonial nesting is common. Ospreys will build large stick nests and often reuse them year after year (Unitt 2004). They will build nests on trees, cliffs, or man-made structures. Territories typically average from approximately 60 to 1,700 square feet (Polite 2005b). Young can breed when 3 years old. In California, the osprey migrates south along the coast and the western slope of the Sierra Nevada to Central America and South America in October. Ospreys will arrive on their nesting grounds mid-March to early April.

Comments: Pesticides have caused reproductive failure in the past (Garber 1972). However reproductive success appears to be increasing since the early 1970s (Airola and Shubert 1981; Unitt 2004).

Status On-site: Osprey were observed in the vicinity of Colorado Lagoon by Chambers Group during surveys in 2004.

Double-crested cormorant - *Phalacrocorax auritus*

CDFG Status: Species of Special Concern (rookery site)

Other Status: MBTA covered

Distribution: The double-crested cormorant is a yearlong resident along the entire coast of California and on inland lakes. It occurs year-round but is far more abundant in fall and winter. The established nesting sites closest to the project site include the Channel and Coronado islands and the Salton Sea.

Habitat: Double-crested cormorants are common in the coastal waters, bays, and inland ponds and lakes of southern California. The species requires undisturbed nesting sites next to water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, or jetties. Perching sites include unvegetated areas.

Natural History: The double-crested cormorant feeds mainly on fish (Cogswell 1977; Robertson 1974). It will also feed on crustaceans and amphibians. The species will dive from the water surface to pursue prey underwater, typically remaining submerged for approximately 30 seconds. The species will sometimes feed cooperatively in flocks. The species must visit perching sites daily to dry plumage. It will rest or sleep on water in the daytime. The double-crested cormorant will migrate during day and night. The species breeds from April through August. Pairs are monogamous. Cormorants will nest in colonies of a few to thousands of pairs. Clutch size is usually three to four eggs (Granholm 2005b). Young are born altricial and are tended by both parents. Approximately 25 percent of adults at breeding colonies are prebreeders (Mendall 1936). The species builds a nest of bulky sticks and debris, placing it usually in a tree surrounded by water or on the ground.

Comments: The species is declining in numbers primarily as a result of habitat destruction, boating, and fishing activities. It is also susceptible to reduced nesting success from pesticides in the water. Human disturbance can cause nest abandonment and increased predation by gulls on eggs and young (Ellison and Cleary 1978). In the last quarter of the 20th century, the population over much of North America increased (Hatch and Weseloh 1999), potentially due to adaptation to artificial nesting sites and the building and fish-stocking of reservoirs.

Status On-site: Double-crested cormorants have been observed during multiple recent wildlife surveys in Colorado Lagoon, foraging and roosting on beaches, bridges, and man-made floating structures.

Elegant tern - *Sterna elegans*

CDFG Status: Species of Special Concern (nesting colony)

Other Status: MBTA covered

Distribution: The elegant tern is common to southern California and rare in northern California. It breeds from San Diego Bay south to central Baja California. The species is a common spring and winter visitor to San Diego County. A single nesting colony is known from the south end of San Diego Bay (Unitt 1984).

Habitat: This species prefers to inhabit coastal mudflats, lagoons, and bays. The elegant tern nests on undisturbed island beaches and on dikes. It feeds primarily in shallow ocean waters beyond the turbulent breaker zone but also may forage in protected bays and lagoons (Cogswell 1977). The elegant tern will congregate on beaches and tideflats when not feeding.

Natural History: Elegant terns nest in tight clusters, often in association with Caspian terns, on the bare dirt on top of dikes. Within each subcolony, egg laying is usually synchronous, after the Caspians begin (Kirven 1969). Nests are shallow scrapes in the sand about 18 meters from the surfline (Bent 1921). Clutch size is one egg, occasionally two eggs. After hatching, the young cluster into crèches. Elegant terns begin returning to southern California typically during mid-March. Postbreeding dispersal from Mexico may begin as early as late May (Burness et al. 1999). The species feeds primarily on fish.

Comments: Tropical storms pose a threat to colonies on low-lying Mexican islands (Dawson 1923). Because the species nests very gregariously at few sites, it is vulnerable. Disturbance caused by humans and domestic animals has affected populations. Population numbers have been increasing since the 1950s. The species' numbers and nesting success in San Diego Bay are linked to the abundance of the northern anchovy offshore, thereby suggesting that the tern could be affected by overfishing or other effects to the anchovy (Schaffner 1986).

Status On-site: Species was observed during Keane Biological Consulting surveys of Colorado Lagoon in 2004. Roosting and foraging habitat occurs on-site but nesting is not expected due to the highly developed nature of the area and high probability of human disturbance.

Listed Wildlife Species with Potential to Occur On-site

No other state or federally listed wildlife species were determined to have a high potential to occur on the site; however, as noted previously, four listed species have a moderate potential to occur on the project site. These species are discussed further below. Information about those species that were determined to have a low potential to occur on the site is provided only in Table 3.

Western snowy plovers nest between March and September on marine and estuarine beaches. Outside of the plover's breeding season, individuals may be observed throughout the southern California coast. Human disturbance and development have led to a decrease in the plover's population. Snowy plovers have not been observed in Colorado Lagoon during recent surveys but ample foraging habitat is available for winter visitors.

Belding's savannah sparrow exists in coastal marsh habitats of southern California and northern Baja; this species breeds in pickleweed *(Salicornia* sp.*)* habitat. Limited breeding habitat occurs in Colorado Lagoon; however, Belding's savannah sparrow could forage in the area outside of breeding season.

Light-footed clapper rail, which occurs in reeds and grassy marshes, may occur on-site to forage or roost, but breeding habitat does not exist in the project vicinity due to its developed state.

American peregrine falcon may occur on-site but has not been observed in recent surveys. The American peregrine falcon population was decimated during the middle 1900s by the use of DDT, a pesticide that weakened the species' egg strength. Since DDT was banned from use in the United States, the species numbers have increased but have not reached historical levels. This raptor inhabits wetlands near cliffs and has adapted to urban settings, nesting on bridges and tall buildings. Foraging areas include tidal flats where shorebirds congregate. The species was considered to have a moderate potential to occur on-site due to the urban habitat and possible foraging opportunity, but has not been observed on-site.

Other Non-listed, Sensitive Wildlife Species with Potential to Occur On-site

Western spadefoot toad and San Diego horned lizard have a moderate but limited chance to occur on-site. Habitat occurs in the vicinity of the site, though urbanization and development decrease the chance of geographic distribution from other natural populations.

Sharp-shinned hawk has a moderate potential to occur in the project vicinity given the similar foraging and roosting patterns of Cooper's hawk, which has been observed on-site.

Species that utilize wetland or tall grass habitats, including tricolored blackbird, salt marsh yellowthroat, and long-billed curlew, have a moderate potential to occur on-site, though none have been observed. Common loon and black skimmer could both forage in wetland areas but are not expected to nest on-site.

Loggerhead shrike, Vaux's swift, and California horned lark have a moderate chance of occurring in the tree, beach, and water interface as they migrate and forage through the project site.

Three species of bats have a moderate potential to occur on-site: pallid bat, western yellow bat, and big free-tailed bat. The trees, shrubs, and urban buildings adjacent to water could serve as habitat for foraging, roosting, or breeding.

Wildlife Corridors

In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors are defined as those linking two or more large areas of natural open space, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development.

Wildlife migration corridors are essential in geographically diverse settings, and especially in urban settings, for the sustenance of healthy and genetically diverse animal communities. At a minimum, they promote colonization of habitat and genetic variability by connecting fragments of like habitat and they help sustain individual species distributed in and among habitat fragments. Habitat fragments, by definition, are separated by otherwise foreign or inhospitable habitats, such as urban/suburban tracts. Isolation of populations can have many harmful effects and may contribute significantly to local species extinction.

A viable wildlife migration corridor consists of more than a path between habitat areas. To provide food and cover from predators for transient species as well as resident populations of less mobile animals, topography and vegetative cover are important site-specific factors. They should direct animals to areas of contiguous open space or resources and away from humans and development. The corridor should be buffered from human encroachment and other disturbances (e.g., light, loud noises, domestic animals) associated with developed areas.

The project site north of Colorado Lagoon is heavily disturbed and urban, and surrounded by residential and commercial development. The existing abandoned railway may serve as a corridor for urban-adapted species that are accustomed to constant disturbance. As such, this portion of the site does not serve as a high-quality wildlife corridor. Colorado Lagoon provides habitat for bird species, which likely also forage over Marine Stadium. There is no area between these two water bodies that serves as a wildlife corridor for terrestrial species.

REGULATORY REQUIREMENTS

The following provides a general description of the applicable permitting requirements for the project. Since the project will not result in the direct take of federally regulated species, USFWS consultation is not expected to occur. However, for purposes of disclosure, information regarding the Section 7 consultation process is included below. Regulatory requirements related to impacts to "waters of the U.S" (Section 404 and 401 of the Clean Water Act [CWA]) are included for potential impacts to Colorado Lagoon and Marine Stadium. In addition, the California Coastal Act regulates activities within the coastal zone.

Federal Endangered Species Act

Under the federal ESA, *take* (defined as *hunt, pursue, catch, capture, or kill; or attempt to hunt, pursue, catch, capture, or kill*) of listed species is prohibited unless authorized by the USFWS. This process involves consultation with the USFWS, pursuant to Section 7 of the federal ESA, to determine if a project will jeopardize the continued existence of any of these federally regulated species. As part of the Section 7 consultation process, a Biological Assessment is required to be submitted to the USFWS outlining the potential impacts to federally listed, proposed, and candidate species and will also suggest mitigation measures for unavoidable impacts to these species. The USFWS issues a Biological Opinion (BO) to document the effects of the proposed project on the long-term viability of the species affected and any incidental *take* provisions. The BO *take* statement is referred to as the "incidental *take* permit."

Migratory Bird Treaty Act

The MBTA restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Certain gamebird species are allowed to be hunted for specific periods determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. Although no permit is issued under the MBTA, if vegetation removal within the project area occurs during the breeding season for raptors and migratory birds (February 15 through September 15), the USFWS requires that surveys be conducted to locate active nests within the construction area. If active raptor or migratory bird nests are detected, project activities may be temporarily curtailed or halted.

Section 404 and 401 of the Clean Water Act

The CWA governs pollution control and water quality of waterways throughout the United States. Its intent, in part, is to restore and maintain the biological integrity of the nation's waters. The goals and standards of the CWA are enforced through permit provisions. Sections 401 and 404 of the CWA pertain directly to the proposed project. Section 401 requires certification from the RWQCB that the proposed project is in compliance with established water quality standards. Section 404 of the CWA requires an individual or nationwide permit from the ACOE for discharge into "waters of the U.S."

Section 1600 of the California Fish and Game Code

Under Sections 1600-1607 of the CDFG Code, the CDFG regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFG jurisdiction are defined in the code as the "bed, channel or bank of any river, stream or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit." The California Code of Regulations (14 CCR 1.72) defines a stream as:

> [A] stream is 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 a surface or subsurface flow that supports or has supported riparian vegetation.

In practice, CDFG usually extends its jurisdictional limit to the top of a stream or lake bank, or outer edge of the riparian vegetation, whichever is wider. Riparian habitats do not always have identifiable hydric soils, or clear evidence of wetland hydrology as defined by the ACOE. Therefore, CDFG wetland boundaries often extend beyond ACOE wetland boundaries, which sometimes include only portions of the riparian habitat adjacent to a river, stream, or lake. Jurisdictional boundaries under Sections 1600-1607 may encompass an area that is greater than that under the jurisdiction of Section 404 (Cylinder et al. 1995).

California Coastal Act of 1976

At the state level, the California Coastal Act of 1976 (Cal. Code Regs. Title 14 § 30000) requires each local jurisdiction along the coast to prepare and submit for state certification a Local Coastal Program (LCP) for that portion of its area located within a specified Coastal Zone. An LCP is defined as "a local government's land use plans, zoning ordinances, zoning district maps, and, within sensitive coastal resources areas, other implementing actions, which, when taken together, meet the requirements of, and implement the provisions and policies of [the Coastal Act] at the local level" (PRC Section 30108.6).

The City of Long Beach LCP was certified by the California Coastal Commission in 1980. The LCP represents the commitment of Long Beach to provide continuing protection and enhancement of its coastal resources. The LCP provides general policies for areas within the Coastal Zone and categorizes the coastal zone in Long Beach into eight community plans. The proposed project is within the Waterland Communities subarea, specifically Area C (Belmont Heights/Belmont Park). The LCP provides an implementation plan and a policy plan summary for the following categories: shoreline access; recreation and visitor serving facilities; locating and planning new development; historic preservation; and hazards.

Magnuson-Stevens Fishery Management and Conservation Act

An EFH Assessment for the project has been 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 set forth a number of new mandates for the NMFS, 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 that 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.

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CHAPTER 3.0
POTENTIAL EFFECTS

Development of the Termino Avenue Drain would result in both direct and indirect impacts to biological resources. Biological resources may be either directly or indirectly impacted. Direct and indirect impacts may furthermore be either permanent or temporary in nature. These impacts are defined below.

Direct: Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Examples include clearing vegetation, encroaching into wetlands, diverting surface water flows, and the loss of individual species and/or their habitats.

Indirect: As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Examples include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and the introduction of invasive wildlife (domestic cats and dogs) and plants.

Permanent: All impacts that result in the irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.

Temporary: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction, or removal of vegetation for underground pipeline trenching activities and allowing the natural vegetation to recolonize the impact area.

SALINITY CRITERIA

The salinity criteria consist of two conditions during a 10-year flood event such that no significant impacts would likely occur to marine species (Table 5). The first criterion (Criterion 1) states that the salinity concentration should not fall below 30 percent of normal seawater or 10 parts per thousand (ppt) for more than 1 hour. This criterion was established to protect the less mobile marine invertebrates that are susceptible to low salinity levels. The second criterion (Criterion 2) states that the salinity concentration should recover to greater than 75 percent of normal seawater or 25 ppt within 10 hours from when the salinity concentration falls below 25 ppt. This criterion was established to protect marine fish species that prefer normal ocean water salinity concentrations (e.g., juvenile halibut).

Table 5
Marine Species Salinity Criteria

Criterion	Salinity Concentration	Duration
1	Should not fall below 30% of normal seawater concentration or 10 ppt	Greater than 1 hour
2	Must recover to greater than 75% of normal seawater concentration or 25 ppt	Within 10 hours starting when salinity concentration falls below 25 ppt

Source: Chambers Group 2000

Significant biological impacts include, but are not restricted to:

- Impacts to water quality and turbidity that have the potential to affect marine species
- Impacts to EFH
- All impacts to federally or state listed species or sensitive habitats
- All impacts to federally or state regulated habitats
- Impacts to high-quality or undisturbed biological communities and vegetation associations that are restricted on a regional basis or serve as wildlife corridors
- Impacts to habitats that serve as breeding, foraging, nesting, or migrating grounds that are limited in availability or serve as core habitats for regional plant and wildlife populations.
- Impacts to migratory birds
- Impacts to local policies or ordinances protecting biological resources or adopted Habitat Conservation Plans

Adverse but not significant impacts would include:

- Impacts that adversely affect biological resources but would not significantly change or stress the resources on a long-term basis

- Impacts to biological resources that are already disturbed or lack importance in the preservation of local or regional native biological diversity and productivity

The following sections discuss the potential effects development of this project will have on the biological resources along the proposed alignment.

DIRECT IMPACTS

Salinity

The locations of Marine Stadium salinity analyses stations include Station E (near the outfall structure), Station F (midpoint of the length of Marine Stadium), and Station G (Intersection of Cerritos Channel/Marine Stadium, south end entrance to Marine Stadium). In Marine Stadium, all three locations meet Criterion 1 under the existing conditions. Criterion 2 is not met at Location E but is satisfied at Locations F and G.

Under the project, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than existing conditions, thereby suggesting an improvement in salinity levels (i.e., more stable salinity levels). However, salinity levels in Marine Stadium would drop suggesting a degradation of salinity levels compared to existing conditions. Criterion 1 is satisfied at all three locations in Marine Stadium, and Criterion 2 is satisfied at only Location G. Criterion 2 also failed under existing conditions in Marine Stadium, which indicates no overall change in this criterion under the project, and the only major failure in criteria passing is at Station F.

The significance of the decreased salinity in Marine Stadium, as reported in Everest International Consultants (2005), relative to impacts on eelgrass and other species, is based upon species' tolerances to low salinity, and the time in which recovery to ambient salinity occurs. Eelgrass can survive in a wide range of water salinities, including the range of salinities in Marine Stadium. Therefore, it is likely to be able to withstand periodic flooding events that reduce salinities in Marine Stadium below 25 ppt for a maximum of 48 hours. In addition, eelgrass growth is generally dormant through the winter months, with most growth occurring during spring and summer (Phillips and Watson 1984). Therefore, most storm-related events occur when eelgrass is within its dormant growing phase, which reduces the potential for impacts to eelgrass. Impacts to eelgrass from a change in salinity levels would be less than significant.

Many benthic bay invertebrates tend to be introduced euryhaline species. In the sediments around the outlets, some species respond by burrowing deeper into the sediments where salinity is less affected. Those invertebrates that cannot escape the effects of lowered salinity and that may not be as tolerant of initial low salinities, such as species living on eelgrass blades (gammarid and caprellid amphipods, polyclad worms, polychaete worms), will be killed; however, invertebrate recolonization will begin to occur as soon as salinity returns to ambient conditions—within approximately 48 hours. Fishes, such as surfperch, topsmelt, and halibut, will temporarily move away from low-salinity areas of Marine Stadium and then return to the areas near the outlets when salinity reaches ambient levels. Again, this would likely occur within 48 hours of the flood event, or when prey items for fishes again become prevalent.

The overall results indicate that only a small area near the outlet would be affected by reduced salinity, and that, overall, average salinity would be higher in both Colorado Lagoon and Marine Stadium. Impacts to marine life from a change in salinity levels would be less than significant.

Water Quality

Construction of the outlet structure in Marine Stadium would involve constructing a coffer dam around the proposed construction zone, removing and replacing riprap along the shoreline, recontouring the riprap shoreline to depths of –5 feet MLLW around the opening of the outlet structure opening, and dredging approximately 250 cubic yards of bayfloor. These impacts would have a short-term adverse impact on water quality when the coffer dam is constructed, related to an increase in suspended sediment loads, and an increase of water turbidity. Resuspension of bottom sediments also has a potential to release sediment-bound contaminants back into the water column that can become bioavailable to water column and bottom-dwelling filter feeders.

These impacts would be short-term and could be minimized by the implementation of Best Management Practices (BMPs) and mitigation as provided below. Water quality conditions would return to ambient when construction activity is completed.

Impacts to marine organisms during construction would result in an initial mortality of algae and benthic invertebrates living on the riprap (e.g., green and red algae, mussels, sponges, limpets, barnacles, shore crabs) and on the bayfloor (e.g., green and red algae, polychaete worms, amphipods, isopods, clams, snails, octopus, hydroids) and resident benthic fishes (e.g., gobies) within the construction easement zones and within the areas where the coffer dam is constructed. There will be a permanent loss of benthic invertebrate biomass and goby biomass within the footprint of the outlet. Water column fishes such as topsmelt, black surf perch, and bottom fish such as California halibut, round sting ray, and barred sand bass will swim away from the zone of construction and will likely avoid any significant mortality to their populations. The restoration of intertidal and subtidal riprap, unvegetated bay soft bottom habitat, and bayfloor eelgrass habitat in the months following the completion of the outfall will allow the establishment of basic habitat requirements for other marine organisms to recolonize these areas. Once the zone within the coffer dam is restored to tidal action, algae, eelgrass, benthic invertebrates, and benthic-dwelling gobies will recolonize the substrate, beginning immediately after construction is completed and possibly taking 1 to 5 years for full recolonization. Implementation of mitigation measures would ensure that impacts would be less than significant.

Essential Fish Habitat

Project activities that would affect identified FMP species (northern anchovy) include increased water turbidity caused by the construction of the outlet structure, and potential temporary resuspension of any contaminants in the immediate area of the outlet during flood periods. These impacts could result in northern anchovy temporarily avoiding the project area, 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 (CRM 2005b).

All four FMP species are pelagic schooling species that 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 the Marine Stadium and the Colorado Lagoon portion 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 nearshore, outside of Alamitos Bay, at depths greater than 12 feet deep.

Based upon these determinations, the proposed project is unlikely to have adverse effects on populations of the four identified FMP species. However, mitigation should be provided to ensure minimal turbidity and water quality impacts.

Vegetation Communities

Construction of the proposed project is scheduled to take approximately 18 to 24 months, contingent on weather conditions suitable for construction. All cut and fill would be balanced on-site. Staging of construction equipment would occur in areas that are disturbed and developed. These areas are already flat and in some areas paved in concrete. No existing terrestrial plant communities would be removed for construction staging. Table 6 shows the temporary and permanent impacts that would occur as a result of the project.

Table 6
Permanent and Temporary Vegetation and Other Land Cover Impacts

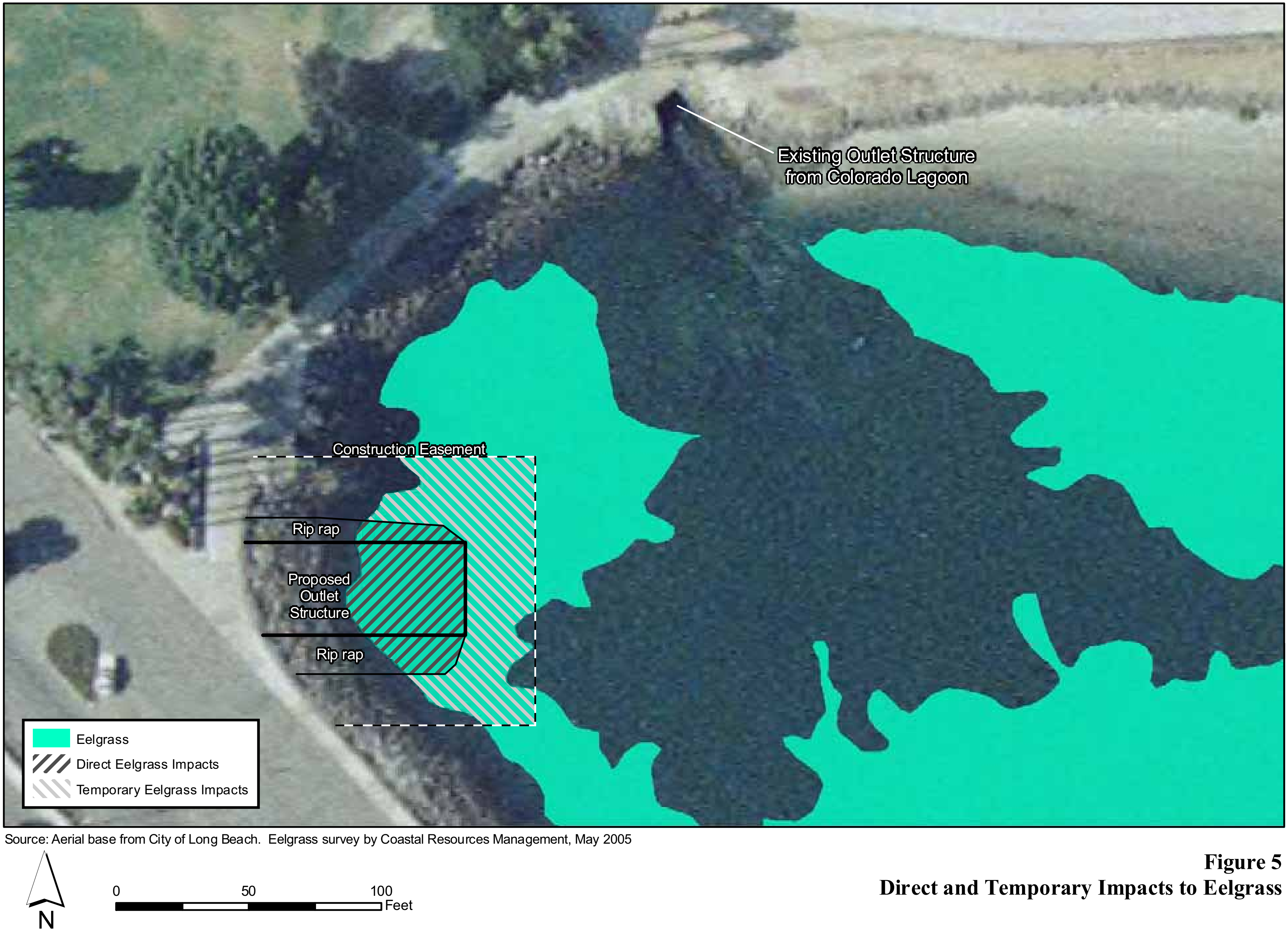
Vegetation/Cover Type	**Permanent/Direct Impacts[1] (acres)**	**Temporary Impacts[1] (acres)**
Marine/Eelgrass	0/0.05	5.75/0.08[2]
Native Landscaping	0	2.54
Disturbed	0	7.27
Developed	0	43.89
Ornamental	0	1.66
Other	0	0.75
Total Impacts	*0.05*	*61.86*

[1] Impact calculations include a 100-foot buffer around the proposed alignment.
[2] "Marine" includes a 500-foot buffer from the outlet structure, as shown in Figure 4; "Eelgrass" includes only eelgrass patches, as shown in Figure 3.

A total of 0.13 acre of eelgrass is located within the outlet structure construction easement zone (Figure 5). Initially, all will be removed once the coffer dam is constructed, the area is dredged, and the waters are pumped out of the coffer dam. Once the outlet is constructed, and the coffer dam is removed, a total of 0.05 square feet will be permanently lost in the footprint of the outlet structure or by riprap placed along side and in front of the structure to depths of -6 feet MLLW. The remaining 0.08 acre of removed eelgrass habitat within the coffer dam will be available for on-site eelgrass mitigation once the bayfloor is restored to tidal action.

The loss of 0.13 acre 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. Further details are provided below.

Eelgrass beds located near the construction zone will be potentially affected by short-term increases in turbidity when the coffer dam is constructed. This may result in the deposition of fine sediments on eelgrass blades and may reduce underwater light levels that will temporarily reduce eelgrass primary productivity. However, with the implementation of water quality BMPs and mitigation measures to reduce the spread of any turbidity plume, there should be no significant impacts to eelgrass bed resources outside of the localized construction zone. Mitigation is further discussed below.



Source: Aerial base from City of Long Beach. Eelgrass survey by Coastal Resources Management, May 2005

Figure 5
Direct and Temporary Impacts to Eelgrass

On-land construction activities would primarily affect developed and disturbed areas. All of the Long Beach Greenbelt restoration area within the PE right-of-way (2.54 acres) would be removed for construction of the proposed project, including planted oak trees. As part of the proposed project, at the conclusion of project construction, all impacted areas would be restored to their existing condition, including the Long Beach Greenbelt. The replanting would include native species appropriate to the site. Therefore, the impacts to the planted restoration area would be temporary. The remainder of the Long Beach Greenbelt project remains ruderal and disturbed; therefore, no significant impacts to these areas would occur.

Project impacts to the disturbed, ruderal, and ornamental portions of the impact area would not result in significant impacts to biological resources. However, removal of ornamental plants may have an adverse impact to the aesthetics of the area. Mitigation should be provided to reduce these impacts to a less than significant level.

Sensitive Plant Species

No sensitive plant species were found during the focused botanical surveys during the appropriate survey windows for the potentially occurring species (Table 2). The area that previously had southern tarplant is outside of the project impact area. The proposed project would not affect future growth of southern tarplant in this area. No federally or state-listed species are expected to occur within or adjacent to the potential area of impact based on survey results and habitat suitability; therefore, no impacts to sensitive plants are expected to occur as a result of the project.

Sensitive Wildlife Species and Wildlife Corridors

The project would not result in impacts to species that are federally or state-listed as threatened or endangered. Foraging behavior by California least terns is rare at Colorado Lagoon and occasional at Marine Stadium, and foraging and roosting behavior by California brown pelicans is rare at both locations. The California brown pelican and California least tern that use Colorado Lagoon and Marine Stadium would not be affected by project construction or operation (Keane Biological Consulting 2004). Impacts to marine species are discussed above in *Salinity*.

The project has the potential to directly affect individuals of Cooper's hawk, western yellow warbler, California gull, osprey, double-crested cormorant, and elegant tern, as well as numerous other bird species that are protected under the MBTA. Removal of habitat, including ornamental trees, within the 61.86 acres that would be temporarily affected by the project has the potential to directly affect bird species that may be nesting within the impact area. However, if the habitat or individual trees are removed outside of the breeding/nesting season no impact would occur. The breeding/nesting season for raptors is February 1 through August 30. This period also encompasses the breeding/nesting season for non-raptor bird species.

Direct impacts to wildlife corridors would not occur from the proposed project. Urban adapted species may use the abandoned railway as a corridor; however, these species are not sensitive and are adapted to the urban environment. In addition, at the conclusion of construction, the project area would be restored to the existing conditions, and any current use by urban wildlife would resume. The project site does not serve as a high-quality wildlife corridor, and as such, the project would not result in significant impacts.

INDIRECT IMPACTS

Sensitive Vegetation Communities

As there are no sensitive vegetation communities in the project study area, indirect impacts would not occur. However, indirect impacts could occur to the nearby Colorado Lagoon. Indirect impacts would include fugitive dust deposition on the native vegetation during construction and increased runoff into the lagoon. These potential indirect impacts may be significant depending upon their extent and intensity.

Indirect impacts to sensitive habitats will be avoided or minimized through the use of appropriate BMPs and implementation of the project environmental commitments listed in the Project Description. These measures will reduce potential indirect impacts to below levels of significance.

Sensitive Plant Species

No indirect impacts are expected to occur to sensitive plant species.

Sensitive Wildlife Species and Wildlife Corridors

No indirect impacts are expected to occur to sensitive wildlife species or wildlife corridors.

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CHAPTER 4.0
MITIGATION

WATER QUALITY

The following mitigation measures would reduce impacts to water quality to a less than significant level:

- 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 of the Marine Stadium outlet structure, floating booms shall be used to assist in containing debris discharged into Marine Stadium, and any debris discharged shall be removed as soon as possible but no later than the end of each day.
- A silt curtain shall be utilized to assist in controlling turbidity during construction of the cofferdam at Marine Stadium. The County of Los Angeles shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column.
- 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 Marine Stadium. 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 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 thirty 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 U.S. Army Corps of Engineers.

