JULY 2008

FINAL

STATE CLEARINGHOUSE NO. 2000111022

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

Final
Environmental Impact Report

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Prepared For:
County of Los Angeles
Department of Public Works
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Alhambra, California 91803

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TERMINO AVENUE DRAIN

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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. Based on the Initial Study, the County determined that an EIR would be required for the project. A Draft EIR for the project was circulated for public review and comment on March 1, 2007, initiating a 45-day public review period pursuant to CEQA and its implementing guidelines (CEQA Guidelines). The document and Notice of Completion (NOC) was distributed to the California Office of Planning and Research, State Clearinghouse. Relevant agencies also received copies of the document. A Notice of Availability (NOA) was distributed to over 500 interested parties and adjacent property owners and residents, which informed them of where they could view the document and how to comment. The purpose of the 45-day review period was to provide interested public agencies, groups and individuals the opportunity to comment on the contents and accuracy of the document. The document was available to the public at DPW's Headquarters, the City of Long Beach Main Library, and the Brewitt Neighborhood Library. A copy of the document was also posted online. During the 45-day public review period, a total of 22 comment letters and emails were received.

Based on comments received during the March 2007 Draft EIR public review period, revisions were made to portions of the Termino Avenue Drain EIR and those modified portions were recirculated for public review pursuant to Section 15088.5(c) of the CEQA Guidelines. Specifically, the project description was revised and new significant information was added to the EIR regarding the potential for green sea turtles to occur within the project area, which required further analysis and discussion. In addition, supplemental information related to air quality and global climate change was provided in the Recirculated Draft EIR, which was circulated for 45 days from April 4, 2008 and to May 19, 2008. As with the March 2007 Draft EIR, a NOA was distributed to over 500 interested parties and adjacent property owners and residents. The Recirculated Draft EIR was also available for public review online and at the County of Los Angeles Department of Public Works and the City of Long Beach and Brewitt Neighborhood Libraries. During the 45-day public review period, two comment letters were received.

The purpose of this EIR is to provide decision-makers, public agencies, and the public detailed information about the potential significant environmental effects of the project, and to identify feasible mitigation measures and alternatives that minimize or avoid significant effects. This Final EIR was prepared in accordance with CEQA statutes (Cal. Pub. Res. Code, §21000 et seq., as amended) and implementing guidelines (Cal. Code Regs., Title 14, §15000 et seq., 1998). In addition to the environmental impact analysis, this Final EIR includes Clarifications and Modifications, which describe

the changes made to the Draft and Recirculated Draft EIRs; Response to Comments, which includes DPW's responses to all written comments received by agencies, private organizations, and the public during the 45-day Draft EIR and Recirculated Draft EIR public comment periods; and the Mitigation Monitoring and Reporting Program, which lists all the mitigation measures required for implementation of the project, the phase in which the measures would be implemented, and the enforcement agency responsible for compliance.

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, 8th Street, Park Avenue, and Termino Avenue.

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.

The outlet structure at Marine Stadium would consist of a double box culvert. The width of the outlet structure would be approximately 22 feet at the upstream end and 30 feet at the downstream end. All parts of the outlet structure would remain within the profile of the existing rip rap. 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 560 cubic yards of material from the rip rap embankment of 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.

DIVERSION SYSTEM TO COUNTY SANITATION DISTRICT SEWER LINE

This component would include a diversion system to divert non-storm flows collected north of 7th Street 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 at Roswell Avenue and the PE railway right-of-way 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

It is anticipated that construction activities would begin in summer of 2009. Construction of the proposed new drainage system 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, with the longest section being approximately 1,700 feet. 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. Construction would begin at Marine Stadium and proceed northwesterly to Anaheim Street. The deepest portion of the excavation would be 25 feet below ground surface in the vicinity of the 8th Street and Termino Avenue intersection.

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.

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. 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. Comment letters submitted during the Draft and Recirculated Draft EIR public review periods and the corresponding responses are included in Chapter 7 of this Final EIR.

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 PM_{10} and $PM_{2.5}$), and Noise (construction noise and vibration). As discussed below, significant unavoidable cumulative impacts related to air quality would also occur as a result of the project.

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 PM_{10}, $PM_{2.5,}$ and greenhouse gas 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 originating north of 7th Street. 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 Street and Park Avenue; 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 collected north of 7th Street 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 5-1). 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	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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-2 Construction of the proposed project would temporarily and permanently impact eelgrass within Marine Stadium. Construction of the outlet structure would temporarily displace 0.0189 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, 0.0008 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** A qualified marine biologist will resurvey the extent of eelgrass coincident with the construction easement to confirm the extent of eelgrass within the permanent and temporary impact areas. Based on 2005 surveys, the direct permanent and temporary impacts to marine sea grasses in Marine Stadium (i.e., 0.0189 acre total) shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy (http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf). A total of 0.0227 acres of eelgrass will be replanted by DPW, including at least 0.0181 acres in the temporary impact area when sediment conditions stabilize following the completion of outlet construction. The remaining 0.0046 acres of eelgrass shall be planted within Marine Stadium or elsewhere within Alamitos Bay in a location determined by a qualified biologist. The location of eelgrass transplant mitigation shall be in areas similar to proposed outlet structure location. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that shall be considered in evaluating potential sites. Monitoring the success of eelgrass mitigation shall be required for a period of	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		five years in accordance with the Southern California Eelgrass Mitigation Policy. A wetland eelgrass mitigation plan shall be prepared to discuss the methods and schedule for planting eelgrass at the Marine Stadium and Alamitos Bay locations, and post-planting monitoring. In accordance with the California Coastal Commission's (CCC's) Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone, the mitigation plan will include the following information, as relevant to the eelgrass mitigation sites: 1) Clearly stated objectives and goals consistent with regional habitat goals. These regional goals must identify functions and or habitats most in need of enhancement or restoration and must be as specific as possible. If the regional goals have not been identified, then the applicant and CCC staff should work with relevant federal, State, or local agencies to determine if the proposed plan is consistent with the ecology and natural resource composition of the area. 2) Adequate baseline data regarding the biological, physical, and chemical criteria for the mitigation area. 3) Documentation that the project will continue to function as a viable wetland over the long term. 4) Sufficient technical detail in the project design including, at a minimum, an engineered grading plan and water control structures,	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		methods for conserving or stockpiling topsoil, a planting program including removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the mitigation site base map, and maintenance techniques. 5) Documentation of performance standards, which provide a mechanism for making adjustments to the mitigation site when it is determined through monitoring, or other means that the enhancement or restoration techniques are not working. 6) Documentation of the necessary management and maintenance requirements, and provisions for remediation should the need arise. 7) An implementation plan that demonstrates there is sufficient scientific expertise, supervision, and financial resources to carry out the proposed activities. 8) A five-year monitoring program. **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	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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 placed 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 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	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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 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 shall be completed within 30 days and will be submitted to the California Coastal Commission and the U.S. Army Corps of Engineers. **BIO-P** 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	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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.	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
BIO-3 Construction activities associated with the outlet structure, including creation of the coffer dam, removal of rip-rap, and dredging 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. Construction activities associated with the outlet structure, including the creation of the coffer dam, removal of rip-rap, and dredging would also have the potential to impact green sea turtles, Pacific harbor seals, and California sea lions.	Significant	See **BIO-B** through **BIO-J** **BIO-K** A qualified marine biologist shall be on site during the construction period to monitor the potential presence of green sea turtles. The onsite biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed. **BIO-L** Construction crews and work vessel crews shall be briefed on potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions. **BIO-M** In the event that a sea turtle is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea turtle(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed. **BIO-N** The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his crews aware of the potential for additional sightings. The report shall be provided within 24 hrs to the California Department of Fish and Game and the National Marine Fisheries Service.	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		BIO-O In the event that a California sea lion or a Pacific harbor seal is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea lion(s) or seal(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
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** In accordance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines, 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 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	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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 occur at the intersection of Termino Avenue and Anaheim Street during the morning or evening peak traffic periods. **TRANS-E** Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction and the "California Manual on Uniform Traffic Control Devices." 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-E** **TRANS-F** Prior to construction, Los Angeles County Department of Public Works shall provide written notification to City of	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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.	
AIR QUALITY			
AIR-1 Construction emissions would violate the South Coast Air Quality Management District's (SCAQMD) air quality standards for NO_x. Construction equipment engine exhaust would result in emissions of 134 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 contractor 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 25 percent NOX reduction. 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	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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. All property owners within 300 feet of the proposed storm drain construction zone shall be notified, in writing, of the proposed construction schedule. Contact information for questions or to report air quality violations shall be provided, including phone numbers for the project's DPW inspector, area engineer, and office engineer. The notification, by standard mail, shall be delivered at least two weeks prior to the start of work.	
AIR-2 During construction, emissions of PM_{10} and $PM_{2.5}$ would exceed SCAQMD's Localized Significance Thresholds (LST) of 4 lbs/day and 3 lbs/day respectively.	Significant	**AIR-B** The construction contractor shall ensure that all excavation sites and excavated soil shall be watered to ensure that the soil is wet to minimize dust plumes. Haul trucks shall be covered when loaded with fill. Open storage piles shall have water applied once per hour or shall be covered to prevent fugitive dust plumes beyond the project boundary.	Significant and Unavoidable
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	Significant and Unavoidable

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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. Due to traffic mitigation requirements, jack hammering shall be allowed to occur on 7th Street between 9:00 AM to 6:00 PM on Saturday and Sunday, not including state and federal holidays. No construction shall occur on Sundays without a permit from the City of Long Beach noise control officer. **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	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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. **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	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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 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	Less than Significant

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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	

Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance after Mitigation
		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** A special excavation criteria area has been designated for approximately 250 feet of PE right-of-way south of the intersection of 4th Street and Park Avenue. Soils excavated from this area shall not be used for backfill. The soils shall be segregated and covered during construction and 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	III	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

1 INTRODUCTION

This Final Environmental Impact Report (Final EIR) has been prepared by the County of Los Angeles Department of Public Works (County) in conformance with the California Environmental Quality Act of 1970 (CEQA) Sections 15088, 15089, and 15132, for the Termino Avenue Drain Project. In addition to the analysis sections of the EIR, this Final EIR includes: Clarifications and Modifications, which describes the changes made to the Draft EIR; Response to Comments, which includes the County's responses to all written comments received by agencies, private organizations, and the public during the 45-day public comment periods for the Draft and Recirculated Draft EIRs; and the Mitigation Monitoring and Reporting Program, which lists all the mitigation measures required for implementation of the project, the phase in which the measures would be implemented, and the enforcement agency responsible for compliance.

1.1 PROJECT LOCATION

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, 8th Street, Park Street, and Termino Avenue.

1.2 SUMMARY OF PROPOSED PROJECT

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. The mainline would also 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 originating north of 7th Street 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.

1.3 SUMMARY OF ALTERNATIVES CONSIDERED

The EIR considered a range of alternatives to the proposed project to provide informed decision-making in accordance with Section 15126.6(a) of the *State CEQA Guidelines*. As described below, the alternatives analyzed in this EIR include: No Project Alternative (Alternative 1); and the Colorado Lagoon Outlet Structure Alternative (Alternative 2)

1.3.1 NO PROJECT ALTERNATIVE (ALTERNATIVE 1)

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. However, 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.

1.3.2 COLORADO LAGOON OUTLET STRUCTURE ALTERNATIVE (ALTERNATIVE 2)

The Alternative 2 alignment would follow the same alignment as with the proposed project; however, 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. In addition, two outlet structures would be constructed: one into Colorado Lagoon, and another into Marine Stadium, resulting in two temporary coffer dams during construction of the outlet structures. The outlet structure at Marine Stadium would be located west of the tidal culvert while the outlet structure in Colorado Lagoon would replace the existing Termino Avenue Drain outlet structure on the west side of the lagoon.

As with the proposed project, the storm drain would be sized to accommodate the 50-year frequency storm event. Other project features would remain the same as with the proposed project, including connections to the existing drainage system, installation of catch basin screens, a diversion system to the County Sanitation District for non-stormwater flows capture north of 7th Street, and re-vegetation of the Long Beach Greenbelt. As with the proposed project, construction of the mainline would require removal of a one-story detached commercial structure on the southwest corner of Ximeno Avenue and 7th Street. 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.

1.3.3 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.

1.4 NOTICING AND AVAILABILITY OF THE DRAFT EIR

The Draft EIR was circulated for public review and comment on March 1, 2007, initiating a 45-day public review period pursuant to CEQA and its implementing guidelines. The document and Notice of Completion (NOC) was distributed to the California Office of Planning and Research, State Clearinghouse. Relevant agencies also received copies of the document. A Notice of Availability (NOA) was distributed to over 500 interested parties and adjacent property owners and residents, which informed them of where they could view the document and how to comment. The purpose of the 45-day review period was to provide interested public agencies, groups and individuals the opportunity to comment on the contents and accuracy of the document. The document was available to the public at the County of Los Angeles Department of Public Works and the City of Long Beach and Brewitt Neighborhood Libraries. A copy of the document was also posted online.

Based on comments received during the March 2007 Draft EIR public review period, revisions were made to portions of the Termino Avenue Drain EIR and those modified portions were recirculated for public review pursuant to Section 15088.5(c) of the CEQA Guidelines. Specifically, the project description was revised and new significant information was added to the EIR regarding the potential for green sea turtles to occur within the project area, which required further analysis and discussion. In addition, supplemental information related to air quality and global climate change was provided in the Recirculated Draft EIR, which was circulated for 45 days from April 4, 2008 and to May 19, 2008. As with the March 2007 Draft EIR, a NOA was distributed to over 500 interested parties and adjacent property owners and residents. The Recirculated Draft EIR was also available for public review online and at the County of Los Angeles Department of Public Works and the City of Long Beach and Brewitt Neighborhood Libraries.

This document makes up the Final EIR as defined in the *CEQA Guidelines*, Section 15132. The Final EIR will subsequently be reviewed by the County for certification. Certification is not the same as approval, but marks the end of the environmental review phase. Certification is a judgment that the EIR is a legally adequate information document in compliance with CEQA. Only when the EIR document adequately identifies all significant environmental impacts associated with the project can it be used in the project approval phase, along with consideration of other relevant factors. To approve a project, CEQA requires that either the significant impacts of the project (as identified in the EIR) be reduced to a less than significant level through the implementation of mitigation measures, or the approving body must adopt a statement of overriding considerations, stating that mitigation measures do not exist or are infeasible thereby resulting in unavoidable significant impact(s). The statement of overriding considerations states, in effect, that the benefits of the project outweigh the environmental impacts that would result upon implementation of the project.

1.5 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 11 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 detailed description of all clarifications and revisions which were made to the text or graphics of the Draft EIR. Clarifications and revisions reflect changes made to the project, analysis, or mitigation as a result of a comment made by an agency or individual during the public review period.

Chapter 7 provides a copy of all comment letters received during the 45-day Draft EIR and Recirculated Draft EIR public comment periods, as well as DPW's responses to those comments.

Chapter 8 includes the Mitigation Monitoring and Reporting Program, which details the mitigation that has been made a condition of project approval in order to mitigate or avoid significant effects on the environment. It also includes the phase during which the mitigation and the monitoring will be implemented and the agency responsible for enforcing the measure.

Chapter 9 provides a bibliography of reference materials used in preparation of this EIR.

Chapter 10 includes a list of agencies, organizations, and persons consulted during preparation of this EIR.

Chapter 11 provides a list of acronyms and abbreviations used in this EIR.

Chapter 12 identifies those persons responsible for preparation of this EIR.

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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.

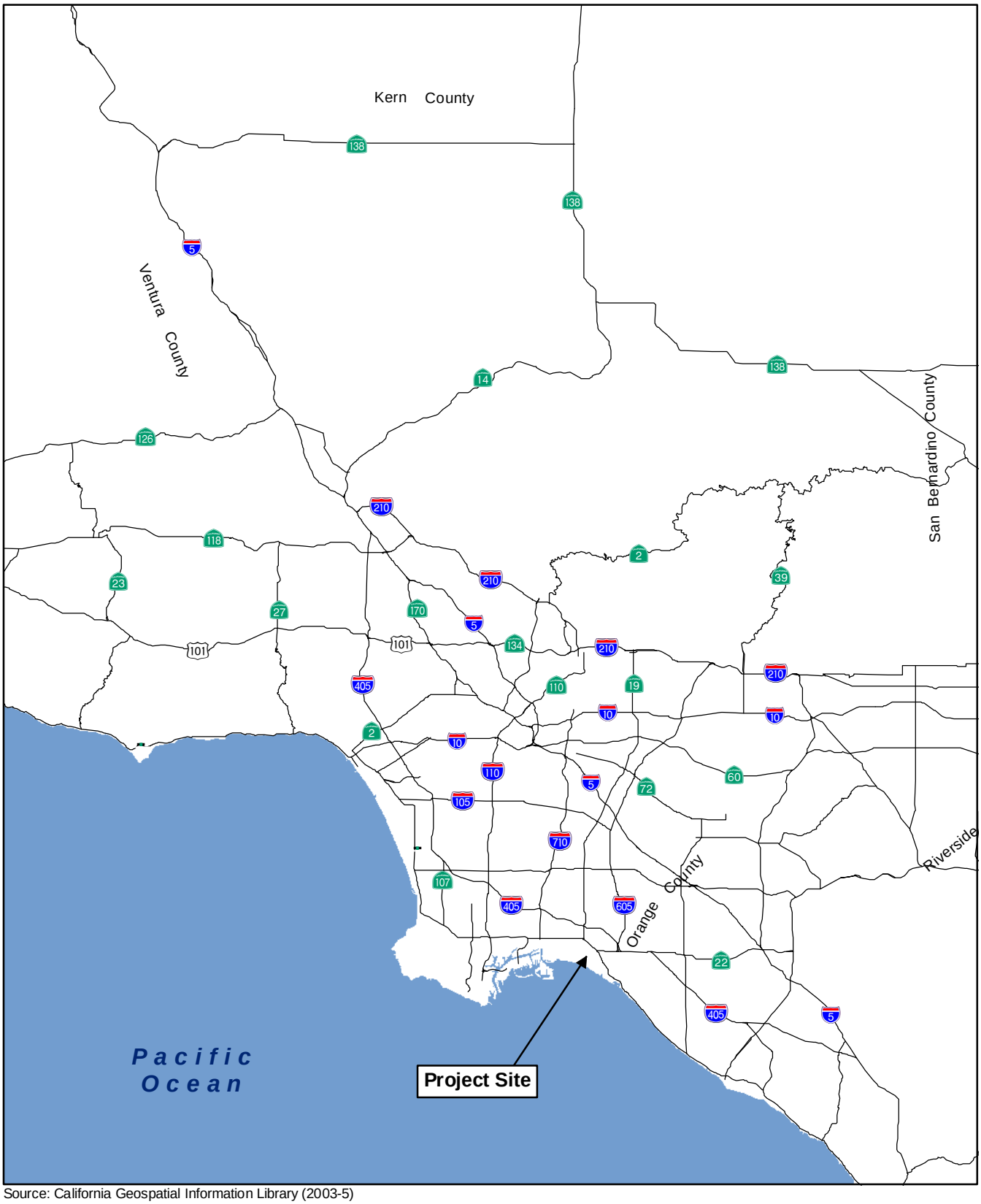
2.1 PROJECT LOCATION AND SETTING

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 4th Street, 6th Street, 7th Street, 8th Street, Park Avenue, and Termino Avenue. 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

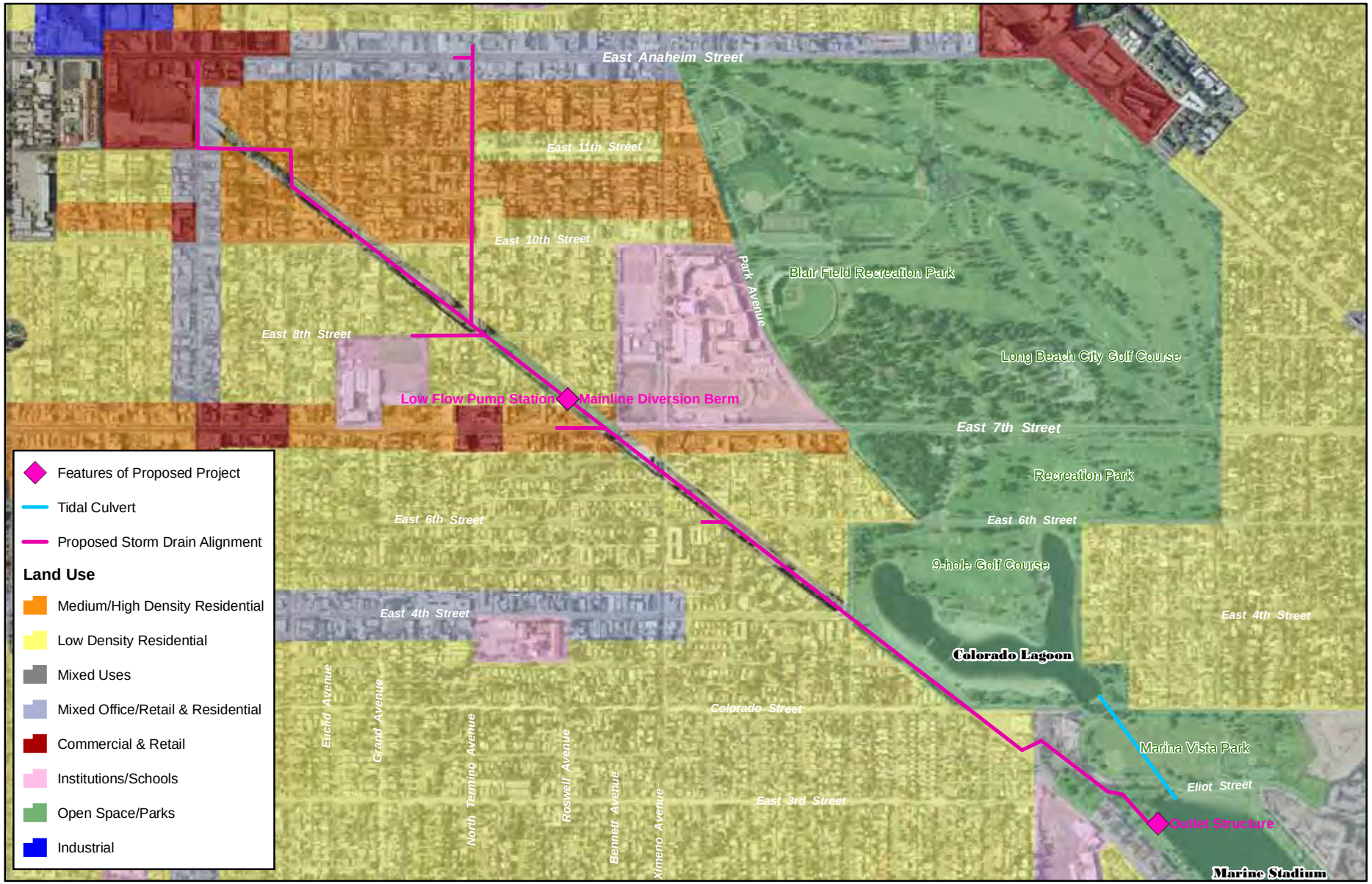
Source: City of Long Beach, 2004; California Geospatial Information Library (CalGIS), 2003-2005

N

1 inch equals 0.5 mile

0 0.25 0.5 1 Miles

Figure 2-2
Project Vicinity Map



N

1 inch equals 1,000 feet

0 500 1,000 2,000 Feet

Figure 2-3
Existing Land Use

at Redondo Beach 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, 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.

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. The following sections describe the construction of the storm drain to Marine Stadium and the diversion system to the County Sanitation Districts sewer line. The two changes to the proposed project that have occurred since the original Draft EIR (February 2007) include the location of the Marine Stadium outlet structure and the construction process at 7th Street. Specifically, the outlet structure has been moved slightly inland to reduce the project's effects on eelgrass. At 7th Street, tunneling is now proposed to avoid impacts to vehicular traffic.

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 9 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 a tunnel consisting of 560 feet of double pipes beneath the alignment's intersection with 7th Street and 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).

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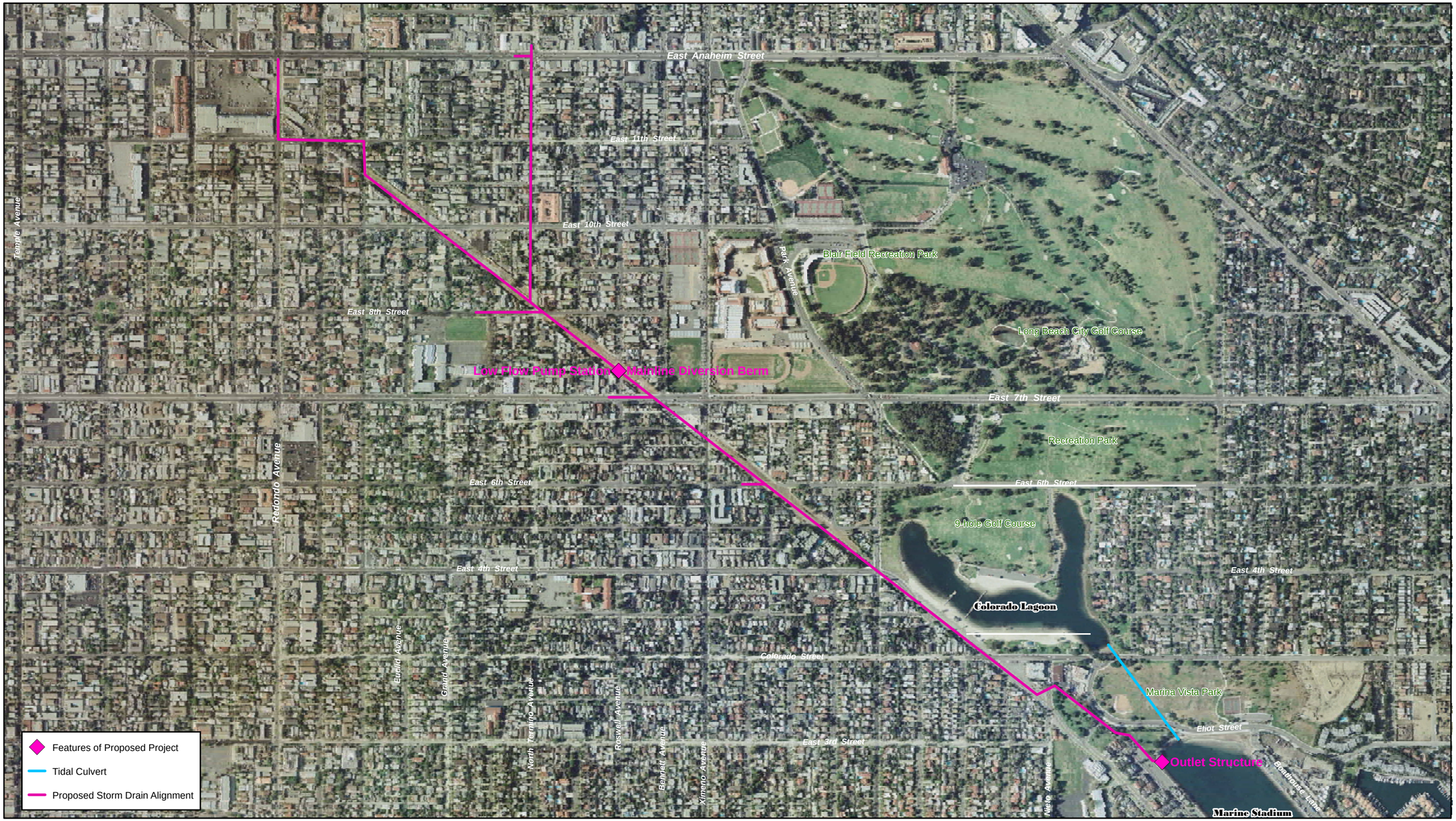

Figure 2-4
Termino Avenue Storm Drain Alignment

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TABLE 2-1 STORM DRAIN CONDUIT DETAILS

Location	Pipe/Box	Size
Marine Stadium vicinity	Dbl Box	9'W x 8'H
Colorado Lagoon vicinity	Dbl Box	9'W x 8'H
4th Street and Park Avenue	Dbl Box	8'W x 5.5'H
PE right-of-way	Dbl Box	8'W x 5.5'H
Ximeno Avenue	Dbl Jacked Pipe	2– 72" RCP
Rosewell and PE right-of-way	Box	10'W x 5.5'H
Termino Avenue	Pipe	72" RCP
Termino Avenue and 11th street	Box	7'W x 4'-6'H RCB
Termino Avenue and Anaheim Street	Box	6'W x 4'H
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 outlet structure would be approximately 22 feet at the upstream end and 30 feet at the downstream end. All parts of the outlet structure would remain within the profile of the existing rip rap. 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 560 cubic yards of material from the rip rap embankment of 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.

Storm drain construction will be underground at 7th Street and the PE right-of-way. A jacking pit would be excavated on one side of 7th Street. A receiving pit would be excavated on the other side of 7th Street. Two pipes would be hydraulically pressed from the jacking pit to the receiving pit in construction of this section of the drain. This construction method would avoid impacts to vehicular traffic on 7th Street.

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 89 catch basins within the storm drain system. Inspection and maintenance of the catch basins would occur after major storm events in order to ensure that the system operates efficiently. Additionally, the catch basins would be inspected and cleaned once during the summer, prior to and following a rain event, and when

Figure 2-5
Rendering of Proposed Outlet Structure

the sump is 40 percent full during the winter, or as needed. Maintenance and operation of the water quality features would be undertaken by the City of Long Beach[1]. 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.

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) occurring north of 7th Street from the storm drain and direct them into an existing County sanitary sewer line. DPW has coordinated with the Sanitation Districts to determine the size of the system. A diversion berm would be located in the mainline near Roswell Avenue and the PE railway right-of-way intersection.

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.

[1] Email from Mark_Christoffels (City of Long Beach) to Dale Sakamoto (LADPW) dated July 25, 2007.

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.

2.5 CONSTRUCTION REQUIREMENTS

It is anticipated that construction activities would begin in summer of 2009. Construction of the proposed new drainage system 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, with the longest section being approximately 1,700 feet. 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. Construction would begin at Marine Stadium and proceed northwesterly to Anaheim Street. The deepest portion of the excavation would be 25 feet below ground surface in the vicinity of the 8th Street and Termino Avenue intersection. 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. 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	Pavement Demolition	Excavation	Pipe Construction and Backfill	Paving	Coffer Dam Construction
Tractor/Loader/Back-Hoe (rubber-tired)	2	2			1
Concrete/Industrial Saw	4	1			
Wheeled Loader	1	2	1	1	
Forklift					2
Crane		2			1
Skidsteer Loader	2		1		
Generators		3			
Compressor		1	1		
Cement/Mortar Mixer				4	
Grader			1		
Excavator		2			
Compactor			1		
Asphalt Paving Machine				1	
Roller				2	
Water Truck		1	1		
*Construction signs would likely be used predominately at intersections and along Termino Avenue; not all equipment is assumed to be operating 8 hours per day.					

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 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, and recontouring the rip rap shoreline to depths of minus five (–5) ft mean lower low water (MLLW) around the opening of the outlet structure. Construction of the temporary cofferdam would require installation of sheet piling, which would extend approximately 60 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. A total of approximately 560 cubic yards of material would be removed from the embankment area of Marine Stadium. Of the 560 cubic yards, 350 cubic yards would be removed from immediately beneath the outlet structure and replaced with construction engineered fill in order to prevent seismically induced settlement. A portion of the existing rip rap would be removed and hauled to an off-site facility for recycling. 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 Final 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 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. 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)

[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.

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

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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 and Circulation;
3.6 Air Quality;
3.7 Noise;
3.8 Geology and Soils;
3.9 Hydrology and 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 and 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.