SENSITIVE VEGETATION COMMUNITIES

The preferable mitigation is the avoidance of impacts to sensitive resources by project design. If avoidance is not possible, all possible mitigation measures should be incorporated into the project such that the minimal environmental damage occurs. Mitigation for impacts to biological resources will be accomplished through the replacement of sensitive plant communities affected by development. No mitigation is required for impacts to the native landscaping area, as this area will be replanted as noted in the project description. Table 7 summarizes the mitigation requirements for the vegetation communities for the proposed project.

Table 7
Direct Impacts to Vegetation Communities and Mitigation Requirements

Vegetation Community Type	Total Permanent Impacts	Total Temporary Impacts	Mitigation Ratios for Permanent Impacts	Mitigation Ratios for Temporary Impacts	Total Mitigation Acreage
Marine/Eelgrass	0/0.05	5.75/0.08	1.2:1	1.2:1	0.156
Native Landscaping	--	2.54	--	--	0[1]
Disturbed	--	7.27	--	--	0
Developed	--	43.89	--	--	0
Ornamental	--	1.66	--	--	0
Other	--	0.75	--	--	0
Total Acreages	***0.05***	***61.86***	--	--	***0.156***

[1] As part of the project, the area of native landscaping affected by construction will be replanted in place. No addition mitigation is required.

Direct permanent and temporary impacts to marine sea grasses at a mitigation ratio of 1.2:1 are required in accordance with the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service 1991). Part of this total may be replanted on-site when sediment conditions stabilize following the completion of outlet construction. Mitigation of 1.2:1 for temporary impacts is required, as the eelgrass removed during construction is not guaranteed to reestablish in this area. In addition, the following mitigation measures should be implemented to reduce impacts to eelgrass beds:

- Direct permanent and temporary impacts to marine sea grasses in Marine Stadium shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy. A total of 0.16 acres of eelgrass will be replanted by DPW, including at least 0.08 acres in the temporary impact area when sediment conditions stabilize following the completion of outlet construction. The remaining 0.08 acres of eelgrass shall be planted within Alamitos Bay.

- 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.
- If barges and work vessels are used during construction, measures shall be taken 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.

SENSITIVE WILDLIFE SPECIES

Should tree removal or removal of the Long Beach Greenbelt restoration area occur during the breeding season for migratory non-game native bird species (generally March 1-September 1, as early as February 1 for raptors), weekly bird surveys would be performed to detect any protected native birds in the trees to be removed and other suitable nesting habitat within 300 feet of the construction work area (500 feet for raptors). The surveys would be conducted 30 days prior to the disturbance of suitable nesting habitat by a qualified biologist with experience in conducting nesting bird surveys. The surveys would continue on a weekly basis with the last survey being conducted no more than 3 days prior to the initiation of clearance/construction work. If a protected native bird is found, DPW would delay all clearance/construction disturbance activities in suitable nesting habitat or within 300 feet of nesting habitat (within 500 feet for raptor nesting habitat) until August 31 or continue the surveys in order to locate any nests. If an active nest is located, clearing and construction with 300 feet of the nest (within 500 feet for raptor nests) shall be postponed until the nest is vacated and juveniles have fledged and when there is no evidence of a second attempt at nesting. Limits of construction to avoid a nest should be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area. The results of this measure would be recorded to document compliance with applicable State and Federal laws pertaining to the protection of native birds.

No direct impacts to the California brown pelican and California least tern or habitat potentially occupied by these species would result from the project and no mitigation measures are required.

NATIVE LANDSCAPING

The PE right-of-way between 7th and 8th Streets shall be replanted with native vegetation at a 1:1 ratio. A restoration and monitoring plan for the site shall be prepared and implemented at the conclusion of construction. Prior to construction, a qualified horticulturist with experience in native plant cultivation shall supervise salvage of plants, soil, and other materials as appropriate from the Long Beach Greenbelt area in the Pacific Electric (PE) right-of-way between 7th and 8th Streets. Salvaged materials shall be maintained and used in replanting of the site. Supplemental native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock) shall be used as necessary. Following implementation, the restoration area shall be monitored quarterly for the first two years and biannually for three more years. Success shall be defined as 80 percent survival of container plants after two years and 100 percent survival thereafter.

CHAPTER 5.0
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APPENDIX A

FLORAL SPECIES LIST

Appendix A
Plant Species Observed within the Termino Avenue Drain Project Study Area

Scientific Name	Common Name
Dicotyledoneae	
Agavaceae Family – Agave Family	
Yucca whipplei	Our Lord's candle†
Aizoaceae Family – Fig-Marigold Family	
Carpobrotus edulis	iceplant
Anacardiaceae Family – Laurel Family	
Rhus integrifolia	lemonadeberry*
Rhus ovata	sugar bush*
Schinus molle	pepper tree†
Shinus terebinthifolius	pepper tree†
Apiaceae – Carrot Family	
Foeniculum vulgare	fennel
Apocynaceae– Periwinkle Family	
Nerium oleander	oleander†
Araliaceae– Ginseng Family	
Hedera helix	English ivy
Arecaceae– Palm Family	
Washingtonia robusta	Mexican fan palm†
Asteraceae - Sunflower Family	
Ambrosia artemisifolia	common ragweed†
Artemisia californica	California sagebrush*
Artemisia douglasiana	mugwort*
Baccharis pilularis	coyotebrush *
Encelia californica	California sunflower*
Isocoma menziesii var. *vernonioides*	Goldenbush*
Osteospermum fruticosum	freeway daisy
Sonchus sp.	sow thistle†
Taraxacum officinale	dandelion†
Auraucariaceae– Monkey Puzzle Family	
Araucaria bidwillii	monkey puzzle tree†
Bignoniaceae– Trumpet Creeper Family	
Jacaranda mimosifolia	jacaranda†
Brassicaceae - Mustard Family	
Brassica nigra	black mustard
Hirschfeldia incana	mustard
Lepidium nitidum var. *nitidium*	peppergrass
Raphanus sativus	radish†
Caprifoliaceae Family – Honeysuckle Family	
Sambucus mexicana	Mexican elderberry*
Chenopodiaceae- Goosefoot Family	
Atriplex lentiformis ssp. *lentiformis*	big saltbush*
Crassulaceae- Stonecrop Family	

Scientific Name	Common Name
Crassula ovata	jade plant
Cycadaceae Family – Sago Palm Family	
Cycas sp.	cycad†
Euphorbiaceae Family – Spurge Family	
Chamaesce maculate	spotted spurge
Fabaceae – Pea Family	
Eythrina sp. (probably *caffra*)	coral tree†
Melilotus alba	white sweetclover †
Trifolium repens	white clover†
Fagaceae Family – Oak Family	
Quercus agrifolia	coast live oak*
Quercus ilex	evergreen oak†
Geraniaceae Family – Geranium Family	
Erodium cicutarium	filaree
Erodium moschatum	filaree
Pelargonium x hortorum	geranium
Juglandaceae Family – Walnut Family	
Juglans californica	California walnut*
Lamiaceae Family – Mint Family	
Rosemarinus officinalis	rosemary†
Salvia apiana	white sage*
Salvia mellifera	black sage*
Magnoliaceae- Magnolia Family	
Magnolia grandiflora	southern magnolia†
Malvaceae Family – Mallow Family	
Lavatera assurgentifolia	malva rosa*†
Malva parviflora	cheeseweed†
Moraceae Family – Fig Family	
Ficus carica	common fig
Myrtaceae Family – Myrtle Family	
Callistemon sp.	bottlebrush†
Eucalyptus sp.	eucalyptus†
Nyctaginaceae- Four O'clock Family	
Bougainvillea sp.	bougainvillea†
Papaveraceae- Poppy Family	
Escholzia californica	Californa poppy*
Pinaceae Family – Pine Family	
Pinus canariensis	Canary Island pine†
Pinus sp.	pine†
Pittosporaceae– Pittosporum Family	
Pittosporum sp. (possibly *tobira*)	pittosporum†
Plataganaceae Family – Plantain Family	
Plantago lanceolata	English plantain
Plumbaginaceae Family – Leadwort Family	
Limonium sp.	statice†

Scientific Name	Common Name
Podocarpaceae Family – Podocarp Family	
Podocarpus gracilior	fern pine†
Polygonaceae Family – Buckwheat Family	
Eriogonum fasciculatum	California buckwheat*
Primulaceae Family – Primrose Family	
Anagallis arvensis	scarlet pimpernel
Rosaceae Family – Rose Family	
Heteromeles arbutifolia	toyon*
Prunus ilicifolia	holly-leafed cherry*
Rhaphiolepis indica	Indian hawthorn†
Solanaceae - Nightshade Family	
Solanum rantonnetti	blue potato bush
Tropaeolaceae - Nasturtium Family	
Tropaeolum majus	garden nasturtium†
Verbenaceae - Verbena Family	
Lantana sp.	lantana
Monocotyledoneae	
Poaceae - Grass Family	
Arundo donax	giant reed
Cynodon dactylon	Bermuda grass†
Pennisetum setaceum	red fountain grass
Poa annua	annual bluegrass†
--	unknown bunch grass
Strelitziaceae – Bird of Paradise Family	
Strelitzia nicolai	giant bird of paradise†
Strelitzia reginae	bird of paradise†
Marine Species	
Gracilariopsis	
Gracilariopsis sp.	red algae
Ulvaceae – Sea-Lettuce Family	
Ulva californica	sea-lettuce*
Enteromorpha sp.	enteromorpha

*Denotes native plant

†Denotes ornamental plant

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APPENDIX B

FAUNAL SPECIES LIST

Appendix B
Faunal Species Observed On-site

Scientific Names	Common Names
Birds	
Order Anseriformes	Ducks, Geese, and Swans
Famiy Anatidae	
Anas platyrhynchos	mallard
Anas sp.	domestic duck
Mergus serrator	red-breasted merganser
Oxyura jamaicensis	ruddy duck
Order Apodiformes	Swifts and Hummingbirds
Family Apodidae	
Calypte anna	Anna's hummingbird
Order Charadriiformes	Shorebirds
Family Charadriidae	
Charadrius vociferus	killdeer
Pluvialis squatarola	black-bellied Plover
Family Laridae	
Larus heermanni	California gull
Larus delawarensis	ring-billed gull
Larus heermanni	Heermann's gull
Larus occidentalis	western gull
Sterna antillarum	least tern
Sterna caspia	Caspian tern
Sterna elegans	elegant tern
Sterna forsteri	Foster's tern
Family Scolopacidae	
Actitis macularia	spotted sandpiper
Calidris mauri	western sandpiper
Calidris minutilla	least sandpiper
Catoptrophorus semipalmatus	willet
Heteroscelus incanus	wandering tattler
Limosa fedoa	marbled godwit
Numenius americanus	long-billed curlew
Numenius phaeopus	whimbrel
Order Ciconiiformes	Storks and Relatives
Family Ardeidae	
Ardea herodias	great blue heron
Butorides virescens	green heron
Casmerodius albus	great egret

Scientific Names	Common Names
Egretta thula	snowy egret
Nycticorax nycticorax	black-crowned night-heron
Order Columbiformes	Doves and Pigeons
Family Columbridae	
Columba livia	rock dove
Streptopelia chinensis	spotted dove
Zenaida macroura	mourning dove
Order Coraciiformes	Kingfishers
Family Alcedinidae	
Ceryle alcyon	belted kingfisher
Order Gruiformes	Coots, Cranes, and Rails
Family Rallidae	
Fulica Americana	American coot
Order Falconiformes	Vultures, Hawks and Falcons
Family Acciptridae	
Buteo lineatus	red-shouldered hawk
Family Falconidae	
Falco sparverius	American kestrel
Order Passeriformes	Perching Birds
Family Corvidae	
Corvus brachyrhynchos	American crow
Family Emberzidae	
Dendroica coronata	yellow-rumped warbler
Dendorica petechia	yellow warbler
Family Fringillidae	
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch
Family Hirundinidae	
Hirundo pyrrhonota	cliff swallow
Hirundo rustica	bank swallow
Family Mimidae	
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
Family Passeridae	
Passer domesticus	house sparrow
Family Sturnidae	
Sturnus vulgaris	European starling
Family Tyrannidae	
Sayornis nigricans	black phoebe

Scientific Names	Common Names
Order Pelecaniformes	Pelicans and Relatives
Family Pelecanidae	
Pelecanus occidentalis	brown pelican
Family Phalacrocoracidae	
Phalacrocorax auritus	double-crested cormorant
Order Podicipediformes	Grebes
Family Podicipedidae	
Aechmophorus occidentalis	western grebe
Podilymbus podiceps	pied-billed grebe
Mammals	
Order Rodentia, Suborder Sciurognathi	Rodents—gophers, mice, rats, squirrels
Family Sciuridae	
Sciurus sp.	common squirrel
Invertebrates	
Order Lepidoptera, Suborder Macrolepidoptera	Butterflies and Moths
Family Nymphalidae	
Vanessa cardui	painted lady
Marine Species	
Order Amphipoda, Suborder Gammaridea	Amphipods, Gammarid Amphipods
Family Corophiidae	
Grandidierella japonica	amphipod
Order Atheriniformes, Suborder Atherinoidei	Rainbow Fishes and Silversides
Family Atherinidae	
Atherinops affinis	topsmelt
Order Cephalaspidea	Cephalaspids
Family Aglajidae	
Navanax inermis	California aglaja
Family Bullidae	
Bulla gouldiana	California bubble
Order Ceriantharia	Tube Dwelling Anenomes
Family Cerianthidae	
Pachycerianthus fimbriatus	cerianthid tube anemones
Order Hydroida, Suborder Anthomedusae	Medusae, Athecate Hydroids
Family Corymorphidae	
Corymorpha palma	fairy palm hydroid
Order Neogastropoda	Neogasropods
Family Columbellidae	
Alia carinata	carinate dovesnail

Scientific Names	Common Names
Order Perciformes, Suborder Labroidei	Perch-Like Fishes and Perchlike Fishes
Family Embiotocidae	
Embiotoca jacksoni	black perch
Cymatogaster aggregata	shiner perch
Order Perciformes, Suborder Gobioidei	Perch-Like Fishes and Perchlike Fishes
Family Gobiidae	
--	unidentified gobies
Order Perciformes, Suborder Percoidei	Perch-Like Fishes and Perchlike Fishes, Groupers and Seabasses
Family Serranidae	
Paralabrax nebulifer	barred sand bass
Order Pleuronectiformes, Suborder Pleuronectoidei	Dabs, Halibuts, Righteye Flounders
Family Paralichthyidae	California halibut
Paralichthys californicus	unidentified flatfish
Family Pleuronectidae	
--	unidentified flatfish
Order Rajiformes, Suborder Rajoidei	Rays, Sawfishes, and Skates
Family Urolophidae	
Urolophus halleri	round sting ray
Order Scorpaeniformes, Suborder Cottoidei	Scorpion Fishes and Sculpins
Family Cottidae	
Leptocottus armatus	Pacific staghorn sculpin

APPENDIX C

AIR QUALITY CALCULATIONS

URBEMIS 2002 For Windows 8.7.0

ne: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino bldgDemo 010906.urb
Name: Termino demo of 1500 sq ft bldg
Location: South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CTION EMISSION ESTIMATES

					PM10	PM10	PM10
)7 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
(lbs/day,unmitigated)	1.94	20.58	13.87	0.02	3.77	0.58	3.19

URBEMIS 2002 For Windows 8.7.0

ne: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino bldgDemo 010906.url
Name: Termino demo of 1500 sq ft bldg
Location: South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

ction Start Month and Year: January, 2007
ction Duration: 0.35
and Use Area to be Developed: 0 acres
Acreage Disturbed Per Day: 0 acres
Family Units: 0 Multi-Family Units: 0
Office/Institutional/Industrial Square Footage: 0

CTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

rce	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
)7***							
- Demolition Emissions							
e Dust	-	-	-	-	3.15	-	3.15
d Diesel	1.43	9.61	11.48	-	0.37	0.37	0.00
Diesel	0.49	10.91	1.84	0.02	0.25	0.21	0.04
Trips	0.02	0.06	0.55	0.00	0.00	0.00	0.00
um lbs/day	1.94	20.58	13.87	0.02	3.77	0.58	3.19
- Site Grading Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ust Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
ust Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.00	-	-	-	-	-	-
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
bs/day all phases	1.94	20.58	13.87	0.02	3.77	0.58	3.19

- Building Construction Assumptions: Phase Turned OFF
onth/Year for Phase 1: Jan '07
Duration: 0.35 months
g Volume Total (cubic feet): 15000
g Volume Daily (cubic feet): 7500
Truck Travel (VMT): 417
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Rough Terrain Forklifts	94	0.475	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

made to the default values for Land Use Trip Percentages

made to the default values for Construction

URBEMIS 2002 For Windows 8.7.0

ne:	C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino Main work.urb
Name:	Termino Ave Drain - pavement demo, trench/install/backfill, roadbed, pave
Location:	South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions	Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CTION EMISSION ESTIMATES

					PM10	PM10	PM10
)7 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
(lbs/day,unmitigated)	18.30	130.41	140.83	0.01	7.95	5.44	2.51
(lbs/day, mitigated)	1.92	67.41	14.45	0.01	2.81	0.30	2.51

					PM10	PM10	PM10
)8 ***	ROG	NOx	CO	SO2	TOTAL	EXHAUST	DUST
(lbs/day,unmitigated)	18.29	124.91	144.30	0.00	4.93	4.92	0.01
(lbs/day, mitigated)	1.92	64.56	14.77	0.00	0.29	0.28	0.01

URBEMIS 2002 For Windows 8.7.0

ne: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino Main work.urb
Name: Termino Ave Drain - pavement demo, trench/install/backfill, roadbed, pave
Location: South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

:tion Start Month and Year: January, 2007
:tion Duration: 18
and Use Area to be Developed: 0 acres
Acreage Disturbed Per Day: 0.25 acres
'amily Units: 0 Multi-Family Units: 0
)ffice/Institutional/Industrial Square Footage: 0

:TION EMISSION ESTIMATES UNMITIGATED (lbs/day)

:ce	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
)7***							
- Demolition Emissions							
: Dust	-	-	-	-	1.81	-	1.81
i Diesel	8.25	62.98	61.08	-	2.81	2.81	0.00
Diesel	0.28	6.25	1.05	0.01	0.15	0.12	0.03
:rips	0.15	0.28	3.13	0.00	0.02	0.01	0.01
ım lbs/day	8.68	69.51	65.26	0.01	4.79	2.94	1.85
- Site Grading Emissions							
: Dust	-	-	-	-	2.50	-	2.50
i Diesel	6.56	47.42	50.50	-	2.04	2.04	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
:rips	0.03	0.02	0.36	0.00	0.01	0.00	0.01
ım lbs/day	6.59	47.44	50.86	0.00	4.55	2.04	2.51
- Building Construction							
ıst Off-Road Diesel	14.77	109.27	111.68	-	4.74	4.74	0.00
ıst Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ıtings Off-Gas	0.00	-	-	-	-	-	-
ıtings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.06	-	-	-	-	-	-
Off-Road Diesel	3.42	20.88	28.74	-	0.70	0.70	0.00
On-Road Diesel	0.01	0.24	0.05	0.00	0.01	0.01	0.00
Worker Trips	0.03	0.02	0.36	0.00	0.01	0.00	0.01
ım lbs/day	18.30	130.41	140.83	0.00	5.45	5.44	0.01
›s/day all phases	18.30	130.41	140.83	0.01	7.95	5.44	2.51
)8***							
- Demolition Emissions							
: Dust	-	-	-	-	0.00	-	0.00
i Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
:rips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ım lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Site Grading Emissions							
: Dust	-	-	-	-	0.00	-	0.00
i Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
:rips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ım lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ıst Off-Road Diesel	14.77	104.35	115.09	-	4.32	4.32	0.00
ıst Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ıtings Off-Gas	0.00	-	-	-	-	-	-
ıtings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.06	-	-	-	-	-	-
Off-Road Diesel	3.42	20.33	28.83	-	0.60	0.60	0.00
On-Road Diesel	0.01	0.22	0.04	0.00	0.00	0.00	0.00
Worker Trips	0.03	0.02	0.33	0.00	0.01	0.00	0.01
ım lbs/day	18.29	124.91	144.30	0.00	4.93	4.92	0.01
›s/day all phases	18.29	124.91	144.30	0.00	4.93	4.92	0.01

- Demolition Assumptions
onth/Year for Phase 1: Jan '07
Duration: 4 months
g Volume Total (cubic feet): 32400
g Volume Daily (cubic feet): 4300
Truck Travel (VMT): 240
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Concrete/Industrial saws	84	0.730	8.0
Other Equipment	190	0.620	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

- Site Grading Assumptions
onth/Year for Phase 2: May '07
Duration: 6 months
Truck Travel (VMT): 0
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Graders	174	0.575	8.0
Other Equipment	190	0.620	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

- Building Construction Assumptions
onth/Year for Phase 3: Nov '07
Duration: 8 months
Month/Year for SubPhase Building: Nov '07
ase Building Duration: 8 months
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Cranes	190	0.430	4.0
Other Equipment	190	0.620	8.0
Signal Boards	119	0.820	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

Month/Year for SubPhase Architectural Coatings: Mar '08
ase Architectural Coatings Duration: 0 months
Month/Year for SubPhase Asphalt: Dec '07
ase Asphalt Duration: 6 months
to be Paved: 3
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Pavers	132	0.590	8.0
Rollers	114	0.430	8.0
Tractor/Loaders/Backhoes	79	0.465	4.0

CTION EMISSION ESTIMATES MITIGATED (lbs/day)

rce	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
07***							
- Demolition Emissions							
e Dust	-	-	-	-	1.81	-	1.81
d Diesel	0.83	32.50	6.11	-	0.16	0.16	0.00
Diesel	0.28	6.25	1.05	0.01	0.15	0.12	0.03
Trips	0.15	0.28	3.13	0.00	0.02	0.01	0.01
um lbs/day	1.26	39.03	10.29	0.01	2.14	0.29	1.85
- Site Grading Emissions							
e Dust	-	-	-	-	2.50	-	2.50
d Diesel	0.66	24.47	5.05	-	0.11	0.11	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.03	0.02	0.36	0.00	0.01	0.00	0.01
um lbs/day	0.69	24.49	5.41	0.00	2.62	0.11	2.51
- Building Construction							
ast Off-Road Diesel	1.48	56.38	11.17	-	0.26	0.26	0.00
ast Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.06	-	-	-	-	-	-
Off-Road Diesel	0.34	10.77	2.87	-	0.04	0.04	0.00
On-Road Diesel	0.01	0.24	0.05	0.00	0.01	0.01	0.00
Worker Trips	0.03	0.02	0.36	0.00	0.01	0.00	0.01
um lbs/day	1.92	67.41	14.45	0.00	0.31	0.30	0.01
os/day all phases	1.92	67.41	14.45	0.01	2.81	0.30	2.51

08***

- Demolition Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Site Grading Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ust Off-Road Diesel	1.48	53.84	11.51	-	0.24	0.24	0.00
ust Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.06	-	-	-	-	-	-
Off-Road Diesel	0.34	10.49	2.88	-	0.03	0.03	0.00
On-Road Diesel	0.01	0.22	0.04	0.00	0.00	0.00	0.00
Worker Trips	0.03	0.02	0.33	0.00	0.01	0.00	0.01
um lbs/day	1.92	64.56	14.77	0.00	0.29	0.28	0.01
os/day all phases	1.92	64.56	14.77	0.00	0.29	0.28	0.01

ction-Related Mitigation Measures

1: Off-Road Diesel Exhaust: Use aqueous diesel fuel
ent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
1: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation
ent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
2: Off-Road Diesel Exhaust: Use aqueous diesel fuel
ent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
2: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
ent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
3: Off-Road Diesel Exhaust: Use aqueous diesel fuel
ent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
ent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)
3: Off-Road Diesel Exhaust: Use aqueous diesel fuel
ent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
3: Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
ent Reduction(ROG 90.0% NOx 40.0% CO 90.0% SO2 0.0% PM10 85.0%)

- Demolition Assumptions
onth/Year for Phase 1: Jan '07
Duration: 4 months
g Volume Total (cubic feet): 32400
g Volume Daily (cubic feet): 4300
Truck Travel (VMT): 240
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Concrete/Industrial saws	84	0.730	8.0
Other Equipment	190	0.620	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

- Site Grading Assumptions
onth/Year for Phase 2: May '07
Duration: 6 months
Truck Travel (VMT): 0
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Graders	174	0.575	8.0
Other Equipment	190	0.620	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

- Building Construction Assumptions
onth/Year for Phase 3: Nov '07
Duration: 8 months
Month/Year for SubPhase Building: Nov '07
ase Building Duration: 8 months
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Cranes	190	0.430	4.0
Other Equipment	190	0.620	8.0

Signal Boards	119	0.820	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

Month/Year for SubPhase Architectural Coatings: Mar '08
ase Architectural Coatings Duration: 0 months
Month/Year for SubPhase Asphalt: Dec '07
ase Asphalt Duration: 6 months
to be Paved: 3
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Pavers	132	0.590	8.0
Rollers	114	0.430	8.0
Tractor/Loaders/Backhoes	79	0.465	4.0

made to the default values for Land Use Trip Percentages

made to the default values for Construction

r has overridden the Default Phase Lengths
mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
s been changed from off to on.

URBEMIS 2002 For Windows 8.7.0

ne:	C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino concrete 010806.urb
Name:	Termino concrete haul
Location:	South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions	Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CTION EMISSION ESTIMATES

)7 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
(lbs/day,unmitigated)	1.07	23.56	3.97	0.04	7.35	0.45	6.90

)8 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
(lbs/day,unmitigated)	0.99	21.44	3.67	0.04	7.31	0.41	6.90

URBEMIS 2002 For Windows 8.7.0

ne: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino concrete 010806.url
Name: Termino concrete haul
Location: South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

ction Start Month and Year: February, 2007
ction Duration: 16
and Use Area to be Developed: 0 acres
Acreage Disturbed Per Day: 0 acres
Family Units: 0 Multi-Family Units: 0
Office/Institutional/Industrial Square Footage: 0

CTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

rce	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
)7***							
- Demolition Emissions							
e Dust	-	-	-	-	6.80	-	6.80
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	1.07	23.56	3.97	0.04	0.55	0.45	0.10
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	1.07	23.56	3.97	0.04	7.35	0.45	6.90
- Site Grading Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ust Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
ust Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.00	-	-	-	-	-	-
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
os/day all phases	1.07	23.56	3.97	0.04	7.35	0.45	6.90
)8***							
- Demolition Emissions							
e Dust	-	-	-	-	6.80	-	6.80
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.99	21.44	3.67	0.04	0.51	0.41	0.10
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.99	21.44	3.67	0.04	7.31	0.41	6.90
- Site Grading Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ust Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
ust Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.00	-	-	-	-	-	-
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
os/day all phases	0.99	21.44	3.67	0.04	7.31	0.41	6.90

- Building Construction Assumptions: Phase Turned OFF
onth/Year for Phase 1: Feb '07
Duration: 16 months
g Volume Total (cubic feet): 308000
g Volume Daily (cubic feet): 16200
Truck Travel (VMT): 900
d Equipment

Type	Horsepower	Load Factor	Hours/Day

made to the default values for Land Use Trip Percentages

made to the default values for Construction

Main Work	PM10	PM10	PM10	PM2.5/	PM2.5	PM2.5	PM2.5	PM10	PM10	PM10
Source	TOTAL	EXHAUST	DUST	PM10	TOTAL	EXHAUST	DUST	TOTAL	EXHAUST	DUST
*** 2007***										
Phase 1 - Demolition Emissions										
Fugitive Dust	1.81	0.00	1.81	0.21	0.38	0.00	0.38	1.43	0.00	1.43
Off-Road Diesel	2.81	2.81	0.00	0.92	2.59	2.59	0.00	0.22	0.22	0.00
On-Road Diesel	0.15	0.12	0.03	0.92	0.14	0.11	0.03	0.01	0.01	0.00
Worker Trips	0.02	0.01	0.01	0.21	0.00	0.00	0.00	0.02	0.01	0.01
Maximum lbs/day	**4.79**	2.94	1.85		**3.10**	2.70	0.41	**1.69**	0.24	1.44
Phase 2 - Site Grading Emissions										
Fugitive Dust	2.50	0.00	2.50	0.21	0.52	0.00	0.52	1.98	0.00	1.98
Off-Road Diesel	2.04	2.04	0.00	0.92	1.88	1.88	0.00	0.16	0.16	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.01	0.00	0.01	0.21	0.00	0.00	0.00	0.01	0.00	0.01
Maximum lbs/day	**4.55**	2.04	2.50		**2.40**	1.88	0.52	**2.15**	0.16	1.98
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	4.74	4.74	0.00	0.92	4.36	4.36	0.00	0.38	0.38	0.00
Bldg - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Off-Road Diesel	0.70	0.70	0.00	0.92	0.64	0.64	0.00	0.06	0.06	0.00
Asphalt - On-Road Diesel	0.01	0.01	0.00	0.92	0.01	0.01	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.01	0.00	0.01	0.93	0.01	0.00	0.01	0.00	0.00	0.00
Maximum lbs/day	**5.46**	5.45	0.01		**5.02**	5.01	0.01	**0.44**	0.44	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

Concrete Hauling	**PM10**	**PM10**	**PM10**	**PM2.5/**	**PM2.5**	**PM2.5**	**PM2.5**	**PM10**	**PM10**	**PM10**
Source	**TOTAL**	**EXHAUST**	**DUST**	**PM10**	**TOTAL**	**EXHAUST**	**DUST**	**TOTAL**	**EXHAUST**	**DUST**
***** 2007*****										
Phase 1 - Demolition Emissions										
Fugitive Dust	6.80	0.00	6.80	0.21	1.41	0.00	1.41	5.39	0.00	5.39
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.55	0.45	0.10	0.92	0.51	0.41	0.09	0.04	0.04	0.01
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**7.35**	0.45	6.90		**1.92**	0.41	1.51	**5.43**	0.04	5.39
Phase 2 - Site Grading Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	**0.00**	0.00	0.00
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Bldg - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00		**0.00**	0.00	0.00	**0.00**	0.00	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

Demolition	**PM10**	**PM10**	**PM10**	**PM2.5/**	**PM2.5**	**PM2.5**	**PM2.5**	**PM10**	**PM10**	**PM10**
Source	**TOTAL**	**EXHAUST**	**DUST**	**PM10**	**TOTAL**	**EXHAUST**	**DUST**	**TOTAL**	**EXHAUST**	**DUST**
***** 2007*****										
Phase 1 - Demolition Emissions										
Fugitive Dust	3.15	0.00	3.15	0.21	0.66	0.00	0.66	2.49	0.00	2.49
Off-Road Diesel	0.37	0.37	0.00	0.92	0.34	0.34	0.00	0.03	0.03	0.00
On-Road Diesel	0.25	0.21	0.04	0.92	0.23	0.19	0.04	0.02	0.02	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**3.77**	0.58	3.19		**1.23**	0.53	0.69	**2.54**	0.05	2.50
Phase 2 - Site Grading Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	**0.00**	0.00	0.00
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Bldg - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	**0.00**	0.00	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