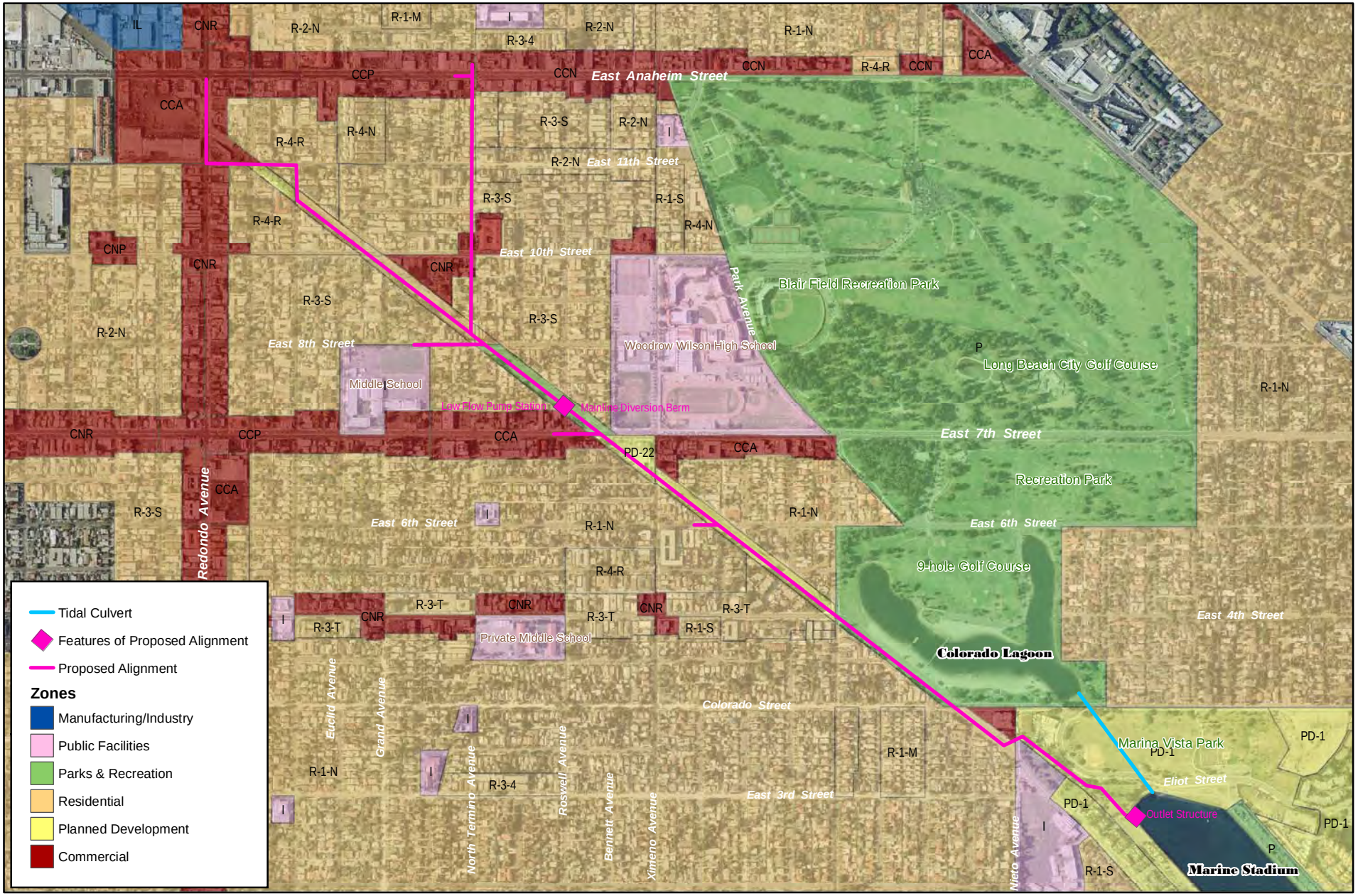
South of Colorado Street, the project alignment would join Appian Way for approximately 500 feet before extending north-east across a parking lot into Will Rogers Mini Park. The alignment would then travel southeast through the park to the southern terminus of the project alignment at Marine Stadium (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. There are no buildings within 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 collected north of 7th Street 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. In addition, catch basin screens would prevent trash collected south of 7th Street from 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

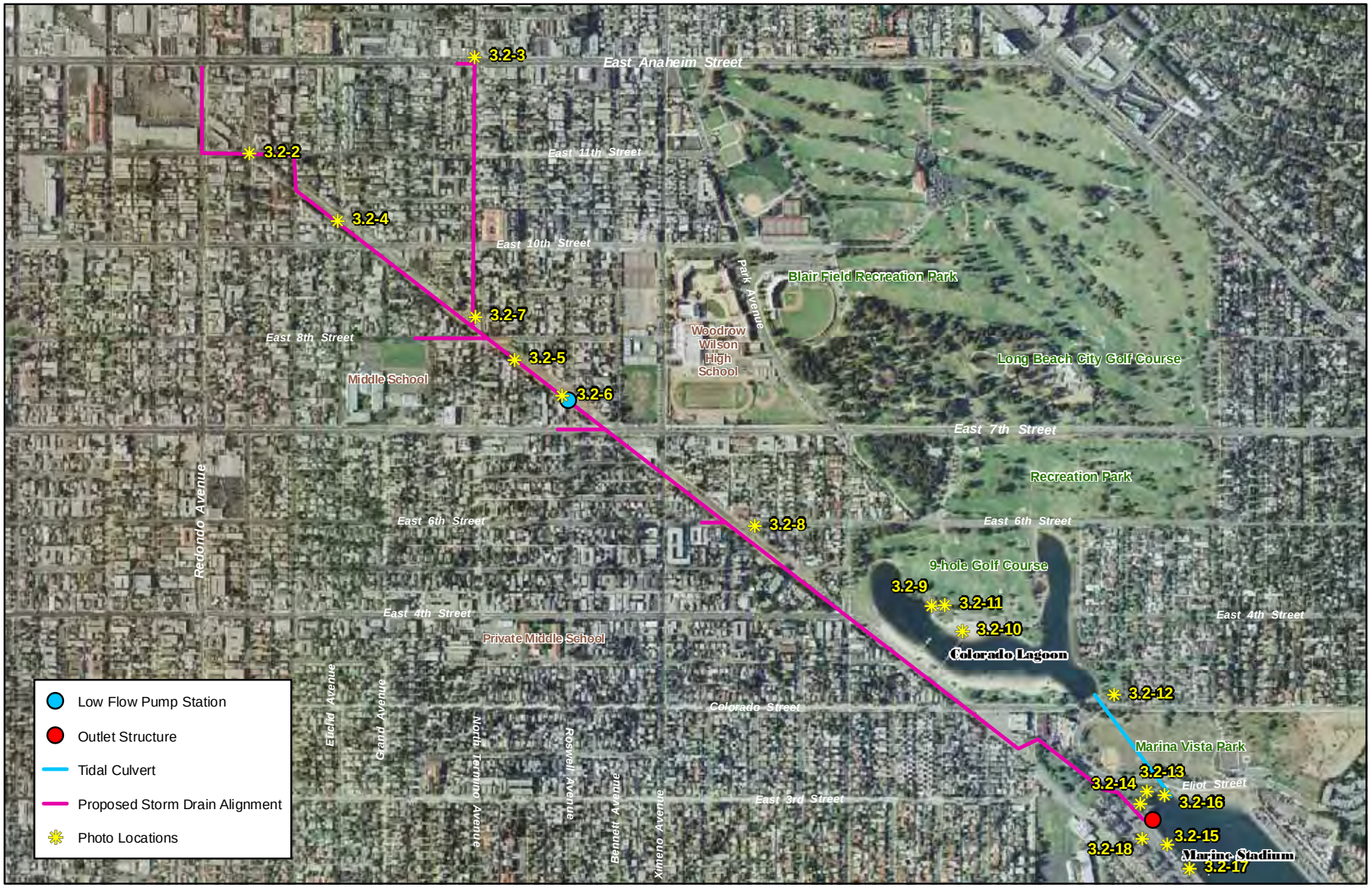
Portions of the Pacific Coast Highway (PCH), also known as State Route 1 (SR 1), are designated as a scenic highway. PCH roughly parallels the proposed project approximately 2.5 miles east of the project alignment. This segment of PCH is eligible as a State Scenic Highway, but is not officially designated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



N

1 inch equals 1,000 feet

0 500 1,000 2,000 Feet

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.

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 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 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 7th 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 7th 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.

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 (see Appendix B, Biological Technical Report). 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 since project surveys began in May 2004. In August 2007, in anticipation of necessary project permitting, a focused assessment of potential jurisdictional waters was conducted throughout the entire study area. Based on this assessment, it was determined that waters regulated under the California Fish and Game Code are not coincident with the proposed project; however, tidal waters regulated by both USACE and CCC are present at Marine Stadium. In addition, water quality testing, including salinity and turbidity analysis, were conducted for the project. 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 study area 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)[3]
Marine[1]/Eelgrass[2]	3.96/0.0189
Native landscaping	2.54
Disturbed	7.27
Developed	43.89
Ornamental	1.66
Other	0.75
Total Acres	**60.09**

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."
3 Acreage includes entire survey area boundary shown on Figure 3.3-1.

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 by a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel/safety diver (CRM 2005a), using a Global Position System (GPS). 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 0.0189 acres of eelgrass habitat occur within the project study area. Marine habitat, including the eelgrass habitat and a 500-foot buffer around the outlet structure, occupies approximately 3.96 acres of the project study area. A complete discussion of marine vegetation in the study area is included in Appendix B.

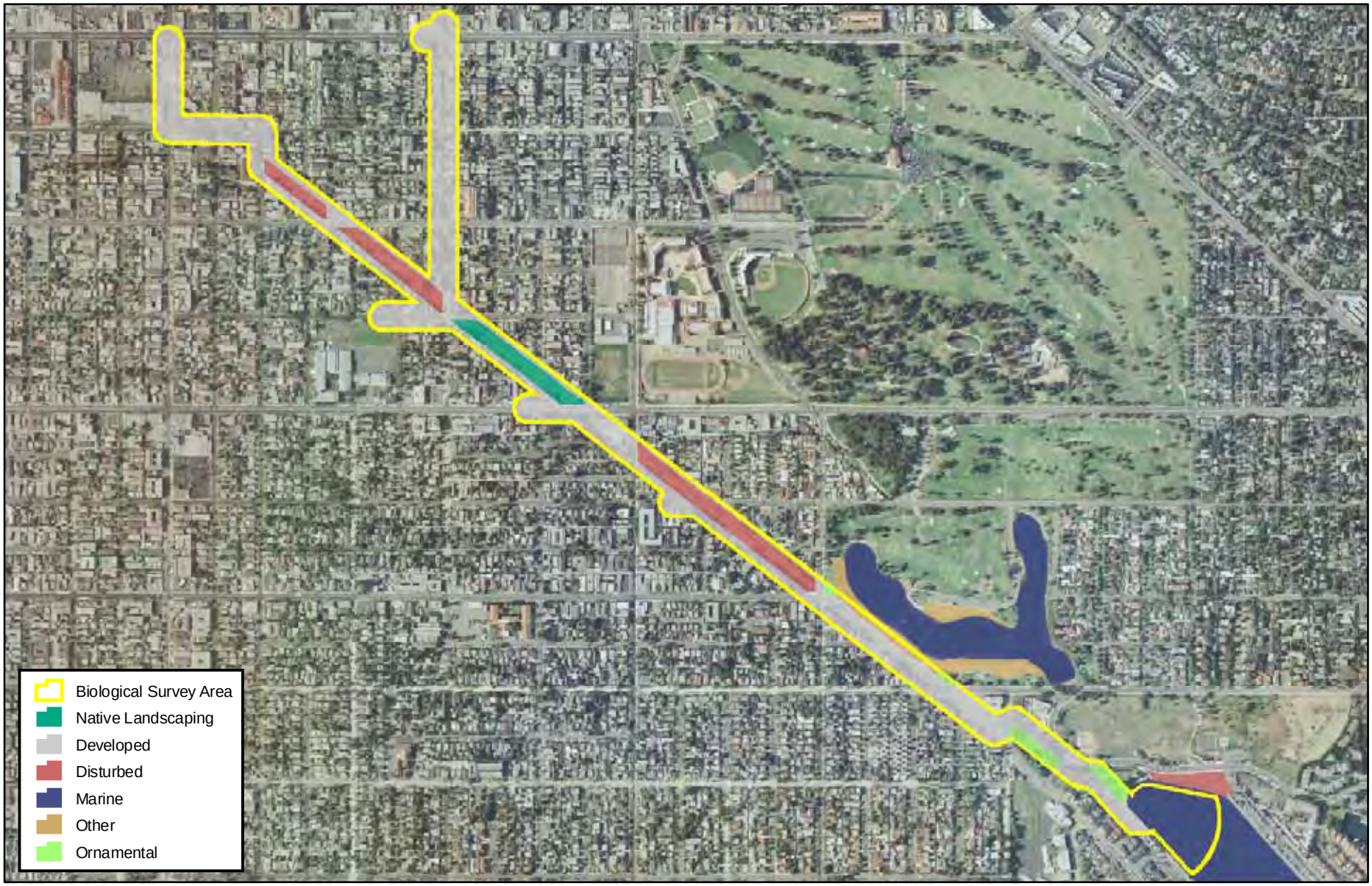
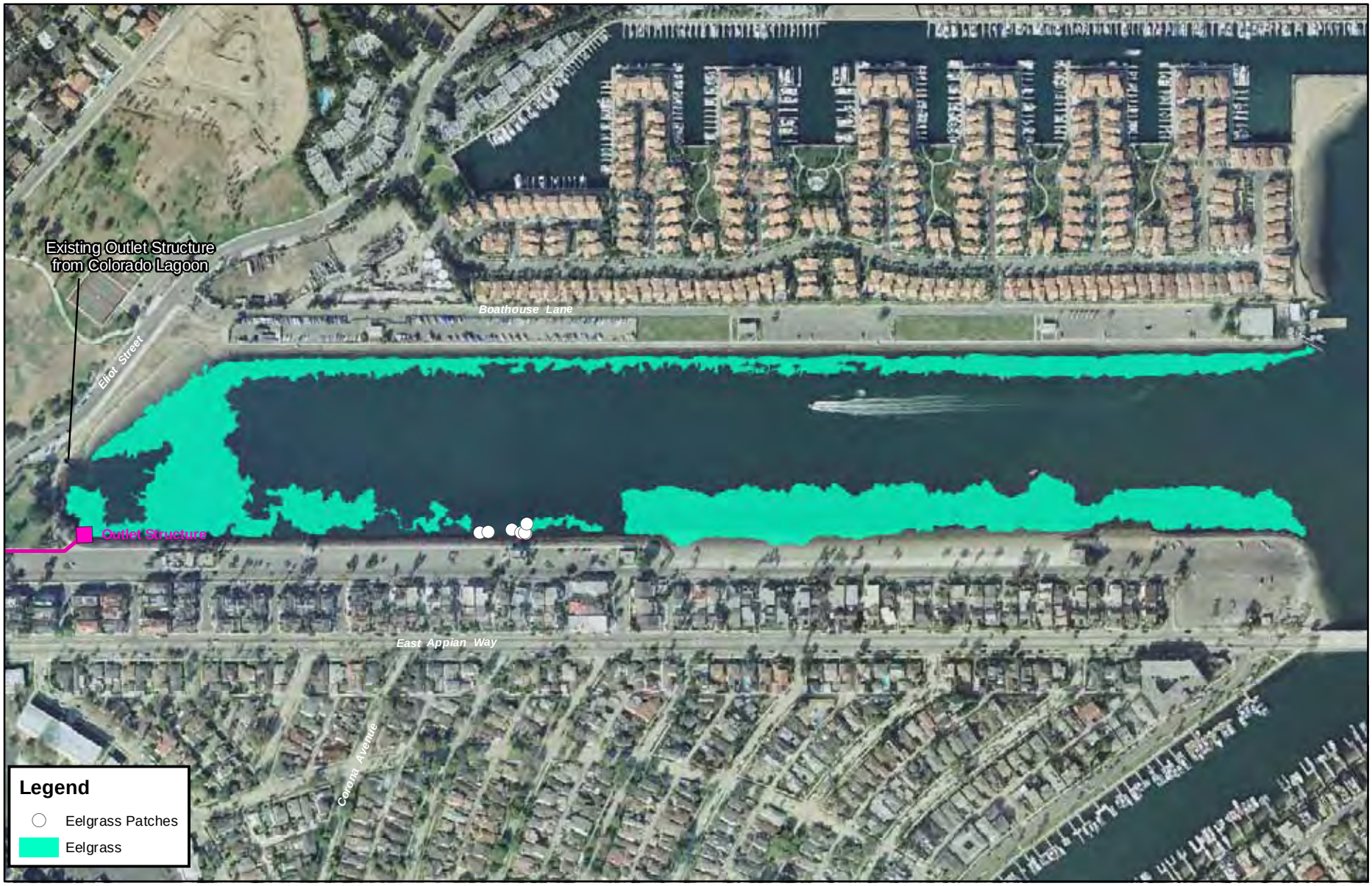


Figure 3.3-1
Vegetation Map



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 study 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 study 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 study 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 study 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 study area shown on Figure 3.3-1. A complete discussion of other vegetation 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.

Green sea turtles have occasionally been found offshore of Orange County and Los Angeles County, north of their more common southerly range due to warmer water temperatures during El Nino periods. Green sea turtles have been reported in the San Gabriel River where they encounter the warmer, discharged waters of the power generating facilities located farther up the River. According to the Long Beach Lifeguards and Marine Bureau staff, green sea turtles have been seen in Alamitos Bay and appear to be curious (Vivian Cook, Marine Bureau; Allen Powder, Long Beach Lifeguards pers. Com with R. Ware 27 July 2007). However, no records are kept as to where they have been seen, the time of year of occurrence, or the numbers observed. There is no evidence that these species breed in the project area.

On July 30, 2007, EDAW contacted Christina Fahy at the National Marine Fisheries Service for additional documentation regarding the presence of green sea turtles in Alamitos Bay. The following information was provided:

> Green sea turtles have stranded in the Long Beach area; for example, in October, 2004, three green sea turtles stranded in the Belmont Shore area and one green sea turtle stranded in the Treasure Island Marina area. In addition, over the years, our office has received numerous reports of sightings of sea turtles in the area. Lastly, in October, 2006, the Long Beach Aquarium attached a satellite transmitter to a green sea turtle that had live-stranded in Long Beach. The turtle was tracked south to the San Clemente area and then turned around and headed back north to the Long Beach area, where it remained for several weeks, presumably foraging on eel grass or algae in the area.

The green sea turtle strandings described above occurred within two miles of the Marine Stadium. The nearest recorded sighting was documented using the satellite transmitter described above. Based on this data, the sea turtle was present within Alamitos Bay in October and December 2006, residing most frequently in the Long Beach Marina area. The turtle appears to have entered the Marine Stadium area on multiple occasions[1]. Although individual sightings have occurred, no resident groups have been observed within Alamitos Bay.

Although occasional green sea turtles have been observed in Alamitos Bay, the likelihood of encountering this species in the northern extreme northeast limit of the bay is relatively low. Green sea turtles' north Pacific range extends from Baja California to southern Alaska; however, turtles within this range most commonly occur south of San Diego. Juvenile turtles are rarely seen as they spend the first several years of their lives swimming in the open ocean. As juveniles, they eat plants and other organisms such as

[1] http://www.seaturtle.org/tracking/index.shtml?keyword=mickey (Accessed August 7, 2007)

jellyfish, crabs, sponges, snails, and worms. Adult green sea turtles are mostly herbivorous and spend most of their time feeding on algae in the sea and the grass that grow in shallow waters inside reefs, bays, and inlets.

Sea turtles are not known to nest along the west coast of the US; the closest known nesting grounds occur along the Pacific coast of Mexico and in the Hawaiian Islands, particularly the French Frigate Shoals, approximately 1,280 miles southeast and 2,500 miles west of the project area, respectively. This species demonstrates strong selectivity and fidelity for both nesting and feeding sites; they have been known to migrate between the same feeding and nesting sites for many generations.

Mammals

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

In general, California sea lions inhabit rocky or sandy beaches, and prefer sandy beaches to breed. They are not known to breed in man-made structures such as Marine Stadium. Outside of the breeding season they will often gather at man-made environments such as piers and buoys for protection from predators. The construction zone, however, contains no surfaces for the animals to haul out during low tide to rest and absorb heat from the sun.

Harbor seals spend their time equally between land and water. They are wary of humans and will leave if they are approached too closely. The open water of Marine Stadium hosts swimmers, rowers, and water skiers daily, and its beaches are used for picnicking and special events. The large amount of human activity in the area makes it unlikely that harbor seals would inhabit the project area. The construction zone also contains no surfaces for the animals to haul out during low tide to rest and absorb heat from the sun.

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).[2] 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. In addition, because the project would not substantially divert or obstruct the natural flow of, or substantially change (remove or deposit material into), the bed, channel, or bank of any river, stream, or lake, authorization under Sections 1600-1616 of the California Fish and Game Code would not apply. 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 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 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."

[2] 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.

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.

MARINE MAMMAL PROTECTION ACT

Under the Federal Marine Mammal Protection Act (MMPA) of 1972, *take* (defined as *harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect*) of all marine mammals is prohibited, except as set forth in the act. The 1994 amendment of the MMPA provided certain exceptions for the take prohibitions, such as for Alaska Native subsistence and for such activities as scientific research, or the enhancement of a particular species' survival or recovery, as authorized by NOAA Fisheries. Endangered and Threatened marine mammals are also protected under the Endangered Species Act. NOAA Fisheries and the USFWS jointly administer the MMPA. NOAA is responsible for protecting whales, dolphins, porpoises, seals and sea lions. The protection of walrus, manatees, otters, and polar bears is enforced by the USFWS.

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 Marine 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.

Construction activities associated with the proposed project would occur in the northern limit of the bay, which is more than two miles from the entrance of Alamitos Bay. Construction activities within Marine Stadium would involve constructing a temporary coffer dam around the proposed construction zone, removing and replacing rip rap along the shoreline, and recontouring the rip rap shoreline to depths of minus five (–5) ft MLLW around the opening of the outlet structure. Construction of the temporary cofferdam would require installation of sheet piling, which would extend approximately 60 feet into Marine Stadium from the edge of the existing pavement (see Figure 2-4). The temporary sheet piling would extend approximately 7 feet above the water surface elevation during construction, depending on tide levels. Construction of the Marine Stadium outlet structure would take approximately three months; however, the majority of this construction would occur behind the cofferdam and would not directly affect marine resources. All construction activities would occur between the hours of 7:00 AM and 7:00 PM on weekdays only. Upon completion of the outlet structure, no additional construction activities would occur within Marine Stadium.

As shown on Figure 2-8, eelgrass beds extend into the Marine Stadium. As discussed above, the potential for green sea turtles to occur in the project area is relatively low. However, because Alamitos Bay has a productive eelgrass system, green sea turtles may be utilizing the eelgrass beds located throughout the bay as one source of their nutritional requirements. Alamitos Bay is north of this species' typical range, so the occurrence of individuals in the Long Beach area is likely to remain low. The project area within Marine Stadium is approximately 2.5 miles from the mouth of the Bay, further decreasing the chance that this species will occur within the project area.

If, however, a green sea turtle were to be present during the one- to two-week installation period of the sheet piling for the cofferdam or the one-week removal period, it could potentially result in a behavioral modification to this species that would include a likely change in swimming behavior to avoid excessive noise or turbidity. Once the cofferdam is installed, the potential for impacts would be reduced, since the construction area would be physically separated from the marine environment. No mortality or other adverse impacts would be expected to occur as a result of any project-related activities. Furthermore, Mitigation Measures BIO-K through BIO-N, would reduce the potential for impacts to sea turtles in the unlikely event that one is present in the project area during the three-month outlet structure construction process. No significant impacts to green sea turtles would occur during construction.

Similarly, the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on California sea lions or Pacific harbor seals due to the low potential for these species to occur in the project area. In the event that either of these species is sighted within 500 meters (1,640 feet) of the construction zone, Mitigation Measure BIO-O would reduce potential impacts to a less than significant level. Accordingly, the proposed project would not have a substantial adverse effect on California sea lions or Pacific harbor seals.

No operational impacts to green sea turtles, California sea lions, or Pacific harbor seals would occur as a result of the project. As discussed in Section 3.9.3 the EIR, impacts to marine life from temporary changes in salinity levels immediately following storm events would be less than significant. In addition, the low-flow diversion system and catch basin screens that are included in the proposed project would improve overall water quality and flooding conditions in Colorado Lagoon and Marine Stadium compared to existing conditions.

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). This assessment assumes that all terrestrial 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	0/0.0008	3.96/0.0189[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	0.0008	60.09

[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 3-7; 'Eelgrass' includes only eelgrass patches, as shown on Figure 3-8.

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

As shown, the project would result in 0.0008 acres of permanent impacts and 60.09 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). 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. 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 0.0189 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 0.0008 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 0.0181 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 0.0189 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-P would reduce the level of impact to less than significant. Mitigation measure BIO-P 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, and recontouring the rip rap shoreline to depths of –5 ft MLLW around the opening of the outlet structure. 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-J and measure BIO-P would reduce the level of impact to less than significant. 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 A qualified marine biologist will resurvey the extent of eelgrass coincident with the construction easement to confirm the extent of eelgrass within the permanent and temporary impact areas. Based on 2005 surveys, the direct permanent and temporary impacts to marine sea grasses in Marine Stadium (i.e., 0.0189 acre total) shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy. A total of 0.0227 acres of eelgrass will be replanted by DPW, including at least 0.0181 acres in the temporary impact area when sediment conditions

stabilize following the completion of outlet construction. The remaining 0.0046 acres of eelgrass shall be planted within Marine Stadium or elsewhere within Alamitos Bay in a location determined by a qualified biologist. The location of eelgrass transplant mitigation shall be in areas similar to proposed outlet structure location. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that shall be considered in evaluating potential sites. Monitoring the success of eelgrass mitigation shall be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy. A wetland eelgrass mitigation plan shall be prepared to discuss the methods and schedule for planting eelgrass at the Marine Stadium and Alamitos Bay locations, and post-planting monitoring. In accordance with the California Coastal Commission's (CCC's) Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone, the mitigation plan will include the following information, as relevant to the eelgrass mitigation sites:

1) Clearly stated objectives and goals consistent with regional habitat goals. These regional goals must identify functions and or habitats most in need of enhancement or restoration and must be as specific as possible. If the regional goals have not been identified, then the applicant and CCC staff should work with relevant federal, State, or local agencies to determine if the proposed plan is consistent with the ecology and natural resource composition of the area.

2) Adequate baseline data regarding the biological, physical, and chemical criteria for the mitigation area.

3) Documentation that the project will continue to function as a viable wetland over the long term.

4) Sufficient technical detail in the project design including, at a minimum, an engineered grading plan and water control structures, methods for conserving or stockpiling topsoil, a planting program including removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the mitigation site base map, and maintenance techniques.

5) Documentation of performance standards, which provide a mechanism for making adjustments to the mitigation site when it is determined through monitoring, or other means that the enhancement or restoration techniques are not working.

6) Documentation of the necessary management and maintenance requirements, and provisions for remediation should the need arise.

7) An implementation plan that demonstrates there is sufficient scientific expertise, supervision, and financial resources to carry out the proposed activities.

8) A five-year monitoring program.

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 placed 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 A qualified marine biologist shall be on site during the construction period to monitor the potential presence of green sea turtles. The onsite biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.

BIO-L Construction crews and work vessel crews shall be briefed on potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.

BIO-M In the event that a sea turtle is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea turtle(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.

BIO-N The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his crews aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game and the National Marine Fisheries Service.

BIO-O In the event that a California sea lion or a Pacific harbor seal is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea lion(s) or seal(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.

BIO-P 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-P 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 *Mission San Gabriel* or *Mission 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 shells 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 In accordance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines, 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 Avenue, 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 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-E, 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-E and TRANS-F 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 occur at the intersection of Termino Avenue and Anaheim Street during the morning or evening peak traffic periods.

TRANS-E Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction and the "California Manual on Uniform Traffic Control Devices." These guidelines provide methods to minimize construction effects on traffic flow.

TRANS-F 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 (City) is within the South Coast Air Basin (Basin), which consists of all or part of four counties – San Bernardino, Riverside, Los Angeles, and Orange – including some portions of what used to be the Southeast Desert Air Basin. 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 South Coast Air Quality Management District (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 2002 to 2007.

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 1 day in 2003 in Long Beach from 2002 through 2007. 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 (2002-2006)[1]

Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations[2]					Number of Days Exceeding Federal Standard[3]					Number of Days Exceeding State Standard[3]				
				2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
O_3	1 hour	0.12 ppm[4]	0.09 ppm	0.084	0.099	0.090	0.091	0.081	0	0	0	0	0	0	1	0	0	0
	8 hours	0.08 ppm	0.070 ppm	0.064	0.068	0.074	0.069	0.058	0	0	0	0	0	--	--	--	--	--
CO	1 hour	35 ppm	20 ppm	6	6	4	4	4	0	0	0	0	0	0	0	0	0	0
	8 hours	9.0 ppm	9.0 ppm	4.56	4.66	3.36	3.51	3.36	0	0	0	0	0	0	0	0	0	0
NO_2	1 hour	None	0.18 ppm	0.130	0.14	0.12	0.14	0.10	--	--	--	--	--	0	0	0	0	0
	Annual	0.053 ppm	0.030ppm[5]	0.026	0.029	0.028	0.024	0.022	0	0	0	0	0	--	--	--	--	--
PM_{10}	24 hours	150 µg/m3	50 µg/m^3	74	63	72	66	78	0	0	0	0	0	5	4	4	4	5
	Annual	Revoked	20 µg/m^3	36	32	33	30	31	--	--	--	--	--	1	1	1	1	1
$PM_{2.5}$	24 hours	35 µg/m3	None	62.7	115.2	66.6	53.8	58.5	0	3	1	0	0	--	--	--	--	--
	Annual/AAM	15 µg/m3	12 µg/m3	19.5	18.0	17.8	16.0	*	1	1	1	1	1	1	1	1	1	*
SO_2	24 hours	.14 ppm	.04 ppm	0.008	0.008	0.013	0.010	0.010	0	0	0	0	0	0	0	0	0	0

Source: CARB 2007; SCAQMD 2007

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 (µg/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] The federal 1-hour ozone standard was revoked in June 2005.

[5] The nitrogen dioxide ambient air quality standard was amended to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes became effective March 20, 2008

na = data not available

"*" = there were insufficient data to determine the value

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.

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/m^3)
	8-Hour	0.08 ppm (157 µg/m^3)		0.070 ppm (137 µg/m^3) [9]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	None	9.0 ppm (10 mg/m^3)
	1-Hour	35 ppm (40 mg/m^3)		20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 µg/m^3)	Same as Primary Standard	0.030 ppm (56 µg/m^3)[10]
	1-Hour	-		0.18 ppm (338 µg/m^3)[10]
Sulfur Dioxide (SO_2)	Annual Average	0.03 ppm (80 µg/m^3)	-	-
	24-Hour	0.14 ppm (365 µg/m^3)	-	0.04 ppm (105 µg/m^3)
	3-Hour	-	0.5 ppm (1300 µg/m^3)	-
	1-Hour	-	-	0.25 ppm (655 µg/m^3)
Suspended Particulate Matter (PM_{10})[7]	24-Hour	150 µg/m^3	Same as Primary Standard	50 µg/m^3
	Annual Arithmetic Mean	Revoked		20 µg/m^3 note 7
Fine Particulate Matter ($PM_{2.5}$)[8]	24-Hour	35 µg/m^3	Same as Primary Standard	-
	Annual Arithmetic Mean	15 µg/m^3		12 µg/m^3
Lead (Pb)	30-Day Average	-	-	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	Same as Primary Standard	-
Hydrogen Sulfide (H_2S)	1-Hour	No Federal Standards		0.03 ppm (42 µg/m^3)
Sulfates (SO_4)	24-Hour			25 µg/m^3
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/m^3)

[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/m^3 to 35 µg/m^3.

[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.

[10] The nitrogen dioxide ambient air quality standard was amended to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes became effective March 20, 2008

ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; km = kilometers
Source: ARB 2008.

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[a]- and 8-hour)	Severe-17 nonattainment	Nonattainment
PM_{10}	Nonattainment Serious	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment/Maintenance	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment

[a] Federal 1-hour O_3 repealed by law with implementation of the 8-hour standard.

Sources: EPA, *The Green Book Nonattainment Areas for Criteria Pollutants*, website http://www.epa.gov/air/oaqps/greenbk/, accessed February 5, 2008; ARB, Area Designations, 2007, website http://www.arb.ca.gov/desig/adm/adm.htm, accessed February 4, 2008.

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 2007 software package, version 9.2.4 (Jones & Stokes 2008). The emission factors and calculation methodologies contained in the URBEMIS 2007 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 asphalt application.

The URBEMIS program considers a typical development project to have several sequential phases of construction including demolition, grading, building construction, paving etc. 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. The phases used for this project are coffer dam construction, pavement demolition, excavation, pipe construction and backfill and paving. 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 June 2009.
- The duration of construction would be 20 months, averaging 22 days per month. While inclement weather may extend the total duration, there would be the equivalent of 20 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.

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;
- 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.

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/m^3 (construction) [b] & 2.5 μg/m^3 (operation)	
annual geometric average	1.0 μg/m^3	
annual arithmetic mean	20 μg/m^3	
$PM_{2.5}$ 24-hour average	10.4 μg/m^3 (construction) [b] & 2.5 μg/m^3 (operation)	
Sulfate 24-hour average	~~25 ug/m^3~~ 1 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 SCAQMD, http://www.aqmd.gov/ceqa/hdbk.html

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
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~~ December 2007
Source: SCAQMD, *Air Quality Analysis Guidance Handbook.* Available at http://www.aqmd.gov/ceqa/hdbk.html. Accessed ~~November 20, 2006~~ March 19, 2008

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 collected north of 7th Street 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. The proposed project would be required to adhere to the requirements of SCAQMD Rule 403 for dust abatement as part of their construction permits. SCAQMD Rule 403 includes dust abatement requirements to ensure the inclusion of best management practices for addressing construction-related dust. However, as shown in the table, estimated emissions of NO_X for the maximum day of activity are 134 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. However, mitigation measure AIR-A is included below to reduce impacts from NO_X below the SCAQMD CEQA significance thresholds.

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

Activity	Estimated Pollutant Emissions (lbs/day)					
	ROG	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Coffer Dam Construction	2	17	16	<1	1	1
Pavement Demolition[1]	1	4	5	<1	1	1
Excavation[2]	8	63	33	<1	58	15
Pipe Construction and Backfill[3]	5	50	21	<1	17	5
Paving	1	5	5	<1	<1	<1
Overlap: Coffer Dam Construction, Pavement Demolition, Excavation, Pipe Construction and Backfill	16	**134**	75	<1	77	21
Overlap: Pavement Demolition, Excavation, Pipe Construction and Backfill, Paving	14	**121**	64	<1	76	20
Daily Thresholds for Construction Emissions	75	100	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	No	No

Bold = exceeds threshold

[1] Assumptions: 80 cubic feet of pavement demolition per day

[2] Assumptions: 400 cubic yards of cut/fill per day, 20 round trips per day, hauling distance = 20 miles

[3] Assumptions: 20 round trips per day for concrete hauling - distance 20 miles

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}, $PM_{2.5}$, and O_3 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 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_x, CO, PM_{10}, and $PM_{2.5}$. The SCAQMD thresholds of significance for LST emissions are shown in Table 3.6-6.

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. Since the Termino Avenue Drain project would not have construction activities occurring on an area larger than 5 acres at a time, 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 2007, version 9.2.4 model, as described above. Unlike the regional emissions calculations, simultaneous construction activities would not occur in a 1-acre area near a receptor. The worst case scenario was examined: excavation would produce the greatest amount of CO, NO_X, 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 B 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. 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).

TABLE 3.6-6 LOCAL PROJECT EMISSIONS

Pollutant		Maximum Daily Emissions[1] lbs/day	LST Threshold[2] lbs/day	Exceed threshold?
NO_X		48.55	125/100[3]	No
CO		24.05	449	No
PM_{10}	Unmitigated	57.57	4	Yes
	Mitigated	19.58		
$PM_{2.5}$	Unmitigated	14.06	3	Yes
	Mitigated	6.13		

[1] See URBEMIS data sheets, Appendix B; 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.

As shown in Table 3.6-6, PM_{10} and $PM_{2.5}$ emissions would exceed the LST thresholds. The mitigated PM emissions in Table 3.6-6 represent emissions after dust mitigation allowed by URBEMIS. As mentioned above, the project would comply with SCAQMD Rule 403 for dust control. Not all measures included in Rule 403 can be quantified in URBEMIS; therefore, the emission reductions would likely be greater than those shown above. Additionally, excavation activities would not occur near a particular receptor for more than 1 to 2 days, before construction activities are completed. Thus, the LST analysis for the Termino Project is not representative of a construction project where receptors would be exposed to construction emissions for a longer period. Although impacts from local emissions of the proposed project to sensitive receptors would likely be less than indicated in the above table, because the daily emissions would exceed the LST thresholds, impacts would be significant and unavoidable.

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 contractor 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 25 percent NO_X 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.

All property owners within 300 feet of the proposed storm drain construction zone shall be notified, in writing, of the proposed construction schedule. Contact information for questions or to report air quality violations shall be provided, including phone numbers for the County Department of Public Works inspector, area engineer, and office engineer. The notification, by standard mail, shall be delivered at least two weeks prior to the start of work.

AIR-B The construction contractor shall ensure that all excavation sites and excavated soil shall be watered to ensure that the soil is wet to minimize dust plumes. Haul trucks shall be covered when loaded with fill. Open storage piles shall have water applied once per hour or shall be covered to prevent fugitive dust plumes beyond the project boundary.

3.6.5 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

The application of mitigation measure AIR-A would reduce NO_X emissions below the SCAQMD CEQA significance thresholds. However, although implementation of Rule 403 and Mitigation Measure AIR-B would reduce LST impacts associated with PM_{10} and $PM_{2.5}$ emissions, they would still exceed the maximum daily emissions thresholds and impacts would remain significant and unavoidable.

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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.

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 3.7-3 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
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.

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
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 in some areas 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 collected north of 7th Street 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. Due to traffic mitigation requirements, jack hammering shall be allowed to occur on 7th Street between 9:00 AM to 6:00 PM on Saturday and Sunday, not including state and federal holidays. No construction shall occur on Sundays without a permit from the City of Long Beach noise control officer.

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

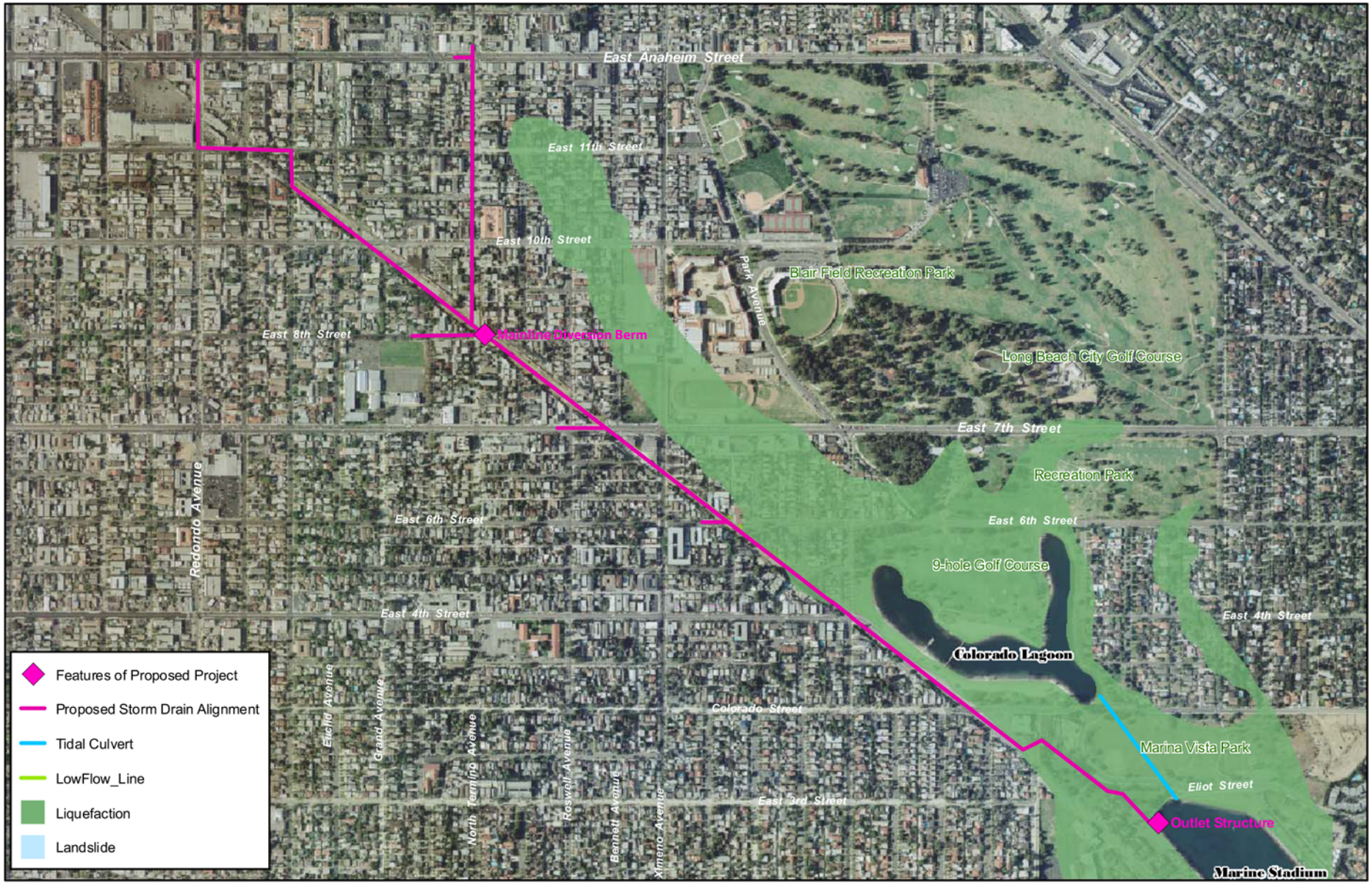


Figure 3.8-1
Liquefaction and Landslide Hazards

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).

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

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

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 9-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 collected north of 7th Street 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.

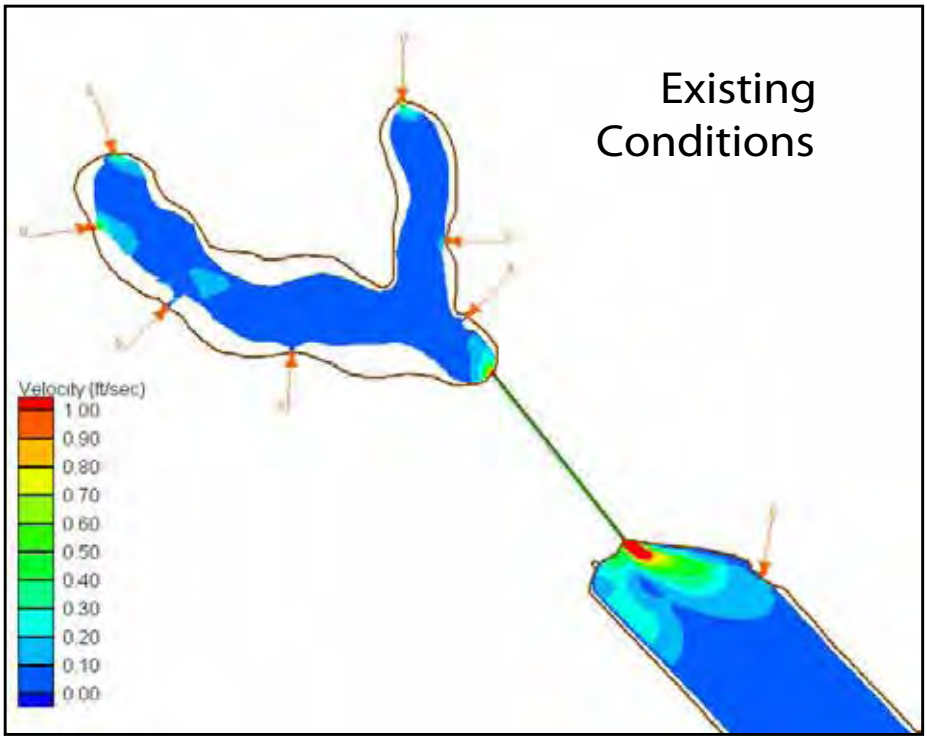
However, as described in Section 2.4, energy dissipater blocks would be placed in the outlet opening to reduce the velocity of stormwater flows and a woven geotextile fabric would be placed at the outlet to minimize erosion and scour. These project features would greatly reduce the effects of scour and 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.

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



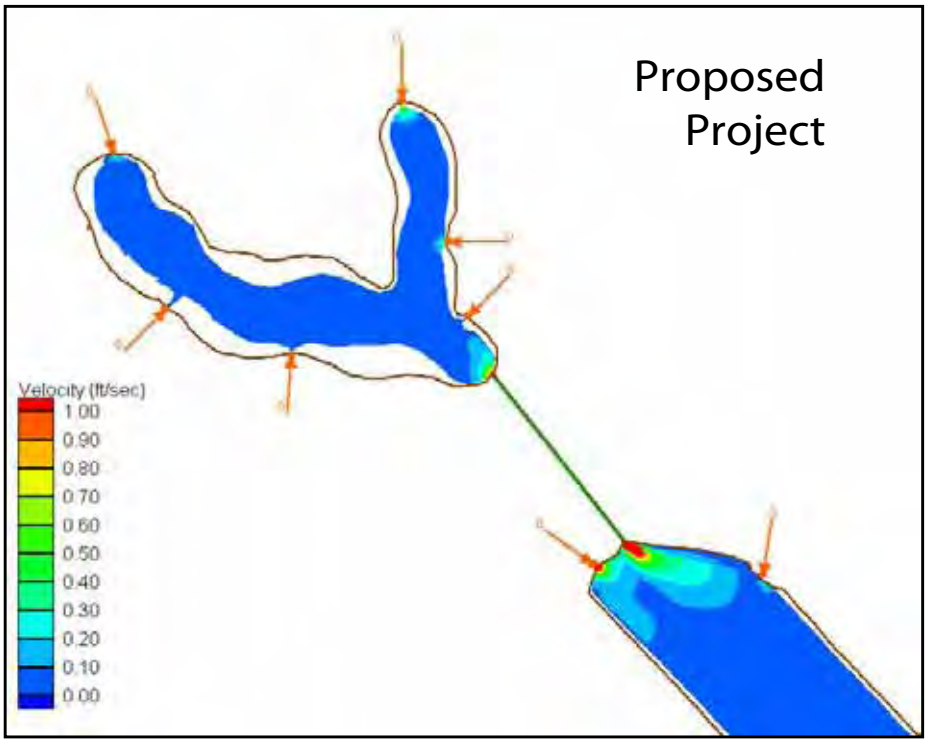


Figure 3.9-1
Maximum Velocity Distribution During 10-Year Flood Event

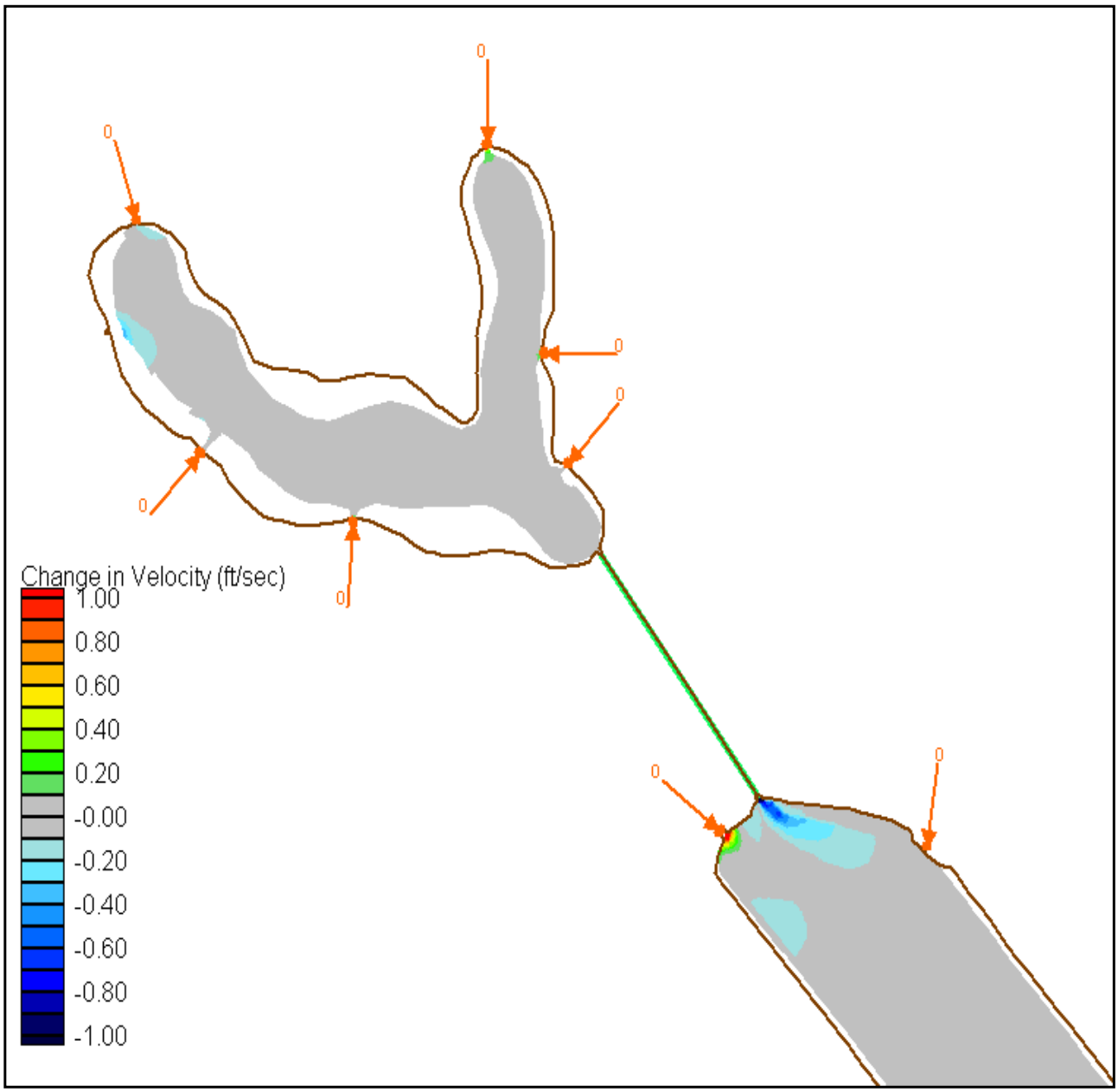


Figure 3.9-2
Change in Maximum Velocity Distributions from Existing Conditions

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 originating north of 7th Street to the sanitary system (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 Long Beach, CA	RCRA-SQG, FINDS, HAZNET	Generates solvent mixture and oil/water separator sludge; no violations found.

Site of Potential Concern	Databases	Status
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 3441 East Anaheim Street	UST	Active UST.

Site of Potential Concern	Databases	Status
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 4700 East 7th Street	RCRA-LQG	Generates waste oil; no violations found; minor leak in 2003; no action required.

Site of Potential Concern	Databases	Status
Long Beach, CA		
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.
California Cars	HAZNET	Generates aqueous solution.

Site of Potential Concern	Databases	Status
1202 Loma Avenue Long Beach, CA		
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).

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.

Due to the change in the proposed alignment between Colorado Street and Marine Stadium, an Additional Phase II Environmental Assessment (included in Appendix E) was conducted in June 2007 to determine the subsurface soil conditions in this area. The assessment determined that the majority of the proposed alignment which was not previously studied does not contain detectable amounts of Total Recoverable Petroleum Hydrocarbons (TRPH), TPHD, TPHG, VOCs, or metals. Several samples contained trace, non-hazardous amounts. However, a 250 linear-foot section of sediment along the alignment located east of the intersection of 4th Street and Park Avenue contained detectable levels of TRPH, TPHD, TPHG,

and VOCs (see Figure 3 of Appendix E). Although the levels of these contaminants were elevated above detection limits, no regulatory thresholds exist, and the soil is not classified as hazardous (GMED 2007). However, due to the elevated levels, the sediment in this area would not be suitable for use as backfill (GMED 2007).

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.

No buildings would be demolished as a result of the project; therefore, impacts associated with ACMs and LBP disposal would not occur.

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-F 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 a 250 linear-foot section of the proposed alignment in the vicinity of Colorado Lagoon and Marine Stadium, south of the intersection of 4th Street and Park Avenue, indicated high levels of hydrocarbons and VOCs. 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 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 choose 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 A special excavation criteria area has been designated for approximately 250 feet of PE right-of-way south of the intersection of 4th Street and Park Avenue. Soils excavated from this area shall not be used for backfill. The soils shall be segregated and covered during construction and 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 PM_{10} and $PM_{2.5}$) and Noise (construction noise and vibration). The project would also result in significant unavoidable cumulative impacts related to air quality, as discussed in Section 3.4.3 below.

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 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. However, since the majority of construction impacts would not occur on public roads and adequate notification of lane closures would be provided to the Long Beach Police Department, impacts to police protection services are not anticipated. In addition, implementation of mitigation

measures TRANS-A through TRANS-F (see Section 3.5, Transportation and Circulation) would further reduce the potential for impacts to police protection services.

Schools

The proposed project area is within the Long Beach Unified School District (LBUSD). There are seven 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), Willard Elementary School (1055 Freeman Avenue), 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, as well as to prevent impacts to sea turtles, Pacific harbor seals, and California sea lions.

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 South Coast Air Quality Management District's (SCAQMD) air pollution control measures and rules. Implementation of these measures would reduce air emissions; however, cumulative air quality impacts related to PM_{10} and $PM_{2.5}$ 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.

Global Climate Change

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters the Earth's atmosphere

from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back to space, but the properties of the radiation have changed from high-frequency solar radiation, to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. This radiation that would have otherwise escaped back to space is now "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Without the Greenhouse Effect, Earth would not be able to support life, as we now know it.

Prominent GHGs contributing to the Greenhouse Effect include carbon dioxide (CO_2), methane (CH_4), O_3, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for an enhancement of the Greenhouse Effect, which have led to a trend of unnatural warming of the Earth's climate, known as global warming or global climate change (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2003). Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills. Processes that absorb CO_2, often referred to as sinks, include uptake by vegetation and dissolution into the ocean.

Carbon dioxide-equivalent (CO_2e) is a value used to account for different GHGs having different potential to retain infrared radiation in the atmosphere and contribute to the Greenhouse Effect. This is known as the Global Warming Potential (GWP) of a GHG, and is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix C, "Calculation Referenced," of the General Reporting Protocol of the California Climate Action Registry, one ton of CH_4 has the same contribution to the Greenhouse Effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2. Expressing emissions in carbon-dioxide equivalents takes the Greenhouse Effect contribution of all GHG emissions and converts them to a single unit equivalent to the affect if all emissions were CO_2 (California Climate Action Registry 2006).

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, respectively. The strong majority of the scientific community concurs that global warming will lead to adverse climate change effects around the globe and that the phenomenon is anthropogenic, i.e., caused by humans.

In 2004 California produced 492 million gross metric tons of CO_2e gases. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Fossil fuel consumption in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7 percent of total GHG emissions in the state. This category was followed by the electric power sector (including both in-state and out-of-state sources) (22.2 percent) and the industrial sector (20.5 percent).

Various local and statewide initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way and there is a real potential for severe adverse environmental, social, and economic effects over the long term. Because every nation is an emitter of GHGs, and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help slow or stop human-caused increase in average global temperatures and associated changes in climatic conditions.

As discussed above, climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, respectively. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for an enhancement of the Greenhouse Effect, which have led to a trend of unnatural warming of the Earth's climate, known as global warming or global climate change (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006). Because every nation is an emitter of GHGs, and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help slow or stop human-caused increase in average global temperatures and associated changes in climatic conditions. As such, this issue is discussed in a cumulative context only.

As discussed in Section 3.6, 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 small electric pumps to divert flows collected north of 7th Street to the sanitary sewer system, and intermittent trips by maintenance personnel to check system facilities. Emissions from these activities would be minimal and would be similar to those required for the current storm drain system. As such, operational emissions would not trigger any of the applicable operations thresholds. Accordingly, GHG emissions associated with the proposed project are focused on the 18- to 24-month construction period. Additionally, completion of the Termino Avenue Drain project would allow the City to proceed with the planned greenbelt restoration project, which would result in the creation of new vegetation and trees in an area currently consisting of vacant dirt corridors. Using sunlight for energy, trees and other green plants take one of the dominant GHGs, carbon dioxide, out of the atmosphere and store the carbon safely while releasing oxygen in the process.

Short-term sources of project-generated GHG emissions would be the off-road construction equipment and on-road vehicles used for site preparation, grading, and construction of the site facilities. The combustion of gasoline and diesel fuel results in the generation of CO_2, methane, and nitrous oxide. As such, construction of the proposed project would generate emissions that would exceed existing levels and contribute to global warming impacts. Specifically, the project would generate 2,561 tons of CO_2 emissions. Implementation of mitigation measure AIR-A during construction would reduce the proposed project's contribution of GHG emissions. In addition, at least 50 percent of the site materials would be

recycled or salvaged in accordance with AB 939 further reducing the proposed project's contribution to GHG emissions during construction activities.

On September 27 2006, Governor Arnold Schwarzenegger signed AB 32, which requires the CARB to monitor and reduce greenhouse gas emissions. Specifically, AB 32 requires the CARB to:

- Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions by January 1, 2008
- Adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2008
- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions
- Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases, including provisions for using both market mechanisms and alternative compliance mechanisms
- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB
- Ensure public notice and opportunity for comment for all CARB actions
- Prior to imposing any mandates or authorizing market mechanisms, requires CARB to evaluate several factors, including but not limited to: impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability, conformance with other environmental laws, and to ensure that the rules do not disproportionately impact low-income communities
- Adopt a list of discrete, early action measures by July 1, 2007 that can be implemented before January 1, 2010 and adopt such measures.

As of this writing, there are no adopted Federal plans, policies, regulations or laws addressing global warming. Further, although the California Global Warming Solutions Act of 2006 provides new regulatory direction towards limiting GHG emissions, no air districts in California, including SCAQMD, have a recommended emission threshold for determining significance associated with GHGs from development projects. To date there is little guidance regarding thresholds for construction impacts and there are no local, regional, state, or federal regulations to establish a criterion for significance to determine the cumulative impacts of GHG emissions on global warming. Therefore, in the absence of defined regulation, DPW has conservatively determined that for the purposes of this EIR, the proposed project's contribution to GHG emissions would be significant. Mitigation measure AIR-A would reduce

the project's contribution to global climate change; however, given the magnitude of the impact (2,561 tons of CO_2 emissions), the impacts would remain significant and unavoidable.

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 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, 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.

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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	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

Similar: Impact is similar in magnitude to impacts of the proposed project

Less: Impact is lower in magnitude than 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 4th Street and Park Avenue, Alternative 2 would follow an identical alignment to that of the proposed project. South of 4th Street and Park Avenue, 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

N

1 inch equals 1,000 feet

0 500 1,000 2,000 Feet

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 originating north of 7th Street, 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 collected north of 7th Street 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, 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

N

1 inch equals 150 feet

0 75 150 300 Feet

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 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 PM_{10} and $PM_{2.5}$ 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 originating north of 7th Street 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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6 CLARIFICATIONS AND MODIFICATIONS

The following clarifications and revisions are intended to update the Draft EIR in response to the comments received during the public review period. These changes, which have been incorporated into the Draft EIR, constitute the Final EIR, to be presented to the County Board of Supervisors for certification and approval. These clarifications and modifications clarify, amplify or make insignificant changes to the EIR. Revisions to the EIR have not resulted in new significant impacts or mitigation measures, nor has the severity of an impact increased. None of the criteria for recirculation set forth in CEQA Guidelines section 15088(a) have been met, and recirculation of the EIR is not required.

The changes to the Draft EIR are listed by section, and page number. Text which has been removed is shown with a strikethrough line, while text that has been added is shown underlined. All of the changes shown described in this section have also been made in the corresponding Final EIR sections. Please refer to Section 3.0, Response to Comments, for referenced comment letters and corresponding comments.

SECTION 0.0 EXECUTIVE SUMMARY

PAGE CLARIFICATION/REVISION

ES-3 *Text under heading 'Diversion System to County Sanitation District Sewer Line' has been revised as follows:*

This component would include a diversion system to divert non-storm flows <u>collected north of 7th Street</u> 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 <u>at Roswell Avenue and the PE railway right-of-way</u> 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.

ES-3 *The first sentence under Construction Activities has been revised as follows:*

Construction of the proposed project is estimated to begin in ~~April 2008~~ <u>summer of 2009</u>.

ES-6 *First paragraph under heading 'Growth Inducing Impacts' has been revised as follows:*

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 originating north of 7th Street. 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.

ES-7 *First paragraph under heading 'Alternative 2 – Colorado Lagoon Outlet Structure' has been revised as follows:*

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 collected north of 7th Street would be diverted to the County Sanitation sewer line via a low-flow bypass pump.

ES-9 *Text under Mitigation measure BIO-B in Table ES-1, Biological Resources has been revised as follows:*

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 (http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf). 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 in a location determined by a qualified biologist. The location of eelgrass transplant mitigation shall be in areas similar to proposed outlet structure location. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that shall be considered in evaluating potential sites. Monitoring the success of eelgrass mitigation shall be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy.

ES-11 *The impact summary for BIO-B has been revised and new mitigation measures BIO-K through BIO-O have been added to Table ES-1.*

ES-12 *Impact BIO-4 has been removed from Table ES-1.*

ES-12 *Text under Mitigation measure CUL-C in Table ES-1, Cultural Resources has been revised as follows:*

CUL-C In accordance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines, 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.

ES-15 *Text under Mitigation measure AIR-A in Table ES-1, Air Quality has been revised as follows:*

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, 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.

All property owners within 300 feet of the proposed storm drain construction zone shall be notified, in writing, of the proposed construction schedule. Contact information for questions or to report air quality violations shall be provided, including phone numbers

for the project's DOW inspector, area engineer, and office engineer. The notification, by standard mail, shall be delivered at least two weeks prior to the start of work.

ES-15 *The following mitigation measure AIR-B has been added to Table ES-1:*

AIR-B The construction contractor shall ensure that all excavation sites and excavated soil shall be watered to ensure that the soil is wet to minimize dust plumes. Haul trucks shall be covered when loaded with fill. Open storage piles shall have water applied once per hour or shall be covered to prevent fugitive dust plumes beyond the project boundary.

ES-16 *Text under Mitigation measure NOISE-B has been revised as follows:*

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. Due to traffic mitigation requirements, jack hammering shall be allowed to occur on 7th Street between 9:00 AM to 6:00 PM on Saturday and Sunday, not including state and federal holidays. No construction shall occur on Sundays without a permit from the City of Long Beach noise control officer.

ES-20 *Text under Mitigation measure HAZ-B in Table ES-1, Hazards and Hazardous Materials has been revised as follows:*

HAZ-B ~~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~~ A Special Excavation Criteria Area has been designated for approximately 250 feet of PE right-of-way south of the intersection of 4th St and Park Ave. Soils excavated from this area shall not be used for backfill. The 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~~ and covered

during construction and shall be hauled to a Class I landfill or other appropriate soil treatment and recycling facility.