Main Work	**PM10**	**PM10**	**PM10**	**PM2.5/**	**PM2.5**	**PM2.5**	**PM2.5**	**PM10**	**PM10**	**PM10**
Source	**TOTAL**	**EXHAUST**	**DUST**	**PM10**	**TOTAL**	**EXHAUST**	**DUST**	**TOTAL**	**EXHAUST**	**DUST**
***** 2008*****										
Phase 1 - Demolition Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions	0.00	0.00	0.00	0.21	0.00	0.00	0.00			
Fugitive Dust	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day								0.00	0.00	0.00
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	4.32	4.32	0.00	0.92	3.97	3.97	0.00	0.35	0.35	0.00
Bldg - Worker Trips	0.00	0.00	0.02	0.93	0.02	0.00	0.02	-0.02	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.02	0.93	0.02	0.00	0.02	-0.02	0.00	0.00
Asphalt - Off-Road Diesel	0.60	0.60	0.00	0.92	0.55	0.55	0.00	0.05	0.05	0.00
Asphalt - On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.01	0.00	0.01	0.93	0.01	0.00	0.01	0.00	0.00	0.00
Maximum lbs/day	**4.93**	4.92	0.05		**4.57**	4.53	0.05	0.36	0.39	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

Concrete Hauling	**PM10**	**PM10**	**PM10**	**PM2.5/**	**PM2.5**	**PM2.5**	**PM2.5**	**PM10**	**PM10**	**PM10**
Source	**TOTAL**	**EXHAUST**	**DUST**	**PM10**	**TOTAL**	**EXHAUST**	**DUST**	**TOTAL**	**EXHAUST**	**DUST**
***** 2008*****										
Phase 1 - Demolition Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Bldg - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

Demolition	PM10	PM10	PM10	PM2.5/	PM2.5	PM2.5	PM2.5	PM10	PM10	PM10
Source	TOTAL	EXHAUST	DUST	PM10	TOTAL	EXHAUST	DUST	TOTAL	EXHAUST	DUST
***** 2008*****										
Phase 1 - Demolition Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions	0.00	0.00	0.00	0.21	0.00	0.00	0.00			
Fugitive Dust	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day								0.00	0.00	0.00
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Bldg - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	0.00	0.00	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

URBEMIS 2002 For Windows 8.7.0

ne: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino for LST 010906.urb
Name: Termino Ave Drain - for LST - 1 acre increment
Location: South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

:TION EMISSION ESTIMATES

)7 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
(lbs/day,unmitigated)	7.24	54.08	54.35	0.00	4.87	2.37	2.50
(lbs/day, mitigated)	0.72	27.91	5.44	0.00	2.63	0.13	2.50

)8 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
(lbs/day,unmitigated)	11.22	73.25	85.58	0.00	2.80	2.79	0.01
(lbs/day, mitigated)	1.62	38.45	9.13	0.00	0.20	0.19	0.01

URBEMIS 2002 For Windows 8.7.0

ne: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Termino\Termino for LST 010906.urb
Name: Termino Ave Drain - for LST - 1 acre increment
Location: South Coast Air Basin (Los Angeles area)
Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

:tion Start Month and Year: January, 2007
:tion Duration: 18
and Use Area to be Developed: 0 acres
Acreage Disturbed Per Day: 0.25 acres
'amily Units: 0 Multi-Family Units: 0
)ffice/Institutional/Industrial Square Footage: 0

:TION EMISSION ESTIMATES UNMITIGATED (lbs/day)

:ce	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
)7***							
- Demolition Emissions							
: Dust	-	-	-	-	0.00	-	0.00
i Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'rips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ım lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Site Grading Emissions							
: Dust	-	-	-	-	2.50	-	2.50
i Diesel	4.49	31.58	35.14	-	1.33	1.33	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'rips	0.07	0.13	1.39	0.00	0.00	0.00	0.00
ım lbs/day	4.56	31.71	36.53	0.00	3.83	1.33	2.50
- Building Construction							
ıst Off-Road Diesel	7.24	54.08	54.35	-	2.37	2.37	0.00
ıst Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ıtings Off-Gas	0.00	-	-	-	-	-	-
ıtings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.00	-	-	-	-	-	-
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ım lbs/day	7.24	54.08	54.35	0.00	2.37	2.37	0.00
ɔs/day all phases	7.24	54.08	54.35	0.00	4.87	2.37	2.50
)8***							
- Demolition Emissions							
: Dust	-	-	-	-	0.00	-	0.00
i Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'rips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ım lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Site Grading Emissions							
: Dust	-	-	-	-	0.00	-	0.00
i Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
'rips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ım lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ıst Off-Road Diesel	7.24	51.58	56.11	-	2.16	2.16	0.00
ıst Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ıtings Off-Gas	0.00	-	-	-	-	-	-
ıtings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.45	-	-	-	-	-	-
Off-Road Diesel	3.42	20.33	28.83	-	0.60	0.60	0.00
On-Road Diesel	0.09	1.33	0.32	0.00	0.04	0.04	0.00
Worker Trips	0.02	0.01	0.32	0.00	0.01	0.00	0.01
ım lbs/day	11.22	73.25	85.58	0.00	2.80	2.79	0.01
ɔs/day all phases	11.22	73.25	85.58	0.00	2.80	2.79	0.01

- Demolition Assumptions: Phase Turned OFF

- Site Grading Assumptions
onth/Year for Phase 2: Jan '07
Duration: 2 months
Truck Travel (VMT): 0
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Graders	174	0.575	8.0
Other Equipment	190	0.620	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

- Building Construction Assumptions
onth/Year for Phase 3: Mar '07
Duration: 16 months
Month/Year for SubPhase Building: Mar '07
ase Building Duration: 16 months
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Cranes	190	0.430	4.0
Other Equipment	190	0.620	8.0
Signal Boards	119	0.820	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

Month/Year for SubPhase Architectural Coatings: May '08
ase Architectural Coatings Duration: 1.6 months
Month/Year for SubPhase Asphalt: Jun '08
ase Asphalt Duration: 0.8 months
to be Paved: 3
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Pavers	132	0.590	8.0
Rollers	114	0.430	8.0
Tractor/Loaders/Backhoes	79	0.465	4.0

CTION EMISSION ESTIMATES MITIGATED (lbs/day)

rce	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
)7***							
- Demolition Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Site Grading Emissions							
e Dust	-	-	-	-	2.50	-	2.50
d Diesel	0.45	16.30	3.51	-	0.07	0.07	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.07	0.13	1.39	0.00	0.00	0.00	0.00
um lbs/day	0.52	16.43	4.90	0.00	2.57	0.07	2.50
- Building Construction							
ast Off-Road Diesel	0.72	27.91	5.44	-	0.13	0.13	0.00
ast Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.00	-	-	-	-	-	-
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.72	27.91	5.44	0.00	0.13	0.13	0.00
os/day all phases	0.72	27.91	5.44	0.00	2.63	0.13	2.50
)8***							
- Demolition Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Site Grading Emissions							
e Dust	-	-	-	-	0.00	-	0.00
d Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00

Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
um lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
- Building Construction							
ust Off-Road Diesel	0.72	26.62	5.61	-	0.12	0.12	0.00
ust Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
atings Off-Gas	0.00	-	-	-	-	-	-
atings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Gas	0.45	-	-	-	-	-	-
Off-Road Diesel	0.34	10.49	2.88	-	0.03	0.03	0.00
On-Road Diesel	0.09	1.33	0.32	0.00	0.04	0.04	0.00
Worker Trips	0.02	0.01	0.32	0.00	0.01	0.00	0.01
um lbs/day	1.62	38.45	9.13	0.00	0.20	0.19	0.01
os/day all phases	1.62	38.45	9.13	0.00	0.20	0.19	0.01

ction-Related Mitigation Measures

- Demolition Assumptions: Phase Turned OFF

- Site Grading Assumptions
onth/Year for Phase 2: Jan '07
Duration: 2 months
Truck Travel (VMT): 0
d Equipment

Type	Horsepower	Load Factor	Hours/Day
Graders	174	0.575	8.0
Other Equipment	190	0.620	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

- Building Construction Assumptions
onth/Year for Phase 3: Mar '07
Duration: 16 months
Month/Year for SubPhase Building: Mar '07
ase Building Duration: 16 months
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Cranes	190	0.430	4.0
Other Equipment	190	0.620	8.0
Signal Boards	119	0.820	8.0
Tractor/Loaders/Backhoes	79	0.465	8.0

Month/Year for SubPhase Architectural Coatings: May '08
ase Architectural Coatings Duration: 1.6 months
Month/Year for SubPhase Asphalt: Jun '08
ase Asphalt Duration: 0.8 months
to be Paved: 3
oad Equipment

Type	Horsepower	Load Factor	Hours/Day
Pavers	132	0.590	8.0
Rollers	114	0.430	8.0
Tractor/Loaders/Backhoes	79	0.465	4.0

made to the default values for Land Use Trip Percentages

made to the default values for Construction

mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
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mitigation measure Off-Road Diesel Exhaust: Use aqueous diesel fuel
s been changed from off to on.
mitigation measure Off-Road Diesel Exhaust: Use cooled exhaust gas recirculation(EGR)
s been changed from off to on.

Main Work	**PM10**	**PM10**	**PM10**	**PM2.5/**	**PM2.5**	**PM2.5**	**PM2.5**	**PM10**	**PM10**	**PM10**
Source	**TOTAL**	**EXHAUST**	**DUST**	**PM10**	**TOTAL**	**EXHAUST**	**DUST**	**TOTAL**	**EXHAUST**	**DUST**
***** 2007*****										
Phase 1 - Demolition Emissions										
Fugitive Dust	2.50	0.00	2.50	0.21	0.52	0.00	0.52	1.98	0.00	1.98
Off-Road Diesel	1.33	1.33	0.00	0.92	1.22	1.22	0.00	0.11	0.11	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**3.83**	1.33	2.50		**1.74**	1.22	0.52	**2.09**	0.11	1.98
Phase 2 - Site Grading Emissions										
Fugitive Dust	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	**0.00**	0.00	0.00
Phase 3 - Building Construction										
Bldg - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Bldg - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Arch Coatings - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Off-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - On-Road Diesel	0.00	0.00	0.00	0.92	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt - Worker Trips	0.00	0.00	0.00	0.93	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	**0.00**	0.00	0.00		**0.00**	0.00	0.00	**0.00**	0.00	0.00
Maximum - all phases										

The PM2.5/PM10 factor is from Appendix A to the new PM2.5 methodology

APPENDIX D

HYDROLOGIC AND WATER QUALITY ANALYSES REPORT AND

TIDAL CULVERT INSPECTION REPORT

TERMINO AVENUE DRAIN

HYDROLOGIC AND WATER QUALITY ANALYSES REPORT

Submitted to:

EDAW, Inc.
3780 Wilshire Boulevard, Suite 250
Los Angeles, California 90010

Contact: Eric Wilson

Submitted by:

Everest International Consultants, Inc.
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Long Beach, California 90802

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February 2007

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1 INTRODUCTION

1.1 BACKGROUND

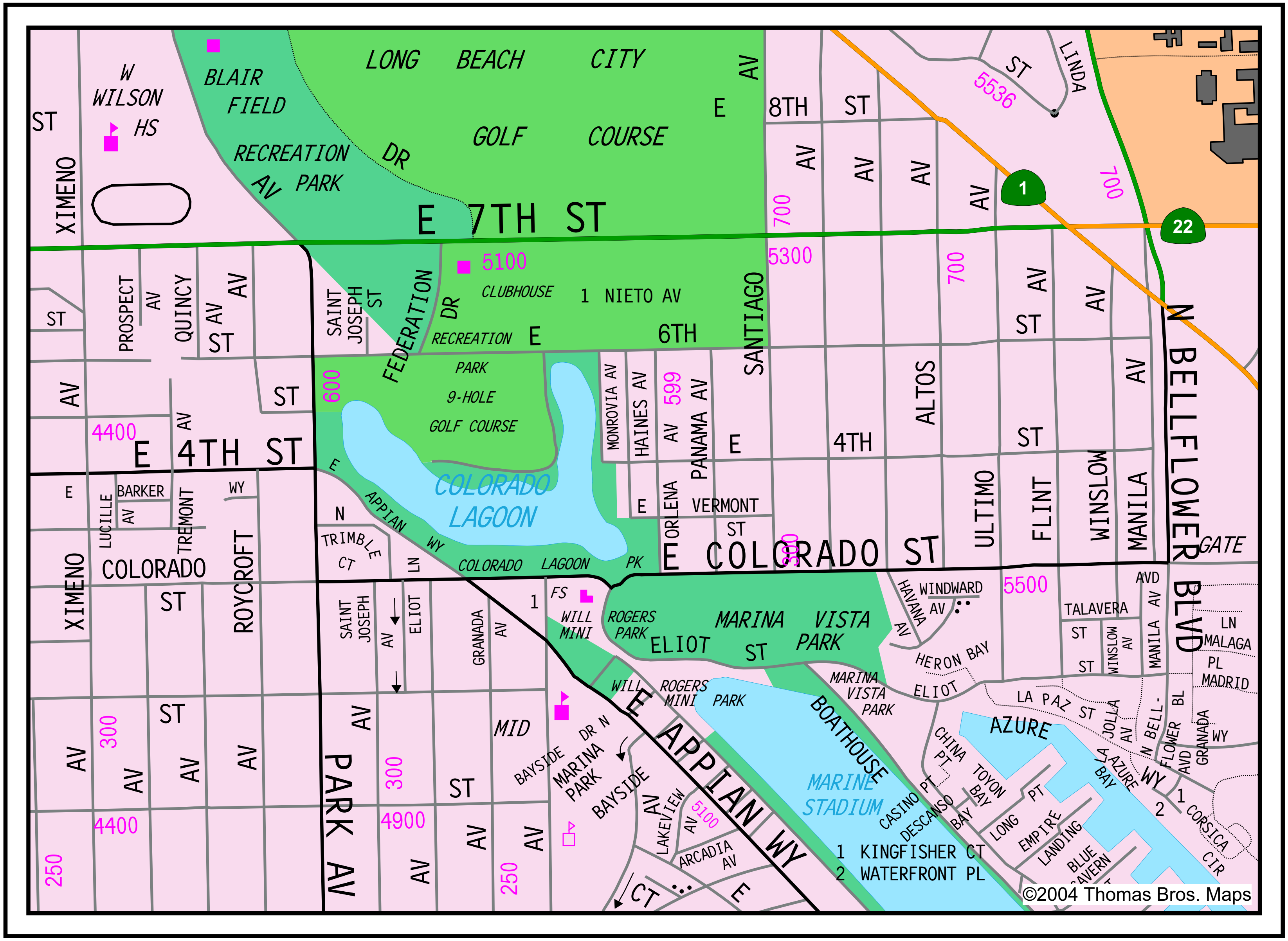
Colorado Lagoon and Marine Stadium are located in the City of Long Beach at the southern border of Los Angeles County, California (Figure 1.1). Colorado Lagoon is a salt water lagoon with beach area and picnic areas for recreational use (Figure 1.2). A tidal culvert located at the southeast end connects the lagoon to Marine Stadium. Originally constructed for the 1932 Olympic rowing competition, Marine Stadium is a rectangular waterway that joins Alamitos Bay. Today, Marine Stadium is used for recreational activities including rowing, water skiing, and boating racing. Colorado Lagoon and Marine Stadium are both operated and maintained by the Long Beach Department of Parks, Recreation, and Marine (LBPRM).

Colorado Lagoon and Marine Stadium serve as the terminus for several major storm drains located in the 1,172-acre drainage area classified as Basin 21 under the City of Long Beach Storm Water Management Program. This drainage area is composed of residential, commercial, institutional, and open space land uses (City of Long Beach 2001).

One of the major storm drains is the Termino Avenue Drain (TAD) that discharges into the northwest corner of Colorado Lagoon. The TAD watershed has a history of flooding problems. The existing drainage facilities of this watershed are not sufficient to convey the flow for a 50-year flood event. The Los Angeles County Department of Public Works (LACDPW) proposed a project to realign and increase the capacity of the TAD storm drain system that discharges to Colorado Lagoon. The goal of that proposed TAD Project was to provide better flood protection to the watershed. A mitigated negative declaration (MND) was approved by the County Board of Supervisors in June 2001. Following approval, the document was challenged in court by Friends of the Colorado Lagoon. The court found that the document provided inadequate CEQA analysis; consequently, the County was ordered to conduct a ". . . proper study of the baseline conditions of the tidal culvert connecting the Colorado Lagoon and the Marine Stadium."

LACDPW retained a consultant team to address the issues of water quality, hydrology, and biological resources and to prepare a comprehensive environmental impact report (EIR) for the proposed TAD project. As part of the EIR, this hydrologic and water quality analyses addresses the hydrology and water quality issues pertaining to the TAD Project.

Figure 1.1 Project Location


LONG BEACH CITY GOLF COURSE
BLAIR FIELD
RECREATION PARK
W WILSON HS
E 7TH ST
E 8TH ST
5100
CLUBHOUSE
1 NIETO AV
E 6TH
RECREATION PARK 9-HOLE GOLF COURSE
COLORADO LAGOON
E 4TH ST
E COLORADO ST
MARINA VISTA PARK
ROGERS PARK
WILL MINI
ELIOT ST
E APPIAN WY
MARINE STADIUM
BOATHOUSE
AZURE
N BELLFLOWER BLVD
PARK AV
XIMENO
PROSPECT AV
QUINCY AV
SAINT JOSEPH AV
FEDERATION DR
SANTIAGO AV
ALTOS
ULTIMO
FLINT
WINSLOW
MANILA
MONROVIA AV
HAINES AV
PANAMA AV
ORLENA
VERMONT ST
ROYCROFT
TREMONT
LUCILLE AV
BARKER
TRIMBLE CT
GRANADA AV
MID
BAYSIDE
MARINA PARK
LAKEVIEW AV
ARCADIA AV
HAVANA AV
WINDWARD AV
HERON BAY
TALAVERA
LA PAZ ST
GATE
MALAGA
MADRID
CORSICA CIR
LINDA
5536
5300
5500
4400
4900
600
700
300
250
1 KINGFISHER CT
2 WATERFRONT PL
©2004 Thomas Bros. Maps

1.2 PURPOSE AND OBJECTIVES

The purpose of the study is to analyze the potential hydrologic and water quality impacts associated with the TAD Project. Potential impacts include increases in flooding associated with large storm events as well as water quality impacts to Colorado Lagoon and Marine Stadium.

To achieve the purpose presented above, the following objectives were developed.

- Establish significance criteria for changes in flood elevations
- Determine increases in flood elevation due to implementation of each alternative
- Evaluate the flood impact to water elevations of each alternative
- Establish significance criteria for changes in salinity levels
- Determine impacts to salinity levels due to implementation of each alternative
- Evaluate the flood impact to salinity levels of each alternative

This report summarizes the objectives, methods, results, findings, and recommendations of the hydrologic and water quality analyses.

1.3 SCOPE OF STUDY

The focus of this study is to determine the potential hydrologic and water quality impacts associated with the TAD Project. The study area is limited to Colorado Lagoon and the northwest portion of Marine Stadium. The potential hydrologic impacts are limited to changes in flood water elevations attributed to modifications in flood flow magnitude and timing. The potential water quality impacts include changes in salinity levels, potential changes in sediment erosion, and changes in other water quality constituents resulting from modifications in flood flow magnitude and timing.

2 EXISTING CONDITIONS

2.1 SITE DESCRIPTION

Colorado Lagoon and Marine Stadium, shown in Figure 2.1, are located in the City of Long Beach adjacent to Alamitos Bay. Colorado Lagoon is a salt water, 44-acre, Y-shaped lagoon with recreational and biological uses. Beach and grass areas surround the entire perimeter of the lagoon, as shown in Figure 2.2. The Recreation Park 9-Hole Golf Course is located along the northern boundary, between the west and east arms of the lagoon. Streets bordering the lagoon are 6th Street to the north, Park Ave and Appian Way to the west, Colorado Street to the south, and Orlena Ave to the east.

Marine Stadium is a mile-long, rectangular waterway located at the back end of Alamitos Bay. The entire perimeter is lined with riprap. The Will Rogers Mini Park and Marina Vista Park are located along the north edge. Site photos showing the north edge of Marine Stadium are shown in Figure 2.3.

Colorado Lagoon is hydraulically connected to Marine Stadium via an underground culvert located beneath Marina Vista Park. The tidal culvert inlet/outlet at Colorado Lagoon and Marine Stadium are shown in Figure 2.4. The inlet/outlet structure at Colorado Lagoon is 22 feet (ft) long, 22 ft wide with one flared and one straight wingwall. There is a tide gate operated by the City of Long Beach to regulate the flow between Colorado Lagoon and Marine Stadium. The inlet/outlet structure at Marine Stadium is 31.25 ft long, 22 ft wide with one flared and one straight wingwall. There is also a trash debris screen. The tidal culvert itself is a reinforced concrete box, which was designed with two distinctive cross sections. From the Colorado Lagoon side, the tidal culvert has a design cross-section of 14 ft by 7 ft for approximately 160 feet then transitions to a design cross-section of 12 ft by 8 ft for about 700 ft.

2.2 HYDROLOGY

2.2.1 Local Watershed

Colorado Lagoon and Marine Stadium are located in Basin 21 based on the City of Long Beach Storm Water Management Program. This 1,173-acre drainage area is composed of 773 acres residential, 125 acres commercial, 55 acres institutional, and 219 acres open space land uses (City of Long Beach 2001). Storm drains that discharge into Colorado

Figure 2.1 Colorado Lagoon and Marine Stadium

Figure 2.2 Colorado Lagoon Site Photos

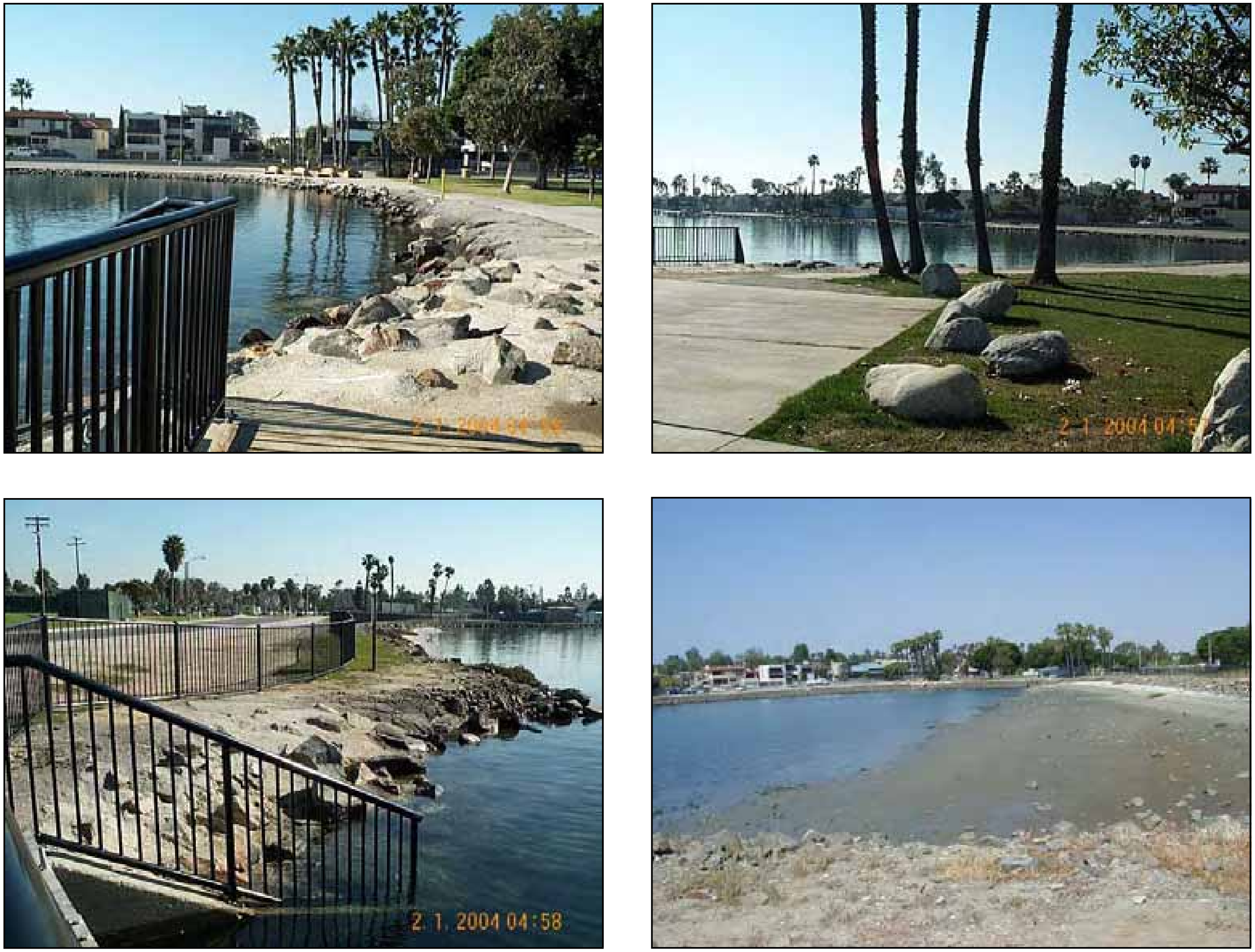


Figure 2.3 Marine Stadium Site Photos

Tidal Culvert at Colorado Lagoon

Tidal Culvert at Marine Stadium

Figure 2.4 Tidal Culvert Site Photos

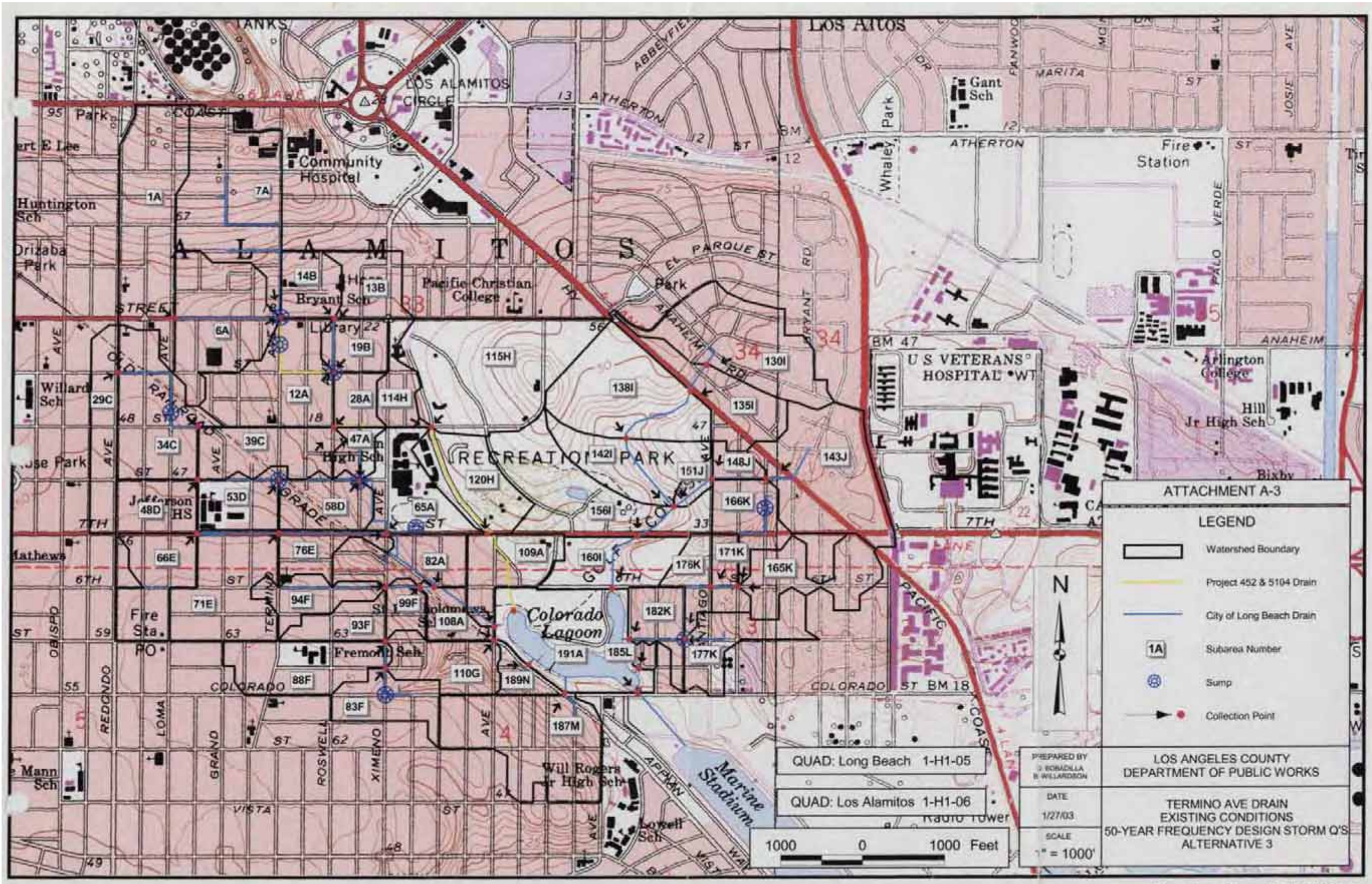
Lagoon drain a total of 1,130-acres. The drainage area used in the LACDPW hydrology study (LACDPW 2003) is reproduced in Figure 2.5.

2.2.2 Precipitation

The climate conditions for Colorado Lagoon and Marine Stadium are similar to that of the general Southern California climate with the majority of rainfall occurring during winter months between October and May. The City of Long Beach has an average annual rainfall of 12.94 inches (City of Long Beach 2004b).

2.2.3 Local Runoff

Thirteen storm drains discharge into the study area, as shown in Figure 2.6. In the figure, the storm drains with available flow information are indicated by blue arrows, while storm drains with no data available are shown as black dashed-line arrows. In general, those storm drains with no flow information are minor storm drains that drain local areas, such as a local parking lot. Two storm drains were not observed in the field, but flows were provided by LACDPW. All storm drains are owned and operated by the City of Long Beach with the exception of the Project 452 and 5104 storm drains, which are owned and operated by LACDPW. Seven major and four minor storm drains discharge into Colorado Lagoon. One major and one minor storm drain discharge into the northwest portion of Marine Stadium.



Reproduced from LACDPW 2003

Figure 2.5 Existing Colorado Lagoon Storm Drain Drainage Area

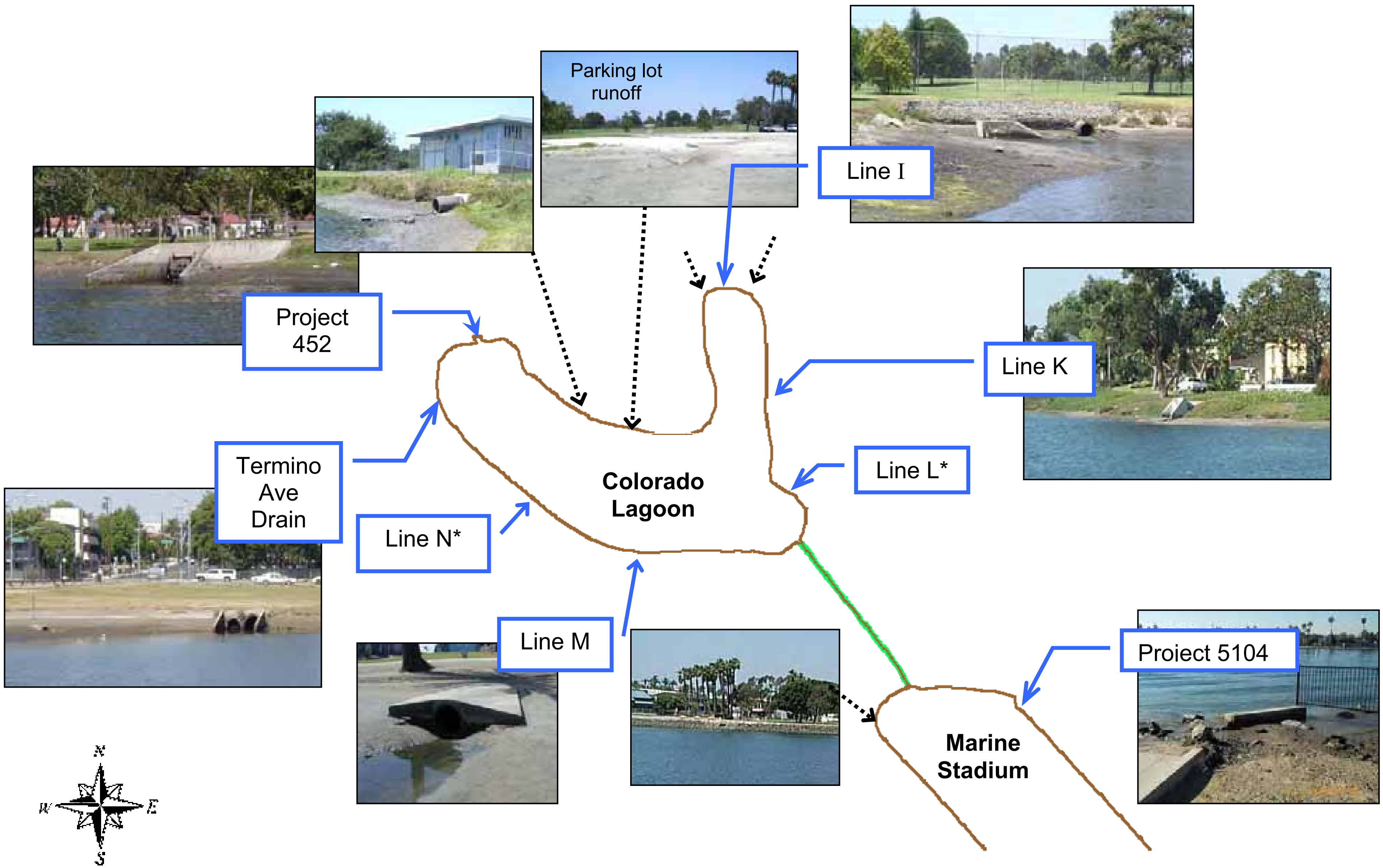


Figure Not to Scale
*Not observed during field survey

Figure 2.6 Existing Storm Drain Locations

3 TERMINO AVENUE DRAIN ALTERNATIVES

3.1 OVERVIEW

Hydrologic and water quality analyses were conducted for Existing Conditions and two alternatives. Under Alternative 1 the TAD outfall will be relocated to Marine Stadium, while under Alternative 2 the TAD outfall will remain in Colorado Lagoon. The alternatives are described in detail below. Alternative 1 in this report represents the proposed project evaluated in the TAD EIR, while Alternative 2 in this report represents the EIR's Alternative 1.

3.2 ALTERNATIVE 1 (EIR PROPOSED PROJECT)

Alternative 1, LACDPW's proposed project, consists of constructing a new mainline for the TAD with the outlet located at the northwest corner of Marine Stadium, adjacent to an existing storm drain. The Alternative 1 TAD would realign and increase the capacity of the existing TAD. The proposed TAD mainline would consist of 5,490 feet of storm drain conduit varying in size from a 48-inch reinforced concrete pipe at the upstream terminus at Termino Avenue and Anaheim Street to a 12 by 8-foot double reinforced concrete box conduit at the downstream terminus at Marine Stadium. The mainline would be sized to accommodate the 50-year storm flow of 1,060 cubic feet per second (cfs).

The majority of the mainline construction would be within portions of the abandoned Pacific Electric (PE) right-of-way, which is currently owned by the City of Long Beach. The mainline alignment will include crossings at Anaheim Street, Loma Avenue, Euclid Avenue, 11th Street, 10th Street, Termino Avenue, 8th Street, Roswell Avenue, 7th Street, Bennett Avenue, Ximeno Avenue, 6th Street, Park Avenue, Appian Way, Colorado Street, and Nieto Avenue. The mainline would connect to the existing drainage system at various locations via six laterals, totaling 5,570 linear feet of conduit. The laterals would vary in size ranging from 48 to 36 inches and be constructed of reinforced concrete pipe.

The outlet structure at Marine Stadium would consist of a double box culvert. The opening to the outlet structure would be approximately 25 feet wide. Energy dissipater blocks would be placed in the outlet opening to reduce the velocity of stormwater from the box culvert during major storm events. A woven geotextile fabric would be placed at the outlet to minimize erosion. In-line storm drain catch basin screens, located throughout the alignment, would prohibit suspended solids and floatables from entering Marine Stadium.

Based on discussions with the City of Long Beach and the Los Angeles County Sanitation Districts (Sanitation Districts), the proposed project includes a diversion line system that would divert the dry weather flows, primarily a result of irrigation, from the storm drain and direct them into an existing County sanitary sewer line. The line would have capacity to convey approximately 150 gallons per minute (230,000 gallons per day). A pump unit would be constructed to convey the dry weather flows due to differences in elevation between the diversion system and the sanitary sewer line. The Sanitation Districts would be responsible for treating the dry weather flows at existing sewage treatment plants. LACDPW would be responsible for the operation and maintenance of the diversion system.

3.3 ALTERNATIVE 2 (EIR ALTERNATIVE 1)

Alternative 2, LACDPW's Alternative 1, consists of re-aligning and increasing the TAD mainline in the same manner as Alternative 1, but with the outlet remaining at Colorado Lagoon. Modifications to the mainline and laterals will be the same from the upstream terminus at Termino Avenue and Anaheim Street to the intersection of Park Ave and 4th Street.

The outlet structure at Colorado Lagoon would replace the existing TAD outlet. The outlet structure will be similar to Alternative 1 with a flap gate apparatus, energy dissipater blocks, and woven geotextile fabric.

A 45-cfs low-flow splitter box at Park Avenue and 4th Street would also be constructed to convey low flows directly to Marine Stadium. The splitter structure would be 200 ft long, 5 ft high, and 22 ft wide with a diagonal weir. The low flow system would be a 2,931 linear feet storm drain varying from a 49-inch reinforced concrete pipe to a 6 ft by 4 ft reinforced concrete box. The low flow drain would be aligned with Appian Way to Colorado Street, run along Eliot Street and Marina Vista Park, and outlet at Marine Stadium near the tidal culvert. The outlet structure would be approximately 11 ft wide with riprap to reduce erosion. Alternative 2 would also include the dry weather flow diversion to the sanitary sewer system.

4 HYDROLOGIC ANALYSIS

4.1 OVERVIEW

The hydrologic analysis was conducted to determine the flood impacts to Colorado Lagoon and Marine Stadium attributed to changes under Alternatives 1 and 2, as well as to provide the hydrodynamic conditions for the water quality analysis described in Section 5. Both alternatives will change the magnitude of the peak flood flows, as well as the timing of when the flood flows will enter Colorado Lagoon and Marine Stadium. Increasing flood flows have the potential to increase the flooded area of the receiving water body. For this study, flood analyses were conducted using a hydrodynamic model to evaluate the changes in water elevations in Colorado Lagoon and Marine Stadium due to a 50-year flood event under Existing Conditions, Alternative 1, and Alternative 2.

4.2 FLOOD ANALYSIS

The hydrodynamic model, RMA2, was used to simulate the flood flows into Colorado Lagoon and Marine Stadium under a 50-year flood event. RMA2 is a two-dimensional, depth averaged hydrodynamic model developed by the U.S. Army Corps of Engineers (USACE) that is capable of simulating tidal conditions and flood flows. The hydrodynamic modeling was conducted based on the 25-hour and 50-year flood hydrographs for the storm drains discharging into Colorado Lagoon and Marine Stadium provided by LACDPW (2003 and 2004). The peak flows and associated flood volumes for each of the storm drains are summarized in Table 4.1 for Existing Conditions, Alternative 1, and Alternative 2. Under Alternative 1, the total volume of the 50-year flood event will be increased due to the increase in drainage area of the proposed TAD. Alternative 2 will increase the magnitude of the 50-year peak, although the total volume of water discharged into Colorado Lagoon will be reduced due to the low flow diversion to Marine Stadium.

Bathymetry and topography within the study area were based on a survey conducted in February 2004 by LACDPW. Bathymetry of the remaining portion of Marine Stadium, Alamitos Bay, and the ocean were based on the NOAA chart 18749. The bathymetry and hydrodynamic model grid are shown in Figure 4.1. The figure also shows the one-dimensional elements used to represent the tidal culvert between Colorado Lagoon and Marine Stadium, as well as the Haynes and AES Alamitos Generating Stations, which intake water from Alamitos Bay and then discharge into the San Gabriel River.

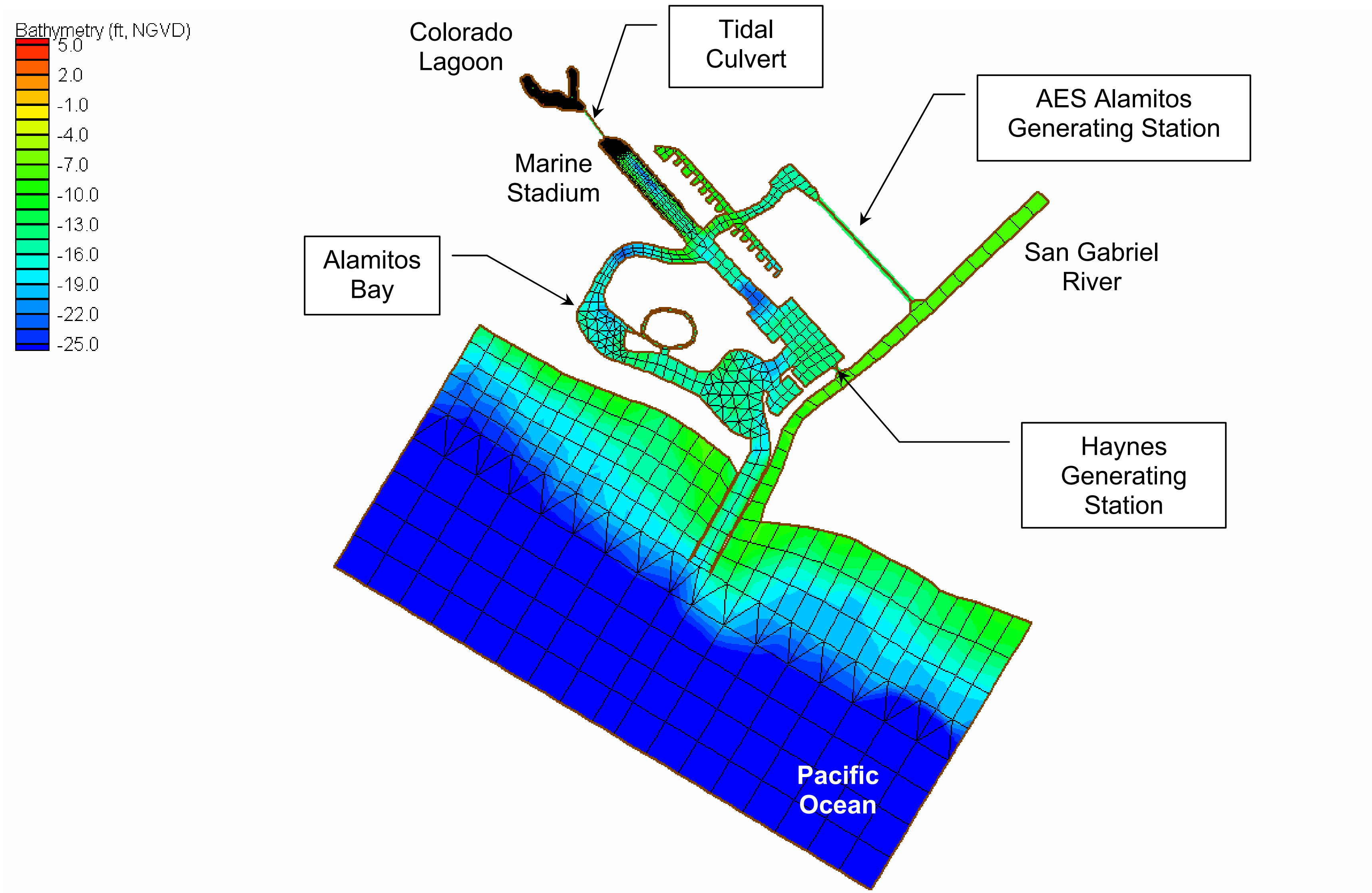


Figure 4.1 Hydrodynamic Model Bathymetry and Grid

Table 4.1 50-Year Flood Event Peaks and Volume

Storm Drain	Existing Conditions		Alternative 1		Alternative 2	
	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)
TAD	342	130.3	703*	209.2*	535	76.9
Project 452	119	53.4	97	12.1	97	12.1
Line I	191	38.3	191	38.3	191	38.3
Line K	99	21.4	99	21.4	99	21.4
Line L	2	0.1	2	0.1	2	0.1
Line M	42	8.4	42	8.4	42	8.4
Line N	7	0.7	7	0.7	7	0.7
Project 5104	51*	8.0*	51*	8.0*	51*	8.0*
Low Flow Diversion	--	--	--	--	45*	93.0*
Total	--	260.6	--	298.1	--	258.7

Source: LACDPW 2003 and 2004
* Flow discharges to Marine Stadium

The AES Alamitos Generating Station has three permitted discharges with a total average flow of 1,271 million gallons per day (MGD). Haynes Generating Station has three permitted discharges with a total average flow of 560 MGD. These permitted flows from the two generating stations are included in the hydrodynamic model simulations.

Flow through the tidal culvert was based on a rating curve, which was determined with an in-house link-node hydrodynamic model KAI. The existing conditions of the tidal culvert for modeling were based on a field inspection survey conducted in April 2005 (Global Inshore 2005). Due to biofouling in the tidal culvert, the tidal culvert survey was used to estimate the conveyance capacity (i.e., cross sectional area) and invert elevations at both ends of the culvert. The invert elevations were calculated as design elevation plus the thickness of biofouling at each end of the culvert. The design elevations were provided by LACDPW.

The downstream control for the flood analysis (i.e., tide elevation at the flood hydrograph peak) was provided by LACDPW. The standard practice for designing storm drains that discharge into the ocean is to use the mean higher high water (MHHW) tide elevation (2.8 ft, NGVD) as the downstream control. Under Existing Conditions and Alternative 2, the TAD discharges into Colorado Lagoon instead of the ocean and the tide range in Colorado Lagoon is muted relative to the ocean tide range due to the tidal culvert connecting Colorado Lagoon and Marine Stadium. In addition, Colorado Lagoon serves as a detention basin for the TAD flows prior to discharging into Marine Stadium via the tidal culvert. Therefore, a more conservative tide elevation of 3.6 ft, NGVD in Marine Stadium was selected for the downstream control.

The 3.6 ft NGVD tide elevation represents the highest tide elevation for 90% of the days observed in 2002. A diurnal tide sequence (i.e., two highs and two lows) with a high peak at 3.6 ft, NGVD was selected from the 2002 tide record. Under existing conditions, the peak TAD flow was timed to occur simultaneously with the peak tide elevation. Under Alternatives 1 and 2, the peak flows of the respective proposed TAD configurations were timed to occur simultaneously with the peak tide elevation. The timing of the 50-year peak flows and peak tide elevations are shown in Figure 4.2. The timing of the 50-year peak flows for Lines I, K, L, M, N, and Project 5104 are also shown for Existing Conditions.

4.3 FLOOD IMPACTS

The following criteria were developed for assessing whether or not a flood impact would occur.

1. A substantial increase in water elevation above Existing Conditions

2. Flooding of the areas outside of Colorado Lagoon and Marine Stadium due to overtopping

For Colorado Lagoon, the perimeter elevations vary, but are higher than the surrounding street elevations. The perimeter elevations were estimated based on the LACDPW topographic survey data and field observations. Although the topographic data did not extend to the surrounding streets, two spot elevations for Colorado Street were provided. The perimeter elevations around Colorado Lagoon range from 5.5 ft, NGVD to 10 ft, NGVD. The lowest elevations are along the northern edge from the parking lot and street towards 6th Street. The highest elevations are along the eastern edge of Colorado Lagoon. The top

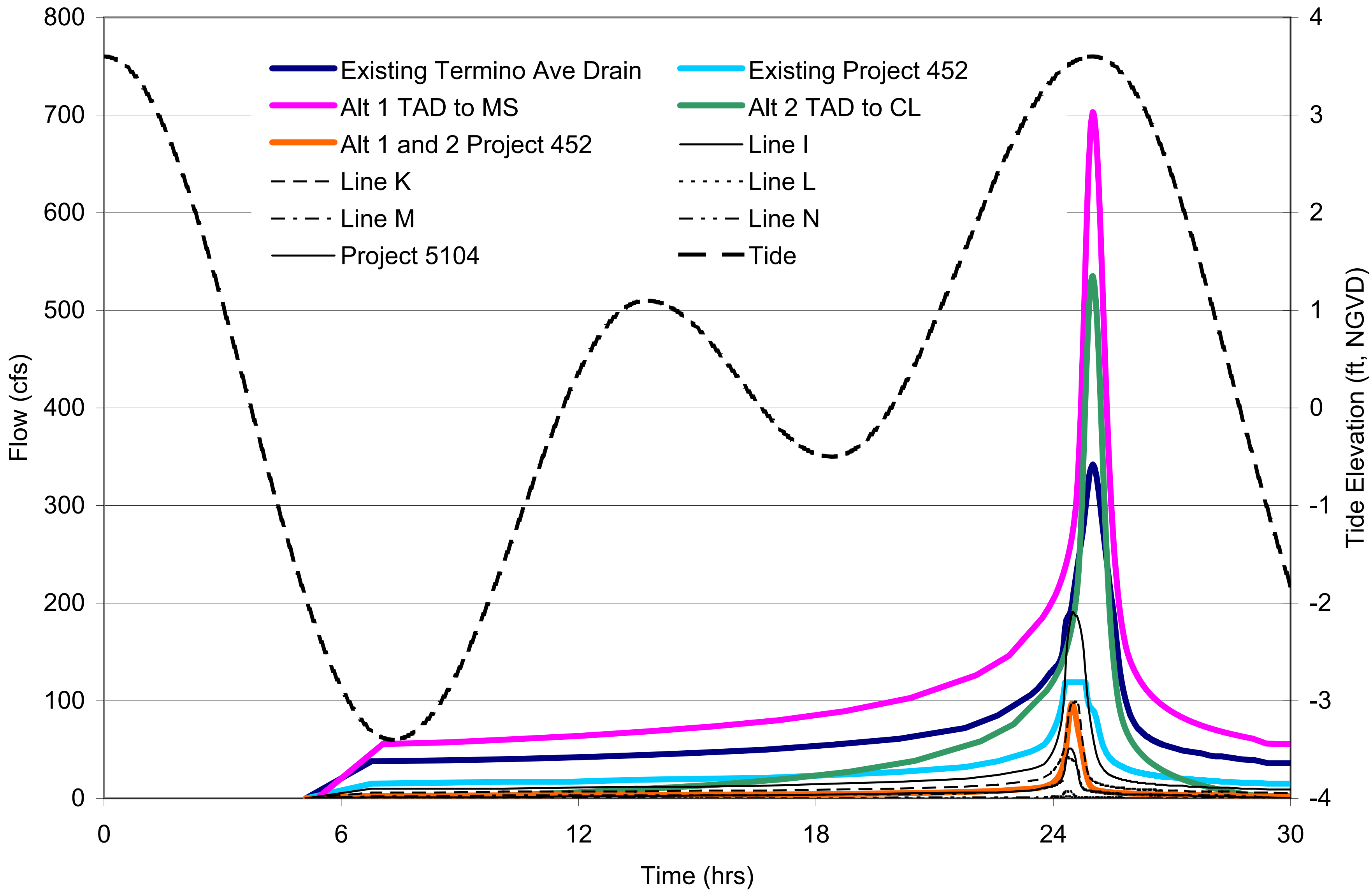


Figure 4.2 50-Year Hydrographs and Tide Elevations for Flood Analysis

elevation of the riprap bank protection along Marine Stadium is 5 ft, NGVD. The 50-year flood water elevations in Colorado Lagoon under Existing Conditions, Alternative 1, and Alternative 2 are shown in Figure 4.3. The highest water elevation occurred under Existing Conditions, followed by Alternative 2, then Alternative 1. Both alternatives decrease the 50-year flood elevation relative to Existing Conditions due to the reduction in the amount of water entering Colorado Lagoon. Approximately 200 and 93 acre-feet of water are diverted from Colorado Lagoon to Marine Stadium under Alternatives 1 and 2, respectively. In addition to decreasing flood elevations relative to Existing Conditions, Alternative 1 also reduces flood elevations within Colorado Lagoon to elevations below the lowest perimeter elevations surrounding Colorado Lagoon, thereby confining flood waters to Colorado Lagoon.

The 50-year flood water elevations in Marine Stadium are shown in Figure 4.4. There are no changes to the flood water elevations within Marine Stadium under Alternatives 1 and 2 compared to Existing Conditions. Under Existing Conditions and both alternatives, the highest flood water elevation in Marine Stadium is predicted to be 3.6 ft, NGVD, which is the high tide elevation used as the downstream control.

The maximum 50-year flood elevations in Colorado Lagoon and Marine Stadium for Existing Conditions, Alternative 1, and Alternative 2 are summarized in Table 4.2.

Table 4.2 Maximum 50-Year Flood Elevations

SIMULATION	MAXIMUM 50-YEAR FLOOD ELEVATION (FT, NGVD)	
	COLORADO LAGOON	MARINE STADIUM
Existing Conditions	6.9	3.6
Alternative 1	4.2	3.6
Alternative 2	6.4	3.6

It should be noted that the maximum 50-year flood elevation is controlled by the condition of the tidal culvert. The hydrologic analysis results presented here were conducted using the surveyed existing condition of the tidal culvert and estimated invert elevations assuming that the tidal gates are fully opened. Situations with higher invert elevations (e.g., due to continued biofouling) or partially closed tidal gates could increase the water elevations in Colorado Lagoon.

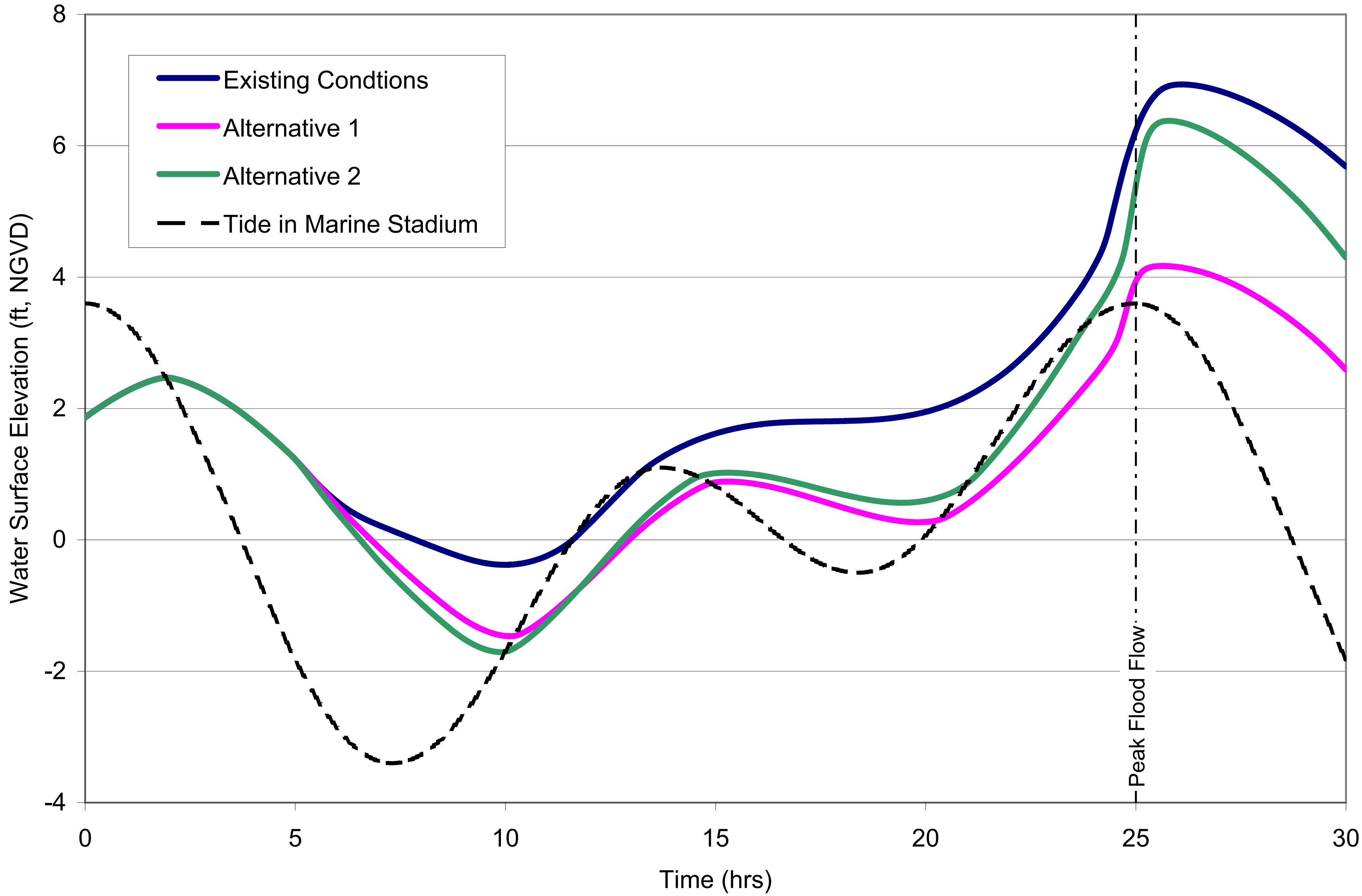


Figure 4.3 50-Year Flood Elevations in Colorado Lagoon

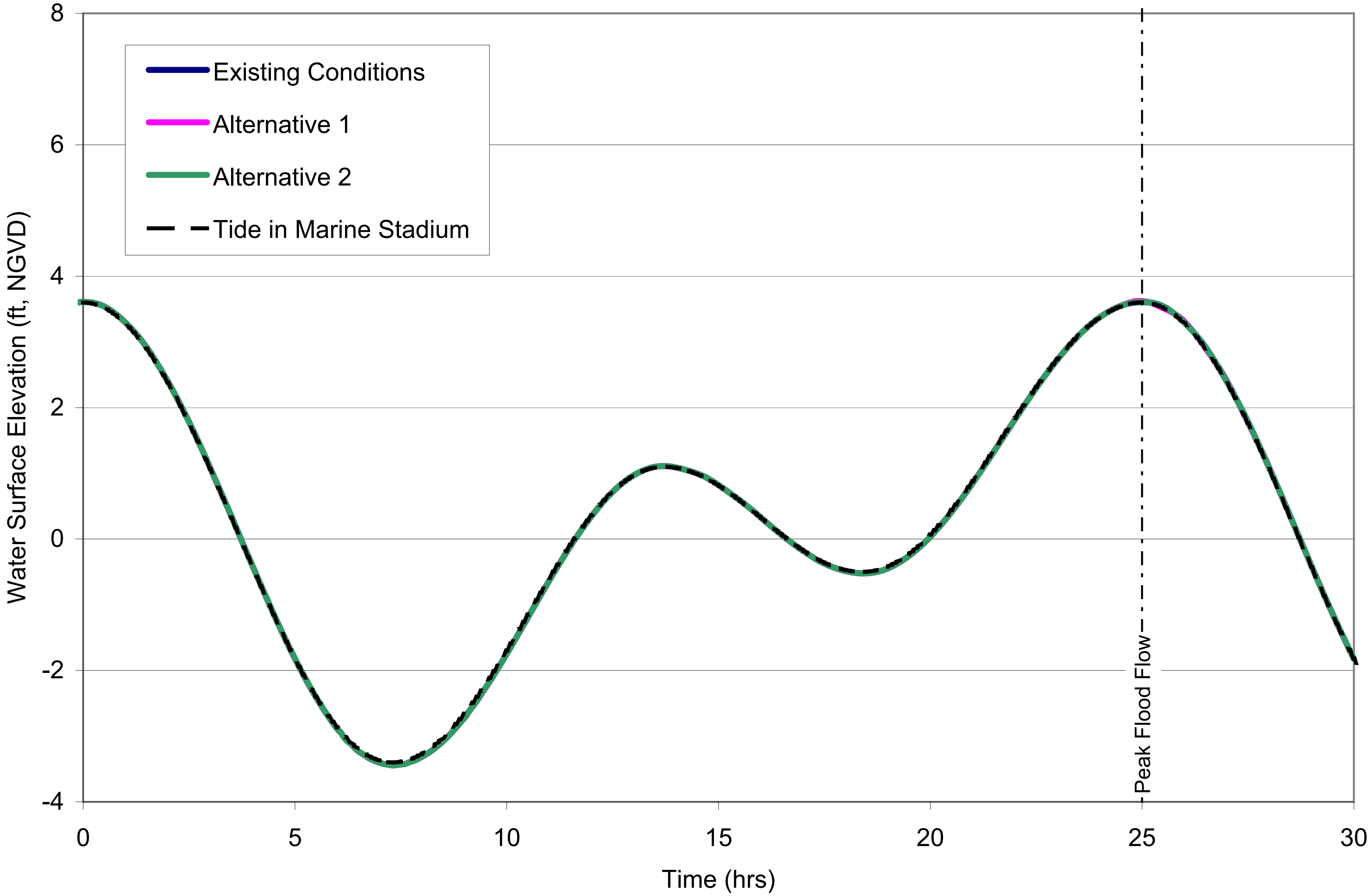


Figure 4.4 50-Year Flood Elevations in Marine Stadium

5 WATER QUALITY ANALYSIS

5.1 OVERVIEW

Colorado Lagoon is listed as an inland surface water with beneficial uses for water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), commercial and sport fishing (COMM), wildlife habitat (WILD), and shellfish harvesting (SHELL). Marine Stadium is listed as a coastal feature with beneficial uses for REC-1, non-contact water recreation (REC-2), commercial and sport fishing (COMM), marine habitat (MAR), rare, threatened, or endangered species (RARE), and shellfish harvesting (SHELL) (LARWQCB 1994).