ES-22 *Table ES-2 Comparison of Impacts for the Proposed Project and the Alternatives has been revised as follows:*

Impact Area	Proposed Project	Alternative 1: No Project	Alternative 2: Colorado Lagoon Outlet Structure
Land Use	~~IV~~ III	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)

SECTION 1.0 INTRODUCTION

PAGE CLARIFICATION/REVISION

1-1 *Fourth paragraph under Section 1.1 has been revised as follows:*

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 originating north of 7th Street to the County's sewage treatment system.

SECTION 2.0 PROJECT DESCRIPTION

PAGE CLARIFICATION/REVISION

2-7 *First paragraph in Section 2.4.1 under heading 'Storm Drain to Marine Stadium' has been revised as follows:*

The proposed Termino Avenue Storm Drain alignment is shown on Figure 3-4. 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~~ 9 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 a tunnel consisting of 560 feet of double pipes beneath the alignment's intersection with 7th Street and 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).

2-8 *Table 2-1 Storm Drain Conduit Details has been revised has follows:*

Location	Pipe/Box	Size
Marine Stadium vicinity	Dbl Box	~~8' x 8'~~ 9'W x 8'H
Colorado Lagoon vicinity	Dbl Box	~~8' x 6.5'~~ 9'W x 8'H
4th Street and Park Avenue	Dbl Box	~~8' x 6.5'~~ 8'W x 5.5'H
PE right-of-way	Dbl Box	~~24' 1" x 6.5'~~ 8'W x 5.5'H
Ximeno Avenue	Dbl Jacked pipe	~~11 x 5.5'~~ 2– 72" RCP
Rosewell and PE right-of-way	Box	~~9' x 5.5'~~ 10'W x 5.5'H
Termino Avenue	Pipe	~~66"~~ 72" RCP
Termino Avenue and 11th street	Box	~~9' x 4'~~ 7'W x 4'-6'H RCB
Termino Avenue and Anaheim Street	Box	6'W x 4'H
Anaheim Street	Pipe	48" RCP

2-12 *Second paragraph in Section 2.4.1 under heading 'Storm Drain to Marine Stadium' has been revised as follows:*

The outlet structure at Marine Stadium would consist of a double box culvert. Figure 3-5 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.~~ The width of

the outlet structure would be approximately 22 feet at the upstream end and 30 feet at the downstream end. All parts of the outlet structure would remain within the profile of the existing rip rap. 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~~ 560 cubic yards of material from the rip rap embankment of 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.

2-12 *Third paragraph under heading 'Storm Drain to Marine Stadium' has been added:*

Storm drain construction would be underground at 7th Street and the PE right-of-way. A jacking pit would be excavated on one side of 7th Street. A receiving pit would be excavated on the other side of 7th Street. Two pipes would be hydraulically pressed from the jacking pit to the receiving pit in construction of this section of the drain. This construction method would avoid impacts to vehicular traffic on 7th Street.

2-8 T*he Third paragraph under Section 2.4.1 under heading 'Storm Drain to Marine Stadium' has been revised as follows:*

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 89 catch basins within the storm drain system. Inspection and maintenance of the catch basins would occur after major storm events in order to ensure that the system operates efficiently. Additionally, the catch basins would be inspected and cleaned once during the summer, prior to and following a rain event, and when the sump is 40 percent full during the winter, or as needed. Maintenance and operation of the water quality features would be undertaken by the City of Long Beach[1].

2-13 *The following paragraph in Section 2.4.1 was deleted from under heading 'Storm Drain to Marine Stadium':*

~~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~~

[1] Email from Mark_Christoffels (City of Long Beach) to Dale Sakamoto (LADPW) dated July 25, 2007.

~~currently vacant and had previously been used for storage. No relocation would be required as part of the project.~~

2-9 *First paragraph in Section 2.4.2 under heading 'Diversion to County Sanitation Districts Sewer Line' has been revised as follows:*

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) occurring north of 7th Street from the storm drain and direct them into an existing County sanitary sewer line. DPW has coordinated with the Sanitation Districts to determine the size of the system. ~~The diversion system~~ A diversion berm would be located in the mainline near ~~8th Street adjacent to the storm drain alignment~~ Roswell Avenue and the PE railway right-of-way intersection. ~~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.~~

2-15 *First paragraph in Section 2.5 has been revised as follows:*

It is anticipated that construction activities would begin in ~~April 2008~~ summer of 2009. Construction of the proposed new drainage system 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, with the longest section being approximately 1,700 feet. 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. Construction would begin ~~at the outlet and progress~~ at Marine Stadium and proceed northwesterly to ~~the upper end of the project~~ Anaheim Street. The deepest portion of the excavation would be 25 feet below ground surface in the vicinity of the 8th Street and Termino Avenue intersection. 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. Table 3-2 lists the equipment that would likely be used to build the storm drain during construction.

2-15 *Table 2-2 has been replaced with the following:*

Equipment Type	Pavement Demolition	Excavation	Pipe Construction and Backfill	Paving	Coffer Dam Construction
Tractor/Loader/Back-Hoe (rubber-tired)	2	2			1
Concrete/Industrial Saw	4	1			
Wheeled Loader	1	2	1	1	

Equipment Type	Pavement Demolition	Excavation	Pipe Construction and Backfill	Paving	Coffer Dam Construction
Forklift					2
Crane		2			1
Skidsteer Loader	2		1		
Generators		3			
Compressor		1	1		
Cement/Mortar Mixer				4	
Grader			1		
Excavator		2			
Compactor			1		
Asphalt Paving Machine				1	
Roller				2	
Water Truck		1	1		
*Construction signs would likely be used predominately at intersections and along Termino Avenue; not all equipment is assumed to be operating 8 hours per day.					

2-16 *Sixth paragraph in Section 2.5 has been revised as follows:*

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, and recontouring the rip rap shoreline to depths of minus five (–5) feet 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~~ 60 feet into Marine Stadium from the edge of the existing pavement (see Figure 3-4). 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. A total of approximately 560 cubic yards of material would be removed from the embankment area of Marine Stadium. Of the 560 cubic yards, 350 cubic yards would be removed from immediately beneath the outlet structure and replaced with construction engineered fill in order to prevent seismically induced settlement. A portion of the existing rip rap would be removed and hauled to an off-site facility for recycling. 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.

SECTION 3.1 LAND USE AND PLANNING

PAGE	CLARIFICATION/REVISION

3.1-7 *Text under heading 'The City of Long Beach Local Coastal Program' has been revised as follows:*

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 collected north of 7th Street 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. In addition, catch basin screens would prevent trash collected south of 7th Street from 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.

SECTION 3.2 AESTHETICS, LIGHT, AND GLARE

PAGE	CLARIFICATION/REVISION

3.2-1 *The last paragraph of the page has been revised as follows:*

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 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.~~

3.2-17 *Fourth paragraph under heading 'Impact Analysis VIS-1' has been revised as follows:*

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~~ 7th 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~~ 7th 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.

3.2-18 *The first full paragraph of the page has been deleted:*

~~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.~~

SECTION 3.3 BIOLOGICAL RESOURCES

PAGE CLARIFICATION/REVISION

3.3-1 *The first paragraph under Section 3.3 has been revised as follows:*

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 (see Appendix A, Biological Technical Report). 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~~ since project surveys began in May 2004 ~~and the completion of the field surveys in 2005 (see Appendix B, Biological Technical Report)~~. In August 2007, in anticipation of necessary project permitting, a focused assessment of potential jurisdictional waters was conducted throughout the entire study area. Based on this assessment, it was determined that waters regulated under the California Fish and Game Code are not coincident with the proposed project; however, tidal waters regulated by both USACE and CCC are present at Marine Stadium. In addition, water quality testing, including salinity and turbidity analysis, were conducted for the project. A Biological Technical Report prepared for the proposed project is included as Appendix B.

3.3-2 *Table 3.3-1 has been revised as follows:*

Vegetation Communities	Acre(s)[3]
Marine[1]/Eelgrass[2]	~~5.75/0.13~~ 3.96/0.0189
Native landscaping	2.54
Disturbed	7.27
Developed	43.89
Ornamental	1.66
Other	0.75
Total Acres	**~~61.86~~ 60.09**

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."

3 Acreage includes entire survey area boundary shown on Figure 3.3-1.

3.3-2 *The second paragraph under heading "Marine" has been revised as follows:*

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 by a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel/safety diver (CRM 2005a), using a Global Position System (GPS). 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~~ 0.0189 acres of eelgrass habitat occur within the project study area. Marine habitat, including the eelgrass habitat and a 500-foot buffer around the outlet structure, occupies approximately ~~5.75~~ 3.96 acres of the project study area. A complete discussion of marine vegetation in the study area is included in Appendix A.

3.3-6 *The following text was added after the first paragraph under heading 'Reptiles and Amphibians':*

Green sea turtles have occasionally been found offshore of Orange County and Los Angeles County, north of their more common southerly range due to warmer water temperatures during El Nino periods. Green sea turtles have been reported in the San Gabriel River where they encounter the warmer, discharged waters of the power generating facilities located farther up the River. According to the Long Beach Lifeguards and Marine Bureau staff, green sea turtles have been seen in Alamitos Bay and appear to be curious (Vivian Cook, Marine Bureau; Allen Powder, Long Beach Lifeguards pers. Com with R. Ware 27 July 2007). However, no records are kept as to where they have been seen, the time of year of occurrence, or the numbers observed. There is no evidence that these species breed in the project area.

On July 30, 2007, EDAW contacted Christina Fahy at the National Marine Fisheries Service for additional documentation regarding the presence of green sea turtles in Alamitos Bay. The following information was provided:

> Green sea turtles have stranded in the Long Beach area; for example, in October, 2004, three green sea turtles stranded in the Belmont Shore area and one green sea turtle stranded in the Treasure Island Marina area. In addition, over the years, our office has received numerous reports of sightings of sea turtles in the area. Lastly, in October, 2006, the Long Beach Aquarium attached a satellite transmitter to a green sea turtle that had live-stranded in Long Beach. The turtle was tracked south to the San Clemente area and then turned around and headed back north to the Long Beach area, where it remained for several weeks, presumably foraging on eel grass or algae in the area.

The green sea turtle strandings described above occurred within two miles of the Marine Stadium. The nearest recorded sighting was documented using the satellite transmitter described above. Based on this data, the sea turtle was present within Alamitos Bay in October and December 2006, residing most frequently in the Long Beach Marina area. The turtle appears to have entered the Marine Stadium area on multiple occasions[2]. Although individual sightings have occurred, no resident groups have been observed within Alamitos Bay.

Although occasional green sea turtles have been observed in Alamitos Bay, the likelihood of encountering this species in the northern extreme northeast limit of the bay is relatively low. Green sea turtles' north Pacific range extends from Baja California to southern Alaska; however, turtles within this range most commonly occur south of San Diego. Juvenile turtles are rarely seen as they spend the first several years of their lives swimming in the open ocean. As juveniles, they eat plants and other organisms such as jellyfish, crabs, sponges, snails, and worms. Adult green sea turtles are mostly herbivorous and spend most of their time feeding on algae in the sea and the grass that grow in shallow waters inside reefs, bays, and inlets.

Sea turtles are not known to nest along the west coast of the US; the closest known nesting grounds occur along the Pacific coast of Mexico and in the Hawaiian Islands, particularly the French Frigate Shoals, approximately 1,280 miles southeast and 2,500 miles west of the project area, respectively. This species demonstrates strong selectivity and fidelity for both nesting and feeding sites; they have been known to migrate between the same feeding and nesting sites for many generations.

3.3-6 *The first paragraph under heading "Mammals" has been revised as follows:*

No sensitive mammals were observed or detected within the project vicinity. Table 3 of Appendix A presents sensitive mammals that have potential to occur within the project site and include the San Diego desert woodrat, ~~and the~~ Pacific pocket mouse, Pacific Harbor seal, and California sea lion.

In general, California sea lions inhabit rocky or sandy beaches, and prefer sandy beaches to breed. They are not known to breed in man-made structures such as Marine Stadium. Outside of the breeding season they will often gather at man-made environments such as piers and buoys for protection from predators. The construction zone, however, contains no surfaces for the animals to haul out during low tide to rest and absorb heat from the sun.

[2] http://www.seaturtle.org/tracking/index.shtml?keyword=mickey (Accessed August 7, 2007)

Harbor seals spend their time equally between land and water. They are wary of humans and will leave if they are approached too closely. The open water of Marine Stadium hosts swimmers, rowers, and water skiers daily, and its beaches are used for picnicking and special events. The large amount of human activity in the area makes it unlikely that harbor seals would inhabit the project area. The construction zone also contains no surfaces for the animals to haul out during low tide to rest and absorb heat from the sun.

3.3-9 *The first paragraph under Section 3.3.2 has been revised as follows:*

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. In addition, because the project would not substantially divert or obstruct the natural flow of, or substantially change (remove or deposit material into), the bed, channel, or bank of any river, stream, or lake, authorization under Sections 1600-1616 of the California Fish and Game Code would not apply. 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.

3.3-10 *The following heading and text has been replaced in Section 3.3.2:*

~~**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).~~

MARINE MAMMAL PROTECTION ACT

Under the Federal Marine Mammal Protection Act (MMPA) of 1972, *take* (defined as *harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect*) of all marine mammals is prohibited, except as set forth in the act. The 1994 amendment of the MMPA provided certain exceptions for the take prohibitions, such as for Alaska Native subsistence and for such activities as scientific research, or the enhancement of a particular species' survival or recovery, as authorized by NOAA Fisheries. Endangered and Threatened marine mammals are also protected under the Endangered Species Act. NOAA Fisheries and the USFWS jointly administer the MMPA. NOAA is responsible for protecting whales, dolphins, porpoises, seals and sea lions. The protection of walrus, manatees, otters, and polar bears is enforced by the USFWS.

3.3-12 *The following text was added after the second paragraph under heading 'Impact analysis BIO-1':*

Construction activities associated with the proposed project would occur in the northern limit of the bay, which is more than two miles from the entrance of Alamitos Bay. Construction activities within Marine Stadium would involve constructing a temporary coffer dam around the proposed construction zone, removing and replacing rip rap along the shoreline, and recontouring the rip rap shoreline to depths of minus five (–5) ft MLLW around the opening of the outlet structure Construction of the temporary cofferdam would require installation of sheet piling, which would extend approximately 60 feet into Marine Stadium from the edge of the existing pavement (see Figure 2-4). The temporary sheet piling would extend approximately 7 feet above the water surface elevation during construction, depending on tide levels. Construction of the Marine Stadium outlet structure would take approximately three months; however, the majority of this construction would occur behind the cofferdam and would not directly affect marine resources. All construction activities would occur between the hours of 7:00 AM and 7:00 PM on weekdays only. Upon completion of the outlet structure, no additional construction activities would occur within Marine Stadium.

As shown on Figure 3-8, eelgrass beds extend into the Marine Stadium. As discussed above, the potential for green sea turtles to occur in the project area is relatively low. However, because Alamitos Bay has a productive eelgrass system, green sea turtles may be utilizing the eelgrass beds located throughout the bay as one source of their nutritional requirements. Alamitos Bay is north of this species' typical range, so the occurrence of

individuals in the Long Beach area is likely to remain low. The project area within Marine Stadium is approximately 2.5 miles from the mouth of the Bay, further decreasing the chance that this species will occur within the project area.

If, however, a green sea turtle were to be present during the one- to two-week installation period of the sheet piling for the cofferdam or the one-week removal period, it could potentially result in a behavioral modification to this species that would include a likely change in swimming behavior to avoid excessive noise or turbidity. Once the cofferdam is installed, the potential for impacts would be reduced, since the construction area would be physically separated from the marine environment. No mortality or other adverse impacts would be expected to occur as a result of any project-related activities. Furthermore, Mitigation Measures BIO-K through BIO-N, would reduce the potential for impacts to sea turtles in the unlikely event that one is present in the project area during the three-month outlet structure construction process. No significant impacts to green sea turtles would occur during construction.

Similarly, the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on California sea lions or Pacific harbor seals due to the low potential for these species to occur in the project area. In the event that either of these species is sighted within 500 meters (1,640 feet) of the construction zone, Mitigation Measure BIO-O would reduce potential impacts to a less than significant level. Accordingly, the proposed project would not have a substantial adverse effect on California sea lions or Pacific harbor seals.

No operational impacts to green sea turtles, California sea lions, or Pacific harbor seals would occur as a result of the project. As discussed in Section 3.9.3 the EIR, impacts to marine life from temporary changes in salinity levels immediately following storm events would be less than significant. In addition, the low-flow diversion system and catch basin screens that are included in the proposed project would improve overall water quality and flooding conditions in Colorado Lagoon and Marine Stadium compared to existing conditions.

3.3-14 *Table 3.2-2 has been revised as follows:*

Vegetation/Cover Type	Permanent/Direct Impacts	Temporary Impacts
Marine/Eelgrass	~~0/0.05~~ 0/0.0008	~~5.75/0.08~~ 3.96/0.0189[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~~ 0.0008	~~61.86~~ 60.09

[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 3-7; 'Eelgrass' includes only eelgrass patches, as shown on Figure 3-8.

3.3-14 *The third paragraph under heading 'Impact analysis BIO-2' has been revised as follows:*

As shown, the project would result in ~~0.05~~ 0.0008 acres of permanent impacts and ~~61.86~~ 60.09 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.

3.3-15 *The first paragraph under the heading 'Construction Impacts' has been revised as follows:*

A total of ~~0.13~~ 0.0189 acre of eelgrass is located within the outlet structure construction easement zone (see Figure ~~3-8~~ 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~~ 0.0008 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~~ 0.0181 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~~ 0.0189 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.

3.3-16 *The first paragraph under "Terrestrial Vegetation Communities" has been revised as follows:*

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~~ BIO-P would reduce the level of impact to less than significant. Mitigation measure ~~BIO-K~~ BIO-P 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.

3.3-17 *The second paragraph under "Impact Analysis BIO-3" has been revised as follows:*

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, and 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~~ BIO-J and measure BIO-P 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.

3.3-19 *Text under Mitigation Measure BIO-B has been revised as follows:*

BIO-B A qualified marine biologist will resurvey the extent of eelgrass coincident with the construction easement to confirm the extent of eelgrass within the permanent and temporary impact areas. Based on 2005 surveys, the direct permanent and temporary impacts to marine sea grasses in Marine Stadium (i.e., 0.0189 acre total) shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy (http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf). A total of ~~0.16~~ 0.0227 acres of eelgrass will be replanted by DPW, including at least ~~0.08~~ 0.0181 acres in the temporary impact area when sediment conditions stabilize following the completion of outlet construction. The remaining ~~0.08~~ 0.0046 acres of eelgrass shall be planted within Marine Stadium or elsewhere within Alamitos Bay in a location determined by a qualified biologist. The location of eelgrass transplant mitigation shall be in areas similar to proposed outlet structure location. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that shall be considered in evaluating potential sites. Monitoring the success of eelgrass mitigation shall be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy. A wetland eelgrass mitigation plan shall be prepared to discuss the methods and schedule for planting eelgrass at the Marine Stadium and Alamitos Bay locations, and post-planting monitoring. In accordance with the California Coastal Commission's (CCC's) Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone, the mitigation plan will include the following information, as relevant to the eelgrass mitigation sites:

1) Clearly stated objectives and goals consistent with regional habitat goals. These regional goals must identify functions and or habitats most in need of enhancement or restoration and must be as specific as possible. If the regional goals have not been identified, then the applicant and CCC staff should work with relevant federal, State, or local agencies to determine if the proposed plan is consistent with the ecology and natural resource composition of the area.

2) Adequate baseline data regarding the biological, physical, and chemical criteria for the mitigation area.

3) Documentation that the project will continue to function as a viable wetland over the long term.

4) Sufficient technical detail in the project design including, at a minimum, an engineered grading plan and water control structures, methods for conserving or stockpiling topsoil, a planting program including removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the mitigation site base map, and maintenance techniques.

5) Documentation of performance standards, which provide a mechanism for making adjustments to the mitigation site when it is determined through monitoring, or other means that the enhancement or restoration techniques are not working.

6) Documentation of the necessary management and maintenance requirements, and provisions for remediation should the need arise.

7) An implementation plan that demonstrates there is sufficient scientific expertise, supervision, and financial resources to carry out the proposed activities.

8) A five-year monitoring program.

3-43 *The following new mitigation measures have been added to the Biological Resources Section:*

BIO-K A qualified marine biologist shall be on site during the construction period to monitor the potential presence of green sea turtles. The onsite biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.

BIO-L Construction crews and work vessel crews shall be briefed on potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.

BIO-M In the event that a sea turtle is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily

stopped until the sea turtle(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.

BIO-N The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his crews aware of the potential for additional sightings. The report shall be provided within 24 hours to the California Department of Fish and Game and the National Marine Fisheries Service.

BIO-O In the event that a California sea lion or a Pacific harbor seal is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea lion(s) or seal(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.

BIO-~~K~~P 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.

SECTION 3.4 CULTURAL RESOURCES

PAGE	CLARIFICATION/REVISION

3.4-11 *Text under Mitigation Measure CUL-C has been revised as follows:*

CUL-B In accordance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines, 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.

SECTION 3.5 TRANSPORTATION AND CIRCULATION

PAGE	CLARIFICATION/REVISION

3.5-8 *Mitigation measure TRANS-D has been deleted and measures TRANS-E through TRANS-F have been renumbered.*

3.5-8 *Text under Mitigation Measure TRANS-F has been revised as follows:*

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."~~ and the "California Manual on Uniform Traffic Control Devices." These guidelines provide methods to minimize construction effects on traffic flow.

SECTION 3.6 AIR QUALITY

PAGE	CLARIFICATION/REVISION

3.6-1 *The second paragraph under heading 'Regional Climate' has been revised as follows:*

The City of Long Beach (City) is within the South Coast Air Basin (Basin), which consists of all or part 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~~ including some portions of what used to be the Southeast Desert Air Basin. 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.

3.6-1 *The first paragraph under heading 'Existing Air Quality' has been modified as follows:*

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~~ 2002 to ~~2004~~ 2007.

3.6-2 *The first paragraph under heading 'Ozone (O_3)' has been revised as follows:*

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~~ 2002 through ~~2004~~ 2007. During that period the federal 1-hour O_3 standard was not exceeded (see Table 3.6-1).

3.6-6 *Second paragraph under heading 'Federal Clean Air Act' has been revised as follows:*

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).~~

3.6-8 *Table 3.6-3 has been replaced with the following table:*

Pollutant	Attainment Status	
	Federal	**State**
O_3 (1[a]- and 8-hour)	Severe-17 nonattainment	Nonattainment
PM_{10}	Nonattainment Serious	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment/Maintenance	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Pb	Attainment	Attainment

[a] Federal 1-hour O_3 repealed by law with implementation of the 8-hour standard.

Sources: EPA, *The Green Book Nonattainment Areas for Criteria Pollutants*, website http://www.epa.gov/air/oaqps/greenbk/, accessed February 5, 2008; ARB, Area Designations, 2007, website http://www.arb.ca.gov/desig/adm/adm.htm, accessed February 4, 2008.

3-53 *Section 3.6.3 has been revised as follows:*

Project-related emissions were estimated by use of the URBEMIS ~~2002~~ 2007 software package, version ~~8.7~~ 9.2.4 (Jones & Stokes ~~2005~~ 2008). The emission factors and calculation methodologies contained in the URBEMIS ~~2002~~ 2007 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~~ several sequential phases of construction including demolition, grading, building construction, paving etc. ~~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. The phases used for this project are coffer dam construction, pavement demolition, excavation, pipe construction and backfill and paving. ~~Therefore, the~~ 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~~ June 2009.

- The duration of construction would be ~~18~~ 20 months, averaging 22 days per month. While inclement weather may extend the total duration, there would be the equivalent of ~~18~~ 20 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 B.

3.6-10 *Table 3.6-4 has been replaced with the following table:*

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/m^3 (construction) [b] & 2.5 µg/m^3 (operation)	
annual geometric average	1.0 µg/m^3	
annual arithmetic mean	20 µg/m^3	
$PM_{2.5}$ 24-hour average	10.4 µg/m^3 (construction) [b] & 2.5 µg/m^3 (operation)	
Sulfate 24-hour average	~~25 ug/m^3~~ 1 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~~ December 2007

Source: SCAQMD, *Air Quality Analysis Guidance Handbook.* Available at http://www.aqmd.gov/ceqa/hdbk.html. Accessed ~~November 20, 2006~~ March 19, 2008

3.6-11 *Second paragraph under heading 'Effects Found Not to be Significant' has been revised as follows:*

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 collected north of 7th Street 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.

3.6-12 *Third paragraph under heading 'Impact Analysis AIR-1' has been revised as follows:*

Construction emissions provided in Table 3.6-5 were calculated in accordance with the methodology described above. The proposed project would be required to adhere to the requirements of SCAQMD Rule 403 for dust abatement as part of their construction permits. SCAQMD Rule 403 includes dust abatement requirements to ensure the inclusion of best management practices for addressing construction-related dust. However; however, as shown in the table, estimated emissions of NO_X for the maximum day of activity are ~~292~~ 134 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. However, mitigation ~~measures~~ measure AIR-A ~~and AIR-B are~~ is included below to reduce impacts from NO_X~~. However, emissions of NOX during project construction would remain above~~ below the SCAQMD CEQA significance thresholds.

3.6-13 *Text and tables under heading 'Impact Analysis AIR-3' has been revised as follows:*

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~~ Since the Termino Avenue Drain project ~~meets these criteria~~ would not have construction activities occurring on an area larger than 5 acres at a time, ~~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~~ 2007, version ~~8.7~~ 9.2.4 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~~ The worst case scenario was examined: ~~trenching, pipe installation, and backfill, which~~ excavation 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 B 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. 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.~~

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~~ 48.55	125/100[3]	No
CO		~~54.4~~ 24.05	~~417~~ 449	No
PM_{10}	Unmitigated	~~2.1~~ 57.57	4	~~No~~ Yes
	Mitigated	19.58		
$PM_{2.5}$	Unmitigated	~~1.7~~ 14.06	3	~~No~~ Yes
	Mitigated	6.13		

[1] See URBEMIS data sheets, Appendix B; 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.

As shown in Table 3.6-6, PM_{10} and $PM_{2.5}$ emissions would exceed the LST thresholds. The mitigated PM emissions in Table 3.6-6 represent emissions after dust mitigation allowed by URBEMIS. As mentioned above, the project would comply with SCAQMD Rule 403 for dust control. Not all measures included in Rule 403 can be quantified in URBEMIS; therefore, the emission reductions would likely be greater than those shown above. Additionally, excavation activities would not occur near a particular receptor for more than 1 to 2 days, before construction activities are completed. Thus, the LST analysis for the Termino Project is not representative of a construction project where receptors would be exposed to construction emissions for a longer period. Although impacts from local emissions of the proposed project to sensitive receptors would likely be less than indicated in the above table, because the daily emissions would exceed the LST thresholds, impacts would be significant and unavoidable.

3.6-15 *Text under Mitigation measure AIR-A has been revised as follows:*

The ~~project~~ contractor 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 25 percent NO_X 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.

All property owners within 300 feet of the proposed storm drain construction zone shall be notified, in writing, of the proposed construction schedule. Contact information for questions or to report air quality violations shall be provided, including phone numbers for the project's Department of Public Works inspector, area engineer, and office engineer. The notification, by standard mail, shall be delivered at least two weeks prior to the start of work.

3.6-16 *The following mitigation measure AIR-B has been added to Section 3.3.4:*

AIR-B The construction contractor shall ensure that all excavation sites and excavated soil shall be watered to ensure that the soil is wet to minimize dust plumes. Haul trucks shall be covered when loaded with fill. Open storage piles shall have water applied once per hour or shall be covered to prevent fugitive dust plumes beyond the project boundary.

3.6-16 *Text under Section 3.6.5 has been revised as follows:*

The application of mitigation ~~measures~~ measure AIR-A ~~and AIR-B~~ would reduce NO_X emissions~~; however, emissions of NOX during project construction would remain above~~ below the SCAQMD CEQA significance thresholds. ~~Accordingly, impacts associated with NO_X emissions would be significant and unavoidable~~. However, although implementation of Rule 403 and Mitigation Measure AIR-B would reduce LST impacts associated with PM_{10} and $PM_{2.5}$ emissions, they would still exceed the maximum daily emissions thresholds and impacts would remain significant and unavoidable.

Tables 3.3-1 and 3.3-5 respectively have been replaced with the following revised tables:

TABLE 3.3-1 AMBIENT AIR QUALITY DATA SUMMARY (2000-2004)[1]

Pollutant	Averaging Time	Federal Primary Standards	California Air Quality Standards	Maximum Concentrations[2]					Number of Days Exceeding Federal Standard[3]					Number of Days Exceeding State Standard[3]				
				2002	2003	2004	2005	2006	2002	2003	2004	2005	2006	2002	2003	2004	2005	2006
O_3	1 hour	0.12 ppm[4]	0.09 ppm	0.084	0.099	0.090	0.091	0.081	0	0	0	0	0	0	1	0	0	0
	8 hours	0.08 ppm	0.070 ppm	0.064	0.068	0.074	0.069	0.058	0	0	0	0	0	--	--	--	--	--
CO	1 hour	35 ppm	20 ppm	6	6	4	4	4	0	0	0	0	0	0	0	0	0	0
	8 hours	9.0 ppm	9.0 ppm	4.56	4.66	3.36	3.51	3.36	0	0	0	0	0	0	0	0	0	0
NO_2	1 hour	None	0.18 ppm	0.130	0.14	0.12	0.14	0.10	--	--	--	--	--	0	0	0	0	0
	Annual	0.053 ppm	0.030ppm[5]	0.026	0.029	0.028	0.024	0.022	0	0	0	0	0	--	--	--	--	--
PM_{10}	24 hours	150 µg/m3	50 µg/m^3	74	63	72	66	78	0	0	0	0	0	5	4	4	4	5
	Annual	Revoked	20 µg/m^3	36	32	33	30	31	--	--	--	--	--	1	1	1	1	1
$PM_{2.5}$	24 hours	35 µg/m3	None	62.7	115.2	66.6	53.8	58.5	0	3	1	0	0	--	--	--	--	--
	Annual/AAM	15 µg/m3	12 µg/m3	19.5	18.0	17.8	16.0	*	1	1	1	1	1	1	1	1	1	*
SO_2	24 hours	.14 ppm	.04 ppm	0.008	0.008	0.013	0.010	0.010	0	0	0	0	0	0	0	0	0	0

Source: CARB 2007; SCAQMD 2007

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 (µg/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] The federal 1-hour ozone standard was revoked in June 2005.

[5] The nitrogen dioxide ambient air quality standard was amended to lower the 1-hr standard to 0.18 ppm and establish a new annual standard of 0.030 ppm. These changes became effective March 20, 2008

na = data not available

"*" = there were insufficient data to determine the value

TABLE 3.3-5 ESTIMATED REGIONAL CONSTRUCTION EMISSIONS – TERMINO AVENUE DRAIN[1]

Activity	Estimated Pollutant Emissions (lbs/day)					
	ROG	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Coffer Dam Construction	2	17	16	<1	1	1
Pavement Demolition[1]	1	4	5	<1	1	1
Excavation[2]	8	63	33	<1	58	15
Pipe Construction and Backfill[3]	5	50	21	<1	17	5
Paving	1	5	5	<1	<1	<1
Overlap: Coffer Dam Construction, Pavement Demolition, Excavation, Pipe Construction and Backfill	16	**134**	75	<1	77	21
Overlap: Pavement Demolition, Excavation, Pipe Construction and Backfill, Paving	14	**121**	64	<1	76	20
Daily Thresholds for Construction Emissions	75	100	550	150	150	55
Exceeds Threshold?	No	**Yes**	No	No	No	No

Bold = exceeds threshold

[1] Assumptions: 80 cubic feet of pavement demolition per day

[2] Assumptions: 400 cubic yards of cut/fill per day, 20 round trips per day, hauling distance = 20 miles

[3] Assumptions: 20 round trips per day for concrete hauling - distance 20 miles

SECTION 3.7 NOISE

PAGE CLARIFICATION/REVISION

3.7-14 *Text under heading 'Impact Analysis NOISE-2' has been revised as follows:*

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 collected north of 7th Street 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.

3.7-15 *Text under Mitigation measure NOISE-B has been revised as follows:*

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. Due to traffic mitigation requirements, jack hammering shall be allowed to occur on 7th Street between 9:00 AM to 6:00 PM on Saturday and Sunday, not including state and federal holidays. No construction shall occur on Sundays without a permit from the City of Long Beach noise control officer.

SECTION 3.8 GEOLOGY AND SOILS

PAGE CLARIFICATION/REVISION

3.8-7 *Second paragraph under heading 'Impact Analysis GEO-1' has been revised as follows:*

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 intersection of Roswell Avenue and 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.

SECTION 3.9 HYDROLOGY AND WATER QUALITY

PAGE CLARIFICATION/REVISION

3.9-8 *First paragraph under heading 'Impact Analysis HYDRO-1' has been revised as follows:*

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~~ 9-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 collected north of 7th Street to an existing County sanitary sewer line.

3.9-12 *Third paragraph under heading 'Operation' has been revised as follows:*

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 originating north of 7th Street to the sanitary system~~, and pollutant loads would be reduced due to the proposed storm drain catch basin screens~~ (Everest 2005).

SECTION 3.10 HAZARDS AND HAZARDOUS MATERIALS

PAGE CLARIFICATION/REVISION

3.10-7 *Fifth paragraph under heading 'Soils and Groundwater' has been revised as follows:*

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.~~

3.10-7 *Sixth paragraph under heading 'Soils and Groundwater' has been revised as follows:*

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.~~

3.10-7 *Sixth paragraph under heading 'Soils and Groundwater' has been revised as follows:*

Due to the change in the proposed alignment between Colorado Street and Marine Stadium, an Additional Phase II Environmental Assessment (included in Appendix E) was conducted in June 2007 to determine the subsurface soil conditions in this area. The assessment determined that the majority of the proposed alignment which was not previously studied does not contain detectable amounts of Total Recoverable Petroleum Hydrocarbons (TRPH), TPHD, TPHG, VOCs, or metals. Several samples contained trace, non-hazardous amounts. However, a 250 linear-foot section of sediment along the alignment located east of the intersection of 4th Street and Park Avenue contained detectable levels of TRPH, TPHD, TPHG, and VOCs (see Figure 3 of Appendix E). Although the levels of these contaminants were elevated above detection limits, no regulatory thresholds exist, and the soil is not classified as hazardous (GMED 2007). However, due to the elevated levels, the sediment in this area would not be suitable for use as backfill (GMED 2007).

3.10-12 *Third paragraph of the page has been revised as follows:*

~~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.~~ No buildings would be demolished as a result of the project; therefore, impacts associated with ACMs and LBP disposal would not occur.

3.10-13 *First paragraph under heading 'Construction' has been revised as follows:*

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 a 250 linear-foot section of the ~~previous~~ proposed alignment ~~location, just north of the new alignment,~~ in the vicinity of Colorado Lagoon and Marine Stadium, south of the intersection of 4th Street and Park Avenue, indicated high levels of hydrocarbons ~~with significant levels of diesel at depth~~ and VOCs. ~~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.

3.10-15 *Mitigation measure HAZ-B has been revised as follows:*

HAZ-B ~~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~~ A Special Excavation Criteria Area has been designated for

approximately 250 feet of PE right-of-way south of the intersection of 4th St and Park Ave. Soils excavated from this area shall not be used for backfill. The 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~~ and covered during construction and shall be hauled to a Class I landfill or other appropriate soil treatment and recycling facility.

SECTION 4.0 IMPACT OVERVIEW

PAGE CLARIFICATION/REVISION

3-60 *Section 3.4.1 has been revised as follows:*

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). The project would also result in significant unavoidable cumulative impacts related to air quality, as discussed in Section 3.4.3 below.

3-66 *First paragraph under heading 'Biological Resources' has been revised as follows:*

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, as well as to prevent impacts to sea turtles, Pacific harbor seals, and California sea lions.

3-67 *The following text has been added under heading 'Air Quality':*

Global Climate Change

Various gases in the Earth's atmosphere, classified as atmospheric greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. Solar radiation enters the Earth's atmosphere from space, and a portion of the radiation is absorbed by the Earth's surface. The Earth emits this radiation back to space, but the properties of the radiation have changed from high-frequency solar radiation, to lower-frequency infrared radiation. GHGs, which are transparent to solar radiation, are effective in absorbing infrared radiation. This radiation that would have otherwise escaped back to space is now "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. Without the Greenhouse Effect, Earth would not be able to support life, as we now know it.

Prominent GHGs contributing to the Greenhouse Effect include carbon dioxide (CO_2), methane (CH_4), O_3, water vapor, nitrous oxide (N_2O), and chlorofluorocarbons (CFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for an enhancement of the Greenhouse Effect, which have led to a trend of unnatural warming of the Earth's climate, known as global warming or global climate change (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2003). Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills. Processes that absorb CO_2, often referred to as sinks, include uptake by vegetation and dissolution into the ocean.

Carbon dioxide-equivalent (CO_2e) is a value used to account for different GHGs having different potential to retain infrared radiation in the atmosphere and contribute to the Greenhouse Effect. This is known as the Global Warming Potential (GWP) of a GHG, and is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, as described in Appendix C, "Calculation Referenced," of the General Reporting Protocol of the California Climate Action Registry, one ton of CH_4 has the same contribution to the Greenhouse Effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2. Expressing emissions in carbon-dioxide equivalents takes the Greenhouse Effect contribution of all GHG emissions and converts them to a single unit equivalent to the affect if all emissions were CO_2 (California Climate Action Registry 2006).

Climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, respectively.

The strong majority of the scientific community concurs that global warming will lead to adverse climate change effects around the globe and that the phenomenon is anthropogenic, i.e., caused by humans.

In 2004 California produced 492 million gross metric tons of CO_2e gases. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Fossil fuel consumption in the transportation sector was the single largest source of California's GHG emissions in 2004, accounting for 40.7 percent of total GHG emissions in the state. This category was followed by the electric power sector (including both in-state and out-of-state sources) (22.2 percent) and the industrial sector (20.5 percent).

Various local and statewide initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way and there is a real potential for severe adverse environmental, social, and economic effects over the long term. Because every nation is an emitter of GHGs, and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help slow or stop human-caused increase in average global temperatures and associated changes in climatic conditions.

As discussed above, climate change is a global problem, and GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern, respectively. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for an enhancement of the Greenhouse Effect, which have led to a trend of unnatural warming of the Earth's climate, known as global warming or global climate change (Ahrens 2003). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006). Because every nation is an emitter of GHGs, and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help slow or stop human-caused increase in average global temperatures and associated changes in climatic conditions. As such, this issue is discussed in a cumulative context only.

As discussed in Section 3.6, 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 small electric pumps to divert flows collected north of 7th Street to the sanitary sewer system, and intermittent trips by maintenance personnel to check system facilities. Emissions

from these activities would be minimal and would be similar to those required for the current storm drain system. As such, operational emissions would not trigger any of the applicable operations thresholds. Accordingly, GHG emissions associated with the proposed project are focused on the 18- to 24-month construction period. Additionally, completion of the Termino Avenue Drain project would allow the City to proceed with the planned greenbelt restoration project, which would result in the creation of new vegetation and trees in an area currently consisting of vacant dirt corridors. Using sunlight for energy, trees and other green plants take one of the dominant GHGs, carbon dioxide, out of the atmosphere and store the carbon safely while releasing oxygen in the process.

Short-term sources of project-generated GHG emissions would be the off-road construction equipment and on-road vehicles used for site preparation, grading, and construction of the site facilities. The combustion of gasoline and diesel fuel results in the generation of CO_2, methane, and nitrous oxide. As such, construction of the proposed project would generate emissions that would exceed existing levels and contribute to global warming impacts. Specifically, the project would generate 2,561 tons of CO_2 emissions. Implementation of mitigation measure AIR-A during construction would reduce the proposed project's contribution of GHG emissions. In addition, at least 50 percent of the site materials would be recycled or salvaged in accordance with AB 939 further reducing the proposed project's contribution to GHG emissions during construction activities.

On September 27 2006, Governor Arnold Schwarzenegger signed AB 32, which requires the CARB to monitor and reduce greenhouse gas emissions. Specifically, AB 32 requires the CARB to:

- Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions by January 1, 2008.
- Adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2008.
- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.
- Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases, including provisions for using both market mechanisms and alternative compliance mechanisms.

- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB.

- Ensure public notice and opportunity for comment for all CARB actions.

- Prior to imposing any mandates or authorizing market mechanisms, requires CARB to evaluate several factors, including but not limited to: impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability, conformance with other environmental laws, and to ensure that the rules do not disproportionately impact low-income communities.

- Adopt a list of discrete, early action measures by July 1, 2007 that can be implemented before January 1, 2010 and adopt such measures.

As of this writing, there are no adopted Federal plans, policies, regulations or laws addressing global warming. Further, although the California Global Warming Solutions Act of 2006 provides new regulatory direction towards limiting GHG emissions, no air districts in California, including SCAQMD, have a recommended emission threshold for determining significance associated with GHGs from development projects. To date there is little guidance regarding thresholds for construction impacts and there are no local, regional, state, or federal regulations to establish a criterion for significance to determine the cumulative impacts of GHG emissions on global warming. Therefore, in the absence of defined regulation, DPW has conservatively determined that for the purposes of this EIR, the proposed project's contribution to GHG emissions would be significant. Mitigation measure AIR-A would reduce the project's contribution to global climate change; however, given the magnitude of the impact (2,561 tons of CO2 emissions), the impacts would remain significant and unavoidable.

SECTION 5.0 ALTERNATIVES

PAGE	CLARIFICATION/REVISION
5-7	*Fourth paragraph under Section 5.2.3 has been revised as follows:*

As with the proposed project, this alternative would include a diversion system that would divert the non-storm flows originating north of 7th Street, 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 collected north of 7th Street 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.

5-7 *Second to last paragraph of this section has been revised as follows:*

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. 5-13

Fourth paragraph under heading 'Hydrology and Water Quality' has been revised as follows:

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 originating north of 7th Street 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.

GRAPHICS

Several EIR figures have been revised to reflect the following changes to the proposed project: deletion of the mainline splitter structure; addition of the mainline diversion berm; and relocation of the low flow pump station. The revised figures are listed below and are included in the respective sections of the Final EIR.

PAGE	FIGURE
2-3	Figure 2-2 Project Vicinity Map
2-4	Figure 2-3 Existing Land Use
2-11	Figure 2-4 Termino Avenue Storm Drain Alignment
2-18	Figure 2-6 Related Projects

3.1-2	Figure 3.1-1 General Plan Land Use Zoning
3.2-2	Figure 3.2-1 Photo Location Map
3.8-5	Figure 3.8-1 Liquefaction and Landslide Hazards
5-6	Figure 5-1 Alternative 2 Alignment

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7 RESPONSE TO COMMENTS

The Draft EIR was distributed for public review on March 1, 2007, initiating a 45-day public review period pursuant to CEQA and its implementing guidelines. During this public review period, a total of 22 letters and emails were received. Based on comments received during the March 2007 Draft EIR public review period, revisions were made to portions of the Termino Avenue Drain EIR and those modified portions were recirculated for public review pursuant to Section 15088.5(c) of the CEQA Guidelines. The Recirculated Draft EIR was circulated for 45 days from April 4, 2008 and to May 19, 2008. Two comment letters were received during this comment period. All of the comment letters are listed in Table 7-1 and the corresponding DPW responses are provided in this section. A copy of each comment letter is provided prior to each response.

DPW held two public meetings during the Draft EIR review period and one meeting during the Recirculated Draft EIR comment period to solicit additional comments from the public. Comments made during those meetings and responses to those comments are included in a table at the end of this section.

TABLE 7-1 LIST OF COMMENT LETTERS FROM DRAFT EIR

Letter No.	Agency/Organization/Individual
Draft EIR comment letters (March/April 2007)	
1	Department of the Army, Los Angeles District, Corps of Engineers *Signed: Mark D. Cohen, Senior Project Manager*
2	National Oceanic and Atmospheric Administration *Signed: Rodney R. McInnis, Regional Administrator*
3	Native American Heritage Commission *Signed: Dave Singleton, Program Analyst*
4	Southern California Association of Governments *Signed: Jill Egerman, Associate Environmental Planner*
5	County Sanitation Districts of Los Angeles County *Signed: Ruth I. Franzen, Engineering Technician*
6	City of Long Beach Police Department *Signed: Anthony W. Batts, Chief of Police*
7	Friends of Colorado Lagoon #1 *Signed: Ray Thorn, President*
8	Friends of the Greenbelt *Signed: Andrea Bell, L.C.S.W.*
9	Perkowitz + Ruth Architects *Signed: Brian Wolfe, AIA, Principal*
10	Friends of Colorado Lagoon #2 *Signed: Ray Thorn, President*
11	Friends of Colorado Lagoon #3 *Signed: M. Hany S. Elwany, Ph.D., President*
12	Gary Guacci
13	Elizabeth A. Barnes
14	Maxine Barton-Bauman
15	Phillip Ivie
16	Duane Nead
17	Somewhatslow

18	George and Marilyn Benatz
19	John Kirby
20	Taylor Parker
21	Andrea Bell, L.C.S.W.
22	C. Anna Ulaszewski, AICP
Recirculated Draft EIR comment letters (April/May 2008)	
23	State of California, Governor's Office of Planning and Research, State Clearinghouse and Planning Unit *Signed: Terry Roberts*
24	Southern California Association of Governments *Signed: Laverne Jones, Planning Technician*
Public Meeting Comments	
25	Various

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

March 5, 2007

REPLY TO
ATTENTION OF:
Office of the Chief
Regulatory Branch

County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91802

Attention: Dale Sakamoto
RE: Termino Avenue Drain Project (SCH No. 20040310)

Dear Mr. Sakamoto:

Thank you for the opportunity to comment on the proposed project referenced above. Based on our preliminary review of the information submitted, we have determined that the proposed project may require a U.S. Army Corps of Engineers permit.

1-1 A Corps of Engineers permit is required for the discharge of dredged or fill material into, including any redeposit of dredged material within, "waters of the United States" and adjacent wetlands pursuant to Section 404 of the Clean Water Act of 1972. Specifically, construction of a 799-acre sub-drain and the outlet structure at Marine Stadium in associated with the project may entail discharge of fill into the Marine Stadium, a water of the United States.

If you or the project proponents have any questions, please contact Valisa E. Nez at (213) 452-3419. Please refer to this letter and SPL-2007-230 in your reply.

Sincerely,

Mark D. Cohen
Senior Project Manager, North Coast Section
Regulatory Branch

Enclosures

Letter 1: **Department of the Army, Los Angeles District, Corps of Engineers**

Comment No.	Response
1-1	The U.S. Army Corps of Engineers determined that the proposed project may require a permit. As stated in Section 2.7 of the EIR, the project would be required to comply with standard restrictions and requirements, including obtaining a U.S. Army Corps of Engineers Section 404 permit prior to project approval. All required permits and approvals are listed in Table 2-3.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802- 4213

APR 16 2007

County of Los Angeles
Department of Public Works
ATTN: Dale Sakamoto
P.O. Box 1460
Alhambra, California 91802-1460

Dear Mr. Sakamoto:

NOAA's National Marine Fisheries Service (NMFS) has reviewed the Draft Environmental Impact Report (DEIR) for the Termino Avenue Drain Project. NMFS offers the following comments pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Fishery Conservation and Management Act and the Endangered Species Act.

Essential Fish Habitat Comments

Statutory and Regulatory Information

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996, establishes a national program to manage and conserve the fisheries of the United States through the development of federal Fishery Management Plans (FMPs), and federal regulation of domestic fisheries under those FMPs, within the 200-mile U.S. Exclusive Economic Zone ("EEZ"). 16 U.S.C. §1801 *et seq*. To ensure habitat considerations receive increased attention for the conservation and management of fishery resources, the amended MSA required each existing, and any new, FMP to "describe and identify essential fish habitat for the fishery based on the guidelines established by the Secretary under section 1855(b)(1)(A) of this title, minimize to the extent practicable adverse effects on such habitat caused by fishing, and identify other actions to encourage the conservation and enhancement of such habitat." 16 U.S.C. §1853(a)(7). Essential fish habitat (EFH) is defined in the MSA as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" 16 U.S.C. §1802(10). The components of this definition are interpreted at 50 C.F.R. §600.10 as follows: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

Pursuant to the MSA, each federal agency is mandated to consult with NMFS (as delegated by the Secretary of Commerce) with respect to any action authorized, funded, or undertaken, or proposed to be, by such agency that may adversely affect any EFH under this Act. 16 U.S.C. §1855(b)(2). The MSA further mandates that where NMFS receives information from a Fishery Management Council or federal or state agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be, by any federal or state agency would adversely effect any EFH identified under this Act, NMFS has an obligation to recommend to such agency measures that can be taken by such agency to conserve EFH. 16 U.S.C. §1855(4)(A). The term "adverse effect" is interpreted at 50 C.F.R. §600.810(a) as any impact that reduces quality and/or quantity of EFH and may include direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce quantity and/or quality of EFH. In addition, adverse effects to EFH may result from actions occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Background and Consultation History

NMFS previously provided comments to the County of Los Angeles (County) on November 21, 2000, after reviewing the Initial Study in Determination of a Mitigated Negative Declaration. Specifically, we offered suggestions for the preparation of an EFH assessment in anticipation of consultation requirements between NMFS and the U.S. Army Corps of Engineers (ACOE).

On April 21, 2004, the County hosted a field meeting with NMFS, ACOE, California Department of Fish and Game, U.S. Fish and Wildlife Service, and the Los Angeles Regional Water Quality Control Board. NMFS, as well as other agencies, indicated that the proposed project was environmentally preferable to the alternative that would convey storm water flows to the Colorado Lagoon.

Proposed Action

The proposed project involves the construction of a storm drain mainline, six lateral drains, low flow treatment pump station, catch basin screens, and an outlet to Marine Stadium within Alamitos Bay. The purpose of the proposed project is to alleviate flooding problems in the area and to accommodate water flows in a 50-year flood event.

The outlet structure at Marine Stadium will consist of a double box culvert with an opening of approximately 25 feet. 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 to accommodate the construction of the outlet structure. A temporary coffer dam will be constructed around the proposed construction zone. In addition, screens will be installed in all catch basins to capture suspended solids, water-borne litter, and other floating debris before they enter the storm drain system.

Action Area

The proposed project occurs within the City of Long Beach in Los Angeles County. The marine component of the project occurs within Marine Stadium, which is a rectangular waterway that joins Alamitos Bay. The proposed project will redirect flows that currently enter Colorado Lagoon, which is a V-shaped water body connected to Marine Stadium by a tidal culvert, into Marine Stadium.

The proposed project occurs within EFH for various federally managed fish species within the Pacific Groundfish and Coastal Pelagics Fishery Management Plans (FMPs). In addition, the project occurs within eelgrass and estuarine habitat, which are designated as habitat areas of particular concern (HAPC) for various federally managed fish species within the Pacific Groundfish FMP. HAPC are described in the regulations as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPC are not afforded any additional regulatory protection under MSA; however, federal projects with potential adverse impacts to HAPC will be more carefully scrutinized during the consultation process.

Effects of the Action

Based on information provided in the DEIR and EFH assessment, NMFS concludes that proposed action would adversely affect EFH for various federally managed species within the Pacific Groundfish and Coastal Pelagics FMPs.

2-1 As identified in the DEIR, a total of 0.13 acres of eelgrass will be directly impacted by dredging, construction of the outlet structure, and the temporary coffer dam. Once the outlet structure is constructed, the coffer dam will be removed resulting in a 0.05 acre permanent loss of eelgrass habitat. The remaining 0.08 acre of removed eelgrass habitat would then be available for potential onsite mitigation.

2-2 Eelgrass habitat outside the immediate construction area may also be impacted as a result of increased turbidity from the dredging operation. In addition, the new outfall will introduce an additional source of water flow that may scour the immediate area and/or resuspend sediments, which may increase turbidity. Excessive scour may impact existing eelgrass habitat outside the immediate construction zone and/or preclude the recolonization of the 0.08 acre of removed eelgrass habitat. In addition, increased turbidity associated with resuspended particulates may reduce light penetration and lower the rate of photosynthesis and the primary productivity of the surrounding area, which may adversely affect eelgrass habitat.

2-3 Water quality parameters are also expected to change as a result of the proposed project. Pollutant loadings are expected to increase in Marine Stadium and decrease in Colorado Lagoon. However, pollutants are more readily diluted within Marine Stadium given the higher flushing rates, thus, water quality is expected to improve in the overall system. In

2-3 cont. addition, pollutant loading is expected to decrease during dry weather conditions due to the in-line storm drain catch basin screens and the diversion of dry weather flows to the sanitary system.

2-4 Lastly, salinity concentrations are expected to decrease in Marine Stadium immediately following storm flows. However, based upon the modeling described in the DEIR, NMFS believes these salinity changes will have a minimal effect on EFH.

EFH Conservation Recommendations

As described in the above effects analysis, NMFS has determined that the proposed action would adversely affect EFH for various federally managed fish species within the Pacific Groundfish and Coastal Pelagics FMPs. Therefore, pursuant to section 305(b)(4)(A) of the MSA, NMFS offers the following EFH conservation recommendations to avoid, minimize, mitigate, or otherwise offset the adverse effects to EFH.

2-5 1. The County should conduct pre- and post-project surveys to determine the extent of the impacts to eelgrass habitat from construction activities. Monitoring should be conducted in accordance with the Southern California Eelgrass Mitigation Policy (http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf). Any observed impact should be mitigated in accordance with the abovementioned policy. The County should recognize that much, if not all, of the habitat in the Marine Stadium area suitable for eelgrass is already colonized. Therefore, filling deeper portions of Marine Stadium or surrounding areas, or excavating upland areas may be required in order to create suitable habitat for eelgrass mitigation.

2-6 2. Given that any indirect impacts to surrounding eelgrass habitat from changes in flow patterns from the new outfall structure may not be immediately observed post-construction, five annual surveys monitoring surveys should be conducted during the time period of August to October to document any changes in areal extent and density of eelgrass in the vicinity of the new outfall structure. Any impacts determined by these monitoring surveys should be mitigated per sections 3-12 of the Southern California Eelgrass Mitigation Policy.

Endangered Species Act Comments

2-7 The green sea turtle (*Chelonia mydas*) has been documented to occur within Alamitos Bay and is a federally listed species under the Endangered Species Act (ESA). The final EIR should analyze the potential effects of the proposed action on this species. Particular emphasis should be placed on potential impacts to eelgrass as it a primary forage item of the green sea turtle. If it is determined that the proposed project may adversely affect the green sea turtle, the federal permitting agency (i.e., ACOE) should request initiation of formal consultation with NMFS pursuant to section 7 of ESA, as amended (16 U.S.C. 1531 *et seq.*). To assist you in evaluating whether or not the proposed project may affect

2-7 cont. | green sea turtles, please contact Christina Fahy at 562-980-4023, or via email at Christina.Fahy@noaa.gov.

Please contact Mr. Bryant Chesney at 562-980-4037, or via email at Bryant.Chesney@noaa.gov if you have any questions concerning our EFH comments or require additional information.

Sincerely,

for Rodney R. McInnis
Regional Administrator

cc: Colonel Alex Dornstauder, U.S. Army Corps of Engineers
Marilyn Fluharty, California Department of Fish and Game
Jonathon Bishop, Los Angeles Regional Water Quality Control Board

Letter 2: National Oceanic and Atmospheric Administration

Comment No.	Response
2-1	Construction of the proposed outlet structure would directly affect eelgrass beds located in Marine Stadium. To evaluate the project's impacts in the EIR, 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. Section 3.3 contains a map of the affected eelgrass beds and a discussion of eelgrass habitat impacts and proposed mitigation measures for the project's direct impacts. Mitigation measures include replacement of eelgrass habitat directly affected by construction activities (see measures BIO-B through BIO-E).
2-2	As discussed in Section 3.3 of the Final EIR, project construction activities would indirectly affect eelgrass beds in Marine Stadium. Section 3.3 includes a discussion of construction-related turbidity impacts and includes mitigation requiring the contractor to address any potential turbidity impacts during construction activities (BIO-F through BIO-J). 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, impacts to eelgrass bed resources outside of the localized construction zone would be less than significant. In addition, Section 3.9 contains a discussion of operation-related turbidity impacts from scour and concludes that no significant impacts would occur and no mitigation is required.
2-3	This comment is in agreement with the analysis and conclusions contained in Section 3.9 of the Final EIR. As discussed, construction and operation of the proposed project would not create any significant water quality impacts.
2-4	This comment is in agreement with the analysis and conclusions contained in Section 3.3 of the Final EIR. Impacts associated with decreased salinity levels in Marine Stadium are evaluated in the EIR and discussed in Appendix D. Impacts would be less than significant.
2-5	As discussed in mitigation measure BIO–B, direct permanent and temporary impacts to marine sea grasses in Marine Stadium would be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy. Mitigation measure BIO-B has been revised to provide additional detail regarding the site selection and monitoring requirements for eelgrass mitigation. (See Section 3.3) As discussed in the revised measure, monitoring the success of

eelgrass mitigation will be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy.

2-6 See response to comment 2-5. A five-year eelgrass monitoring program will be required per revised mitigation measure BIO-B.

2-7 The County has contacted Bryant Chesney (National Marine Fisheries Service (NMFS) to discuss this comment. As a result, additional research has been conducted and new text has been added to Section 3.3 of the Final EIR to describe and analyze potential impacts to green sea turtles. As discussed, green sea turtles have occasionally been found offshore of Orange County and Los Angeles County, north of their more common southerly range due to warmer water temperatures during El Nino periods. Green sea turtles have been reported in the San Gabriel River where they encounter the warmer, discharged waters of the power generating facilities located farther up the River. According to the Long Beach Lifeguards and Marine Bureau staff, green sea turtles have been seen in Alamitos Bay and appear to be curious (Vivian Cook, Marine Bureau; Allen Powder, Long Beach Lifeguards pers. Com with R. Ware 27 July 2007). However, no records are kept as to where they have been seen, the time of year of occurrence, or the numbers observed. There is no evidence that these species breed in the project area.

On July 30, 2007, EDAW contacted Christina Fahy at the National Marine Fisheries Service for additional documentation regarding the presence of green sea turtles in Alamitos Bay. The following information was provided:

> Green sea turtles have stranded in the Long Beach area; for example, in October, 2004, three green sea turtles stranded in the Belmont Shore area and one green sea turtle stranded in the Treasure Island Marina area. In addition, over the years, our office has received numerous reports of sightings of sea turtles in the area. Lastly, in October, 2006, the Long Beach Aquarium attached a satellite transmitter to a green sea turtle that had live-stranded in Long Beach. The turtle was tracked south to the San Clemente area and then turned around and headed back north to the Long Beach area, where it remained for several weeks, presumably foraging on eel grass or algae in the area.

The green sea turtle strandings described above occurred within two miles of the Marine Stadium. The nearest recorded sighting was documented using the satellite transmitter described above. Based on this data, the sea turtle was present within Alamitos Bay in October and December 2006, residing most

frequently in the Long Beach Marina area. The turtle appears to have entered the Marine Stadium area on multiple occasions[1]. Although individual sightings have occurred, no resident groups have been observed within Alamitos Bay.

Although occasional green sea turtles have been observed in Alamitos Bay, the likelihood of encountering this species in the northern extreme northeast limit of the bay is relatively low. Green sea turtles' north Pacific range extends from Baja California to southern Alaska; however, turtles within this range most commonly occur south of San Diego. Juvenile turtles are rarely seen as they spend the first several years of their lives swimming in the open ocean. As juveniles, they eat plants and other organisms such as jellyfish, crabs, sponges, snails, and worms. Adult green sea turtles are mostly herbivorous and spend most of their time feeding on algae in the sea and the grass that grow in shallow waters inside reefs, bays, and inlets.

Sea turtles are not known to nest along the west coast of the US; the closest known nesting grounds occur along the Pacific coast of Mexico and in the Hawaiian Islands, particularly the French Frigate Shoals, approximately 1,280 miles southeast and 2,500 miles west of the project area, respectively. This species demonstrates strong selectivity and fidelity for both nesting and feeding sites; they have been known to migrate between the same feeding and nesting sites for many generations.

Construction activities associated with the proposed project would occur in the northern limit of the bay, which is more than two miles from the entrance of Alamitos Bay. Construction activities within Marine Stadium would involve constructing a temporary coffer dam around the proposed construction zone, removing and replacing rip rap along the shoreline, and recontouring the rip rap shoreline to depths of minus five (–5) ft MLLW around the opening of the outlet structure Construction of the temporary cofferdam would require installation of sheet piling, which would extend approximately 60 feet into Marine Stadium from the edge of the existing pavement (see Figure 2-4). The temporary sheet piling would extend approximately 7 feet above the water surface elevation during construction, depending on tide levels. Construction of the Marine Stadium outlet structure would take approximately three months; however, the majority of this construction would occur behind the cofferdam and would not directly affect marine resources. All construction activities would occur between the hours of 7:00 AM and 7:00 PM on weekdays only. Upon completion of the

[1] http://www.seaturtle.org/tracking/index.shtml?keyword=mickey (Accessed August 7, 2007)

outlet structure, no additional construction activities would occur within Marine Stadium.

As shown on Figure 3-8, eelgrass beds extend into the Marine Stadium. As discussed above, the potential for green sea turtles to occur in the project area is relatively low. However, because Alamitos Bay has a productive eelgrass system, green sea turtles may be utilizing the eelgrass beds located throughout the bay as one source of their nutritional requirements. Alamitos Bay is north of this species' typical range, so the occurrence of individuals in the Long Beach area is likely to remain low. The project area within Marine Stadium is approximately 2.5 miles from the mouth of the Bay, further decreasing the chance that this species will occur within the project area.

If, however, a green sea turtle were to be present during the one- to two-week installation period of the sheet piling for the cofferdam or the one-week removal period, it could potentially result in a behavioral modification to this species that would include a likely change in swimming behavior to avoid excessive noise or turbidity. Once the cofferdam is installed, the potential for impacts would be reduced, since the construction area would be physically separated from the marine environment. No mortality or other adverse impacts would be expected to occur as a result of any project-related activities. Furthermore, Mitigation Measures BIO-K through BIO-N, would reduce the potential for impacts to sea turtles in the unlikely event that one is present in the project area during the three-month outlet structure construction process. No significant impacts to green sea turtles would occur during construction.

No operational impacts to green sea turtles would occur as a result of the project. As discussed in Section 3.9.3 the EIR, impacts to marine life from temporary changes in salinity levels immediately following storm events would be less than significant. In addition, the low-flow diversion system and catch basin screens that are included in the proposed project would improve overall water quality and flooding conditions in Colorado Lagoon and Marine Stadium compared to existing conditions.

A letter from NMFS confirming their concurrence is provided in Appendix F.

Document Details Report
State Clearinghouse Data Base

SCH# 2000111022
Project Title Termino Avenue Drain
Lead Agency Los Angeles County Department of Public Works

Type EIR Draft EIR

Description 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 convey storm flows directly to Marine Stadium, located immediately southeast of Colorado Lagoon, 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 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. Upon completion of the project, the alignment would be returned to its existing condition.