Colorado Lagoon is a 303(d) listed water body with impairments to the beneficial uses due to contaminated sediment. These impairments are listed in Table 5.1. Marine Stadium is not a 303(d) listed water body.

Table 5.1 2002 Clean Water Act 303(d) Impairments for Colorado Lagoon

303(D) IMPAIRMENTS
Chlordane (tissue and sediment)
DDT (tissue)
Dieldrin (tissue)
Lead (sediment)
PAHs (sediment)
PCBs (sediment)
Sediment toxicity
Zinc (sediment)

Source: SWRCB 2003

A water quality assessment of Colorado Lagoon conducted by the City of Long Beach (2004c) identified concerns for bacteria and nutrients, although Colorado Lagoon is not 303(d) listed for these constituents. Weekly bacteria monitoring is conducted by the City of Long Beach Health Department for compliance with Assembly Bill 411 (AB 411). There are three monitoring sites along the pedestrian bridge that crosses the lagoon. Exceedances of bacteria concentrations above the AB 411 criteria have resulted in beach postings for Colorado Lagoon. Periodic decreased dissolved oxygen levels (< 5 mg/L) and algae blooms indicate excess nutrients. Visual observations of the lagoon water suggest the lagoon water is degraded compared to Marine Stadium and Alamitos Bay (City of Long Beach 2004c).

In addition to these water quality constituents, flood flows to marine environments can have detrimental effects to the salt water habitat due to decreases in salinity. Hence, a concern for the TAD project to water quality and marine habitats in Colorado Lagoon and Marine Stadium is the change in salinity in the water bodies during and following flood events. In this section, the salinity impact to Colorado Lagoon and Marine Stadium is first presented, followed by a discussion of other water quality constituents.

5.2 SALINITY ANALYSIS

Criteria for potential impacts associated with changes in salinity levels were adopted from the Bolsa Chica Lowlands Restoration Project Final EIR/EIS (Chambers 2000). These criteria were developed to be protective of marine species because the Bolsa Chica Lowlands Restoration Project was designed to mitigate for impacts to marine species associated with landfill projects within the Ports of Los Angeles and Long Beach. In addition, these criteria were developed to determine whether or not flood flows from the Wintersberg Flood Control Channel should be allowed to mix with saltwater under the various restoration alternatives. For these reasons, it is noted that application of these salinity criteria for the TAD Project should probably be considered somewhat conservative (i.e., overly protective) because the TAD Project is not being done as mitigation for marine species and the existing species within Colorado Lagoon have become adapted, to some degree, to storm flow-induced salinity changes.

The salinity criteria consist of two conditions during a 10-year flood event such that no significant impacts would likely occur to marine species (Table 5.2). The first criterion (Criterion 1) states that the salinity concentration should not fall below 30% of normal seawater or 10 parts per thousand (ppt) for more than one hour. This criterion was established to protect the less mobile marine invertebrates that are susceptible to low salinity levels. The second criterion (Criterion 2) states that the salinity concentration should recover to greater than 75% of normal seawater or 25 ppt within 10 hours from when the salinity concentration falls below 25 ppt. This criterion was established to protect marine fish species that prefer normal ocean water salinity concentrations (e.g., juvenile halibut).

Table 5.2 Marine Species Salinity Criteria

CRITERION	SALINITY CONCENTRATION	DURATION
1	Should not fall below 30% of normal seawater concentration or 10 ppt	Greater than one hour
2	Must recover to greater than 75% of normal seawater concentration or 25 ppt	Within 10 hours starting when salinity concentration falls below 25 ppt

Source: Chambers 2000

The impacts of flood flows to salinity levels in Colorado Lagoon and Marine Stadium under Existing Conditions, Alternative 1, and Alternative 2 were analyzed based on the 10-year flood event. The RMA2 model described previously in Section 4.2 was used in conjunction with a water quality model (RMA4) to simulate the 10-year flood flows, tidal conditions, and corresponding initial decrease and subsequent recovery of salinity levels in Colorado Lagoon and Marine Stadium. The significance of the impacts to the salinity levels were then determined based on comparison to the criteria above.

The 10-year flood hydrographs for the storm drains used for this analysis were provided by LACDPW. A summary of the 10-year peak flows and flood volumes for each storm drain is provided in Table 5.3. The tide elevations used for the salinity analyses were based on tide datums from the National Oceanic and Atmospheric Administration (NOAA) Los Angeles, Outer Harbor Station (Station ID 9410660) based on the most recent National Tidal Datum Epoch from 1983 to 2001 as presented in Table 5.4.

The time when the peak of the 10-year flood flow enters Colorado Lagoon and/or Marine Stadium relative to the tide elevation will result in different drops and recovery of the salinity in Colorado Lagoon and Marine Stadium. The 10-year flood for the hydrodynamic and water quality model simulations was timed with the peak arriving at MHHW as shown in Figure 5.1. The timing of the 10-year hydrographs (Lines I, K, L, M, and N, as well as Project 5104) is shown for Existing Conditions as examples.

For the water quality model simulation, an initial salinity concentration of 34 ppt was assumed for Marine Stadium, Alamitos Bay, and the Pacific Ocean. The initial salinity concentration for Colorado Lagoon was based on salinity data from water quality sampling conducted by Surfrider (2002). A total of 13 samples obtained during dry weather conditions between May 2000 and January 2002 resulted in an average salinity of 30.6 ppt.

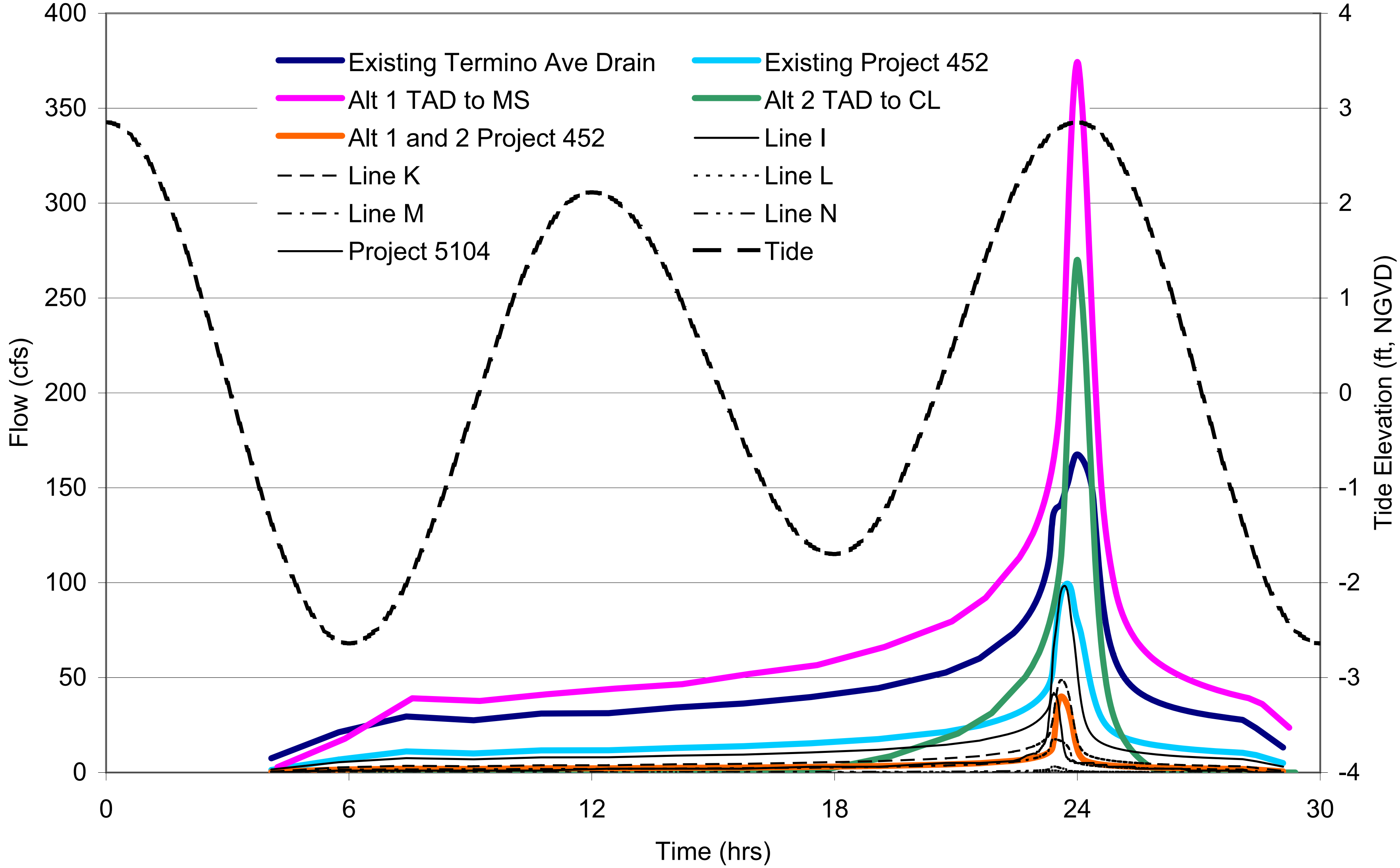


Figure 5.1 10-Year Hydrograph and Tide Elevations for Salinity Analysis

Table 5.3 10-Year Flood Event Peaks and Volumes

Storm Drain	Existing Conditions		Alternative 1		Alternative 2	
	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)
TAD	167.59	88.49	374.39*	130.28*	270.13	30.01
Project 452	99.49	35.25	40.05	7.23	40.05	7.23
Line I	98.32	24.86	98.32	24.86	98.32	24.86
Line K	48.71	11.95	48.71	11.95	48.71	11.95
Line L	1.08	0.23	1.08	0.23	1.08	0.23
Line M	17.46	5.58	17.46	5.58	17.46	5.58
Line N	3.14	0.73	3.14	0.73	3.14	0.73
Project 5104	42.00*	6.04*	42.00*	6.04*	42.00*	6.04*
Low Flow Diversion	--	--	--	--	45.00*	92.98*
Total	--	173.13	--	186.90	--	179.60

* Flow discharges to Marine Stadium

Table 5.4 NOAA Tide Datums

Tidal Datums	Elevation (ft, MLLW)	Elevation (ft, NGVD)
Highest Observed Water Level (1/27/83)	7.821	5.181
Mean Higher High Water (MHHW)	5.492	2.852
Mean High Water (MHW)	4.754	2.114
Mean Sea Level (MSL)	2.825	0.185
National Geodetic Vertical Datum – 1929 (NGVD)	2.640	0.000
Mean Low Water (MLW)	0.942	-1.698
North American Vertical Datum 1988 (NAVD)	0.203	-2.437
Mean Lower Low Water (MLLW)	0.000	-2.640
Lowest Observed Water Level (12/17/33)	-2.730	-5.370

The salinity levels were analyzed at several locations through the study area. The salinity concentrations for the 10-year peak at MHHW under Existing Conditions, Alternative 1, and

Alternative 2 are shown in Figures 5.2 to 5.4, respectively. Under Existing Conditions, the salinity in Colorado Lagoon drops rapidly to below 10 ppt within the first 24 hours of the flood (peak occurs at hour 20) and remains below 10 ppt past hour 30, hence, violating both criteria shown previously in Table 5.2. In Marine Stadium, all three locations meet Criterion 1 under Existing Conditions. Criterion 2 is not met at Location E, but is satisfied at Locations F and G.

For Alternative 1 (TAD to Marine Stadium), Location A in Colorado Lagoon does not meet both criteria, while Locations B, C, and D meet only Criterion 1. In Marine Stadium, Criterion 1 is satisfied at all three locations and Criterion 2 is satisfied at only Location G.

For Alternative 2 (TAD to Colorado Lagoon), both criteria are not satisfied in Colorado Lagoon. In Marine Stadium, Criterion 1 is met at all three locations, while Criterion 2 is met only at Locations F and G.

5.3 Salinity Impacts

A comparison of the salinity analysis under Existing Conditions, Alternative 1, and Alternative 2 at the four locations in Colorado Lagoon is shown in Figure 5.5. Overall, both alternatives reduce the drop in salinity levels compared to Existing Conditions. Location A shows the least amount of improvement since flows in that portion of the lagoon were not altered under either alternative. The greatest improvement occurs at Location D, which is closest to the existing TAD. Alternative 1 shows an improvement in Colorado Lagoon compared to Alternative 2.

A comparison of the salinity analysis under Existing Conditions, Alternative 1, and Alternative 2 at the three locations in Marine Stadium is shown in Figure 5.6. Overall, both alternatives reduce salinity levels in Marine Stadium below Existing Conditions, with Alternative 1 resulting in the greatest change. At Location E, both alternatives reduce salinity levels below Existing Conditions for the first 24-hours, but then salinity levels are similar to Existing Conditions beyond that timeframe. Alternative 1 has the greater impact at Location F, compared to Alternative 2. Salinity levels at Location G are reduced slightly under Alternatives 1 and 2.

The salinity recovery was simulated for nine days following the 10-year flood flow. The salinity recovery for Existing Conditions, Alternative 1, and Alternative 2 are shown in Figures 5.7 – 5.9, respectively. Recovery of salinity levels occurs much faster in Marine Stadium compared to Colorado Lagoon.

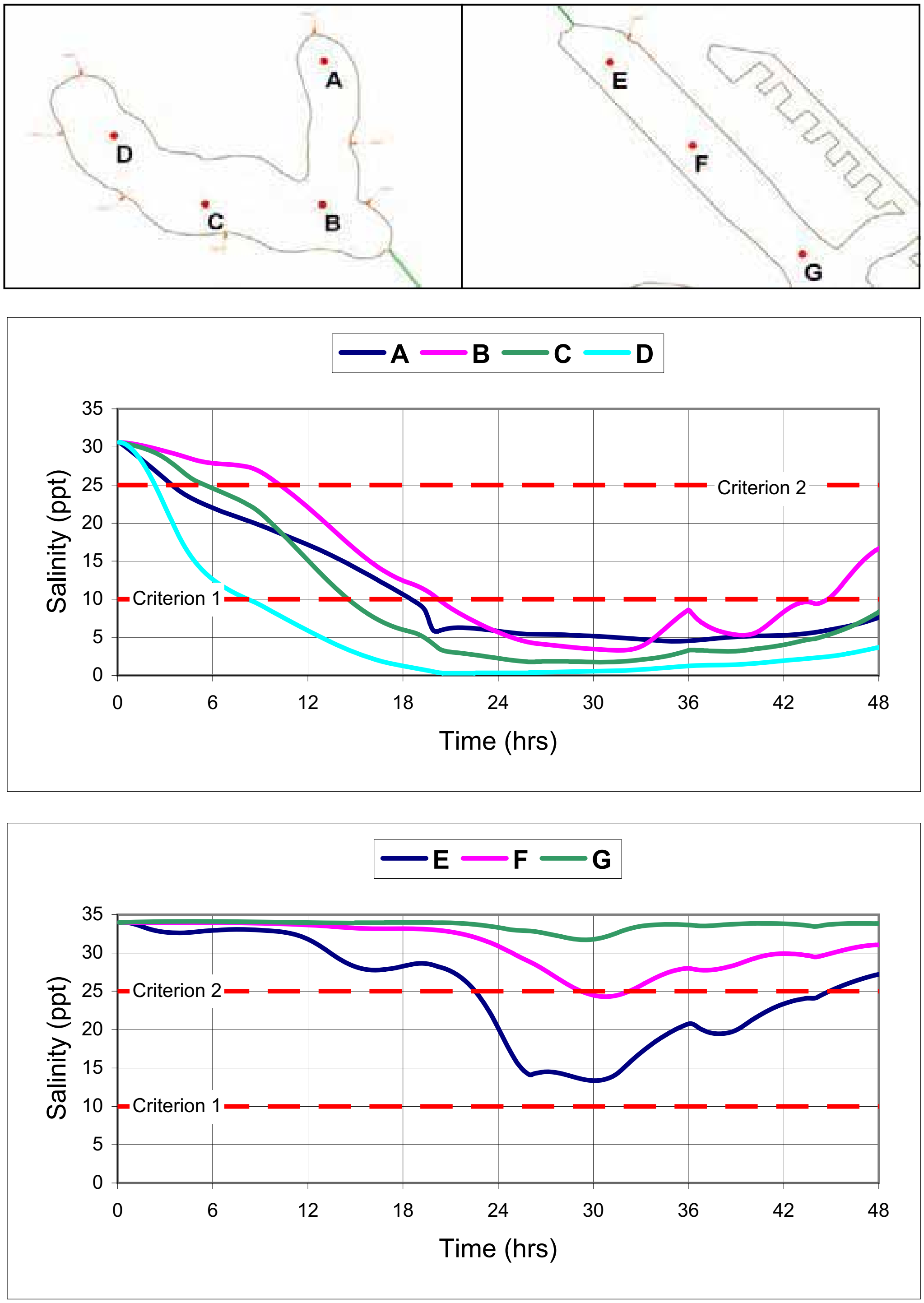
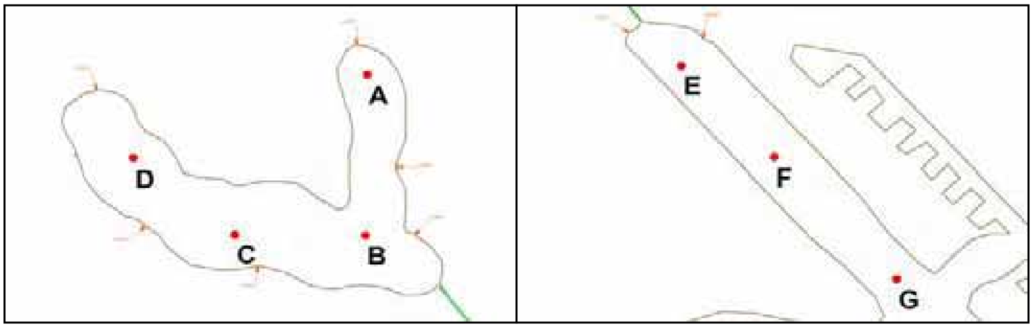
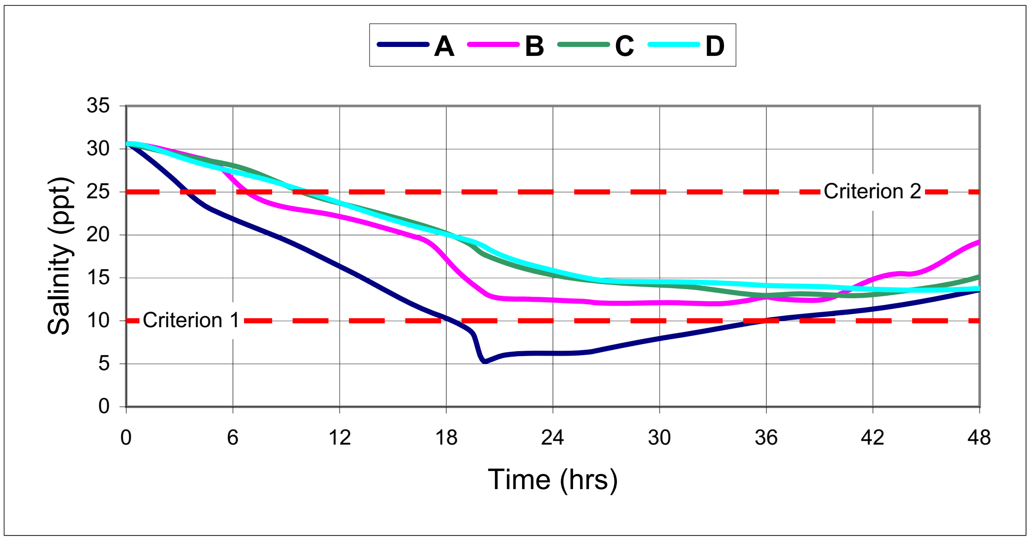


Figure 5.2 Salinity Concentrations for Existing Conditions with 10-Year Peak at MHHW





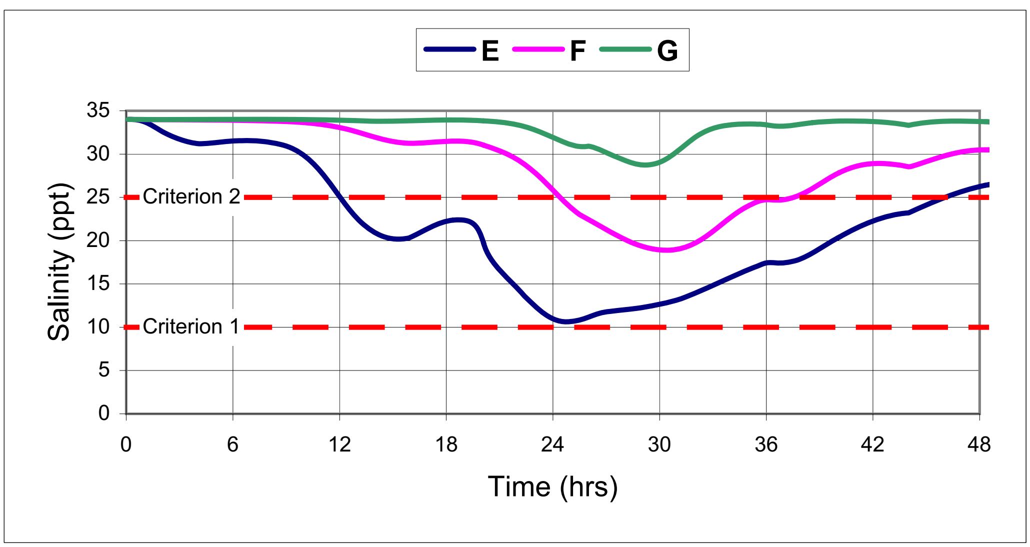


Figure 5.3 Salinity Concentrations for Alternative 1 with 10-Year Peak at MHHW

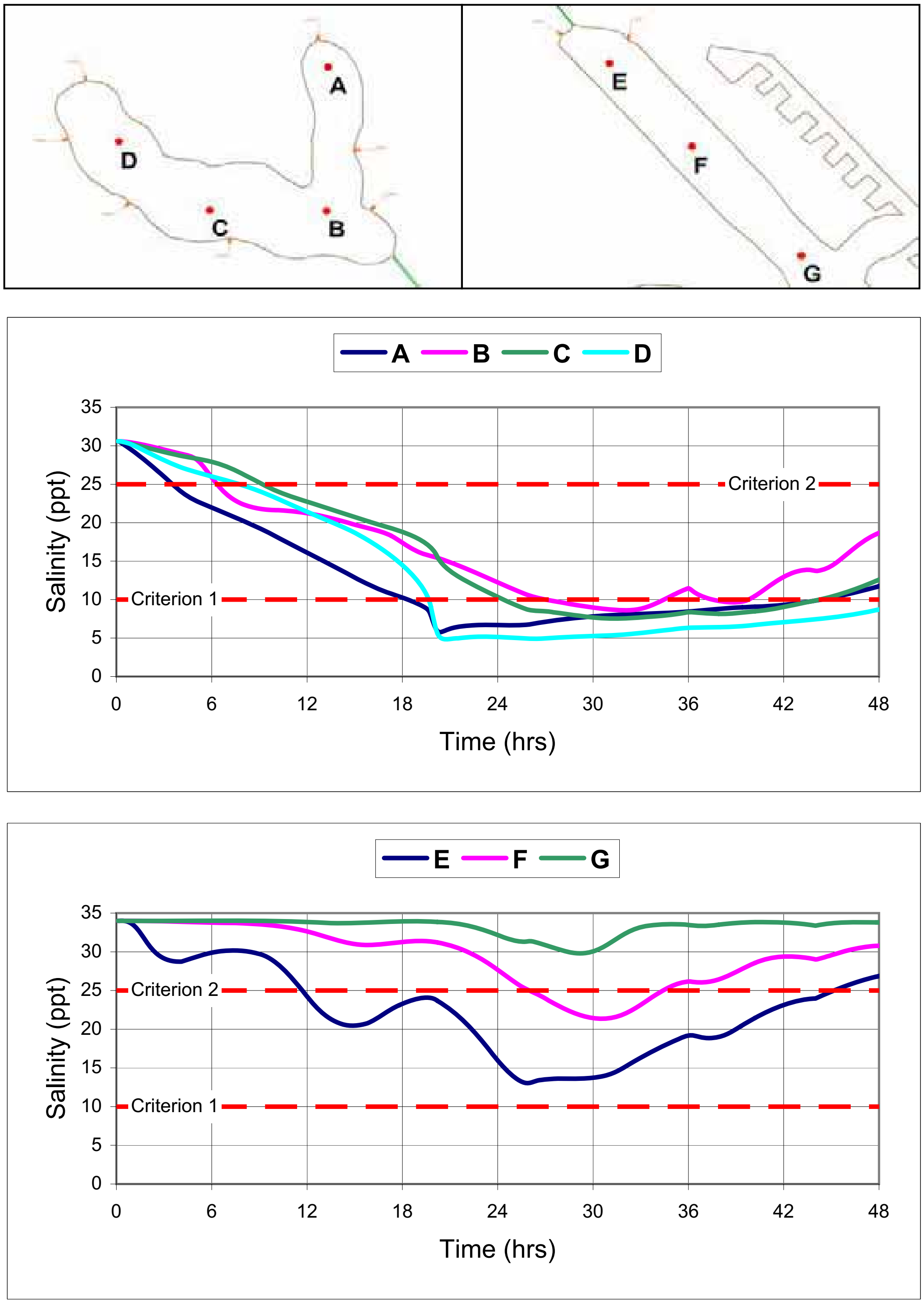


Figure 5.4 Salinity Concentrations for Alternative 2 with 10-Year Peak at MHHW

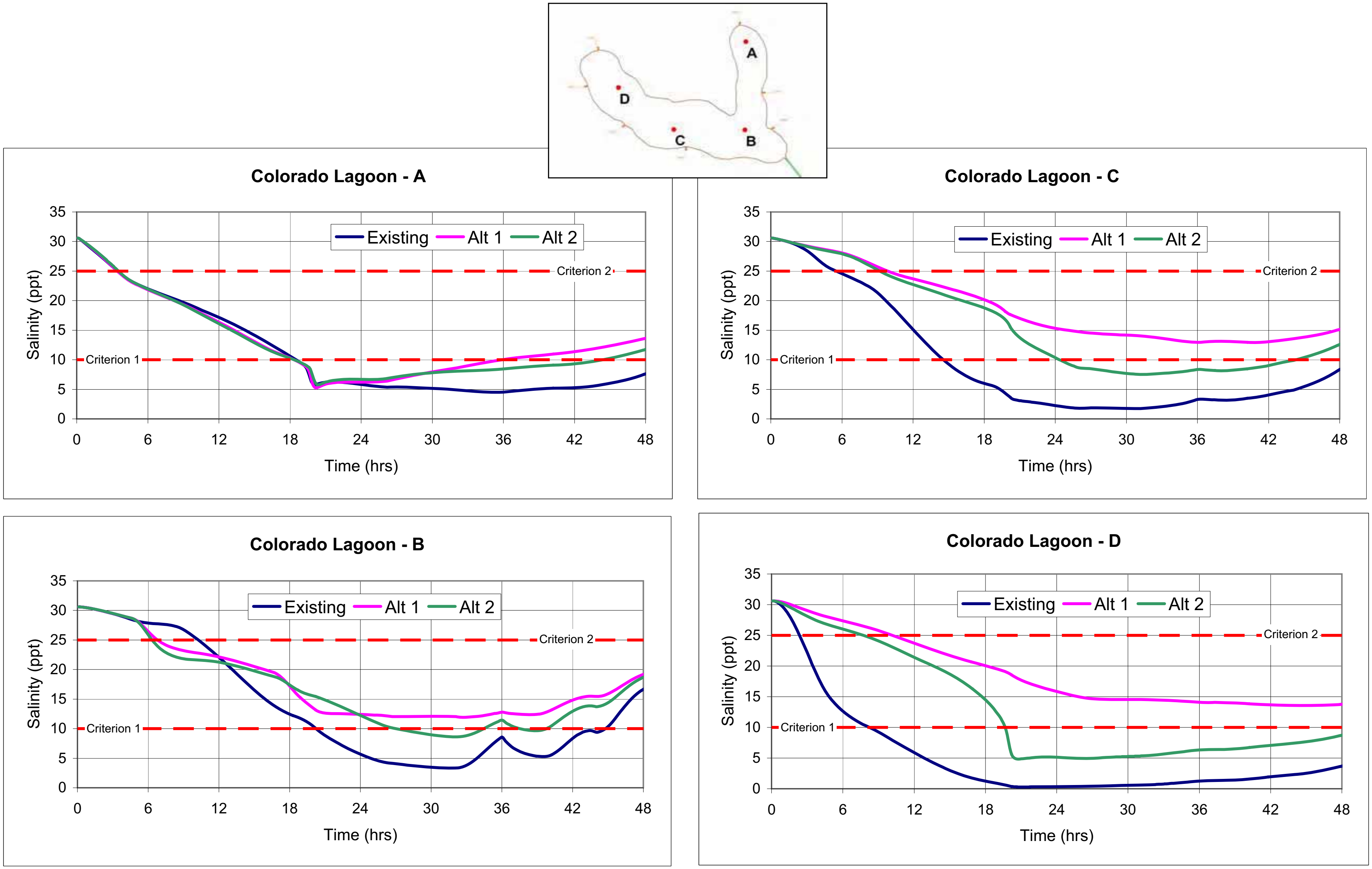
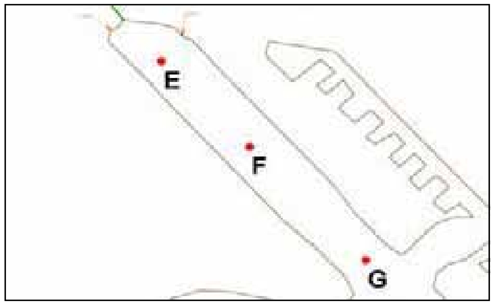
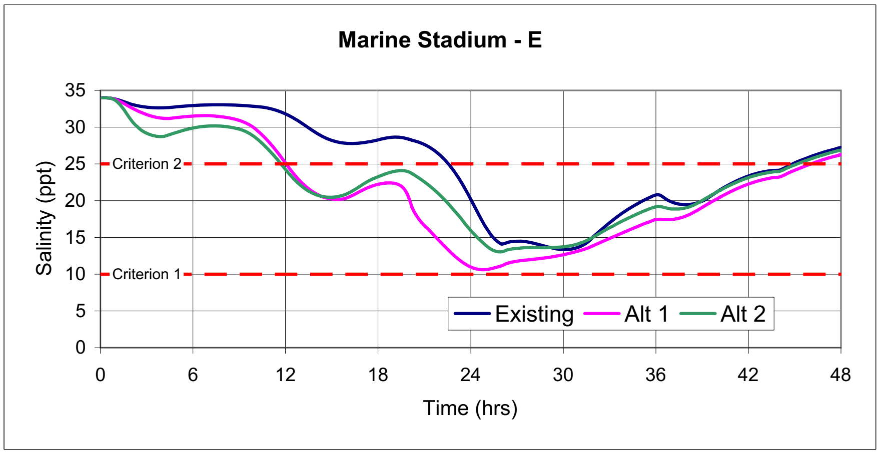
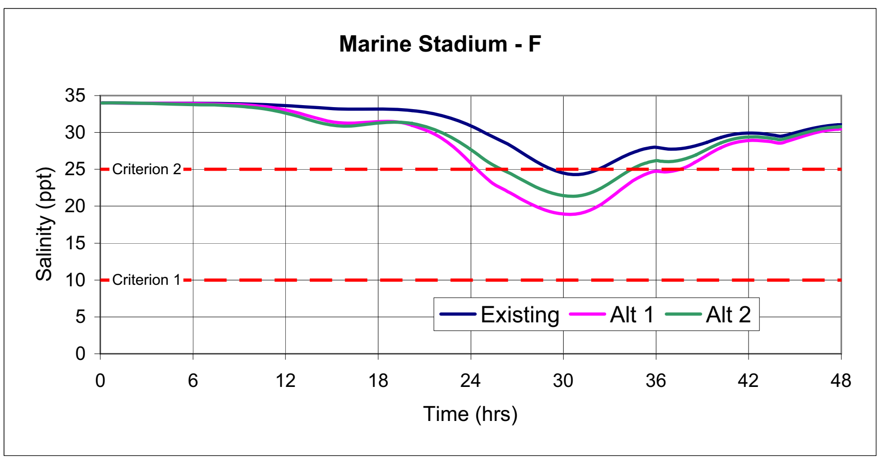