Lead Agency Contact

Name Dale Sakamoto
Agency Los Angeles County Department of Public Works
Phone (626) 458-3915 **Fax**
email
Address 900 S. Fremont Avenue
City Alhambra **State** CA **Zip** 91803

Project Location

County Los Angeles
City Long Beach
Region
Cross Streets Anaheim Street, Termino Avenue
Parcel No.
Township 5S **Range** 12W **Section** 4 **Base** LB

Proximity to:

Highways I-405
Airports Long Beach Municipal
Railways Abandoned PE right-of-way
Waterways San Gabriel River, Colorado Lagoon, Los Cerritos Channel
Schools Lowell, Fremont, Bryant, Will Rogers, Jefferson, Wilson
Land Use Pacific Electric (PE) right-of-way, open space, roadways, parking lots, and sidewalk/designated open space/park, right-of-way - Pacific Electric Railroad; townhomes, moderate density residential, high density residential, and single family residential.

Project Issues Aesthetic/Visual; Air Quality; Coastal Zone; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Growth Inducing; Landuse; Noise; Recreation/Parks; Septic System; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; Regional Water Quality Control Board, Region 4; Department of Parks and Recreation; Native American Heritage Commission; Office of Historic Preservation; Department of Fish and Game, Region 5; Department of Water Resources; California Highway Patrol; Caltrans, District 7; Caltrans, Division of Aeronautics; Department of Toxic Substances Control; State Water Resources Control Board, Division of Water Rights; State Lands Commission; San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy

Date Received 02/28/2007 **Start of Review** 02/28/2007 **End of Review** 04/13/2007

Note: Blanks in data fields result from insufficient information provided by lead agency.

STATE OF CALIFORNIA — Arnold Schwarzenegger, Governor

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

March 19, 2007

Mr. Dale Sakamoto
County of Los Angeles Department of Public Works
900 South Fremont Street
Alhambra, CA 91803

Re: SCH#2000111022; CEQA Notice of Completion; draft Environmental Impact Report (DEIR) for **Termino Avenue Drain Project;** City of Long Beach; Los Angeles County Department of Public Works; California

Dear Mr. Sakamoto:

Thank you for the opportunity to comment on the above-referenced document. The Native American Heritage Commission is the state's Trustee Agency for Native American Cultural Resources. The California Environmental Quality Act (CEQA) requires that any project that causes a substantial adverse change in the significance of an historical resource, that includes archaeological resources, is a 'significant effect' requiring the preparation of an Environmental Impact Report (EIR) per CEQA guidelines § 15064.5(b)(c). In order to comply with this provision, the lead agency is required to assess whether the project will have an adverse impact on these resources within the 'area of potential effect (APE)', and if so, to mitigate that effect. To adequately assess the project-related impacts on historical resources, the Commission recommends the following action:

√ Contact the appropriate California Historic Resources Information Center (CHRIS). Contact information for the Information Center nearest you is available from the State Office of Historic Preservation (916/653-7278)/ http://www.ohp.parks.ca.gov/1068/files/IC%20Roster.pdf The record search will determine:

3-1
- If a part or the entire APE has been previously surveyed for cultural resources.
- If any known cultural resources have already been recorded in or adjacent to the APE.
- If the probability is low, moderate, or high that cultural resources are located in the APE.
- If a survey is required to determine whether previously unrecorded cultural resources are present.

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

3-2
- The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure.
- The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.

√ Contact the Native American Heritage Commission (NAHC) for:

3-3
* A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project vicinity that may have additional cultural resource information. Please provide this office with the following citation format to assist with the Sacred Lands File search request: USGS 7.5-minute quadrangle citation with name, township, range and section; .
- The NAHC advises the use of Native American Monitors to ensure proper identification and care given cultural resources that may be discovered. The NAHC recommends that contact be made with Native American Contacts on the attached list to get their input on potential project impact (APE).

√ Lack of surface evidence of archeological resources does not preclude their subsurface existence.

3-4
- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

3-5 √ Lead agencies should include provisions for discovery of Native American human remains or unmarked cemeteries in their mitigation plans.

3-5 cont. * CEQA Guidelines, Section 15064.5(d) requires the lead agency to work with the Native Americans identified by this Commission if the initial Study identifies the presence or likely presence of Native American human remains within the APE. CEQA Guidelines provide for agreements with Native American, identified by the NAHC, to assure the appropriate and dignified treatment of Native American human remains and any associated grave liens.

3-6 √ Health and Safety Code §7050.5, Public Resources Code §5097.98 and Sec. §15064.5 (d) of the CEQA Guidelines mandate procedures to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

3-7 √ Lead agencies should consider avoidance, as defined in § 15370 of the CEQA Guidelines, when significant cultural resources are discovered during the course of project planning.

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

Sincerely,

Dave Singleton, Program Analyst

Cc: State Clearinghouse

Attachment: List of Native American Contacts

Letter 3: Native American Heritage Commission

Comment No.	Response
3-1	As discussed in Section 3.4.2 of the Final EIR, an archaeological records search was conducted at the South Central Coastal Information Center at California State University, Fullerton on April 27, 2005. The search indicated that five cultural resources investigations have taken place within a ¼-mile radius of the project area. Additionally, five archaeological sites and one historical resource have been previously recorded. The historical resource (Marine Stadium) and one of the archaeological resources (Site CA-LAN-700) previously recorded are located within the proposed project area itself. As such, it was determined that a survey of the area was required.
3-2	As discussed in Section 3.4.2 of the Final EIR, an archaeological field survey of the project area was conducted on January 4, 2006. Site CA-LAN-700 was relocated as part of the survey and a Department of Parks and Recreation (DPR) update form was filled out for the site. One new archaeological site (Termino Survey Site #1) was discovered within the PE right-of-way consisting of shell scatter measuring approximately 8.5 meters north/south and 15.5 meters east/west. A single set of DPR forms was completed for Termino Survey Site #1.
3-3	The Native American Heritage Commission has been contacted for a Sacred Land File search of the project area. In a letter dated May 18, 2007, the Native American Heritage Commission confirmed that no such sites were identified within the vicinity of the project site.
3-4	As discussed in Section 3.4 of the Final EIR, the PE right-of-way was determined to potentially contain subsurface cultural deposits. Mitigation measures CUL-A and CUL-B require the presence of a qualified archeological monitor during all ground disturbing activities within the PR right-of-way and includes provisions for the identification and evaluation of accidentally discovered archaeological resources, per CEQA Section 15064.2(f).
3-5	As discussed in Section 3.4 of the Final EIR, archival research and archaeological survey did not indicate the presence of any known human remains in the project area and the site does not contain any formal cemeteries. However, mitigation measure CUL-C includes provisions for the discovery of Native American remains or unmarked cemeteries.
3-6	The Final EIR did not identify the presence or likely presence of human remains with the APE; however, text has been added to Section 3.4 to clarify the project's

compliance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines.

3-7 As discussed in Section 3.4, CA-LAN-700, Termino Survey Site #1, and Marine Stadium were determined to be potentially eligible for the California Register of Historic Places and Marine Stadium was also determined to be potentially eligible for the National Register of Historic Places. However, CA-LAN-700 was relocated outside of the construction impact area and Termino Survey Site #1 is not located within the construction impact area. In addition, no above-ground demolition or alteration to Marine Stadium would occur and no further avoidance measures would be required.

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street

12th Floor

Los Angeles, California

90017-3435

t (213) 236-1800

f (213) 236-1825

www.scag.ca.gov

March 21, 2007

Mr. Dale Sakamoto
County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, CA 91802

RE: SCAG Clearinghouse No. I 20070112 Termino Avenue Drain

Dear Mr. Sakamoto:

Thank you for submitting the **Termino Avenue Drain** 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**, 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. 4-1

A description of the proposed Project was published in SCAG's **March 1-15, 2007** 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) 236-1856. Thank you.

Sincerely,

Jill Egerman

JILL EGERMAN
Associate Environmental Planner
Intergovernmental Review

Letter 4: **Southern California Association of Governments**

Comment No.	Response
4-1	The Southern California Association of Governments (SCAG) determined that the proposed project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and CEQA Guidelines, and thus has no comments. SCAG verified that a description of the proposed project was published in their Intergovernmental Review Clearinghouse Report for public review and comment. No further response is required.

Ydd 605

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

STEPHEN R. MAGUIN
Chief Engineer and General Manager

March 6, 2007

File No: 03-00.04-00

Mr. Dale Sakamoto
County of Los Angeles
Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Sakamoto:

Termino Avenue Drain

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report for the subject project on March 1, 2007. The proposed project is located within the jurisdictional boundaries of District No. 3. We offer the following comments:

5-1

- The proposed project may impact several existing and/or proposed Districts' trunk sewers over which it will be constructed. Existing and proposed Districts' trunk sewers may be located directly under and/or cross directly beneath the proposed project alignment. 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. Tommy Sung of the Districts' Sewer Design 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.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Stephen R. Maguin

Ruth I. Frazen
Engineering Technician
Facilities Planning Department

RIF:rf
cc: T. Sung

Doc #: 759174.1

Letter 5: **County Sanitation Districts of Los Angeles County**

Comment No.	Response
5-1	As part of the project and construction approval processes, DPW will be required to coordinate with the County Sanitation District (the District) to determine the precise location of existing and proposed trunk sewers. Detailed plan maps of the proposed alignment will be submitted to the District for review.

CITY OF LONG BEACH

POLICE DEPARTMENT

400 WEST BROADWAY • LONG BEACH • CALIFORNIA 90802 • (562) 570-7260 • FAX (562) 570-7114

ANTHONY W. BATTS
Chief of Police

April 16, 2007

Dale Sakamoto
County of Los Angeles
Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

RE: TERMINO AVENUE DRAIN

Dear Mr. Sakamoto:

The Long Beach Police Department Planning and Research Detail reviewed the proposed subject project and provided the following comments with regards to the impact of the Termino Avenue Drain Project.

The project area (Termino Avenue Drain) would not require additional staffing and/or equipment for the Long Beach Police Department. During construction, some lane closures would occur along Termino Avenue, 10th Street, 7th Street, Anaheim Street, Ximeno Avenue, and Appian Way.

6-1 The project will result in temporary impacts such as, vehicle traffic delays, slowing of vehicle speeds at the roadway approaches and intersections, and restricted access to the 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 may increase and response time for emergency vehicles may be delayed slightly.

There are no other foreseeable impacts that would effect the day-to-day operations of the Long Beach Police Department.

If you have any questions, please contact me or my Chief of Staff, Commander Jorge Cisneros, at (562) 570-7301.

Sincerely,

Anthony W. Batts

Anthony W. Batts
Chief of Police

AWB:JJC:SD:ER:copstaff-djh
Terminodrain.memo

ADMINISTRATION BUREAU (562) 570-5830 FAX (562) 570-5833
INVESTIGATIONS BUREAU (562) 570-7350 FAX (562) 570-7175
PATROL BUREAU (562) 570-7214 FAX (562) 570-7058
SUPPORT BUREAU (562) 570-7342 FAX (562) 570-6018

Letter 6: **City of Long Beach Police Department**

Comment No.	Response
6-1	As discussed in Section 4.2.4, the proposed project would not require additional staffing and/or equipment for the Long Beach Police Department (LBPD). Mitigation provided in Section 3.5 would address the potential for the project to result in temporary access restrictions and response time delay. The letter confirms that no other foreseeable impacts would effect the operations of the LBPD.

-----Original Message-----
From: Dingman, Ed
Sent: Monday, March 26, 2007 8:23 AM
To: Sakamoto, Dale; Cheng, Tina
Subject: FW: TAD EIR Public Mtg.
Importance: High

fyi

From: Ray Thorn [mailto:RayThorn@charter.net]
Sent: Sunday, March 25, 2007 7:50 PM
To: wilson@edaw.com; Dingman, Ed
Cc: Taylor Parker; Alan Magree; Andrew Kincaid; Ardie Kennedy; Cindy Desatoff; Dave Pirazzi; Elaine Medosch; Eric Zahn; Harriet Bennish; Helene Ansel; Laurie Pekich; Madeline McNab; Norman Zoref; Rich Sonnenberg; Sue Considine; Tina Pirazzi; Tom McClane
Subject: TAD EIR Public Mtg.
Importance: High

Hi Ed and Eric,

Friends of Colorado Lagoon (FOCL) has not yet prepared a written response to the TAD EIR, partly because we are supportive and appreciative of the current plan, but mainly because we have been very busy this month with multiple transition pertaining to the restoration of the Lagoon. We will submit a wrtten statement prior to April 15 expressing our support for the plan. However, we do have a few issues that we would like addressed at the Tuesday, March 27, public meeting. They are listed below.

7-1 1. We have been told the current design will pick up and resolve the flooding / erosion problems connected with the two small drains entering the Colorado Lagoon South of TAD along the Western shore of the Lagoon. Major erosion of sediment in this area is filling in the Lagoon. That portion of the Lagoon is scheduled to be dredged by the Army Corps of Engineers, but we would like assurance that this erosion problem will be resolved.

7-2 2. We strongly recommend there be a five year monitoring program established to assess impacts of the new TAD on Marine Stadium and the Colorado Lagoon. This is especially important since the EIR does not appear to document sources of pollution in the watershed that may impact Marine Stadium.

7-3 3. We understand there are additional costs to extending the drain to empty into Marine Stadium near the mantenance building, and that it was moved Northward due to the eel grass beds in Marine Stadium, however, we would prefer the outfall be located near the maintenance building. We would like more information about all of the factors impacting this decision.

7-4 | 4. With regards to the Greenbelt, it is our understanding there are 33 native species in the area that need to be documented to insure 1:1 mitigation of all species. Addtionally, for the record, Monarch and Blues butterflies have been identified in the area. We would also like to know the

7-5 | cost factors associated with reducing below significant the impact of NOx emissions and deisel particulate matter.

Again we appreciate and support the redesign of the TAD that alleviates significant flooding and salinity level impacts in Colorado Lagoon, and are sorry to be slow in getting our written response to you.

Than you very much,
Ray Thorn, President
Friends of Colorado Lagoon

Letter 7: **Friends of Colorado Lagoon #1**

Comment No.	Response
7-1	The Termino Avenue Drain (TAD) will pick up the two small drains entering Colorado Lagoon south of TAD along the western shore. The existing drain south of Colorado Lagoon at 4th Street will be intercepted and the two drains will collect sheet flow and drain into the system in order to alleviate eroded sediment entering Colorado Lagoon.
7-2	Section 3.9 of the EIR evaluates the project's effects on hydrology and water quality. Additional technical information is provided in Appendix D, Hydrologic and Water Quality Analyses Report and Tidal Culvert Inspection Report. As stated in Section 2.3, the goal of the project is to provide an efficient storm water drainage system that would protect the vicinity from flooding. Although the project's objectives do not include water quality enhancement, the storm drain project would improve stormwater quality in the watershed by diverting non-storm flows (i.e., irrigation and other sources of urban runoff) from the storm drain into an existing County sanitary sewer line. In addition, catch basin screens would be installed to capture suspended solids and water-borne litter and debris known as floatables before they enter Marine Stadium. As discussed in Section 3.9.3, construction-related impacts on water quality would be less than significant after mitigation and no significant operational water quality impacts would occur. A pollutant load analysis was prepared for the EIR, which 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. 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. Therefore, pollutant dispersal for the overall Colorado Lagoon and Marine Stadium system would improve as a result of the project. Average peak concentrations of pollutants would be approximately half of what they are under existing conditions in Colorado Lagoon. 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.

Section 15126.4(a)(3) of the CEQA Guidelines states that "mitigation measures are not required for effects which are not found to be significant." Furthermore, pursuant to the U.S. Constitution, an agency's authority to impose mitigation is limited to those situations in which there is a clear "nexus" between the impact of the proposed project and the mitigation measure. (*See Nollan v. California Coastal Commission* (1988) 107 S.Ct. 3141.) Accordingly, no water quality monitoring measures are provided in the EIR, because none of the CEQA significance thresholds for water quality would be exceeded during project operation. Obtaining water quality and pollutant data following implementation of the project is not required for this project; however, the City of Long Beach conducts, and will continue to conduct, water quality monitoring of Colorado Lagoon[2].

7-3 The additional construction cost required to extend the drain to empty into Marine Stadium near the maintenance building is approximately $1.5 million. This estimate is a DPW engineering estimate based on a cost of $2,000 per foot over 800 feet and does not include the cost of utility relocation. Additionally, placing the outlet structure at this location would result in a greater impact to eelgrass during construction and operation. As such, this location was determined to be infeasible for the proposed outlet structure due to the increased cost and environmental impacts.

An EIR is only required to consider a reasonable range of alternatives to the proposed project that could feasibly achieve most of the basic project objectives and would lessen any of the significant effects of the project. Section 5.1 of the Final EIR describes the alternatives that were considered but rejected as infeasible during the scoping process, including alternate outlet structure locations. Such alternatives were rejected because they were found to be infeasible and/or would not reduce any of the significant effects of the project.

7-4 The list of species included in Section 3.3 is based on surveys conducted from 2003 through 2005, which reflects the existing conditions that were present at the time of the notice of preparation was publish for this project (May 2004), in accordance with Section 15125(a) of the CEQA Guidelines. Mitigation measure BIO-K includes a restoration plan to salvage existing plants, which would include those not observed during the biological surveys. While the EIR states that the potential exists for Monarch butterflies to occur onsite, none were observed during biological surveys of the site. In addition, the site does not provide optimal over-wintering habitat for monarch butterflies; therefore the

[2] Termino Avenue Drain City-County Cooperative Agreement, dated December 10, 2001

potential for encountering this species onsite would be relatively low. The monarch butterfly is not protected by any state or federal regulations and no impacts are anticipated.

7-5 As discussed in Section 3.6.3, 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 by construction activities. As shown in Table 3.6-5 of the EIR, estimated emissions of VOC, CO, PM_{10}, and $PM_{2.5}$ would be less than the South Coast Air Quality Management District's (SCAQMD) applicable thresholds. Although NO_X emissions would exceed the SCAQMD thresholds during construction, mitigation measure AIR-A would reduce these impacts below the significance thresholds. Instead of requiring any one particular means for reducing project-related NO_x emissions, mitigation measure AIR-A identifies a project wide fleet-average 25 percent NO_x reduction. This provides some flexibility for the construction contractor to achieve the target reductions without mandating a specific method of emission reductions. A similar 20 percent reduction target has been adopted by the Sacramento Metropolitan Air Quality Management District (SMAQMD) to meet the CEQA requirements to implement "all feasible mitigation." No such targets have been adopted by the SCAQMD.

As discussed in the EIR, 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. Some combination of these technologies may be used to reach the 25% NO_x reduction requirement identified in Mitigation Measure AIR-A. Application of the above methods to all off-road and on-road diesel engine powered equipment on a large project, however, would generally not be feasible due to the cost of implementation and the availability of these materials.

The fleet of construction equipment described in the EIR has total horsepower of greater than 1500 hp but less than 20,000 hp. For the purpose of regulating NO_x reduction requirements, the fleet for the Termino Avenue Drain project is classified as a medium sized fleet. As required by the California Air Resources Board's (CARB's) *Regulation for In-Use Off-Road Diesel Vehicles* (final rule approved May 16, 2008), contractors with medium sized fleets are required to start reporting the NO_x emissions of their equipment in 2009, and to meet the regulatory limits in 2013.

There are 4 levels of diesel engines in operation in California today classified from the older Tier 0 to the newer and cleaner Tier 3. Tier 4 engines –which will be the only engines that meet both NOx and PM requirements—are not expected

to be available in significant quantity until 2015, when the new CARB standards take affect. Tier 3 is the best technology that is expected to be available in 2008 when the Termino Avenue Drain project begins. A study conducted by Justice & Associates for the Construction Industry Air Quality Coalition estimated that it would cost an average of $77,000 to replace the engines in older equipment with Tier 3 engines[3]. For the Termino Avenue Drain project, the contractor would have to replace 31engines at a cost of $2.4 million to upgrade the fleet to the best technology available. This assumes that there are existing Tier 3 replacement engines for all equipment. Currently, there are a limited number of models capable of being replaced due to physical limitations on the machine for additional cooling systems or other engineering design requirements needed to meet Tier 3 emissions levels. The contractor would be required to purchase expensive new machines. Loaders in the horsepower range that would be used by the contractor cost an average of approximately $100,000. New cranes can cost from $300,000 to $5 million[4]. Accordingly, the cost associated with additional NO_x reduction mitigation beyond that required in the EIR would be economically infeasible.

As shown in Table 3.6-6, PM_{10} and $PM_{2.5}$ emissions would exceed the SCAQMD's Localized Significance Thresholds (LTSs). The mitigated PM emissions in Table 3.6-6 represent emissions after dust mitigation allowed by URBEMIS. Although impacts from local emissions of the proposed project to sensitive receptors would likely be less than indicated in Table 3.6-6, because the daily emissions would exceed the LST thresholds, impacts would be significant and unavoidable.

[3] Construction Industry Air Quality Coalition, Off-Road Cost of Compliance - http://www.cleanairconstruction.org

[4] http://www.biggecranesales.com

Dear Friends,

You are receiving this email because you signed a sign-up sheet, indicating interest in matters impacting the Long Beach Greenbelt.

Or, in the case of a few of you, I happen to have met you and suspect or know that you are interested. If anyone on this list is NOT interested in receiving these emails, then please let me know and I will unsubscribe you.

I will soon be moving this email list to a listserv which makes email communications really easy and efficient.

In any case—**welcome!**

Purpose of this email:
* remind everyone of the importance of the Greenbelt and the upcoming Termino Drain Project;
* inform everyone about FOG and the opportunity to join;
* inform everyone about FOG's recommendations to make the Greenbelt even better than ever!

The Long Beach Greenbelt:
The Greenbelt is a stretch of the old Pacific Electric right-of-way that laid fallow for years after the trains stopped running, until there were plans to construct a public storage facility. Concerned residents and community activists met with City leaders and everyone succeeded in preserving the area as open space parkland. After the Greenbelt committee disbanded, the site fell into disrepair until being taken over by the Los Cerritos Wetlands Stewards (www.lcwstewards.org) for caretaking, maintenance and stewardship. The stretch between 7th Street and the corner of 8th/Termino is a thriving native plant habitat which supports much urban wildlife: birds of prey, woodpeckers, hummingbirds, and multiple other bird species; squirrels, skunks, possums, voles, raccoons; grasshoppers, lizards; rabbits; and many other critters. Many members of the public use the site every day and frequently comment on its unique beauty. The Substance Abuse Foundation and myself are partnering to use the site (and the healing properties of Nature) to bring healing to alcoholics and drug addicts in early sobriety.

FOG's RECOMMENDATIONS FOR THE GREENBELT:
For a summary of FOG's recommendations for the Greenbelt, please see:
http://www.thisland.org/

8-1 In a nutshell, the idea is that FOG supports the Termino Drain Project because it will improve water quality in the Colorado Lagoon and reduce flooding risk in local neighborhoods.

8-2 That said, we also believe it is extremely important to *complete the project with minimum negative impact* to surrounding neighborhoods and people; and to support the current, viable urban native habitat as much as possible during the project.

FOG has a *vision for the parkland on the right of way after the construction*. Credit the **Los Cerritos Wetlands Stewards** for this concept!!!!

8-3 California has an intensely beautiful and varied native watershed, ranging from oak woodlands to the north, through the riparian habitat at the coastlands.
FOG and the Wetlands Stewards would like to recreate a beautiful, living sample of this habitat, available to Long Beach residents as parkland, education and urban (non-dangerous) wildlife habitat. The northernmost strip of the right of way, south of the Wild Oats Community Garden, between 10th Street and Termino, would be the woodland area, with coast live oaks transplanted from the existing Greenbelt prior to its construction. The current Greenbelt, between the corner of 8th/Termino and 7th Streets, would be the coastal sage scrub habitat. The southern strip of the right-of-way would be replanted with more

8-3 cont.

riparian habitat, which is actually appropriate since it leads into the Lagoon, Marine Stadium and the beautiful terrestrial/riparian habitat of Jack Dunster Reserve.
This type of parkland is actually less expensive for the City to plant and maintain because the plants are zeroscape (very low water requirements) and low maintenance. Native parkland has no runoff, pesticides, fertilizers, etc.

TO JOIN FOG:
FOG is intended to be a community organization, open to anyone and everyone who cares about the Long Beach Greenbelt, open space and native habitats for animals and people to enjoy. To join, send me an email indicating your wish to be part of the organization. Make your voice heard! We really want the community's thoughts and input on this project. As of yet, there are no dues; and any future dues would be minimal and cover expenses like printing costs, etc. Stay tuned for information on upcoming meetings.

Environmental Impact Report for the Termino Drain Project:
The EIR is available for download at:
http://ladpw.org/services/environment

8-4

FOG supports the Termino Drain Project and has the following concerns:

- We insist on cleaner construction equipment to reduce particulate, NOx and other pollution from the diesel equipment during the project.

8-5

- We would like to see the storm drain installed between 10th and Termino, prior to the clearing of the Greenbelt (between 8th and 7th Streets). This way, at least some of the trees and animals from the current Greenbelt will have habitat available during the construction phase.

Submit your comments for the EIR BEFORE April 16, 2007!!!

Stay tuned: the second edition of FOG's newsletter will soon be printed and available.
For a copy of the first edition, please contact me.

Thanks for reading, and for caring!

Sincerely,
Andrea

Andrea L. Bell, LCSW
Licensed Clinical Social Worker
Long Beach, CA
(562)243-9963

***** Please distribute this email freely to all interested parties.*****

Letter 8: Friends of the Greenbelt

Comment No.	Response
8-1	The comment of support has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
8-2	The EIR includes mitigation when required by CEQA to address a significant impact. Section 15126.4(a)(3) of the CEQA Guidelines states that "mitigation measures are not required for effects which are not found to be significant." As discussed in Sections 3.6 and 3.7, two issues were found to result in significant unavoidable adverse impacts – Air Quality (construction PM_{10} and $PM_{2.5}$ emissions) and Noise (construction noise and vibration). Impacts to Biological Resources, Cultural Resources, Transportation/Circulation, and Hazards/Hazardous Materials would be less than significant after mitigation.
8-3	See response to comment 7-4. As stated in Section 2.4.3, the Long Beach Greenbelt would be replanted upon completion of the project. Once the alignment is restored, the City has indicated that planning will commence to develop a park along the PE right-of-way.[5]
8-4	See response to comment 7-5.
8-5	The construction schedule will vary from segment to segment along the proposed alignment. Mitigation is provided for re-vegetation of the Area (BIO-P) as described in Section 3.3, and efforts will be made during construction to avoid or minimize impacts to the Greenbelt. Although the EIR conservatively assumes that all of the native landscaping would be removed, some vegetation may be avoided during construction. The anticipated area of disturbance would be approximately 80 feet of the 120-foot-wide corridor.

[5] Dennis Eschen, Manager, City of Long Beach, Department of Parks, Recreation, and Marine, Planning and Development Bureau, verbal statement at public meeting on Draft EIR, March 3, 2007.

To : County of Los Angeles Department of Public Works
PO Box 1460 Alhambra, Ca 91802-1460
Contact: Dale Sakamoto
dsakamoto@dpw.lacounty.gov

Re: Termino Ave Drain; Draft EIR; Project (SCH No. 20040310)- Comment

Date: March 5, 2007

Dear Mr. Sakamoto;

I am an interested home owner living in the proximity of the above referenced project. My home address and contact information is:

Brian Wolfe, AIA
5015 E 3rd St.
Long Beach, Ca 90814
Phone: 562-433-1054
Email: bwolfe@prarchitects.com

9-1

The project description indicates that low flow storm water and urban runoff will be diverted to the sanitary sewer system through a new pump station to be located at 4th street. This design, while addressing the control of pollutants entering the Colorado Lagoon, does not take into consideration Low Impact Development, Best Management Practices (BMP's). When overlaying the Termino Ave Drain Alignment map and the Termino Ave Drain Vegetative map (see attached pdf files) there is a clear opportunity to incorporate sustainable, water quality treatment BMP's for the low flow runoff along the drain alignment from 7th Street to 4th Street.

Some of the devices that could be incorporated would be:

- **Bio-retention cells** which consist of grass buffers, sand beds, a ponding area for excess runoff storage, organic layers, planting soil and vegetation. Their purpose is to provide a storage area, away from buildings and roadways, where storm water collects and filters into the soil. Permanent ponds can be incorporated into the cell design as landscaping features. Temporary storage areas without ponds may be called detention cells. Bioretention areas have also been called **rain gardens** since they are typically landscaped with native plants and grasses, selected according to their moisture requirements and ability to tolerate pollutants. Annual maintenance of bioretention cells must be planned in order to replace mulching materials, remove accumulated silt, or revitalize soils as required.
- **Grass swales** which function as alternatives to curb and gutter systems. They use grasses or other vegetation to reduce runoff velocity and allow filtration, while high volume flows are channeled away safely. Features like plantings and checkdams may be incorporated to further reduce water velocity and encourage filtration.
- **Filter strips** can be designed as landscape features to collect flow from large impervious surfaces. They may direct water into vegetated detention areas or special sand filters that capture pollutants and gradually discharge water over a period of time.

These devices could be incorporated as part of a parkland restoration project which would benefit and improve the neighborhood visual environment, reestablish natural habitat, and reduce impacts on our sanitary treatment facilities. The Draft Environmental Impact Report does not adequately address these Best Management Practices for the project area located upstream of 4th Street.

Sincerely;

Brian Wolfe, AIA
Principal
Perkowitz + Ruth Architects
111 W. Ocean Boulevard, 21st floor
Long Beach, CA 90802
Tel: 562/628-8000
Fax: 562/628-8003
bwolfe@prarchitects.com

Letter 9: **Perkowitz + Ruth Architects**

Comment No.	Response
9-1	The project has been designed to provide an efficient stormwater drainage system that would protect the project vicinity from flooding. The system has also been designed to divert dry-weather flows north of Roswell Avenue to the County Treatment Plant, with dry weather flows south of Roswell Avenue passing through catch basin screens to limit floatables and other trash from entering Marine Stadium. The system has been designed so as not to preclude alternate stormwater treatment options, such as those suggested by the commentor. While the suggested devices are not required to mitigate any significant impacts of the proposed project, DPW will forward the suggested devices to the City for consideration in the future planning efforts for the PE right-of-way.

Friends of Colorado Lagoon - *a coalition of concerned citizens working to preserve and restore Colorado Lagoon*

April 15, 2007

County of Los Angeles Department of Public Works
P.O. Box 1460
Alhambra, CA 01802-1460
Contact: Dale Sakamoto
Email: dsakamoto@dpw.lacounty.gov

Subject: Termino Avenue Drain (TAD) – Response to Environmental Impact Report (EIR)

10-1 Friends of Colorado Lagoon (FOCL) support the TAD EIR. However, in addition to the required monitoring of impacts on eelgrass in Marine Stadium and habitat in the greenbelt area, we strongly recommend five years of monitoring of water and sediment quality near the TAD outlet in Marine Stadium. We know that stormwater, our urban slobber, carries many toxic contaminants to our oceans. We also know that western arm of Colorado Lagoon has served as a catch basin for TAD and Drain 452 for many years and is listed on the State 303(d) as an "Impaired Water Body." Marine Stadium is a recreational area that has full body contact, hence the need to monitor water and sediment quality for five years after the completion of construction.

The proposed TAD project bypassing Colorado Lagoon going directly to Marine Stadium has several positive features:

1. Documentation by Everest Consultant, David Cannon, demonstrates that it alleviates flooding concerns in Colorado Lagoon, while addressing critical flooding problems in the Recreational Park neighborhoods.

2. Also documented by Everest is the fact that it minimizes impacts of salinity destabilization - fresh water toxicity to a marine ecology - during storm events.

3. Diversion of low stormwater flows into LA County Sanitation System for treatment will significantly improve water quality for public health and safety during non-storm times.

4. Installation of catch-basin inserts in all of the watershed area covered by TAD and Drain 452 will not only inhibit debris coming to the ocean, but is also purported to treat bacteria contamination entering storm drains.

10-2 5. We have been told the current design will pick up and resolve the flooding / erosion problems connected with the two small drains entering the Colorado Lagoon south of TAD along the western shore of the Lagoon. Major erosion of sediment in this area is filling in the Lagoon. That portion of the Lagoon is scheduled to be dredged by the Army Corps of Engineers, but we would like assurance that these drains will be directed into TAD and the erosion problem will be resolved.

There are, however, areas of concern:

10-3 1. The EIR does not document sources of pollution in the watershed that may impact Marine Stadium. Therefore, as mentioned above, FOCL strongly recommends there be a five-year monitoring program established to assess water quality and sediment impacts of the new TAD along with impacts on eelgrass and greenbelt areas. .

10-4 2. We understand there are additional costs to extending the drain to empty into Marine Stadium near the maintenance building, and that it was moved northward due to the eelgrass beds in Marine Stadium, however, we would prefer the outfall be located near the maintenance building.

10-5 3. With regards to the Greenbelt, it is our understanding there are 33 native species in the area that need to be documented to insure 1:1 mitigation of all species. Additionally, for the record, Monarch and Blues butterflies have been identified in the area.

10-6 We also recommend increased cost and care to reduce significant the impacts of NOx emissions and diesel particulate matter.

Again we appreciate and support the redesign of the TAD that alleviates significant flooding and salinity level impacts in Colorado Lagoon, and request that you add to your plan a five-year water and sediment monitoring program.

Thank you very much,
Ray Thorn, President
Friends of Colorado Lagoon
203 Argonne, #140
Long Beach, CA 90803

Attachment: As part of FOCL's response the following letter was sent to FOCL by Dr. Hany Elwany, president of Coastal Environments in La Jolla, CA, in response to FOCL's request that he review the TAD EIR

Letter 10: **Friends of Colorado Lagoon #2**

Comment No.	Response
10-1	See response to comment 7-2.
10-2	See response to comment 7-1 and 7-2.
10-3	See response to comment 7-2.
10-4	See response to comment 7-3.
10-5	See response to comment 7-4.
10-6	See response to comment 7-5.

Mr. Ray Thorn
Friends of Colorado Lagoon
Long Beach, CA 90003
Via email: RayThorn@charter.net
Tel: (562) 597-2800
(562) 618-7837 (cell)

RE: Response to EIR for the Termino Avenue Drain Project, Dated February 2007

Dear Ray:

On behalf of the the Friends of Colorado Lagoon, I would like to thank you for giving us the opportunity to review the above-referenced EIR. We have been following your progress with this project over the years, and we are pleased to see that the EIR has been completed. Overall, our impression of the project is positive, but we do have a few concerns. With the understanding that there are constraints on the design of the drainage system (mainly cost), we would like to point out the following.

11-1 The project would definitely provide benefits to the Colorado Lagoon and surrounding area. It would improve flood control in the area; reduce the volume of drainage water, and consequently, the volume of pollutants, into the lagoon; and prevent summer flows from entering the lagoon by directing them into the sewage treatment plant. However, we are concerned that the newly designed system may simply transfer some of the problems of the Colorado Lagoon to the Marine Stadium, while not sufficiently alleviating conditions in the lagoon. Based on our experience, we know that

11-2 the deteriorated conditions in the lagoon are the result of many years of abusing the lagoon by using it as a drainage basin for the area. While tidal flushing is better in the Marine Stadium than in the lagoon, we feel that potential long-term impacts on the Marine Stadium are cause for concern. We also think it is essential to determine that

11-3 conditions will actually be improved in the Colorado Lagoon.

11-4 Increasing the capacity of the Termino Avenue drain would increase water flow rates into the Marine Stadium during storm events. Such increased flows generally cause an increase in suspended sediments. Fine sediments may then be transported back into the Colorado Lagoon by the incoming tides. Residential and industrial pollutants adhere to fine particulates. Thus, fine sediments transported into the lagoon may increase contaminants in the lagoon. While the storm drainage currently goes directly into the lagoon, water velocities during storm events are sufficient to prevent settling of fine particulates in the lagoon. Thus, diverting the drainage system may have the unintended impact of increasing sediment pollutant loads in the Colorado Lagoon.

11-5 It is also important to consider the potential for increased pollutant levels in the Marine Stadium. The Colorado Lagoon undoubtedly already functions as a sink for much of the residential and industrial pollutant waste in the watershed. Although currently overtaxed and degraded, the

11-5 cont.

lagoon functions as a filtration and treatment asset, as evidenced by the unimpaired status of the Marine Stadium. Moving the outlet directly to the Marine Stadium may simply be moving the problem downstream. It is to be hoped that, as mentioned in the EIR, the impacts on the Marine Stadium will be minimal. However, it is important not to simply assume that the problem will be completely controlled in this way.

11-6

In addition, the outlet of the newly designed storm overflow empties into the largest area of eelgrass, which may be impacted by increased turbidity. Increased turbidity may constitute a periodic impact on avifauna feeding in the Marine Stadium, both by reducing the ability of the birds to find fish and by causing fish to avoid the region.

11-7

Since impacts on the Marine Stadium and Colorado Lagoon are uncertain, we strongly recommend adopting a five-year water and sediment monitoring program in the Marine Stadium and Colorado Lagoon. This program should include chemical analyses of both water and sediment on, at a minimum, a yearly basis. The number of samples should be sufficient to cover all possible areas of impact. The samples should be analyzed for metals, TPHs, and pesticides. Baseline measurements should be established prior to the project, and the sampling locations should remain the same throughout the five-year period. In addition, we recommend monitoring the health of the eelgrass near the outfall structure and any change in the bed.

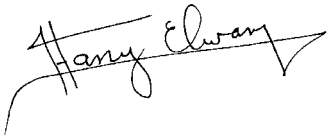
11-8

After five years, a decision should be made to either: end the monitoring program, continue the monitoring program, or develop a management plan to reduce the impacts of the newly designed outfall on the valuable habitat in the Colorado Lagoon and Marine Stadium.

Again, we would like to thank you for taking our concerns into consideration, and we hope our comments are of some help to you.

Sincerely,

COASTAL ENVIRONMENTS



M. Hany S. Elwany, Ph.D.
President

Letter 11: Friends of Colorado Lagoon #3

Comment No.	Response
11-1	Comment noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
11-2	Implementation of the proposed project would result in the transfer of storm flows and associated pollutants from Colorado Lagoon to Marina Stadium. However, as discussed in Section 3.9, the proposed project would include an inline treatment system that would reduce pollutant loading to Colorado Lagoon compared to existing conditions. In addition, year-round, dry weather (not just summer time) low flows will be diverted to the wastewater treatment plant, which will further reduce pollutant loading to Colorado Lagoon compared to existing conditions. The mixing of water and associated water-borne pollutants is better in Marine Stadium than Colorado Lagoon. This is due to the increased tidal flushing (a.k.a. circulation) within Marine Stadium associated with the large, unrestricted open channels in Marine Stadium compared to the small, tidal culvert that restricts tidal flow exchange in Colorado Lagoon (see discussion on page 3.9-3). In general, the reduction in pollutant loadings compared to existing conditions combined with the improved tidal flushing in Marine Stadium compared to Colorado Lagoon results in improved water quality (e.g., lower pollutant concentrations) throughout the entire system; therefore, it was determined that the proposed project would not result in a significant impact to water quality following construction (see page 3.9-13).
11-3	The purpose of the proposed project is to improve flood protection within the drainage area while avoiding and/or minimizing adverse, significant impacts to environmental resources. Although it is anticipated that implementation of the proposed project would improve water quality, water quality improvement in Colorado Lagoon is not a purpose of the proposed project. Furthermore, pursuant to the U.S. Constitution, an agency's authority to impose mitigation is limited to those situations in which there is a clear "nexus" between the impact of the proposed project and the mitigation measure. (*See Nollan v. California Coastal Commission* (1988) 107 S.Ct. 3141.) As discussed in Section 3.9, no significant operational water quality impacts would occur and no mitigation would be required.
11-4	Diversion of the storm drain from Colorado Lagoon to Marine Stadium would result in increased storm flow rates entering Marine Stadium compared to existing conditions even without increasing the capacity of the storm drain because the tidal culvert attenuates storm flows entering Marine Stadium under

existing conditions. These increased flow rates can lead to increased velocities that might resuspend fine-grained sediment within Marine Stadium. An analysis of potential sediment scour was conducted to address this potential water quality impact. Water velocities obtained from a numerical model study (Hydrologic and Water Quality Analyses Report, Everest 2007) were used to predict sediment resuspension throughout Colorado Lagoon and Marine Stadium for a range of sediment (i.e., various grain sizes). The results of that analysis indicated that sediment resuspension was likely to occur in the immediate vicinity of the new TAD outlet structure as well as the existing tidal culvert. However, it is likely that the area of potential sediment resuspension will actually be less than predicted by the analysis because no erosion protection (e.g., riprap and concrete) was considered in the sediment resuspension analysis. The results of the modeling study did confirm that a portion of sediment resuspended in Marine Stadium can be transported back into Colorado Lagoon. However, the results of contaminant testing for sediment samples collected within Marine Stadium (Petra Geotechnical, 2005) revealed low levels of contaminants. Specifically, soil samples from the outlet structure location were analyzed for metals, polychlorinated biphenyls (PCBs), TPH, semi-volatile organic compounds (SVOCs), and organo-chlorine pesticides. TPH, PCBs, and organo-chlorine pesticides were not detected in any of the three samples and metals were within anticipated background levels. Given the small area of potential sediment resuspension predicted by the analysis, conservative nature of the analysis, and absence of contaminated sediment at the Marine Stadium outlet location, it was determined that no significant impacts to water quality would result from sediment resuspension within Marine Stadium.

Under existing conditions water velocities during large storm events are high thereby washing fine-grain sediment out of Colorado Lagoon. However, during smaller storm events, which tend to occur on a more frequent basis, fine-grain sediment does tend to settle within Colorado Lagoon. Therefore, it cannot be assumed that more fine-grain sediment will be deposited in Marine Stadium (see discussion the proposed project compared to Colorado Lagoon under existing conditions.

11-5 As mentioned in the response to Comment 11-3 above, the purpose of the proposed project was to improve flood protection for the drainage area rather than improve water quality within Colorado Lagoon and Marine Stadium and, under CEQA, a Lead Agency cannot require project conditions to improve the existing environmental setting. As previously indicated, the results of the hydrologic and water quality analyses conducted in support of the proposed project indicated that the proposed project would improve water quality conditions within the overall Colorado Lagoon and Marine Stadium system while

not resulting in significant adverse water quality impacts within Marine Stadium (see Section 3.9).

11-6 Section 3.3 contains an analysis of turbidity impacts within Marine Stadium. Mitigation is included to reduce potential impacts from turbidity to a less than significant level (BIO-F through BIO-J). No further mitigation is required.

11-7 See response to comment 7-2.

11-8 As mentioned in response to comment 7-2, the City of Long Beach conducts, and will continue to conduct water quality monitoring of Colorado Lagoon.[6] Should DPW and the City implement a 5-year monitoring plan, a decision to continue or end the plan would be made at the conclusion of the monitoring. As discussed above, however, water quality monitoring is not required per the EIR analysis.

[6] Termino Avenue Drain City-County Cooperative Agreement, dated December 10, 2001

15. Gary Guacci

April 8, 2007

Mr. Dale Sakamoto
County of Los Angeles
Department of Public Works
Alhambra, CA 91802

Regarding: Terminal Avenue Drain Project, City of Long Beach

Dear Mr. Sakamota,

I would like to thank the County of Los Angeles for their proposed project and the EIR process which has allowed the opportunity for the public to comment and provide their input on the project. The project is much needed, and I believe the County has addressed the primary concerns to increase flood protection in the area. 12-1

I have lived in this area (6th & Quincy) for over 30 years and have witnessed and experienced the flooding problems at our corner and at Prospect Avenue and the alley running parallel to the PE right-of-way. My only question is will the short lateral drains be able to handle and prevent flooding during storm events where the rainfall amount is about 2 inches per hour or 0.7 inch per 20 minutes (I have a rain gauge). This seems to be the approximate threshold in this area, which if surpassed, generally results in flooding of a portion of our neighborhood (Photo # 1). 12-2

I have enclosed a map showing drainage in the area which I prepared a month or two after several flooding events in 2005, based on my being out during the rain storms and observing the flow of water. Also enclosed are 3 representative photos of the drainage and flooding.

We are located at the 6th and Quincy, right next to existing storm drain or catchment basin 1 (see drawing). During rainfall amounts of 2 inches or less an hour, the drain captures water flowing from the alley between Quincy and Prospect, Quincy, the alley between Quincy and Roycroft, and the north side of 6th street. I have not observed the drainage at Roycroft or further to the east during heavy rains.

At storm events of about 2 inches per hour or more, a portion of the drainage above the old PE right-of-way also flows to this drain. Drainage comes from the east side of Tremont Avenue. A portion of the drainage encompassing the area between Ximeno Avenue and Tremont Avenue and between 4th Street and 6th Street flows across Tremont Avenue, midway between 5th and 6th streets, down onto the right-of-way, and then down to drain 1 (Photo #2). Water also flows along the north side of 6th street (west of the right-of-way), past storm drain 4, onto the right-of-way, and then to drain 1 (Photo #3). During heavy rains, much of the drainage by-passes storm drain 4 because of the grade of the street, which imparts a higher velocity to the water, causing much of the water to flow past this drain.

These rainfall events have consistently flooded our garages. The large storm of January 1995 was considerably worse and left a standing watermark of 33 inches on our block wall, and came close to entering the apartments where we live.

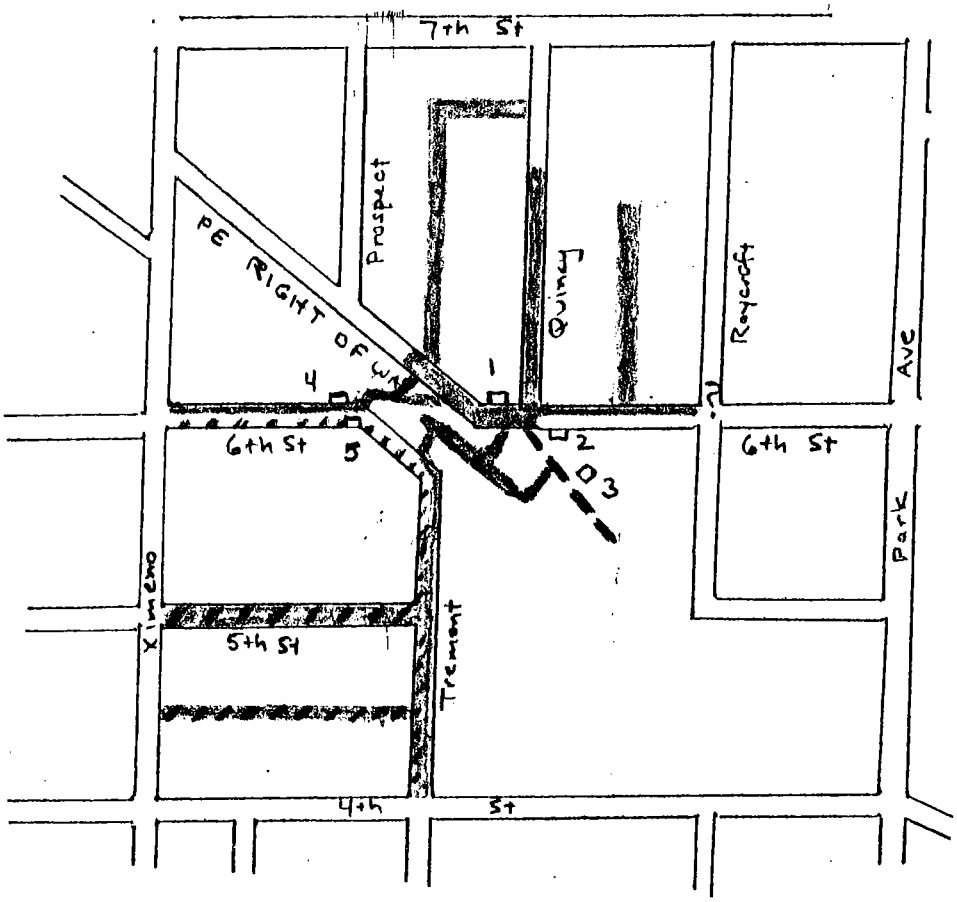
Excluding the extraordinary event of 1995, *are the short lateral drains designed to accommodate and reduce the risk of flooding in the neighborhood due to storm events of about 2 inches per hour (also events of about 0.7 inch in 20 minutes)?*

Thank you for consideration in this matter, and again I thank the County for proceeding with this project.

Gary Guacci,
601 Quincy Avenue
Long Beach, CA 90814

Could I please be on the mailing list to receive future project updates?

STORM RUNOFF, streets and alleys near PE Right of Way between 4th St and 7th St and Ximeno Ave and Park Ave.



NORTH

□ Catchment basins for runoff
1, 2, and 4 are curb-entry basins
3 and 5 are grated basins

▬ Storm runoff captured by catchment basin #1

▬ ▬ Storm runoff captured by catchment basin #1 in addition to #2 and 3 (limited function)

▯▯▯▯ Storm runoff captured by catchment basin #5

G. Guacci
601 Quincy Ave
April 10, 2005

Photo # 1
6th ; Quincy
Early 2005

Flooding at the corner of 6th and Quincy. Note that runoff also comes from the dirt alley between 6th street and the right-of-way (right upper side of photo) ↑

Photo #2
near 6th & Quincy
early 2015

Drainage (runoff) flowing down to 6th Street from Tremont Avenue and the PE right-of-way (Basin #1 at curb is under water)

Letter 12: **Gary Guacci**

Comment No.	Response
12-1	The comment of support has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
12-2	The TAD has been designed for the 50-year flood conditions, which assumes rainfall intensity varying from 1.22 to 2.33 inches per hour. New catch basins would be installed near the intersection of Quincy and 6th Street, with two 7-foot catch basins to be installed on the south side of 6th Street, twenty eight feet of catch basins to be installed to the west of the intersection near the Pacific Electric right-of-way, and twenty four feet of catch basins to be installed to the northwest at Prospect Street and the right-of-way. These catch basins would supplement the existing drain to divert the flow into the Termino Avenue Drain. Localized flooding should be alleviated by these new catch basins. Refer to Section 3.9 for a detailed analysis of flooding impacts.

PDE
54

ELISABETH A. BARNES
6119 Costa del Rey
Long Beach, CA 90803
(562) 494-3403

28 March 2007

Mr. Dale Sakamoto
Project Manager
County of Los Angeles, DPW
P.O. Box 1460
Alhambra, CA 91802-1460

RE: Our Organic Gardens

Dear Mr. Sakamoto:

13-1 I would like to go on record as requesting that you seriously consider our Organic Gardens when taking decisions regarding the proposed drain plans in District 3 and 4 in Long Beach.

Thank you for your consideration.

Sincerely,

Elisabeth A Barnes

Elisabeth A. Barnes

Letter 13: **Elizabeth A. Barnes**

Comment No.	Response
13-1	Under an existing agreement with DPW, the City has agreed to restore the landscape between 7th Street and Loma Avenue in the Pacific Electric right-of-way.[7] The agreement will be updated to reflect the current construction footprint. The County has agreed to deposit funds toward the restoration of this area.[8] In addition, as stated in Section 2.4.3, the community garden at the northern end of the PE right-of-way would be replaced upon completion of the project..[9] This comment has been forwarded to the City by DPW and will be considered by the Board of Supervisors in the decision-making process.

[7] Termino Avenue Drain City-County Cooperative Agreement, dated December 10, 2001

[8] Ibid.
[9] Ibid.

----- Original Message -----
From: bartbaum
To: dsakamoto@dpw.lacounty.gov
Cc: Mayor@longbeach.gov ; District3@LB.gov
Sent: Tuesday, March 27, 2007 8:27 PM
Subject: Proposed Termino Avenue Drain

I have read the draft environmental impact report prepared by the County of Los Angeles, Department of Public Works.

I reside at 5279 E. Paoli Way, Long Beach, California 90803 and my property faces Marine Stadium.. As it now stands, when we have heavy rains or very high tide, the water in Marine Stadium overflows and reaches the middle of the parking

14-1 lot of Marine Stadium. While the proposed construction would afford some portions of the area greater protection in the event of major flooding, it appears that those property owners facing Marine Stadium would be subjected to greater flooding. If the project is approved, what efforts will be taken to mitigate the flood damage to the properties facing Marine Stadium as the water flow into Marine Stadium from the adjacent areas floods the Stadium.

I am concerned about the vibrations from the underground drilling causing structural and other damage to the land and homes facing Marine Stadium.

14-2 Will the drilling underground affect the stability of the surrounding land? What is being done to mitigate or prevent damage caused by the vibrations, drilling and movement of underground earth in Marine Stadium?

Thank you for your response.
Maxine Barton-Bauman

Letter 14: **Maxine Barton-Bauman**

Comment No.	Response
14-1	The project would not alter the topography around Marine Stadium. The only structural changes within Marine Stadium would be the construction of the outlet structure, which, as shown on Figure 2-5 of the EIR, would be constructed below the top of the embankment. As discussed in Section 3.9, the hydrological analysis concluded that that flooded area of Marine Stadium would not increase and the 50-year flood elevation would remain at 3.6 feet NGVD due to the substantial capacity of the receiving waters. The project will improve flooding conditions and the surrounding property owners at Marine Stadium would not be subject to greater flooding risks as a result of the project.
14-2	The vibration analysis in Section 3.7 concluded that the construction-related vibrations would be short-lived and temporary and would not result in architectural or structural damage. Mitigation is included to address the disturbance to nearby residences from the noise of these activities. No impacts would occur to the stability of the surrounding land; therefore, measures to protect structural damage are required.

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by April 16, 2007)

Name: Phillip Ivie

Organization (if any):

Address: 3935 E 8TH ST.

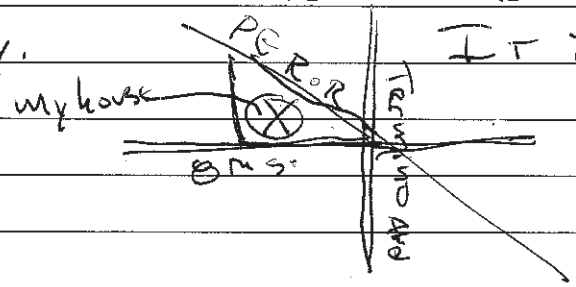
City, State, Zip: Long Beach, CA 90804

Phone (optional): 562 / 243-2920

E-mail (optional): iviebrasil@mac.com

Would you like to remain on our mailing list to receive future project updates?	Yes	No
	[X]	[ ]

Comments My house sits at the NW corner of 8TH and Termino and backs up against the PE right of way. It is 102 years old.



I'm concerned about land movement and soil stability when excavation occurs in those 3 areas (Termino, 8TH ST, PE right of way). Specifically damage to my home and foundation in the event of land/soil movement during construction/excavation. What recourse will I have if damage occurs? Who is liable?

15-1

Letter 15: **Phillip Ivie**

Comment No.	Response
15-1	DPW must comply with all applicable construction standards and regulations including stability requirements in areas where deep trenching would occur. In locations where trenching would occur near structures and major utilities, DPW may use solid shoring within the trenches to ensure stabilization of the sediment. Shoring is a temporary bracing system installed to prevent cave-ins in the walls of an excavation; and is designed by the Contractor to meet the requirements of the Standard Specifications for Public Works Construction. The design is reviewed and approved by the Flood Control District Engineer. The protection of existing improvements which may be affected by the proposed excavation is a part of the detailed design review process. The Contractor would be responsible for providing adequate shoring for the protection of existing improvements in the vicinity of any excavation. As part of standard County specification requirements, the contractor would also be responsible for any damages resulting from failure to provide adequate shoring to support the excavation under any or all of the conditions of loading which may exist or arise during construction.

FirstName: First Name Duane
City: CityLong Beach
EmailAddress: Your Email Addressduane.nead@conexant.com

Question:

Don,

16-1 During the Termino storm drain project, will the street sweeping enforcement continue? On Thursdays and Fridays there is no parking in the area and most people park in the red or walk a couple of blocks (if they are lucky) to reach their residents. Looking at the map, it looks

16-2 like that I may not be able to park any vehicles on my property which will put five to six more cars on the street to park. Is there a plan to take care of this parking issue during construction? Also how long

16-3 will the construction take at the Termino and 8th intersection?

Letter 16: Duane Nead

Comment No.	Response
16-1	As discussed in Section 4.2.4, the proposed project would not significantly affect any public services or utilities in the project area. All City of Long Beach services, including street cleaning, would continue as scheduled, although some inconveniences would occur. Mitigation measures are provided in the EIR to ensure that adequate emergency access is provided at all times during construction (see TRANS-F).
16-2	While no street closures or major detours are anticipated, parking may be restricted on some streets in order to provide an open lane of traffic during temporary lane closures. As explained in Section 3.5, 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. Mitigation measures are provided in the EIR to address short term traffic impacts in the project area, including requirements for a County-approved traffic control plan. No provisions for alternate parking have been made, since no significant parking impacts would occur.
16-3	Construction work in the vicinity of 8th Street and Termino Avenue would involve excavation, construction of a 9-foot wide concrete box, refilling the trench, and reconstruction of the road and curb along Termino Avenue. Work would also include excavation for the lateral pipelines, laying the pipe, connecting them to the mainline, and refilling and restoration above the pipeline. The exact duration of time that construction activities would occur within the vicinity of specific locations along the proposed alignment has not been determined; however, it is estimated that construction work on the mainline at 8th Street and Termino Avenue would take approximately one month and work on the lateral pipelines near 8th Street would take approximately one week each. These estimates are based on typical construction schedules for this type of work and schedules will be confirmed once the contractor is hired. Per the County's *Road/Flood Project Management Manual*, informational flyers would be

prepared for review by the Supervisory District Board Deputy before sending to residents affected by the project. The information includes location, scope, funding, estimated construction duration, and hours of construction.

Apparently the County has no institutional memory
TO WIT:
Circa 17 years ago the leadership of this City articulated its repugnance to impregnating
the Marine Stadium with a storm drain system spewing diseased water into a recreational facility
within but feet of homes.
The plan presented at the time was most telling,as is the recent version.It is an embarrasment
on its face.Essentially the plan to discharge into Marine Sradium(which is seperate from the drain
into the Lagoon is based on technology in vogue at the time of the namesake of Appian Way circa 312BC.!!!!
Need more be said!!!!!!!

Since we are dealing with the same minds responsible for the mismanagment of:LACSD;Drew King;MTA(in large measure)
apparently so.Thus let me sugggest you remind the errant:
The proposal to so impregenate the Marine Stadium was unacceptable 17 years ago when first advanced by the courts
found to be obtuse.
It was unacceptable circa 7 years later when it was again proposed.
It is unacceptable today.
It will be unacceptable tomorrow.
It will be unacceptable next year.
IT WILL be PERPETUALLY UNACCEPTABLE!!!!!!

17-1 The solution:run and connect the drain to the line on PCH that will be installed to service the planned
developement @ PCH/Westminster;Marina Drive(Bixby,SeaPort Hotel aera et al-much of which has been slipped
in under the radar ABETTED BY ILLGEAL UPGRADING OF ROADS TO FACILIATE THE OVER DEVELOPMENT.
Money should not stand as a bar.County has plently of money-you just have to put the foot on the neck of the
issue...begining with supporting a ballot measure to eliminate many of the perks of the LACBOC including cars
and drivers!!!!!

--
somewhatslow
cacrewood2@fastmail.fm

Letter 17: **somewhatslow**

Comment No.	Response
17-1	These comments will be forwarded to the decision-makers for their consideration. No further response is necessary as the comment does not address specific environmental concerns.
17-2	In order to connect the mainline to Pacific Coast Highway (PCH), over 5,500 additional feet of pipeline and new pumping stations would be required. In addition, construction-related impacts would significantly increase due to the increase in the number of residences and businesses located between the right-of-way and PCH that would be affected by the project. The additional cost to extend the Termino Avenue Drain to PCH is an estimated $30 million, excluding the costs of utility relocation, mitigation for increased environmental impact, or right-of-way acquisition. Per the DEIR of the Seaport Marina Hotel Development Project, the only storm drain construction for the project involves reconstruction of a 36" drain that crosses the property. The flow out of the Termino Avenue Drain would require an 19’ by 8’ outlet. Accordingly the Seaport Marina Hotel Development project drain is not adequately sized to handle the flows from the proposed Termino Avenue Drain. The high cost of the additional construction, the extended construction schedule, and the increased environmental impacts would render this alternative infeasible. An EIR is only required to consider a reasonable range of alternatives to the proposed project that could feasibly achieve most of the basic project objectives and would lessen any of the significant effects of the project. Section 5.1 of the Final EIR describes the alternatives that were considered but rejected as infeasible during the scoping process, including alternate outlet structure locations. Such alternatives were rejected because they were found to be infeasible and/or would not reduce any of the significant effects of the project.

3/5/07

TERMINO AVENUE DRAIN PROJECT
ENVIRONMENTAL IMPACT REPORT COMMENTS
LONG BEACH, CALIFORNIA

(please hand in or mail back by April 16, 2007)

Name: George + Marilyn Benatz
Organization (if any):
Address: 2320 E 5th St
City, State, Zip: Long Beach, CA 90814
Phone (optional): 562-987-2814
E-mail (optional): benatz2@verizon.net

Would you like to remain on our mailing list to receive future project updates? Yes [X] No [ ]

1

Comments We own two houses on one lot at 728-730 Belmont Ave. At the end of Belmont, where the street ends at the "Green Belt," there is a drain pipe, where the street ends, that drains into the "Green Belt." It does not appear to be tied into any sewer system. It has been put where the street ends at a gutter. The gutter along Belmont appears to just run into this pipe.

Our concern is: Will there be a tie in for Belmont between 7th & the "Green Belt" to the County System. There is a lot of landscape runoff & rainfall runoff that rushes down Belmont. The City has never maintained this open pipe that carries a lot of runoff. 18-1

Comments continued

2. Since we know the greebelt is home to rats, mice, possums, skunks - Is there any help from the County available if the creatures "relocate" to our property?

18-2

3. One of our houses is over 100 years old - the other 80+ years. If we have plaster or structural damage who do we call and who pays for repairs?

18-3

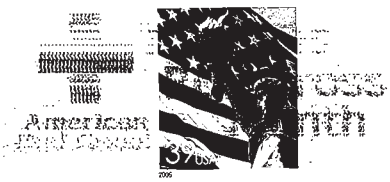
RECEIVED
DEPT. OF PUBLIC WORKS
07 MAR -2 PM 4:02
GEOTECHNICAL DIVISION

---Please fold in thirds---

George and Marilyn Benatz
2320 E. 5th St.
Long Beach, CA 90814

Tape it closed, affix a 39 cent stamp and mail by April 16, 2007. Thank you!

05 MAR 2007 PM 1 L



County of Los Angeles, Department of Public Works
P.O. Box 1460
Alhambra, California 91802-1460
Attn: **Mr. Dale Sakamoto, Project Manager**

PDD 851

Letter 18: **George and Marilyn Benatz**

Comment No.	Response
18-1	The TAD project would include two new catch basins (one 7-foot and one 14-foot basin) to address runoff flow along Belmont Avenue. These basins would tie into the storm drain mainline, which would ultimately drain into Marine Stadium. Localized flooding should be alleviated by these new drains, as discussed in Section 3.9.
18-2	Trenching activities along the PE right-of-way would be temporary and existing conditions would be restored following installation of the pipeline. It is not anticipated that residences or businesses in the vicinity of the PE right-of-way would experience an increase in the amount of rodents on their property due to the project as a significant amount of vegetation would not be removed.
18-3	The greatest source of vibration during construction would occur near Marine Stadium during installation of the piling for the cofferdam. As discussed in Section 3.7, the nearest residence to these impacts would be approximately 120 feet from the work area and would experience maximum vibrations between 0.06 to 0.14 in/sec ppv, which poses virtually no risk of architectural or structural damage. Standard trenching activities along the PE right-of-way and within City streets would also create vibration impacts in some areas; however, these activities would not cause any architectural or structural damage to adjacent structures.