Figure 5.5 Salinity Ananlysis Summary for Colorado Lagoon







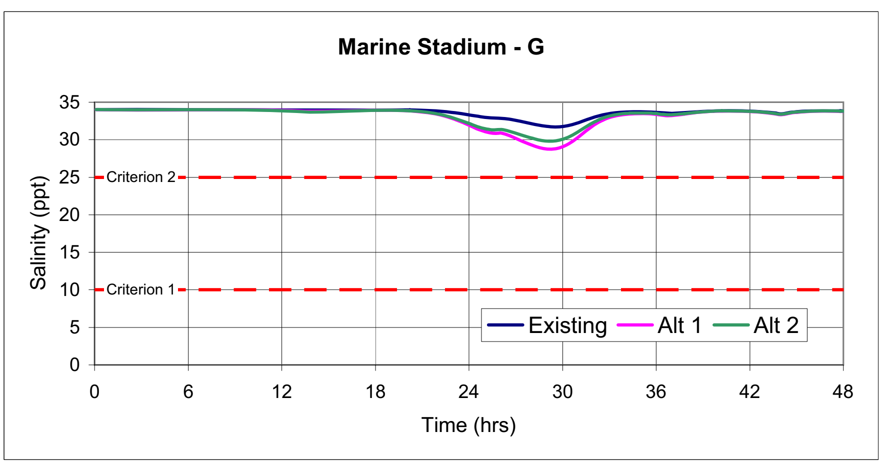


Figure 5.6 Salinity Ananlysis Summary for Marine Stadium

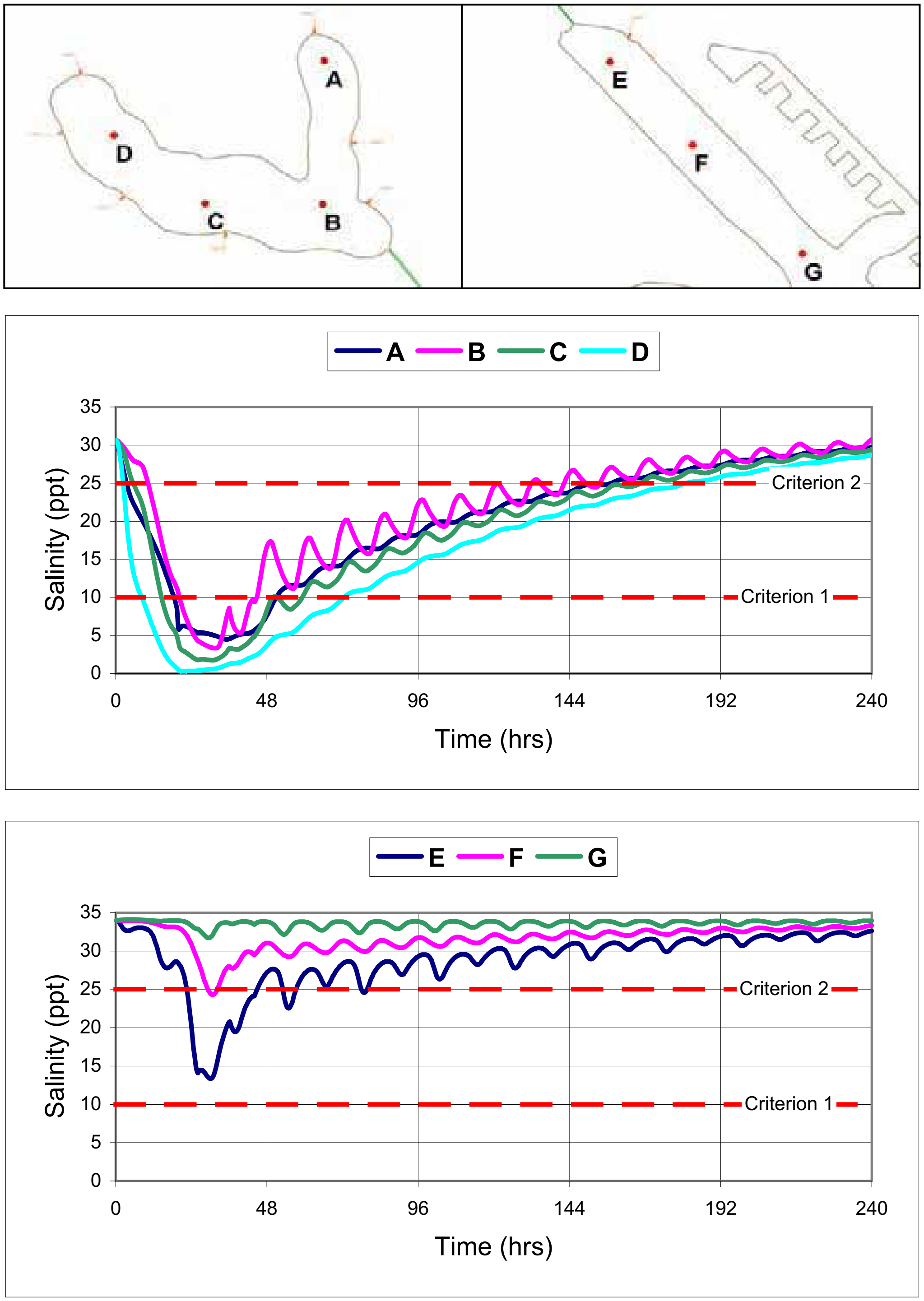


Figure 5.7 Salinity Recovery for Existing Conditions with 10-Year Peak at MHHW

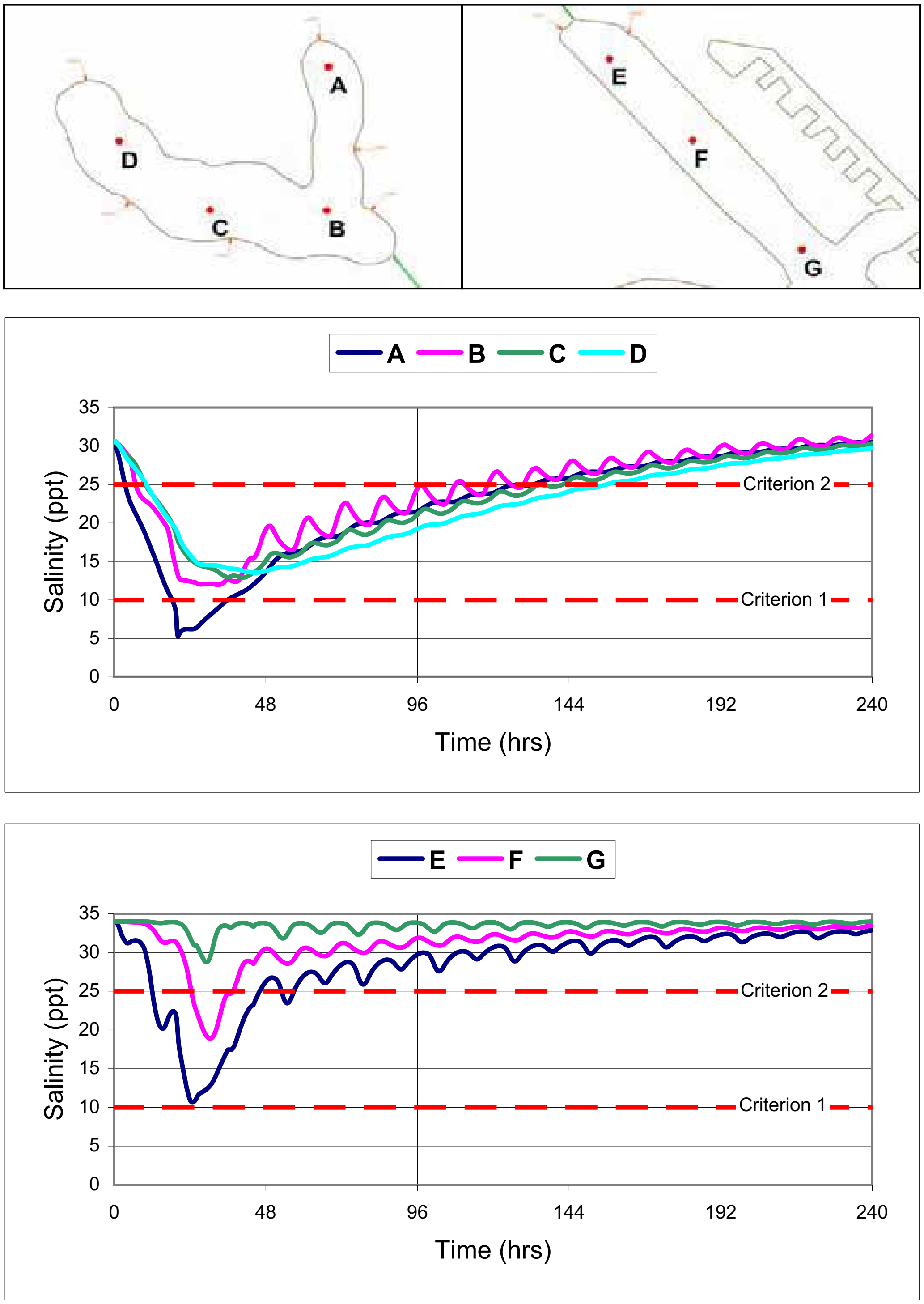


Figure 5.8 Salinity Recovery for Alternative 1 with 10-Year Peak at MHHW

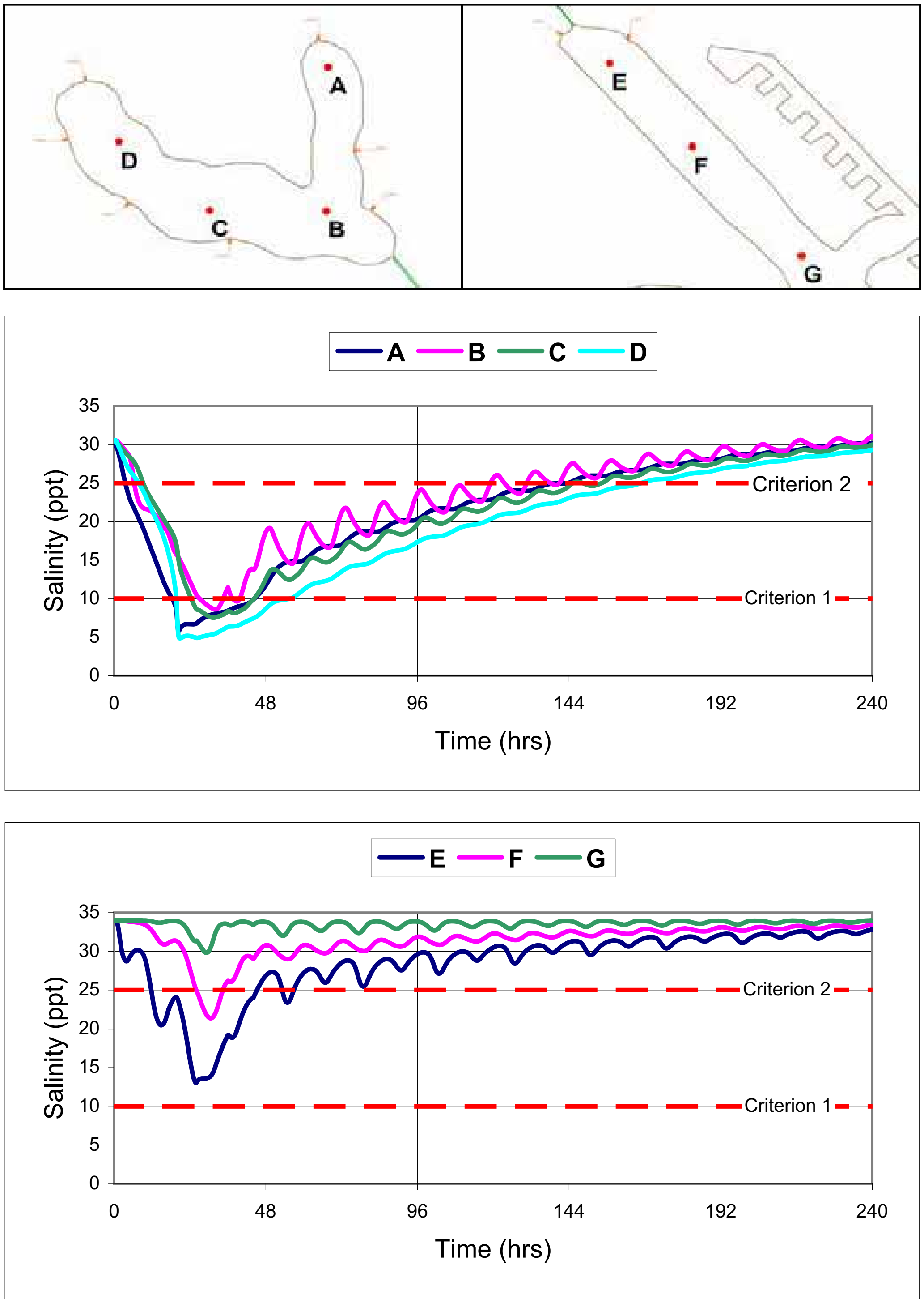


Figure 5.9 Salinity Recovery for Alternative 2 with 10-Year Peak at MHHW

The salinity analyses results based on the 10-year peak coinciding at MHHW are summarized in Table 5.5. Under Existing Conditions, the four locations in Colorado Lagoon violate both criteria. Under Alternative 1, Locations B, C, and D would pass Criterion 1, but all of the locations would still not pass Criterion 2. Alternative 2, like Existing Conditions, does not meet both criteria. At Marine Stadium, Criterion 1 is satisfied at all three locations under Existing Conditions, Alternative 1, and Alternative 2. Existing Conditions pass Criterion 2 at Locations F and G, but not E. Alternative 1 passes both criteria only at Location G, while Alternative 2 is the same as Existing Conditions.

Table 5.5 Salinity Analysis Summary for 10-Year Peak at MHHW

Colorado Lagoon	Existing Conditions		Alternative 1		Alternative 2	
	Criterion 1	Criterion 2	Criterion 1	Criterion 2	Criterion 1	Criterion 2
A	Fail	Fail	Fail	Fail	Fail	Fail
B	Fail	Fail	**Pass**	Fail	Fail	Fail
C	Fail	Fail	**Pass**	Fail	Fail	Fail
D	Fail	Fail	**Pass**	Fail	Fail	Fail
Marine Stadium	**Existing Conditions**		**Alternative 1**		**Alternative 2**	
	Criterion 1	**Criterion 2**	**Criterion 1**	**Criterion 2**	**Criterion 1**	**Criterion 2**
E	Pass	Fail	Pass	Fail	Pass	Fail
F	Pass	Pass	Pass	**Fail**	Pass	Pass
G	Pass	Pass	Pass	Pass	Pass	Pass

5.4 Sediment Analysis

Storm drain discharges into Colorado Lagoon and Marine Stadium can result in localized high velocities near the storm drain outfalls. High velocities from flood flows may resuspend sediment and associated pollutants into the water column. The potential impact of the proposed TAD alternatives to sediment resuspension in Colorado Lagoon and Marine Stadium was evaluated. First, the minimum velocity required to resuspend different sediment grain sizes or "critical velocities" were determined. Next, sediment in Colorado Lagoon and Marine Stadium were characterized by grain size distributions of sediment samples. The hydrodynamic model used in the salinity analysis was used to evaluate the velocities that occurred Colorado Lagoon and Marine Stadium during a 10-year flood event. These velocities were compared to the critical velocities that would resuspend sediment in

Colorado Lagoon and Marine Stadium. The areas susceptible to sediment resuspension under Alternative 1 and Alternative 2 were then compared to Existing Conditions to determine the sediment impacts.

The critical velocity is mainly a function of the grain size of the sediments in the bed. Larger grain sizes require a higher velocity to resuspend the sediment into the water column. The critical velocities for resuspension for various sediment grain sizes were determined based on a modified Shields diagram applicable for turbulent flows (USACE 2002). The modified Shields diagram is generally applicable for noncohesive sediment (e.g., sand) with grain sizes greater than 0.1 mm, but does include an alternate determination of the critical velocity for grain size diameters less than 0.1 mm (e.g., silts and clays). The critical velocities for different grain sizes are summarized in Table 5.6. Sand would be resuspended above a velocity of ranging from 0.87 feet per second (ft/sec) for fine sand to 1.54 ft/sec for very coarse sand, while, velocities above 0.73 ft/sec would resuspend silts.

Table 5.6 Critical Velocities for Resuspension

SEDIMENT GRAIN SIZE (MM)	SEDIMENT CLASSIFICATION	CRITICAL VELOCITY FOR RESUSPENSION (FT/SEC)
1	Very Coarse Sand	1.54
0.5	Coarse Sand	1.07
0.25	Medium Sand	0.87
0.125	Fine Sand	0.81
0.062	Silt	0.73

Characteristics of sediment in Colorado Lagoon were determined based on sediment data collected by the City of Long Beach (2004a). The grain size distribution was determined from a composite sample taken from three sediment cores in the northwest portion of Colorado Lagoon. The composite sample was divided into a top sample and bottom sample. The top sample ranged in depths from 2.5 to 4.5 ft. The bottom sample consisted of the 0.5 ft beneath the top sample interval for each core. Three sediment cores at depths taken at the central portion of the lagoon near the tidal culvert were combined for another composite sample with the top sample depths between 4.0 and 5.5 ft. A third composite was sampled from three sediment cores taken from the northeastern portion of the lagoon. The depth of the top sample ranged from1.5 to 3.5 ft. The grain size distributions for each region of the lagoon are summarized in Table 5.7. Sediment in Colorado Lagoon is predominantly fines with grain sizes less than 0.062 mm.

Table 5.7 Colorado Lagoon Sediment Grain Size Distributions

GRAIN SIZE INTERVAL (MM)	INTERVAL PERCENT (%)					
	NORTHWEST COMPOSITE		CENTRAL COMPOSITE		NORTHEAST COMPOSITE	
	TOP	BOTTOM	TOP	BOTTOM	TOP	BOTTOM
8 - 4	0.7	0.6	0.3	0.0	3.5	3.1
4 – 2	0.7	0.2	1.2	0.1	1.9	0.4
2 – 1	1.8	0.2	2.0	0.1	4.0	1.9
1 – 0.5	6.6	0.3	6.5	0.3	15.6	2.8
0.5 – 0.25	18.6	1.5	16.2	0.7	24.1	4.4
0.25 - 0.125	11.3	4.0	11.4	3.6	13.1	7.5
0.125 – 0.062	8.0	4.3	6.0	16.0	7.5	10.1
<0.062	52.3	88.9	56.4	79.3	29.9	69.8

Source: City of Long Beach 2004a

Characteristics of sediment in the northwest portion of Marine Stadium were determined based on three sediment samples taken on May 11, 2005 (Coastal Resources Management 2005). Sediment grain size distributions were determined from core samples taken to a depth of 1.5 ft. A summary of the grain size analysis is shown in Table 5.8. In general, the surface sediment (0.5 ft) was bay mud consisting of fine sediments underlain by silty sand.

Table 5.8 Marine Stadium Sediment Grain Size Distributions

SAMPLE	D_{50} (MM)	INTERVAL PERCENT		
		GRAVEL	SAND	SILT/CLAY
S-1	0.035	0.0	25.3	74.6
S-2	0.086	0.4	53.0	46.6
S-3	0.099	1.8	57.8	40.3

Source: Coastal Resources Management 2005

For flood events, the maximum velocity at a given location occurs at a different time then the time of the maximum velocity at another location. For example, the maximum velocity at a point near the existing TAD would occur at or near the peak of the hydrograph. The maximum velocity at a point near the tidal culvert would occur after the hydrograph peak, as the flood flow moves through the lagoon towards the tidal culvert. Therefore, the maximum velocity at each point in the study area was determined from the model results for the entire duration of each model simulation.

The maximum velocity distribution was determined under Existing Conditions, Alternative 1, and Alternative 2, as shown in Figure 5.10. The highest velocities occur at the storm drain outfalls, as well as at each end of the tidal culvert. Resuspension of silts occur in areas where velocities are above 0.7 ft/sec. Under Existing Conditions, the maximum velocities in Colorado Lagoon are sufficient to resuspend silt in the immediate vicinity of the storm drain outfalls. The largest scour area occurs at the Marine Stadium end of the tidal culvert, where velocities are sufficient to resuspend sands and silts. Alternative 1 increases the scour area in Marine Stadium at the TAD outfall. Alternative 2 increases the scour area in Colorado Lagoon at the TAD outfall.

5.5 SEDIMENT IMPACTS

The potential of each alternative to resuspend sediment was evaluated based on the change in scour area from Existing Conditions. The changes in the maximum velocity distribution from Existing Conditions to Alternatives 1 and 2 are shown in Figure 5.11. In the figure, velocity changes within plus or minus 0.1 ft/sec of Existing Conditions were grayed out in order to highlight the major differences. Blue areas indicate areas where the alternative will

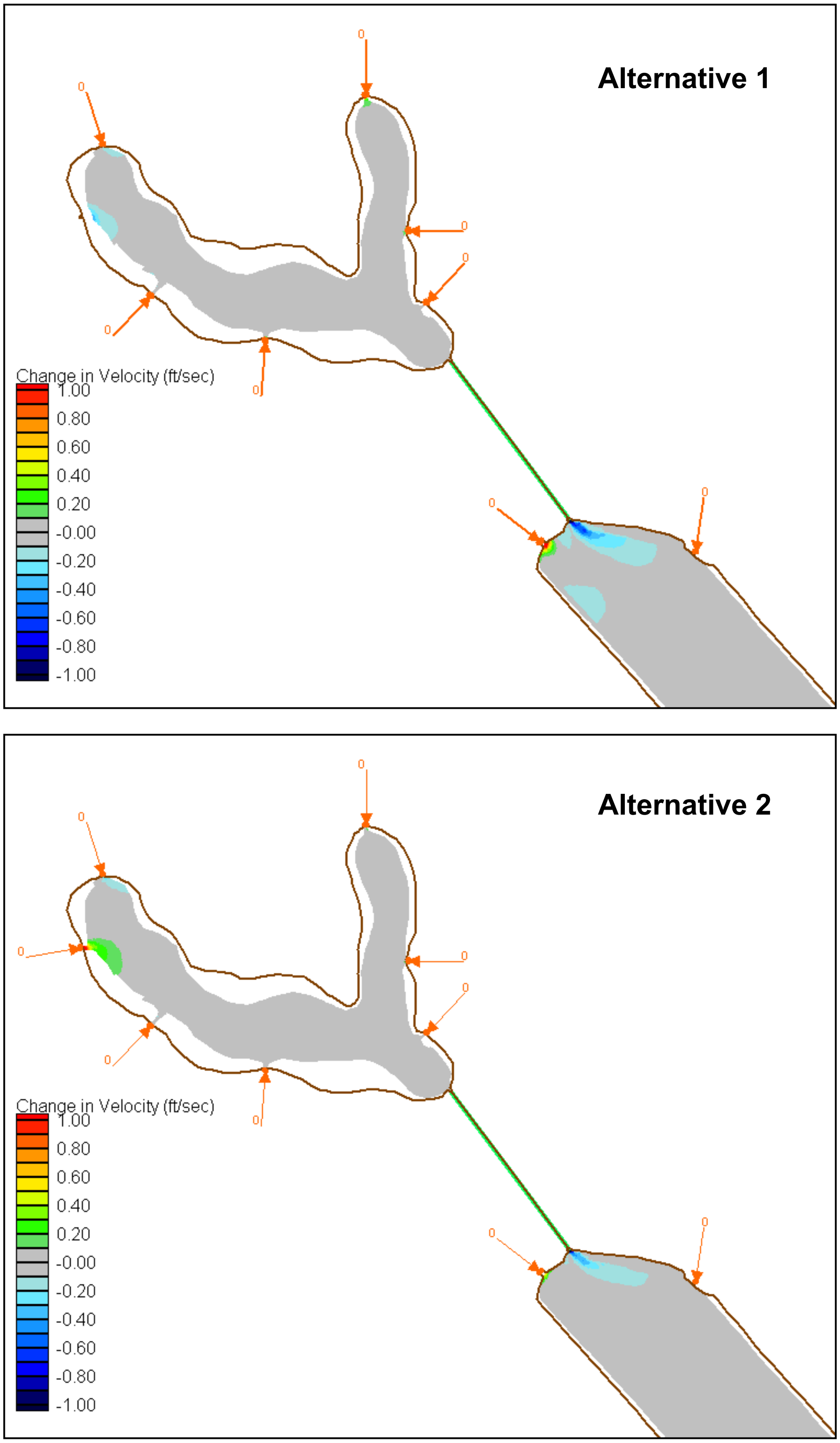


Figure 5.11 Change in Maximum Velocity Distribution from Existing Conditions

decrease velocities compared to Existing Conditions, while other colored areas indicate increases in velocities.

Alternative 1 will reduce the silt scour area in Colorado Lagoon due to the removal of the existing TAD flows. At Marine Stadium, velocities near the tidal culvert will also be reduced. Velocities in the immediate vicinity of the Alternative 1 TAD outfall will be increased.

The scour area in Colorado Lagoon under Alternative 2 will be increased at the Alternative 2 TAD outfall. Velocities at the Marine Stadium end of the tidal culvert will be reduced, but will be increased at the low flow outfall.

In general, both alternatives will increase velocities at the new outfall locations. These impacts will be minimized with the placement of properly designed energy dissipater blocks at the outfall that will reduce velocities from the storm drain flows. In addition, woven geotextile fabric will also be placed at the outfall to reduce erosion and associated resuspension.

5.6 POLLUTANT LOADING ANALYSIS

There are insufficient data available to determine the loadings of bacteria, nutrients, and other 303(d) constituents into Colorado Lagoon from each storm drain. Water quality data for constituent concentrations from individual storm drains are available, but do not include other storms drains for a relative comparison.

In lieu of storm drain water quality data, sediment quality data for Colorado Lagoon and Marine Stadium were used to generalize pollutant loading characteristics from the storm drains. The Colorado Lagoon sediment samples, discussed previously in Section 5.5, were also analyzed for organochlorine pesticides, polychlorinated biphenyls (PCBs), metals, and polycyclic aromatic hydrocarbons (PAHs). The study (City of Long Beach 2004a) concluded that the sediment sampling showed significantly higher pollutant concentrations at the northwest portion of the lagoon compared to the center and northeast areas. The primary constituents of concern identified were lead and some organochlorine pesticides (DDT compounds, chlordane, and dieldrin). Secondary constituents of concern identified were PCBs and metals (cadmium, copper, mercury, silver, and zinc). The Marine Stadium sediment samples were tested for metals, PCBs, total petroleum hydrocarbons (TPHs), semi-volatile organic compounds (SVOCs), and organochlorine pesticides (Coastal Resources Management 2005). The three sediment samples were non-detect for TPHs, organochlorine pesticides, and PCBs. Metals were within background concentrations of terrestrial soils in Southern California. In the second sediment sample, bis-(2-ethylhexyl) phthalate was detected, while no SVOCs were detected in the other two samples.

Based on the sediment quality data, the largest concentration of pollutants occurs in the northwest portion of Colorado Lagoon, near the existing TAD and Project 452 storm drains. The existing TAD has the highest flood flow and the Project 452 storm drain has the second highest flood flow. The third largest storm drain (Line I) discharges into the northeast portion of Colorado Lagoon, where the sediment quality was better compared to the northwest portion. Therefore, it was assumed that the existing pollutant loading is proportional to the storm drain flows.

Implementation of either alternative will not change the total loading into the system, but it will redistribute the loading between Colorado Lagoon and Marine Stadium. This is a conservative assumption since the in-line storm drain catch basin screens and dry weather diversions were not considered. Under the assumption that the pollutant loading is proportional to the flood flow, the percentage of the total 10-year flood flow for each storm drain was determined for Existing Conditions, Alternative 1, and Alternative 2. The existing TAD contributes about 51% of the total flood flow. Under Alternative 1, approximately 70% of the total 10-year flood flow would be diverted to Marine Stadium. Alternative 2 would divert approximately 52% of the total flow to Marine Stadium via the low flow diversion, while the Alternative 2 TAD would account for about 17%. The percent loading contributions for each storm drain under Existing Conditions, Alternative 1, and Alternative 2 are summarized in Table 5.9.

To better illustrate the redistribution of pollutant loadings under the alternatives, a loading analysis was conducted with the same water quality model used for the salinity analysis. The pollutant loading was simulated as a conservative tracer with a concentration proportional to the 10-year flood flow was simulated under Existing Conditions, Alternative 1 and Alternative 2. The peak of the 10-year flood was timed to correspond to MHHW. The time series of the average concentration in Colorado Lagoon and the northwest portion of Marine Stadium were then compared.

The average concentrations in Colorado Lagoon under Existing Conditions, Alternative 1, and Alternative 2 are shown in Figure 5.12. The average concentrations are shown based on the time in days after the end of the storm with time -1 indicating the start of the storm, time 0 indicating the end of the storm, and time 1 indicating one day after the end of the storm. The highest concentrations occur under Existing Conditions. The average concentration is reduced by 25% within one day following the end of the storm flow and

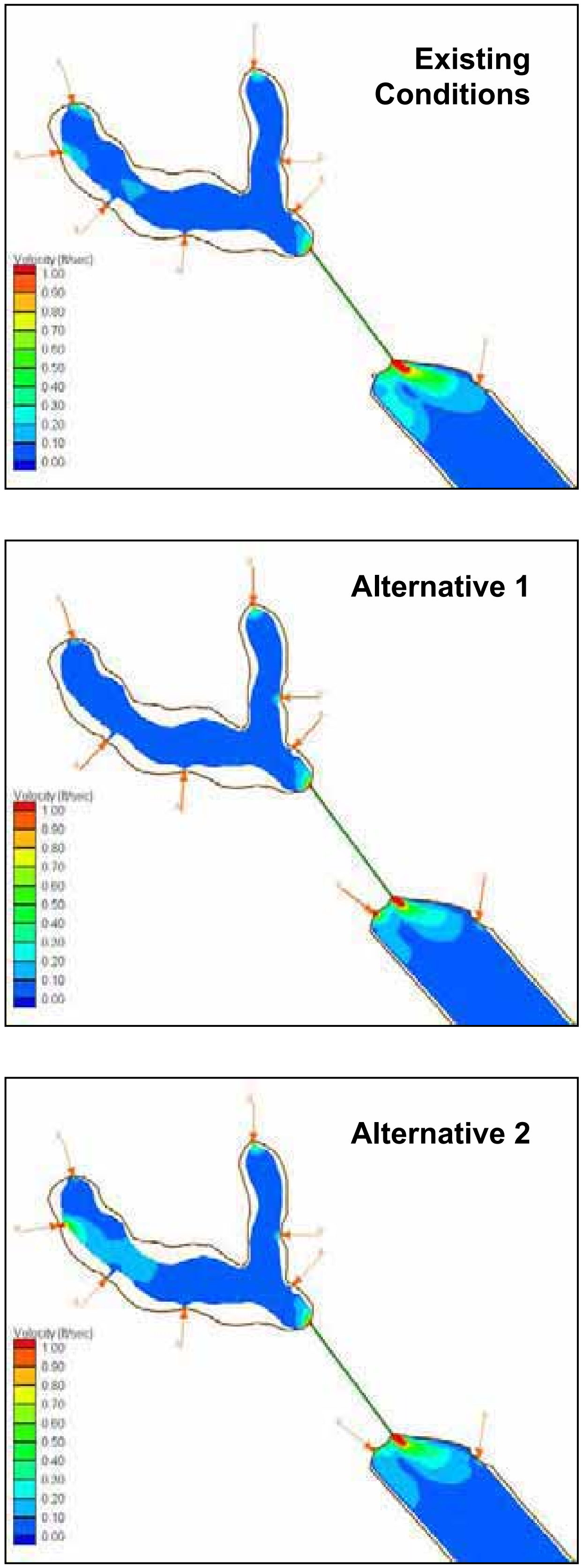


Figure 5.10 Maximum Velocity Distribution during 10-Year Flood Event

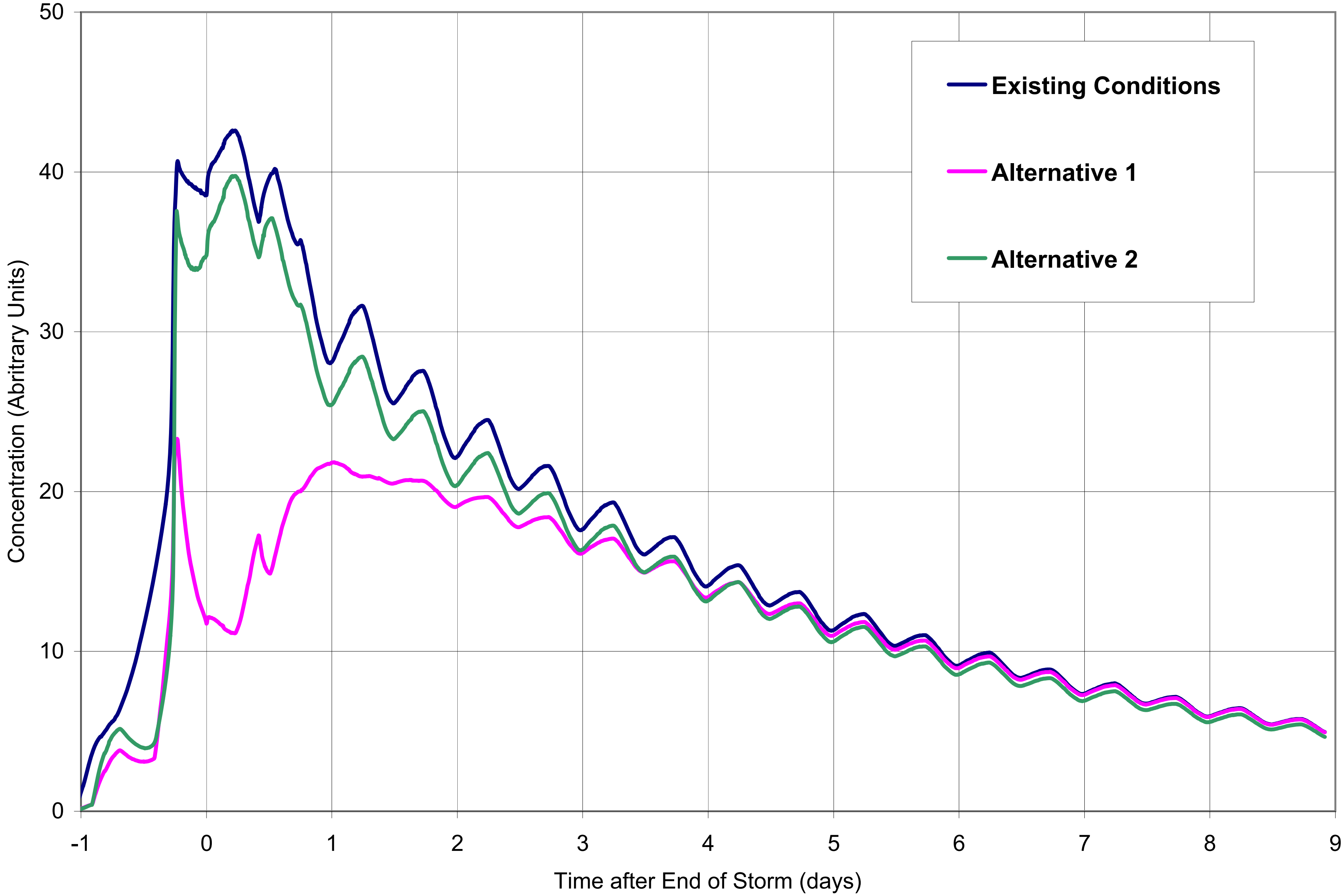


Figure 5.12 Loading Analysis for Colorado Lagoon

reduced by 50% within about three days. For Alternative 1, the peak average concentration into Colorado Lagoon is about half of the peak concentration under Existing Conditions. For the first day following the storm flow, the concentration in Colorado Lagoon increases since pollutants discharging into Marine Stadium during ebb tide is now returning into Colorado Lagoon during the flood tide. Alternative 2 follows the same trend as Existing Conditions, but at a lower concentration. The recovery beyond two days following the end of the hydrograph is similar for Existing Conditions, Alternative 1, and Alternative 2.

Table 5.9 Proportional Loading Contributions for Storm Drains

STORM DRAIN	PERCENTAGE OF TOTAL 10-YEAR FLOOD VOLUME		
	EXISTING CONDITIONS	ALTERNATIVE 1	ALTERNATIVE 2
TAD	51.1	69.7*	16.7
Project 452	20.4	3.9	4.0
Line I	14.4	13.3	13.8
Line K	6.9	6.4	6.7
Line L	0.1	0.1	0.1
Line M	3.2	3.0	3.1
Line N	0.4	0.4	0.4
Project 5104	3.5*	3.2*	3.4*
Low Flow Diversion	--	--	51.8*

* Flow discharges to Marine Stadium

The average concentrations in Marine Stadium under Existing Conditions, Alternative 1, and Alternative 2 are shown in Figure 5.13. Existing Conditions shows the lowest average concentrations, with the peak occurring after the end of the storm flow as the pollutant moves out of Colorado Lagoon and into Marine Stadium. The average concentration is reduced by 50% in about one day. Alternative 1 has the highest concentrations due to the increase in loadings into Marine Stadium. However, the initial peak is quickly dispersed by the end of the storm flow, from which point the concentration is reduced by 50% within about one day. The results for Alternative 2 are similar to Alternative 1 without the sharp peak in concentration immediately following the storm flow.

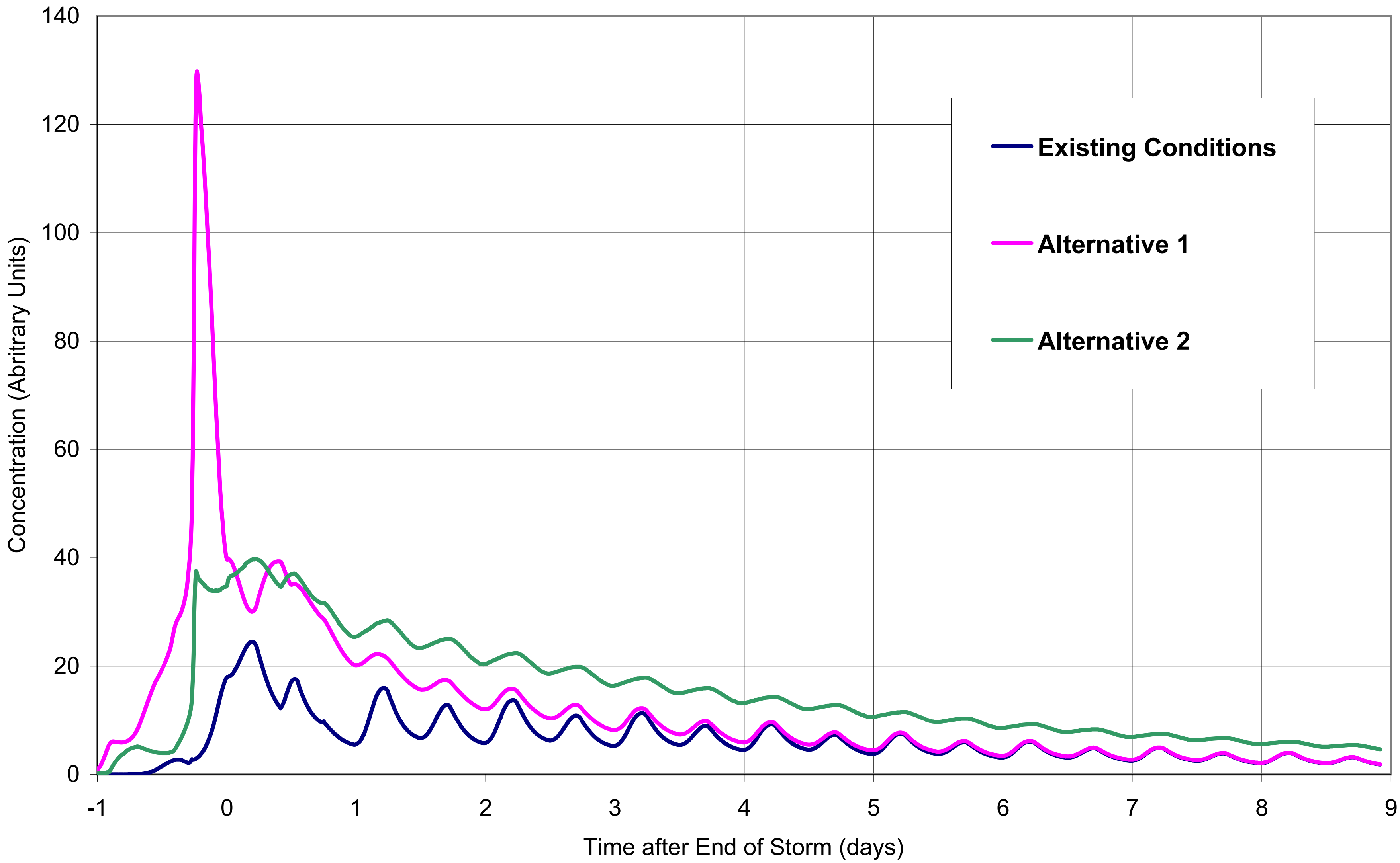


Figure 5.13 Loading Analysis for Marine Stadium

5.7 POLLUTANT LOADING IMPACTS

The pollutant loading impacts for the alternatives were evaluated based on the pollutant loading analysis. Both alternatives would increase loadings to Marine Stadium and decrease the loadings to Colorado Lagoon. However, the impacts to Marine Stadium would be less than Colorado Lagoon since Marine Stadium has better flushing. Based on the pollutant loading analysis, a 50% reduction in concentration occurs within about one day in Marine Stadium, but same reduction takes about three days in Colorado Lagoon. Therefore pollutant dispersal for the overall system (Colorado Lagoon and Marine Stadium) would improve for both alternatives. In addition, improvement in water quality would occur during dry weather conditions, as both alternatives would reduce the total loading in the system due to the in-line storm drain catch basin screens and through the diversion of dry weather flows to the sanitary system. Future pollutant loadings to Colorado Lagoon and Marine Stadium could also be reduced by other non-project related BMPs implemented within the watershed; however, such improvements are beyond the scope of the TAD project.

In addition to the pollutant loadings, most of the constituents on the 303(d) list are associated with the sediments. Scouring and resuspension of existing sediments in Colorado Lagoon and Marine Stadium during flood events may also contribute to additional pollutant loadings to Colorado Lagoon and Marine Stadium. Based on the previous sediment analysis, the resuspension of sediment would be minimized at the new outfalls under each alternative. Increases in scour are expected to occur mainly in Marine Stadium, where the sediment quality is better than that of Colorado Lagoon.

6 SUMMARY OF FINDINGS

The impacts of each alternative on flood elevations within Colorado Lagoon and the northwest portion of Marine Stadium (Marine Stadium) were evaluated based on a hydrologic analysis performed for the 50-year flood event. Under Existing Conditions the results indicted that flooding would occur within the vicinity of Colorado Lagoon, but not the vicinity of Marine Stadium. Under Alternative 1 the results indicated that flood elevations within Colorado Lagoon would be reduced compared to Existing Conditions and no changes would occur to flood elevations within Marine Stadium. In addition, the results indicated that no flooding would occur within the vicinity of Colorado Lagoon. Under Alternative 2 the results indicated that flood elevations within Colorado Lagoon would be reduced compared to Existing Conditions and no changes would occur to flood elevations within Marine Stadium. However, in contrast to Alternative 1, the results indicated that some flooding would still occur within the vicinity of Colorado Lagoon under Alternative 2.

The impacts of each alternative on salinity changes within Colorado Lagoon and Marine Stadium were evaluated based on salinity modeling simulations. The salinity modeling simulations were based on changes to salinity associated with a 10-year flood event. The 10-year event was chosen to be consistent with salinity criteria and analysis method developed previously to evaluate salinity impacts associated with the Bolsa Chica Lowlands Restoration Project. Under Alternative 1, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than Existing Conditions, thereby suggesting an improvement in salinity levels (i.e., more stable salinity levels). On the other hand, salinity levels in Marine Stadium would drop suggesting a degradation of salinity levels compared to Existing Conditions. Comparison of the salinity modeling results to the salinity criteria indicated that implementation of Alternative 1 would change three out of eight failures under Existing Conditions to passes within Colorado Lagoon, but a portion of Marine Stadium located closest to the new storm drain that passed both salinity criteria would not pass one of the criteria. The significance of this impact to marine species would need to be determined by biologists in the EIR. Under Alternative 2, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than Existing Conditions, thereby suggesting an improvement in salinity levels. Salinity levels in Marine Stadium would remain similar to salinity levels under Existing Conditions suggesting no substantial change to salinity levels. Comparison of the salinity modeling results to the salinity criteria indicated that implementation of Alternative 2 would not change the pass or fail of the criteria under Existing Conditions within Colorado Lagoon or Marine Stadium.

The impacts of each alternative on water quality associated with the resuspension of sediment within Colorado Lagoon and Marine Stadium were evaluated based on a sediment scour analysis. The sediment analysis was based on determining velocity changes that would exceed the critical velocities needed to resuspend sediment of various grain sizes. Under Alternative 1 the results indicated a reduction in potential scour within Colorado Lagoon and an increase in potential scour within Marine Stadium in the immediate vicinity of the new TAD Drain outfall. Under Alternative 2 the results showed an increase in potential scour within Colorado Lagoon in the immediate vicinity of the TAD Drain outfall and an increase in potential scour within Marine Stadium at the low flow drain outfall. Both alternatives would reduce the tidal velocities at the end of the tidal culvert within Marine Stadium. However, these impacts would be reduced with the proposed energy dissipater blocks and geotextile fabric that are to be placed at the outfalls as the effects of these project features was not included in the sediment scour analysis.

The impacts of each alternative on water quality constituents other than salinity and sediment were evaluated based on a pollutant loading analysis that examined the redistribution of flows between Colorado Lagoon and Marine Stadium. Under Alternative 1 the results indicated a reduction of contaminant concentration within Colorado Lagoon compared to Existing Conditions and an increase of contaminant concentration within Marine Stadium. However, Alternative 1 would result in an overall improvement in the entire hydrologic system (Colorado Lagoon and Marine Stadium). Under Alternative 2 the results showed no substantial change in contaminant concentration within Colorado Lagoon and an increase of contaminant concentration within Marine Stadium. Like Alternative 1, Alternative 2 would also result in an overall improvement in the entire hydrologic system (Colorado Lagoon and Marine Stadium).

In summary, both alternatives would improve flood conditions (i.e., lower flood water elevations) within Colorado Lagoon compared to Existing Conditions without adversely impacting flood conditions within Marine Stadium. Alternative 1 would provide the most benefit and it would reduce flood elevations to levels below the elevation of the perimeter of Colorado Lagoon, thereby containing floods within the lagoon. Both alternatives would result in higher average salinity levels during storm flows across the entire hydrologic system compared to Existing Conditions. However, under Alternative 1 a small area near the tidal culvert within Marine Stadium could result in higher short-term impacts to marine species compared to Existing Conditions and Alternative 1. While both alternatives will result in potential increases in sediment resuspension associated with localized scour in the vicinity of the new TAD drain outlets, these increases will be partially offset by the inclusion of energy dissipation structures and geotextile fabric that was not included in the analysis. In addition, although both alternatives would result in potential increases in sediment resuspension, the impacts to water quality under Alternative 1 would most likely be less than under Alternative 2 because the sediment quality in Marine Stadium is better than the sediment quality in Colorado Lagoon. Both alternatives would improve the overall water quality within Colorado Lagoon and Marine Stadium due to the inclusion of the in-line storm drain catch basin screens and diversion of dry weather flows to Marine Stadium where mixing is much better than Colorado Lagoon.

7 REFERENCES

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GLOBAL INSHORE

TERMINO AVENUE DRAIN EIR, 03080062.03

COLORADO LAGOON CULVERT INSPECTION

CONDUCTED APRIL 12, 2005

Submitted To:
E.D.A.W., Inc.
1420 Kettner Blvd., Suite 620
San Diego, CA 92101

Submitted By:
Global Inshore Inc
3095 Cattey Lane
Rio Vista, CA 94571

April 28, 2005

E.D.A.W., INC.
1420 Kettner Blvd., Suite 620
San Diego, CA 92101

ATTN: ERIC WILSON

RE: TERMINO AVENUE DRAIN EIR

Dear Sir:

Global Inshore, Inc. was contracted to perform an underwater inspection of the tidal culvert (culvert) between Colorado Lagoon (lagoon) and Marine Stadium (marina). The inspection was to be performed along and within the entire length of the culvert (approximately 900 feet). The inspection was performed with a surface supplied diver with communications and recorded to a DVD. All audio between the diver and the surface support personnel was recorded to the DVD. The inspection was to determine the following conditions and scope.

- Estimate vertical and horizontal dimensions at 50-foot intervals
- Determine amount and type of growth on surfaces
- Determine amount and type of material build up on invert
- Estimate floor elevation at each end of the culvert
- Verify opening dimensions at each end of the culvert
- Report any anomalies found throughout the culvert

Due to emergency work the City Surveyor was unable to provide survey services. The elevation of the invert at each end therefore could not be obtained. We did measure the distance and it can be interpolated out after survey to find the elevation. The following is a report of the findings and conditions and video captures.

MARINA SIDE

Global Inshore, Inc. began the inspection on the marina side due to tidal conditions. During set-up and testing of the equipment the City removed the trash rack covering the outlet into the marina. The diver began the inspection by measuring the opening at the marina side. The opening was measured at 12'-1" x 8'-0". Just inside of the opening the culvert is 12'-1" x 8'-6". There is an extensive amount of rock just outboard of the opening. The rock is built up so that it is 3.5' above the invert in one area.

The following is a table of the vertical and horizontal measurements obtained throughout the culvert.

MEASUREMENT OF CLEAN CULVERT

DISTANCE FROM MARINA OPENING	HORIZONTAL MEASUREMENT	VERTICAL MEASUREMENT
0'	12'-1"	8'-0"
50'	12'-1"	8'-0"
100'	12'-1"	8'-3"
150'	12'-1"	8'-1"
200'	12'-1"	8'-1"
250'	12'-1"	8'-3"
300'	12'-1"	8'-6"
350'	12'-1"	8'-5"
400'	12'-1"	8'-3"
450'	12'-1"	* 7'-4"
500'	12'-1"	8'-6"
550'	12'-1"	8'-6"
600'	12'-1"	8'-6"
650'	12'-1"	8'-6"
700'	12'-1"	8'-6"
750'	14'-4.5"	6'-3"
800'	14'-1"	6'-8"
850'	14-0"	6'-8"
900' / OPENINGS (2 EA.)	6'-6"	7'-0"

***This is probably 8'-4" and is probably a diver error.**

MEASUREMENT OF FREE FLOW IN CULVERT

The following table is the measurement from biofouling to biofouling both vertically and horizontally.

DISTANCE FROM MARINA OPENING	HORIZONTAL MEASUREMENT	VERTICAL MEASUREMENT
0'	11'-7"	8'-0"
50'	11'-7"	6'-4"
100'	11'-7"	6'-8"
150'	11'-7"	7'-3"
200'	11'-7"	7'-4"
250'	11'-7"	6'-0"
300'	11'-7"	7'-4"
350'	11'-7"	7'-1"
400'	11'-7"	6'-5"

450'	11'-7"	5'-7"
500'	11'-7"	6'-9"
550'	11'-7"	6'-6"
600'	11'-7"	6'-0"
650'	11'-7"	7'-4"
700'	11'-7"	6'-9"
750'	13'-9.5"	4'-3"
800'	13'-7"	4'-8"
850'	13'-6"	5'-2"
900' / OPENINGS (2 EA.)	6'-0"	6'-6"

DISTANCE FROM MARINA OPENING	VERTICAL MEASUREMENT DEPTH OF MATERIAL ON FLOOR
0'	0"
50'	20"
100'	17"
150'	10"
200'	9"
250'	26"
300'	14"
350'	16"
400'	22"
450'	21"
500'	16" – 22"
550'	24"
600'	30"
650'	14"
700'	19"
750'	30"
800'	16"
850'	12"
900' / OPENINGS	0"

There is some discrepancy in the vertical measurements and this is due to the fact that the material build up varies and could be in a different place from the vertical measurement. Overall Global Inshore believes the measurements of the two sections of culvert are as follows:

1. **12'-1" x 8'-6"**
2. **14'-1" x 6'-8" to 7'-0"**

The material build up on the floor was mainly clam and mussel growth. To measure the depth the diver used a probe with incremental marks. The diver found some sand mixed in with the hard growth. Thirty feet in from the lagoon side the floor was clean of material.

The sides have a soft growth and hard growth. The hard growth on the sides was again mainly mussels and barnacles.

The top of the culvert on the lagoon side was fairly sporadic with biofouling until the transition when the top of the culvert drops in elevation. At this point the material was a lot thicker as it appears to be underwater almost continually.

The following table identifies the amount of and type of growth on the walls and top of the culvert.

DISTANCE FROM MARINA OPENING	TOP OF CULVERT DEPTH OF MATERIAL/ TYPE OF MATERIAL	WALLS DEPTH OF MATERIAL/ TYPE OF MATERIAL
0'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
50'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
100'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
150'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
200'	2"-3" SOFT/ MUSSELS	½" SOFT
250'	3" SOFT/ MUSSELS	½" SOFT
300'	2"-3" SOFT/ MUSSELS	SPORADIC SOFT
350'	2"-3" SOFT/ MUSSELS	½" SOFT
400'	2"-3" SOFT/ MUSSELS	½" SOFT
450'	2" SOFT/ MUSSELS	CLEAN
500'	2"-3" SOFT/ MUSSELS	CLEAN
550'	2"-3" SOFT/ MUSSELS	CLEAN
600'	2"-3" SOFT/ MUSSELS	MINIMAL BARNACLE
650'	2"-3" SOFT/ MUSSELS	MINIMAL BARNACLE
700'	2"-3" SOFT/ MUSSELS	CLEAN
750'	3"-4" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS
800'	2"-3" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS
850'	2"-3" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS
900' / OPENINGS (2 EA.)	2"-3" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS

The overall condition of the concrete surfaces is very good. No spalling and/or cracks were found throughout the interior of the culvert. The only anomalies found were to the concrete soft patches/covers at each end of the culvert. The undersides of the covers on their bottoms have missing concrete and exposed rebar. (See photo 3)

Approximately 415' – 420' in from the marina side the diver found a vertical shaft that leads to a man hole cover. The vertical shaft is in the north side of the top of the culvert. It appeared to be 24" in diameter. (See photo 4)

Approximately 725' from the marina side is the transition between the sizes. The transition is approximately 20' in length. The top of the culvert decreases in height from 8'-6" to between 6'-8" and 7'-0". (See photo 8)

Approximately 755' from the marina side there is a 30" pipe opening into the culvert. There is a second pipe of 30" diameter at approximately 815' from the marina side. Both of the pipes come in on the north side wall near the floor. (See photo 10 and 11)

At the 900' distance, are the two openings into the lagoon. They are comprised of two, 6'-6" tall by 7'-0" wide openings with a divider wall. There are two wooden gates that are in very poor condition with holes. Both gates were able to slide up and down with no difficulty in the exercising of them. The north gate had a hole that was approximately 6" diameter with that and the floor being spalled the gate has a leakage of approximately 20 %. The south gate has leakage less significant than the north I would estimate it at 5-10% leakage. The gates are approximately 7'-0" x 7'-0" x 3" and slide down through guides in the concrete. The guides are formed into the concrete and are basically cut outs in the face. There are guides in the floor as well which comprise of 4" deep channel. On the Northern gate this channel is all spalled out with dimensions of the spall being 3' x 2' x 4".

Elevation information was not gathered. To assist with getting elevation Global Inshore Inc. measured from the floor of the culvert up to the concrete above the culvert. This was accomplished at each end of the culvert. When the city or a surveyor is brought in they should be able to shoot elevation of the concrete at each end. After knowing this elevation the surveyor can subtract the measurement from the floor to the concrete above the culvert and provide a culvert floor elevation. The following are the height measurements:

- MARINA SIDE = 11'-1"
- LAGOON SIDE = 11'-0"

On the marina side we mention the rocks 6'-0" away from the opening. These rocks are above the floor by 3.5 feet and are impeding the flow out of the lagoon.

After the inspection and prior to resetting the trash racks, the area of the trash racks was cleaned of all debris and rock.

The following are video captures of typical conditions and of anomalies noted in the report.

If you have any questions concerning this report, please give me a call at (925) 439-7227.

Respectfully submitted,

GLOBAL INSHORE, INC.

Kevin J. Pehle
General Manager

PHOTO 1 - TYPICAL CLEAN TOP OF CULVERT WITH NO BIOFOULING

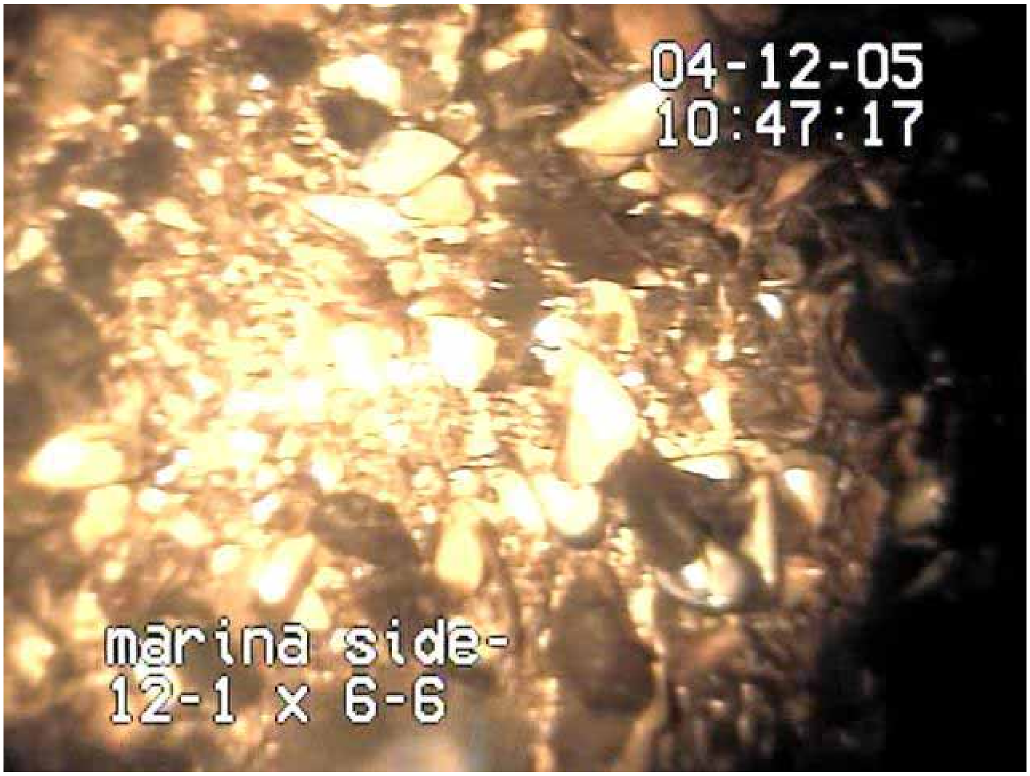


PHOTO 2 - TYPICAL MATERIAL ON BUILD UP OF CLAMS AND MUSSELS ON THE FLOOR OF THE CULVERT

PHOTO 3 - EXPOSED REBAR AND MISSING CONCRETE AT MARINA SIDE COVERS, LOOKING FORWARDS THE LAGOON

PHOTO 4 – VERTICAL SHAFT AND MANHOLE ACCESS AT 425 FT IN FROM MARINA SIDE

PHOTO 5 - ROCK BUILD UP OUTSIDE OF MARINA OPENING. THIS PILE IS IMPEDING FLOW AND IS 3.5' HIGHER THAN THE CULVERT FLOOR AND IS ABOUT 6' WIDE

PHOTO 6 - TYPICAL OVERHEAD SHOT SHOWING BIOFOULING AND TYPICAL CONDITION

PHOTO 7 - LAGOON OUTLET STRUCTURE SHOWING THE WING WALL AND DIVIDER WALL

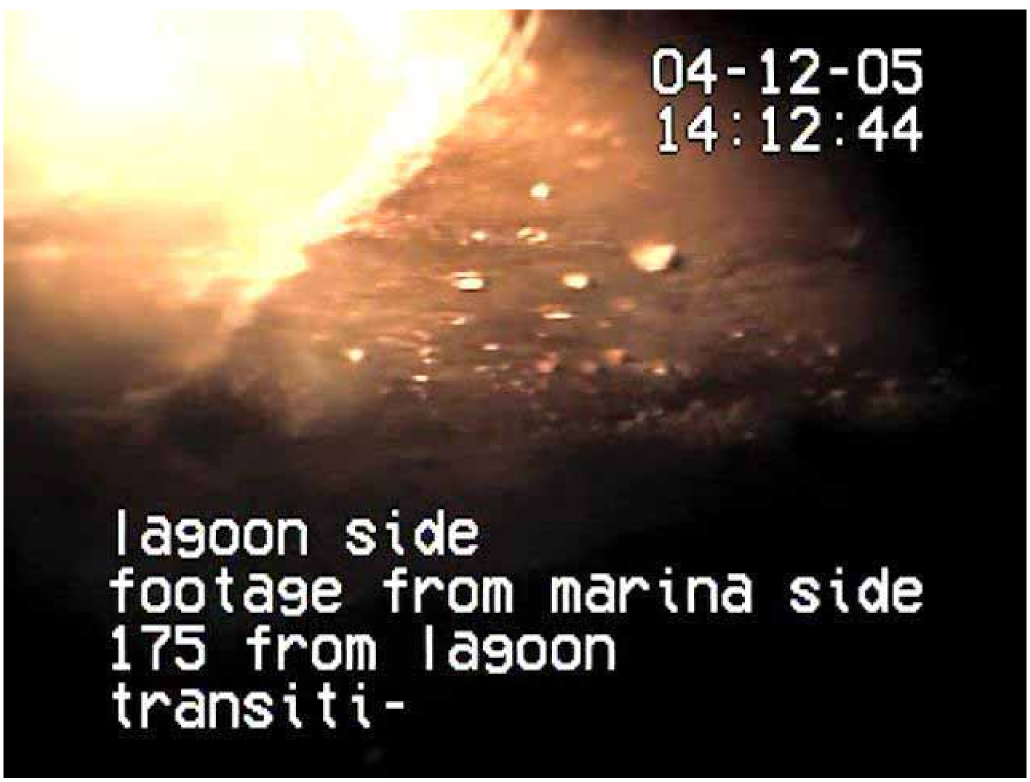


PHOTO 8 – SHOWING START OF TRANSITION. THE EDGED CONCRETE IN ON THE LEFT CENTER IS THE START OF THE TRANSITION WHERE THE TOP OF THE CULVERT LOWERS

PHOTO 9 - TYPICAL MATERIAL BUILD UP SHOWING THE SHELL MATERIAL FOUND ON THE FLOOR

PHOTO 10 - 30" DIAMETER PIPE IN NORTH WALL APPROXIMATELY 755 FEET FROM THE MARINA SIDE. THIS IS THE FIRST OF TWO PIPES

PHOTO 11 - 30" OPENING / PIPE AT 815' FROM MARINA

APPENDIX E

ENVIRONMENTAL DATA RESOURCES REPORT CORRIDOR STUDY

EXECUTIVE SUMMARY SECTION

EDR™ Environmental
Data Resources Inc

EDR DataMap™
Corridor Study

Termino Avenue
Long Beach, CA 90804

July 13, 2005

Inquiry number 01463598.1r

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR).

TARGET PROPERTY INFORMATION

ADDRESS

LONG BEACH, CA 90804
LONG BEACH, CA 90804

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS	Corrective Action Report
RCRA-TSDF	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

AWP	Annual Workplan Sites
Cal-Sites	Calsites Database
CHMIRS	California Hazardous Material Incident Report System
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
CA BOND EXP. PLAN	Bond Expenditure Plan
VCP	Voluntary Cleanup Program Properties
INDIAN UST	Underground Storage Tanks on Indian Land
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens

EXECUTIVE SUMMARY

PADS - PCB Activity Database System
UMTRA - Uranium Mill Tailings Sites
US ENG CONTROLS - Engineering Controls Sites List
ODI - Open Dump Inventory
FUDS - Formerly Used Defense Sites
DOD - Department of Defense Sites
INDIAN RESERV - Indian Reservations
RAATS - RCRA Administrative Action Tracking System
TSCA - Toxic Substances Control Act
SSTS - Section 7 Tracking Systems
FTTS INSP - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST - Aboveground Petroleum Storage Tank Facilities
CA WDS - Waste Discharge System
DEED - Deed Restriction Listing
NFE - Properties Needing Further Evaluation
WIP - Well Investigation Program Case List
NFA - No Further Action Determination

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas - Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS - A Listing of Brownfields Sites
US INST CONTROL - Sites with Institutional Controls
VCP - Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

CERCLIS-NFRAP: As of February 1995. CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

A review of the CERC-NFRAP list, as provided by EDR, and dated 03/22/2005 has revealed that there are 2 CERC-NFRAP sites within the searched area.

Site	Address	Map ID	Page
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 05/20/2005 has revealed that there are 3 RCRA-LQG sites within the searched area.

Site	Address	Map ID	Page
EXXONMOBIL OIL CORP.	3400 E ANAHEIM ST	4	17
BEST WASHINGTON UNIFORM SUPPLY	1347 REDONDO AVENUE	4	28
EXXONMOBIL OIL CORP.	4700 E 7TH ST	31	90

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 05/20/2005 has revealed that there are 28 RCRA-SQG sites within the searched area.

Site	Address	Map ID	Page
BELMONT AUTO SERVICE	***3720 EAST 14TH STREET***	***3***	***5***
ONE HOUR PHOTO	***3270 E ANAHEIM ST***	***4***	***11***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
HAMER AUTOMOTIVE	***1333 REDONDO AVE***	***4***	***27***
WOODSTOCK FURNITURE INC	1395 CORONADO ST	4	31
WOODSTOCK FUNITURE MANUFACTURI	***1395 CORONADO AVENUE***	***4***	***31***
DEWEY PEST CONTROL	***1391 REDONDO AVENUE***	***5***	***31***
JOHNIE WALKER PRINTING	***1344 NEWPORT AVE***	***8***	***39***
LONG BEACH USD-BRYANT ELEMENTA	***4101 E FOUNTAIN STREET***	***10***	***40***
EAST LONG BEACH BRAKE SVC	***4401 E ANAHEIM ST***	***11***	***42***
1 HOUR PHOTO WORK	***4339 E ANAHEIM***	***11***	***42***
NESS GARMAN AUTO	***4417 E ANAHIEM***	***11***	***43***
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
JOES AUTO REPAIR	***3909E ANAHEIM ST***	***12***	***46***
EAST ANAHEIM AUTO CLINIC	***3636 E ANAHEIM***	***14***	***50***
LONG BEACH MOPED	***4138 E ANAHEIM ST***	***15***	***51***
ONE HOUR PHOTO	***1224 OBISPO AVE***	***17***	***57***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***
JB HANOVER CO	***4116 E 10TH ST***	***24***	***75***
LONG BEACH USD-WILSON HIGH SCH	***4400 EAST 10 STREET***	***25***	***80***
TRANS PLUS AUTOMOTIVE	***793 REDONDO AVE***	***26***	***82***
LONG BEACH USD JEFFERSON JR HI	***750 EUCLID AVENUE***	***28***	***83***
MCFARLAND ENERGY INC	***5003 7TH ST***	***31***	***90***
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***
GEN TELEPHONE OF CA/ LONG BEAC	***3910 E SEVENTH ST***	***32***	***97***
LONG BEACH USD-ROGERS JUNIOR H	***365 MONROVIA AVENUE***	***42***	***113***
LONG BEACH USD-LOWELL ELEMENTA	***5201 EAST BROADWAY***	***43***	***114***

STATE ASTM STANDARD

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 16 Cortese sites within the searched area.

Site	Address	Map ID	Page
TEXACO (FORMER)	***4545 PACIFIC COAST HWY***	***2***	***3***
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
MOBIL #11-M10	***3400 ANAHEIM ST E***	***4***	***17***
DAVIS-LEGRAND SITE	***1365 OBISPO AVE***	***6***	***33***
SUNSET AUTO BODY & PAINT	***1381 OBISPO***	***6***	***37***
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
T & T ARCO	***4235 ANAHEIM ST E***	***16***	***53***
ARAM'S INTERNATIONAL CAR & TIR	***3940 E 10TH ST***	***22***	***69***
WILSON HIGH SCHOOL	***4400 010TH ST E***	***25***	***78***
CHEVRON #9-0817	***700 REDONDO BLVD***	***29***	***84***
ARCO	***3201 007TH ST E***	***30***	***86***
UNOCAL #5820 (FORMER)	***676 TERMINO AVE***	***32***	***93***
SOUTHLAND CORP #25800	***4400 007TH ST E***	***34***	***99***

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
LONG BEACH UNIFIED SCHOOL	***4345 007TH***	***34***	***102***
TEXACO SERVICE (FORMER)	***404 REDONDO AVE***	***35***	***104***
GAS S/S #5814	***4404 004TH ST***	***37***	***109***

NOTIFY 65: Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resources Control Board's Proposition 65 database.

A review of the Notify 65 list, as provided by EDR, has revealed that there are 2 Notify 65 sites within the searched area.

Site	Address	Map ID	Page
APARTMENT/RESIDENCE	770 ST. LOUIS	27	83
SVC STA #1883	4725 E. 2ND	44	114

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 05/12/2005 has revealed that there are 18 LUST sites within the searched area.

Site	Address	Map ID	Page
TEXACO (FORMER)	***4545 PACIFIC COAST HWY***	***2***	***3***
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
MOBIL #11-M10	***3400 ANAHEIM ST E***	***4***	***17***
DAVIS-LEGRAND SITE	***1365 OBISPO AVE***	***6***	***33***
SUNSET AUTO BODY & PAINT, INC.	1381 OBISPO AVE	6	35
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
T & T ARCO	***4235 ANAHEIM ST E***	***16***	***53***
ARAM'S INTERNATIONAL CAR & TIR	***3940 E 10TH ST***	***22***	***69***
WILSON HIGH SCHOOL	***4400 010TH ST E***	***25***	***78***
CHEVRON #9-0817	***700 REDONDO BLVD***	***29***	***84***
ARCO	***3201 007TH ST E***	***30***	***86***
MOBIL #18-M1A	4770 7TH ST. E.	31	91
UNOCAL #5820 (FORMER)	***676 TERMINO AVE***	***32***	***93***
SOUTHLAND CORP #25800	***4400 007TH ST E***	***34***	***99***
LONG BEACH UNIFIED SCHOOL	***4345 007TH***	***34***	***102***
TEXACO SERVICE (FORMER)	***404 REDONDO AVE***	***35***	***104***
SCOTTY'S	3601 4TH ST E	36	106
GAS S/S #5814	***4404 004TH ST***	***37***	***109***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 04/12/2005 has revealed that there are 65 UST sites within the searched area.

Site	Address	Map ID	Page
DENO'S	1100 REDONDO AVE	4	6
WILLIAM COWAN ROOFING	1144 REDONDO AVE	4	8
CONTINENTAL BAKING COMPANY	1208 REDONDO AVE	4	8
CHURCH OF GOD - CLEVELAND TENN	1216 REDONDO AVE	4	8
VACANT/DEMO (FORMERLY CITY RAD	3543 E ANAHEIM ST	4	9
KING TEXTILE	3530 E ANAHEIM ST	4	9
BELMONT AUTO SPA	3525 E ANAHEIM ST	4	9
PARKS & REC/SPEC SERVICES (OLD	3500 E ANAHEIM ST	4	12
TANK UNDER PAVED STREET (SLURR	3342 E ANAHEIM ST	4	12
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
Not reported	3339 E ANAHEIM ST	4	16
Not reported	3327 E ANAHEIM ST	4	16
Not reported	3321 E ANAHEIM ST	4	16
MCDONALDS RESTAURANT	3302 E ANAHEIM ST	4	16
MOBIL SS#18-M10	3400 E ANAHEIM STREET	4	17
MOBIL OIL #18-M10 (4 D/W O-C)	3400 E ANAHEIM ST	4	17
Not reported	3441 E ANAHEIM ST	4	22
EL POLLO LOCO (FORMERLY ACME M	3425 E ANAHEIM ST	4	25
TIDY DIDY SERVICE	***1330 REDONDO AVE***	***4***	***26***
BEST WASHINGTON UNIFORM SUPPLY	1342 CORONADO AVE	4	28
Not reported	1356 CORONADO AVE	4	30
Not reported	1326 OBISPO AVE	6	32
Not reported	1340 OBISPO AVE	6	32
Not reported	1354 OBISPO AVE	6	33
Not reported	1347 LOMA AVE	7	38
Not reported	1353 LOMA AVE	7	39
Not reported	1360 NEWPORT AVE	8	39
Not reported	3710 FOUNTAIN ST	9	40
PRO-TIRE & WHEEL INC	4390 E ANAHEIM ST	11	41
Not reported	4343 E ANAHEIM ST	11	41
Not reported	4340 E ANAHEIM ST	11	41
Not reported	3927 E ANAHEIM ST	12	43
Not reported	4005 E ANAHEIM ST	12	44
Not reported	1212 EUCLID AVE	14	49
Not reported	3715 E ANAHEIM ST	14	50
Not reported	4135 E ANAHEIM ST	15	52
COASTAL PAINT & DECORATINC INC	4127 E ANAHEIM ST	15	52
T & T MINI MART/GAS STATION (4	4235 E ANAHEIM ST	16	52
T & T GAS & AUTO SERVICE	4235 E ANAHEIM ST	16	55
Not reported	1200 OBISPO AVE	17	56
Not reported	1203 LOMA AVE	18	62
JIM BLAND MASONRY INC	1228 LOMA AVE	18	63
Not reported	1145 NEWPORT AVE	19	63
BELMONT AUTO BODY & PAINT	1101 OBISPO AVE	20	67
Not reported	1111 OBISPO AVE	20	67
BEACH CITIES SUNROOFS	***3640 E 10TH ST***	***21***	***68***
Not reported	3500 E 10TH ST	21	69
ARAM'S INTERNATIONAL CAR & TIR	***3940 E 10TH ST***	***22***	***69***
ARMSTRONG GARDEN CENTER	3842 E 10TH ST	22	72
G.H.A. INC (ARCO AM-PM) 3 D/W	1001 REDONDO AVE	23	75
LBUSD-WILSON HIGH SCHOOL	***4400 E 10TH ST***	***25***	***81***
TRANS PLUS AUTOMOTIVE	***793 REDONDO AVE***	***26***	***82***
ANTHONY'S STUDIO 7	4640 E 07TH ST	31	90
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***
VACANT (FORMERLY UNOCAL)	0676 TERMINO AVE	32	96

Site	Address	Map ID	Page
SEE 3910 & 3980 E. 07TH ST	3940 E 07TH ST	32	98
LEE’S AUTO REPAIR	4001 E 07TH ST	32	98
GTE CALIFORNIA INC	3980 E 7TH ST	32	99
LOMA OIL	3605 E 7TH ST	33	99
STARR DRY CLEANING (MR ARIS GO	4400 E 07TH ST	34	104
UNOCAL #5814 (DEMO)	4404 E 04TH ST	37	111
Not reported	5150 E COLORADO ST	39	112
FIRE STATION 14 (12 D/W JOOR G	5200 ELIOT ST	40	113
ELLIOTT TENEYCK LTD	5491 MARINA WAY	41	113
Not reported	5232 E BROADWAY	43	113

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there are 13 CA FID UST sites within the searched area.

Site	Address	Map ID	Page
BIG EFF’S CAR WASH	3525 E ANAHEIM ST	4	9
ELIAS F. BATSHON	***3400 E ANAHEIM ST***	***4***	***21***
TIDY DIDY DIAPER SERVICE	1330 REDONDO AVE	4	26
WAREHOUSE	1326 OBISPO AVE	6	32
ADVANCE METALS	3710 FOUNTAIN ST	9	39
T&T MINIMART & GAS	4235 E ANAHEIM	16	52
BEACH CITIES ENT.	3640 E 010TH ST	21	67
THE GAS STATION	3940 E 010TH ST	22	69
G.H.A.S. INC.	1001 REDONDO AVE	23	74
NABIL BATSHOUN	4770 007TH ST	31	88
SERVICE STATION 5820	676 TERMINO AVE	32	92
ALLIANCE	4001 E 007TH ST	32	97
SERVICE STATION 5814	4404 E 004TH ST	38	112

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 17 HIST UST sites within the searched area.

Site	Address	Map ID	Page
BIG EFF’S CAR WASH	3525 E ANAHEIM ST	4	10
ELIAS F. BATSHON	3400 E ANAHEIM ST	4	20
TIDY DIDY DIAPER SERVICE	1330 REDONDO AVE	4	25
WAREHOUSE	1326 OBISPO AVE	6	32
ADVANCE METALS	3710 E FOUNTAIN ST	9	40
OCEAN OIL #2	4235 E ANAHEIM ST	16	56
BEACH CITIES ENT.	3640 E 10TH ST	21	68
HUFFMAN TRUCKING	3866 E 9TH ST	22	69
THE GAS STATION	3940 E 10TH ST	22	72
AUTOMAT #6	1001 REDONDO AVE	23	74
TRANS-PLUS AUTOMOTIVE	793 REDONDO AVE	26	83
NABIL BATSHOUN	4770-7TH ST.	31	89

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
SERVICE STATION 5820	676 TERMINO AVE	32	96
UNION OIL SERVICE STATION LEAS	676 TERMINO AVE	32	97
ALLIANCE	4001 E 7TH ST	32	98
UNION OIL SERVICE STATION LEAS	4404 E 4TH ST	37	109
SERVICE STATION 5814	4404 E 4TH ST	37	111

FEDERAL ASTM SUPPLEMENTAL

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 04/11/2005 has revealed that there are 27 FINDS sites within the searched area.

Site	Address	Map ID	Page
BELMONT AUTO SERVICE	***3720 EAST 14TH STREET***	***3***	***5***
ONE HOUR PHOTO	***3270 E ANAHEIM ST***	***4***	***11***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***
HAMER AUTOMOTIVE	***1333 REDONDO AVE***	***4***	***27***
WOODSTOCK FUNITURE MANUFACTURI	***1395 CORONADO AVENUE***	***4***	***31***
DEWEY PEST CONTROL	***1391 REDONDO AVENUE***	***5***	***31***
JOHNIE WALKER PRINTING	***1344 NEWPORT AVE***	***8***	***39***
LONG BEACH USD-BRYANT ELEMENTA	***4101 E FOUNTAIN STREET***	***10***	***40***
EAST LONG BEACH BRAKE SVC	***4401 E ANAHEIM ST***	***11***	***42***
1 HOUR PHOTO WORK	***4339 E ANAHEIM***	***11***	***42***
NESS GARMAN AUTO	***4417 E ANAHIEM***	***11***	***43***
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
JOES AUTO REPAIR	***3909E ANAHEIM ST***	***12***	***46***
EAST ANAHEIM AUTO CLINIC	***3636 E ANAHEIM***	***14***	***50***
LONG BEACH MOPED	***4138 E ANAHEIM ST***	***15***	***51***
ONE HOUR PHOTO	***1224 OBISPO AVE***	***17***	***57***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
ART DECAL CORP.	1145 LOMA AVE.	18	62
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***
JB HANOVER CO	***4116 E 10TH ST***	***24***	***75***
LONG BEACH USD-WILSON HIGH SCH	***4400 EAST 10 STREET***	***25***	***80***
TRANS PLUS AUTOMOTIVE	***793 REDONDO AVE***	***26***	***82***
LONG BEACH USD JEFFERSON JR HI	***750 EUCLID AVENUE***	***28***	***83***
MCFARLAND ENERGY INC	***5003 7TH ST***	***31***	***90***
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***
LONG BEACH USD-ROGERS JUNIOR H	***365 MONROVIA AVENUE***	***42***	***113***
LONG BEACH USD-LOWELL ELEMENTA	***5201 EAST BROADWAY***	***43***	***114***

EXECUTIVE SUMMARY

TRIS: The Toxic Chemical Release Inventory System identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313. The source of this database is the U.S. EPA.

A review of the TRIS list, as provided by EDR, and dated 12/31/2002 has revealed that there is 1 TRIS site within the searched area.

Site	Address	Map ID	Page
ART DECAL CORP.	1145 LOMA AVE.	18	62

STATE OR LOCAL ASTM SUPPLEMENTAL

DRYCLEANERS: A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the CLEANERS list, as provided by EDR, has revealed that there are 6 CLEANERS sites within the searched area.

Site	Address	Map ID	Page
MURRE CLEANERS, T.K KIM DBA	***1100 REDONDO AVE***	***4***	***6***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***
BEST WASHINGTON UNIFORM SUPPLY	***1347 REDONDO AVE***	***4***	***29***
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
CRYSTAL CLEANERS	1232 OBISPO AVE	17	60

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 05/04/2005 has revealed that there is 1 SCH site within the searched area.

Site	Address	Map ID	Page
WOODROW WILSON HIGH SCHOOL	4400 EAST TENTH STREET	25	76

Emissions Inventory Data: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2002 has revealed that there are 2 EMI sites within the searched area.

Site	Address	Map ID	Page
MURRE CLEANERS, T.K KIM DBA	***1100 REDONDO AVE***	***4***	***6***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***

EXECUTIVE SUMMARY

REF: This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another tate or local regulatory agency.

A review of the REF list, as provided by EDR, and dated 05/04/2005 has revealed that there are 2 REF sites within the searched area.

Site	Address	Map ID	Page
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
CARL'S AUTO BODY, INC.	1101 OBISPO AVENUE	20	65

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 04/12/2005 has revealed that there are 2 SLIC sites within the searched area.

Site	Address	Map ID	Page
R.W. SELBY & COMPANY	3600 EAST PACIFIC COAST	1	3
R.W. SELBY & COMPANY	3600 PACIFIC COAST	1	3

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2002 has revealed that there are 23 HAZNET sites within the searched area.

Site	Address	Map ID	Page
ONE HOUR PHOTO	***3270 E ANAHEIM ST***	***4***	***11***
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
ELIAS F. BATSHON	***3400 E ANAHEIM ST***	***4***	***21***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***
TIDY DIDY SERVICE	***1330 REDONDO AVE***	***4***	***26***
HAMER AUTOMOTIVE	***1333 REDONDO AVE***	***4***	***27***
BEST WASHINGTON UNIFORM SUPPLY	***1347 REDONDO AVE***	***4***	***29***
SUNSET AUTO BODY & PAINT	***1381 OBISPO***	***6***	***37***
EAST LONG BEACH BRAKE SVC	***4401 E ANAHEIM ST***	***11***	***42***
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
EAST ANAHEIM AUTO CLINIC	***3636 E ANAHEIM***	***14***	***50***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
ART DECAL CO	1145 LOMA AVE	18	61
CALIFORNIA CARS	1202 LOMA AVE	18	62
1X IM BLAND MASONRY, INC	1228 LOMA AVENUE	18	63
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***
BEACH CITIES SUNROOFS	***3640 E 10TH ST***	***21***	***68***
JB HANOVER CO	***4116 E 10TH ST***	***24***	***75***
LBUSD-WILSON HIGH SCHOOL	***4400 E 10TH ST***	***25***	***81***
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***

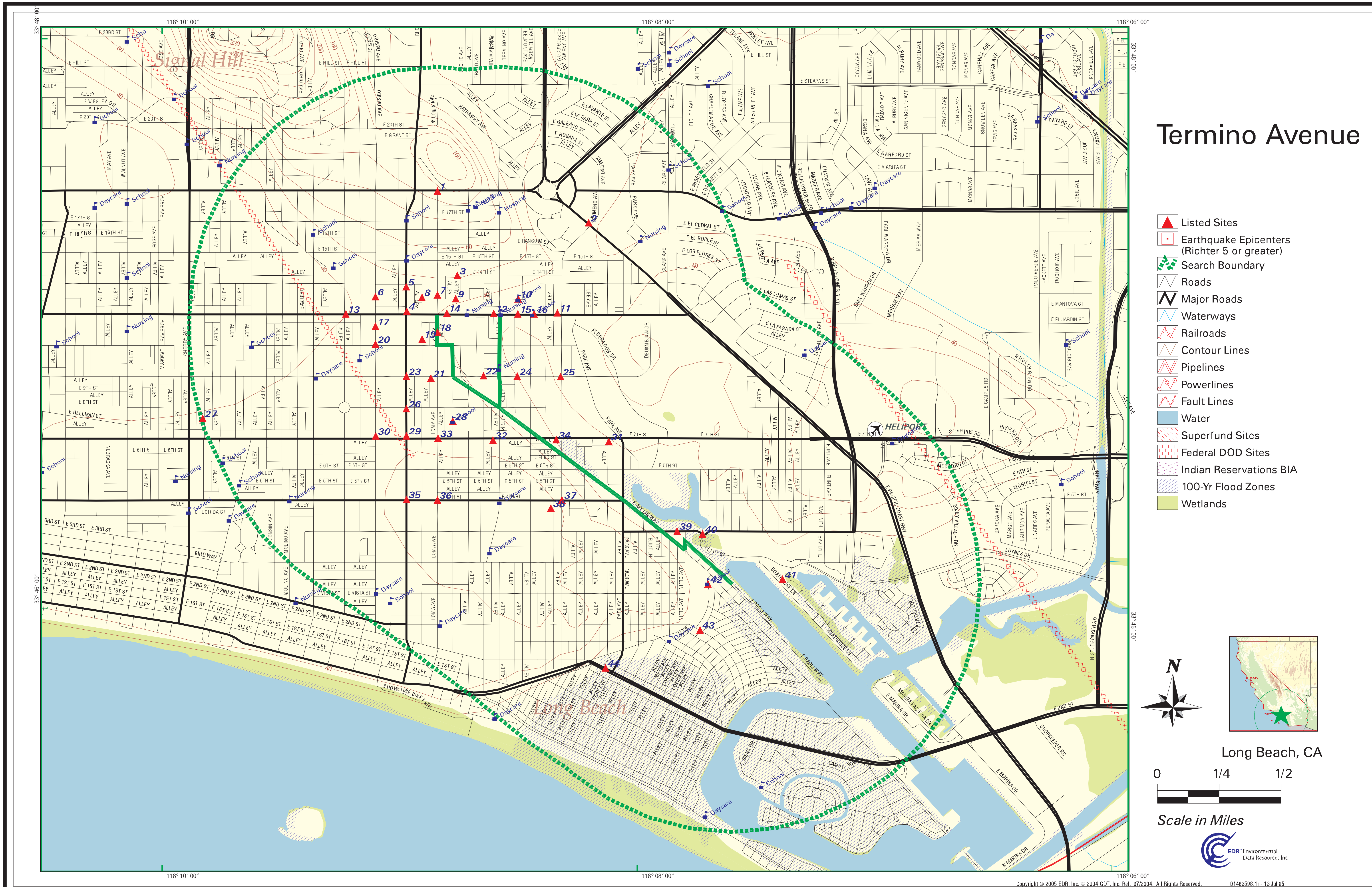
EXECUTIVE SUMMARY

Site	Address	Map ID	Page
UNOCAL #5820 (FORMER)	*676 TERMINO AVE*	*32*	*93*
GEN TELEPHONE OF CA/ LONG BEAC	*3910 E SEVENTH ST*	*32*	*97*
TEXACO SERVICE (FORMER)	*404 REDONDO AVE*	*35*	*104*

HMS: Los Angeles County Industrial Waste and Underground Storage Tank Sites.

A review of the LOS ANGELES CO. HMS list, as provided by EDR, has revealed that there is 1 LOS ANGELES CO. HMS site within the searched area.

Site	Address	Map ID	Page
WILSON HIGH SCHOOL	*4400 010TH ST E*	*25*	*78*



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