Mr. Kirby,
The function of the mainline splitter is to divert "low flows" out of the mainline storm drain into the sanitary sewer system for treatment.The splitter was designed to be underground within the former Pacific Electric right-of-way between 7th and 8th St.
The low flow system operates during non-rainy times when volume of water in the storm drain is minimal(primarily street runoff).During the rain, the large volume of storm water will move along the mainline to Marine Stadium.

-----Original Message-----
From: JOHN KIRBY [mailto:johnandrobin@verizon.net]
Sent: Saturday, February 24, 2007 2:41 PM
To: Sakamoto, Dale
Subject: Termino Avenue Drain

Mr. Sakamoto,

I just recieved your letter regards the proposed Termino Drain Project.

19-1 Since I live directly south of the right-of-way on Theresa St., I am curious to know what the referenced "mainline splitter stucture" is and where it is to be located.

I will attempt to be in attendance at one of the public meetings, but any insight you could provide before then would be much appreciated.

Thank you,

John Kirby

Letter 19: **John Kirby**

Comment No.	Response
19-1	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) occurring north of 7th Street from the storm drain and direct them into an existing County sanitary sewer line. The Draft EIR evaluated a splitter structure at 4th Street to divert the non-storm flows to the County sanitary sewer line. Based on new information, the County determined that, due to potential tidal influences, is would be difficult to maintain the tidal gate check valves to prevent leakage to the main line at this location. Accordingly, the mainline diversion structure was moved upstream and. Accordingly, the splitter structure has been replaced with a mainline diversion berm located near Roswell Avenue and the PE railway right-of-way intersection, which is not under tidal influence. Therefore, the "mainline splitter structure" is no longer part of the proposed project. The "mainline diversion berm" will divert low flows to the pump station. Both the mainline diversion berm and the pump station will be located at the intersection of Roswell Avenue and the PE right-of-way. The text and graphics of the EIR have been revised to reflect the changes in the proposed project design. No changes in the analysis or determination of impacts have occurred as a result of the revisions.

Taylor Parker
The Lagoon Explorer
740 Roswell Ave
Long Beach, Ca 90804
562-331-0226
Taylor.Parker@yahoo.com

April 15, 2007

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

RE: Response to EIR for the Termino Avenue Drain Project

Dear Mr. Sakamoto:

20-1 On behalf of the community that I live, operate my business and attend school in I would like to thank you for the opportunity to respond to the Termino Avenue Drain Project Draft EIR. The project is well-conceived and the outreach the county has undertaken through two community meetings is appreciated. As a member of two community organizations, the Friends of the Colorado Lagoon (FOCL) and the Friends of the Greenbelt (FOG), that are active in protecting and promoting care and respect for our unique habitats in the neighborhood, I have a couple comments that I believe are critical to explore further.

20-2 First, the TADP Draft EIR is a bit ambiguous regarding the native floral species that have been documented in the Greenbelt section of the project. In section 3.3 of the Draft there are 6 species (Erigonum spp, Artemisia spp, Salvia spp, Isocoma spp, Baccharis spp, and Atriplex spp) while in Appendix A there are several more listed. A count conducted by The Los Cerritos Wetland Stewards, Inc that was updated in February 2007 (which is attached) has come up with at least 33 native species in the 2.5 acre property. It is of crucial importance to note these species as the Draft calls for a 1:1 ratio of native plant replacement in BIO-K of the EIR.

20-3 The EIR states that no sensitive invertebrates were encountered during the two expeditions but does mention in section 3.3 that Monarch butterflies have the potential to occur within the site. Monarch butterflies, assorted Blues (including the supposedly world's smallest: Western Pygmy Blue), assorted Swallowtails and Funeral Duskywings have been seen on the Greenbelt. This is important to note because Butterflies are some of the most impacted animals in regard to habitat disruption. In addition to the 1:1

20-4 replacement listed, it would be wonderful for the project to place additional Butterfly

20-4 cont. nectaring and egg-host plants on the re-vegetation list including a plan to plant native milkweed (Asclepias spp.) to aide the sensitive Monarch species.

20-5 Lately there have been numerous accounts of the dangers of NOX and diesel particulates in our Southern California air. With the construction occurring directly in our neighborhood it would be negligent to disregard our community's health for the sake of a financial hurdle. The Draft lists several alternatives in section 3.6 that would bring the NOX and diesel particulates dangers below the healthy threshold level but are too expensive to implement. I believe that revisiting the costs associated with protecting our wellbeing could be an opportunity for the county to show it's commitment to the health and safety of our neighbors on all levels.

20-6 Besides these crucial points, the EIR Draft does well to address the myriad potential problems and I cannot elaborate enough how much I appreciate the benefit the project will have on the Colorado Lagoon's water quality. If the aforementioned problems were addressed I as a resident, student, proprietor of The Lagoon Explorer and community member of both the Friends of the Colorado Lagoon and the Friends of the Greenbelt living next to the Greenbelt would support the county's project of alleviating our flooding difficulties.

Sincerely,

Taylor Parker

Attachments: Greenbelt Flora List

Greenbelt Native Plant List - February 2007

Ambrosia psilostachya – Western ragweed
Artemisia californica – California sagebrush
Atriplex lentiformis – Big saltbush/quail bush
Baccharis pilularis – Coyote Bush
Baccharis salicifolia – Mule Fat
Camissonia cherianthifolia - Beach Evening-Primrose
Ceanothus 'Dark Star'
Encelia californica – California Sunflower
Epilobium canum - California Fuchsia
Ericameria linearifolia -Goldenbush
Eriogonum fasciculatum – California Buckwheat
Eschscholzia californica - California Poppy
Heteromeles arbutifolia – Toyon/Christmas-tree berry
Isocoma menzeisii – Goldenbush
Isomeris arborea – Bladder Pod
Juglans californica - Southern California Black Walnut
Juncus acutus – Spiny Rush
Lavetera assurgentiflora – Island Mallow/Malva Rosa
Leymus condensatus - Giant rye grass
Lotus scoparius – Deerweed
Lupinus camissonus – Dune Lupine
Malosma laurina – Taco Plant/Laurel Sumac
Platanus racemosa – Western Sycamore
Prunus ilicifolia – Holly-Leafed Cherry
Quercus agrifolia – Coast Live Oak
Rhamnus californica – Coffee Berry
Rhus integrifolia – Lemonade Berry
Rhus ovata – Sugar Bush
Ribes viscosissimum – Sticky Ribes
Romneya coulteri – Matillja Poppy
Rosa californica – California Rose
Salvia leucophylla – Purple Sage
Salvia mellifera – Black Sage
Sambucus mexicana – Mexican Elderberry
Sporobolus airoides – Alkali Sacaton

Letter 20: **Taylor Parker**

Comment No.	Response
20-1	The comment of support has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
20-2	The list of species included in Section 3.3 is based on surveys conducted from 2003 through 2005, which reflects the existing conditions that were present at the time of the notice of preparation was publish for this project (May 2004), in accordance with Section 15125(a) of the CEQA Guidelines. Mitigation measure BIO-K includes a restoration plan to salvage existing plants, which would include those not observed during the biological surveys. Please see response to comment 7-4. The list of species included in Section 3.3 is based on surveys conducted from 2003 through 2005, which reflects the existing conditions that were present at the time of the notice of preparation was publish for this project (May 2004), in accordance with Section 15125(a) of the CEQA Guidelines. Mitigation measure BIO-K includes a restoration plan to salvage existing plants, which would include those not observed during the biological surveys. While the EIR states that the potential exists for Monarch butterflies to occur onsite, none were observed during biological surveys of the site. In addition, the site does not provide optimal over-wintering habitat for monarch butterflies; therefore the potential for encountering this species onsite would be relatively low. Additionally, the monarch butterfly is not protected by any state or federal regulations and no significant impacts to this species would occur.
20-3	Please see response to comments 7-4.
20-4	DPW has forwarded the suggestions for additional butterfly habitat to be included on the re-vegetation list to the City for consideration in its plans for the PE right-of-way. As discussed in BIO-K, salvaged materials would be maintained and used in replanting of the site, in addition to other native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock).
20-5	See response to comment 7-5.
20-6	The comment has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.

From: "Andrea B." <veganskater@earthlink.net>
To: "Sakamoto, Dale" <dsakamoto@dpw.lacounty.gov>
Date: 4/15/2007 9:27:28 PM
Subject: Termino Drain Project EIR Comments

Dear Mr. Sakamoto and Colleagues:

Thank you very much for all the helpful assistance you have provided so far, regarding the public meetings for this project. I have been glad for the opportunity to work with you.

Please note that I do support the project due to the benefits to the community and the Colorado Lagoon ecosystem. My concerns, then, have to do with "doing the project right": minimizing impact to the people and other creatures who will be impacted by the project.

Following are my comments and concerns regarding the Termino Drain Project EIR.

* Diesel particulate and NOx emissions: This project will involve bringing heavy diesel equipment into the hearts of our residential neighborhoods. Thanks to its proximity to the Ports, Long Beach is already inordinately impacted by diesel particulate and other pollution. It is well-documented that such pollution causes disproportionate lung disease, heart disease and deaths. The EIR notes that cleaner diesel equipment is possible: that the project "may" use late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. It recommends a fleet 20% cleaner than fleet average. However, the word "may" is flaky; and fleet average is still filthy. This equipment will be running about 50 feet from my home, and also 50 feet from my office. As someone who will be tremendously impacted by this project, I want diesel equipment that is more than 20% cleaner than fleet average; and I want to know that the cleanest technology possible is being used (not "may" be used). Before the project begins, I want the public to know exactly what options are being examined, how much they cost, and how the determination is made, to choose which equipment/contractor will be used. It might be more costly; but what cost can be placed on human life and health? It wouldn't be such a big issue, if this area wasn't already saturated with diesel emissions. I'm sure you know that Long Beach has been dubiously distinguished as "The Diesel Death Zone." All melodramatics aside, the statistics do concur with that label. Also: Will the equipment be CARB-rated? Who will be monitoring the contractors' actual behaviors and what will happen if they violate the clean air restrictions?

21-1
21-2
21-3
21-4

* Public Ombudsman: Since this project will so intimately impact our local residents, there must be someone appointed to mediate concerns. I am talking about an actual human being who can be spoken with and met with-not an answering machine that never yields any response. This person needs to have the power to impose sanctions on the contractors if they violate clean

21-5

21-5 cont. air requirements, noise requirements, work times (before 7AM or after 7PM), and respect for the existing native ecosystem.

21-6 * Dust Pollution: The EIR notes that the project will create dust pollution, another respiratory irritant and general nuisance. Yet it doesn't propose any dust mitigation steps. There needs to be steps taken to mitigate dust, such as sandbags, water and tarps.

21-7 * Maintenance and Restoration of Native Habitat: The Long Beach Greenbelt (between 7th Street and the corner of 8th/Termino) is now home to nearly forty species of California native plants. It provides viable urban habitat for a multitude of animal species, ranging from large birds of prey to small hummingbirds; from butterflies, beetles and lizards to skunks, possums, rabbits and squirrels. Attached is a partial, incomplete species list. For the sake of the ecosystem as well as making restoration easier, there need to be identified no-construction zones along the edges of the Greenbelt: roped off and unviolated by construction equipment. My colleagues at Friends of the Greenbelt and I have identified some zones along the edges, that we believe could stay free of construction equipment, without hindering the project. This would preserve some plants as well as some animal habitat. I can provide you with the map we have created thus far. Furthermore, the area was surveyed in 2004, when it was clearly at its historical worst. The EIR photos demonstrate this! It has improved tremendously since the EIR survey. The Long Beach Greenbelt needs to be re-surveyed prior to construction to ensure adequate restoration efforts. If the EIR only notes nine native plant species and we know of nearly 40, restoration efforts are sure to be woefully inadequate.

21-8 * Re-planting; Salvaging and Preservation of Existing Plants: The EIR notes that salvaging and reusing some of the existing plant biomass is planned. I wholeheartedly support this. Specifically, Greenbelt plants could be transplanted directly into other segments of the right-of-way in which construction is already complete. This will save money and time.

21-9 Furthermore, with respect to the 1:1 replacement ratio planned for mitigation: This is definitely inadequate if one is going by the number of plants. The plants in the Greenbelt were planted about eight years ago. A 1:1 plant ratio will yield tremendously less biomass, and this impact will continue for the next seven or eight years. For that reason I am asking for a 2:1 or 3:1 ratio unless it is 1:1 with respect to plant biomass.

Thank you very much for your attention to these matters.

Upon closing, I will simply note:

21-10 Please know that the Long Beach Greenbelt is an area that is loved and cherished by many, many local residents. As someone who works on one side of it and lives on the other, I am in a unique position to observe this. Every day, I see children, elderly folks, families with young children, individuals and their dogs, using and enjoying the area. One elderly woman, walking slowly with her elderly dog, commented to me that she doesn't know what she would do without the Greenbelt. Her mobility is now limited; and she loves nature so much, she said. This is one of several reasons why I feel it is so vitally important to proceed with caution and restore with care.

Sincerely,

Andrea L. Bell, L.C.S.W.

Licensed Clinical Social Worker

740 Roswell Avenue

Long Beach, CA 90804

(562)243-9963

And the day came when the risk to remain tight in a bud was more painful than the risk it took to blossom.

--Anais Nin

Species List:
The Long Beach Greenbelt

Birds (incomplete list):
(W) = Winter Visitor (R) = Resident (S) = Summer Visitor

Yellow-rumped Warbler (***Dendroica coronata***)(W)
Black Phoebe (***Sayornis nigricans***)(R)
Chipping Sparrow (***Spizella passerine***)
White-crowned Sparrow (***Zonotrichia leucophrys***)(W)

Anna's Hummingbird (***Calypte anna***)(R)
House Sparrow (***Passer domesticus***)(R)

Kestrel (***Falco sparverius***)(R)
Mourning Dove (***Zenaida macroura***)(R)
Say's Phoebe (***Sayornis saya***)(W)
Cassin's Kingbird (***Tyrannus vociferans***)(W)
Cooper's Hawk (***Accipiter cooperii***)(R)
Western Scrub-Jay (***Aphelocoma californica***)(R)
Northern Mocking Bird (***Mimus polyglottos)***(R)

Plants: (Credit: Los Cerritos Wetlands Stewards)

Ambrosia psilostachya – Western ragweed
Artemisia californica – California sagebrush
Atriplex lentiformis – big saltbush/quail bush
Baccharis pilularis – coyote bush
Baccharis salicifolia – mule fat
Camissonia cherianthifolia - beach evening-primrose
Ceanothus 'Dark Star'
Encelia californica – California sunflower
Epilobium canum - California fuchsia
Ericameria linearifolia
Eriogonum fasciculatum – California buckwheat
Eschscholzia californica - California poppy
Heteromeles arbutifolia – toyon/Christmas-tree berry
Isocoma menzeisii – goldenbush
Isomeris arborea – bladder pod
Juglans californica - Southern California black walnut
Juncus acutus – spiny rush
Lavetera assurgentiflora – island mallow/malva rosa
Leymus condensatus - *Giant rye grass*
Lotus scoparius –Deerweed
Lupinus camissonus – dune lupine

Lupinus bicolor--Lupine
Malosma laurina – taco plant/laurel sumac
Platanus racemosa – western sycamore
Prunus ilicifolia – holly-leafed cherry
Quercus agrifolia – coast live oak
Rhamnus californica – coffee berry
Rhus integrifolia – lemonade berry
Rhus ovata – sugar bush
Ribes viscosissimum – sticky ribes
Romneya coulteri – matillja poppy
Rosa californica – California rose
Salvia leucophylla – purple sage
Salvia mellifera – black sage
Sambucus mexicana – Mexican elderberry
Sporobolus airoides – Alkali Sacaton

Fungi…

Common Volvariella (***Volvariella Speciosa***)
Blewit (***Clitocybe Nuda***)
Dead Man's Foot (***Pisolithus tinctorius***)

Mammals and insects: Not surveyed recently.
Informal observation yields:
Skunks
Possums
Voles
Multiple species of grasshopper and butterfly
Rabbits
Squirrels

Letter 21: **Andrea Bell, L.C.S.W.**

Comment No.	Response
21-1	As stated in Section 3.6, the 25 percent reduction of NO_x emissions is a requirement, not a recommendation. Mitigation measure AIR-A states that the reduction shall be achieved. The word "may" refers to the different options available for the contractor to achieve this reduction. Refer to response to comment 7-5.
21-2	Refer to response to comment 7-5.
21-3	Mitigation measure AIR-A requires the contractor to submit an inventory of off-road construction equipment to be used. DPW would assure that the equipment complies with the applicable CARB standards., as required by mitigation measure AIR-A in the MMRP.
21-4	As stated in the MMRP included in the Final EIR, DPW would be responsible for monitoring the contractor's compliance with the required air quality mitigation. Mitigation measure AIR-A has been revised to include information regarding notification of the public and contact information for reporting complaints or violations. (See Section 3.6 and Chapter 6.0 of this Final EIR.) Should the project exceed the limits established by the required mitigation, SCAQMD has the authority to issue a warning or shut the project down.
21-5	As stated above, Mitigation measure AIR-A has been revised to include information regarding notification of the public and contact information for reporting complaints or violations. Phone numbers for the DPW inspector, area engineer, and office engineer will be provided in the notices.
21-6	SCAQMD Rule 403 includes dust abatement requirements to ensure the inclusion of best management practices for addressing construction-related dust. The project would be required to adhere to these requirements as part of the construction permits and as standard practice for all DPW projects.
21-7	Mitigation is provided for revegetation of the Greenbelt area (BIO-P) and efforts would be made during construction to avoid or minimize impacts to the Greenbelt. The anticipated area of disturbance would be approximately 80 feet of the 120-foot-wide corridor. Additionally, the list of species included in Section 3.3 is based on surveys conducted from 2003 through 2005, which reflects the existing conditions that were present at the time of the notice of preparation was publish for this project (May 2004), in accordance with Section 15125(a) of the CEQA Guidelines.

21-8 The comment of support has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.

21-9 A 1:1 ratio is appropriate for replacement of cultivated plants in the PE right-of-way between 7th and 8th Streets as they are not naturally occurring habitat which would warrant a higher mitigation ratio. Per mitigation measure BIO-P, existing plants would be salvaged to the extent feasible, preserving their size. New plantings would be used to replace plants that could not be salvaged and are generally used in excess of what is required in order to account for die-off. A 1:1 success ratio assures replacement of plants at a density that is appropriate for the plant species present. Most of the existing vegetation is naturally found in coastal sage scrub communities that typically have bare ground underneath and between shrubs. The restoration area is also limited in space and planting too many plants would not allow for the future growth of salvaged and replacement plants.

21-10 The comment will be provided to the Board of Supervisors for consideration in the decision-making process for the project.

C. ANNA ULASZEWSKI, AICP
5365 E. Paoli Way
Long Beach, CA 90803

Mr. Dale Sakamoto
L.A. County, Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Sakamoto:

Draft Environmental Impact Report
Termino Avenue Drain Project, Long Beach, CA

The above referenced document proposes the construction of a storm drain mainline, six lateral drains, low-flow treatment pump station, catch basin screens, and an outlet to Marina Stadium in the City of Long Beach.

This review is limited to issues related to the catch basins, low-flow treatment pump station and outlet structure to Marina Stadium.

General Comments

22-1 This document adequately addresses the potential, direct impacts to flora and fauna in the area of Colorado Lagoon and Marina Stadium, and recommends appropriate mitigation.

22-2 For information, there is a large colony of black crowned night herons in the vicinity of this project. Also, a pair of Osprey has been observed in the area. Caution should be used if trees are removed in this general area.

22-3 According to page 2-6, par 2, "Following approval, the document was challenged in court by Friends of the Colorado Lagoon. The court found that the document provided inadequate CEQA analysis...."

- This reference was cited several times in the document.
- Please provide a copy of the Court's decision in the Appendix.

According to page 3.9-2, Colorado Lagoon, "The Lagoon is a 303(d) listed waterbody impaired for chlordane, [etc]....A water quality assessment...has also identified concerns for bacteria and nutrients. Analysis of sediment samples...concluded that significantly higher concentrations of pollutants are located at the northwest portion of the Lagoon, where the existing Termino Avenue Drain...discharge(s)."

22-4 • While it is recognized that the catch basin screens, and low-flow treatment station will catch a portion of the first flush from the streets, however, not all run-off will be captured by the treatment station. Pollutants and some debris will enter Stadium water.

22-5 • 1) Will the water in the vicinity of the outlet be tested after large rain-events [to be defined]?

22-6 • 2) In order to prevent a situation similar to that found in the Lagoon, will stormwater sediments, deposited near the mouth of the outlet, be tested on a routine basis?

22-7 • 3) How will the additional nutrient loading affect marine fauna/flora?

According to page 3.9-8, Impact Analysis, the outlet structure is 11 feet by 8 feet.

22-8 • Please provide elevation drawings of the outlet structure at various tidal conditions in appropriate section.

According to page 3.10-12, "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...."

Also, according to Section 4.3.10, Hazards and Hazardous Materials, "The project would not contribute to long-term cumulative impacts due [to] its limited maintenance and operational requirements."

• Although the City of Long Beach has an effective street sweeping program, during a large rain-event, dirt and soil particles, hydrocarbons and other pollutants, animal fecal matter, and trash will be washed into the Drainage System.

22-9 In order for the drainage system to protect the water quality of Marine Stadium, the system will require not only "routine inspections" or "limited maintenance", but timely removal of accumulated sinkables and floatables, and biomass.

• Please provide additional information about the inspection and maintenance activities that will be conducted to keep the system operating effectively.

Thank you for the opportunity to comment on this document. I hope that my comments will be of assistance in preparing the Final Environment Impact Report.

Yours truly,

C. Anna Ulaszewski

C. Anna Ulaszewski, AICP

Letter 22: **C. Anna Ulaszewski, AICP**

Comment No.	Response
22-1	The comment has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
22-2	Although not observed during the biological surveys, all birds, including black crowned night herons would be protected by adherence to the Migratory Bird Treaty Act and through implementation of Mitigation measure BIO-A, set forth in Section 3.3 of the Final EIR.
22-3	The court decision is part of the administrative record for this EIR and the can be viewed by appointment at DPW Headquarters. To schedule an appointment, please contact Dale Sakamoto at (626) 458-3915
22-4	See response to comments 11-2, 11-3, and 11-4. Although some pollutants would enter Marine Stadium, the overall water quality of the system would improve, as discussed in Section 3.9.
22-5	See response to comments 7-2 and 11-5. As discussed, no significant impacts to water quality would occur as a result of the project, and no mitigation involving water quality sampling would be required.
22-6	See response to comments 7-2 and 11-5.
22-7	As discussed in Section 3.3, the water quality analysis indicated 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. As stated in Section 3.3, impacts to existing fauna/flora would be less than significant as a result of the changes in salinity within the system.
22-8	Figure 2-5 in Section 2.0 of the Final EIR shows the outlet structure between high and low tide conditions. At the lowest high tide, a maximum of three feet of the outlet structure would be exposed, with the remaining 2 feet located below the water level. As discussed in Section 3.9, the aesthetic impacts associated with the new outlet structure would be less than significant.
22-9	Inspection and maintenance of the catch basins would occur after major storm events in order to ensure that the system operates efficiently. Additionally, the catch basins would be inspected and cleaned once during the summer, prior to and following a rain event, and when the sump is 40 percent full during the winter, or as needed (see Section 2). The EIR project description has been

revised to further describe the anticipated maintenance requirements (see Section 6).

MDD 605

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

May 20, 2008

Dale Sakamoto
Los Angeles County Department of Public Works
900 S. Fremont Avenue
Alhambra, CA 91803

Subject: Termino Avenue Drain
SCH#: 2000111022

Dear Dale Sakamoto:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on May 19, 2008, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

23-1

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH# 2000111022
Project Title Termino Avenue Drain
Lead Agency Los Angeles County

Type **EIR** Draft EIR

Description 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 convey storm flows directly to Marine Stadium, located immediately southeast of Colorado Lagoon, 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 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. Upon completion of the project, the alignment would be returned to its existing condition.

Lead Agency Contact

Name Dale Sakamoto
Agency Los Angeles County Department of Public Works
Phone (626) 458-3915 **Fax**
email
Address 900 S. Fremont Avenue
City Alhambra **State** CA **Zip** 91803

Project Location

County Los Angeles
City Long Beach
Region
Cross Streets Anaheim Street, Termino Avenue
Parcel No.
Township 5S **Range** 12W **Section** 4 **Base** LB

Proximity to:

Highways I-405
Airports Long Beach Municipal
Railways Abandoned PE right-of-way
Waterways San Gabriel River, Colorado Lagoon, Los Cerritos Channel
Schools 6 LBUSD schools
Land Use Pacific Electric (PE) right-of-way, open space, roadways, parking lots, and sidewalk/designated open space/park, rail right-of-way, residential

Project Issues Air Quality; Biological Resources; Coastal Zone; Cumulative Effects; Vegetation; Wetland/Riparian; Wildlife

Reviewing Agencies Resources Agency; Regional Water Quality Control Board, Region 4; Department of Parks and Recreation; Native American Heritage Commission; Public Utilities Commission; Office of Historic Preservation; Department of Fish and Game, Region 5; Department of Water Resources; California Highway Patrol; Caltrans, District 7; State Water Resources Control Board, Division of Water Rights; San Gabriel & Lower Los Angeles Rivers & Mountains Conservancy; State Lands Commission; Caltrans, Division of Aeronautics

Date Received 04/04/2008 **Start of Review** 04/04/2008 **End of Review** 05/19/2008

Note: Blanks in data fields result from insufficient information provided by lead agency.

STATE OF CALIFORNIA — Arnold Schwarzenegger, Governor

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

Clear
5-19-08
C

April 22, 2008

RECEIVED
APR 25 2008
STATE CLEARING HOUSE

Mr. Dale Sakamoto
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
900 South Fremont Avenue
Alhambra, CA 91803

Re: SCH#2000111022; CEQA Notice of Completion; Re-circulated draft Environmental Impact Report (DEIR) for the Termino Avenue Drain; Los Angeles County, California

Dear Mr. Sakamoto:

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

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

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

23-2

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

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

√ Contact the Native American Heritage Commission (NAHC) for:

* A Sacred Lands File (SLF) search of the project area and information on tribal contacts in the project vicinity that may have additional cultural resource information. Please provide this office with the following citation format to assist with the Sacred Lands File search request: USGS 7.5-minute quadrangle citation with name, township, range and section: .

- The NAHC advises the use of Native American Monitors to ensure proper identification and care given cultural resources that may be discovered. The NAHC recommends that contact be made with Native American Contacts on the attached list to get their input on potential project impact (APE). In some cases, the existence of a Native American cultural resources may be known only to a local tribe(s).

√ Lack of surface evidence of archeological resources does not preclude their subsurface existence.

- Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5 (f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
- A culturally-affiliated Native American tribe may be the only source of information about a Sacred Site/Native American cultural resource.
- Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.

23-2 (cont.)

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

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

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

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

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

Sincerely,

Dave Singleton
Program Analyst

Attachment: List of Native American Contacts

Cc: State Clearinghouse

Letter 23: **State of California OPR, State Clearinghouse**

Comment No.	Response
23-1	The Termino Avenue Drain Recirculated Draft EIR was received by State Clearinghouse and copies of the document were forwarded to the appropriate reviewing agencies. One agency, the Native American Heritage Commission, submitted a letter in response to the EIR. DPW's response to this letter is provided below.
23-2	See response to comments 3-1 through 3-7. As discussed, an archaeological records search was conducted at the South Central Coastal Information Center at California State University, Fullerton on April 27, 2005. In addition, an archaeological field survey of the project area was conducted on January 4, 2006. As part of the EIR process, the Native American Heritage Commission was contacted for a Sacred Land File search of the project area. In a letter dated May 18, 2007, the Native American Heritage Commission confirmed that no such sites were identified within the vicinity of the project site.

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

Main Office

818 West Seventh Street
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Los Angeles, California
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www.scag.ca.gov

24-1

May 16, 2008

Mr. Dale Sakamoto
County of Los Angeles
900 South Freemont Avenue
Alhambra, CA 91803

RE: SCAG Clearinghouse No. I 20080194 Termino Avenue Drain

Dear Mr. Sakamoto:

Thank you for submitting the **Termino Avenue Drain** 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**, 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 **April 1-30, 2008** 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) 236-1857. Thank you.

Sincerely,

LAVERNE JONES, Planning Technician
Environmental Planning Division

Letter 24: **Southern California Association of Governments**

Comment No.	Response
24-1	SCAG determined that the proposed project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and CEQA Guidelines, and thus has no comments. SCAG verified that a description of the proposed project was published in their Intergovernmental Review Clearinghouse Report for public review and comment. No further response is required.

TABLE 7-2 RESPONSES TO COMMENTS RECEIVED DURING PUBLIC MEETINGS

No.	Comment	Response
March 3, 2007 Public Meeting		
25-1	If the tide is coming in during a storm event, will the pollutants flush back into Colorado Lagoon?	Refer to response to comments 7-2 and 11-2.
25-2	The scoping period diagrams indicated that the outlet into Marine Stadium was going to be further south. Why has it been moved?	The location of the outlet structure was relocated to a position further north in Marine Stadium due to engineering concerns with the amount of required demolition and increased impacts to the eelgrass associated with the southern location.
25-3	Fire Station access to south and west during construction?	As discussed in Section 4.2.4, the project would not impact operations at the fire stations. Adequate notification of all lane closures would be provided and impacts would be less than significant.
25-4	How many catch basins are there?	There would be 89 catch basins, resulting in a catch basin at almost every intersection.
25-5	What are the dates for construction?	As discussed in Section 3.6.3, construction is anticipated to begin in April 2008 and will take 18 to 24 months to complete.
25-6	City catch basin study is looking to remove bacteria. Newport Beach study found this didn't work. What will these catch basins remove?	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.
25-7	What are the maintenance needs for catch basins?	Refer to response to comment 22-9. Inspection and maintenance of the catch basins would occur after major storm events in order to ensure that the system operates efficiently. Additionally, the catch basins would be inspected and cleaned once during the summer, prior to and following a rain event, and when the sump is 40 percent full during the winter, or as needed.
25-8	There is an existing erosion problem within the PE ROW between Park and Ximeno. Immediately east of Ximeno 6th Street extension. Build a retaining wall? Lower at 6th street – causes erosion problem. Will the project improve this situation?	As part of the proposed project, the area would be graded to repair the erosion damage. Refer to response to comment 12-2 for the prevention of future erosion.
25-9	There is an existing structure at 7th/Ximeno that would be removed under the proposed project. After construction, could it be replaced?	As discussed in Section 3.1, the removal of the existing structure at 7th Street and Ximeno Avenue is not considered a significant environmental impact under CEQA and therefore, no mitigation is required. Your comment will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
25-10	Western side of Colorado Lagoon has erosion problems too because there are no drains collecting stormflows	Refer to response to comment 7-1.
25-11	Which area would be converted to park after project completion?	Refer to response to comments 7-4 and 8-3.
25-12	Representative of Friends of the Greenbelt (www.thisland.org).	Refer to response to comment 7-4.

	Bio studies were done in 2004, when the biological diversity was at its worst. No protection. Greenbelt is represented in the Draft EIR as a jungle.	
25-13	AQ – 20% NO_X and 40% PM with mitigation. Already heavily impacted by the POLB. More mitigation needed – e.g. fuel additives, biodiesel etc. Opposes the use of older vehicles in construction. Houses are right next to the PE ROW.	The comment has been noted and will be used by the Board in project approval determination. Mitigation measure AIR-A has been revised to include measures to notify residents near the construction areas prior to the start of construction. Please see Section 3.3 and Chapter 6.0 for the text of the revised mitigation measure.
25-14	FotG has plans to restore from 11th to Marine Stadium. Different forms – woodland through to coastal sage scrub along the ROW.	Refer to response to comments 7-4 and 8-3.
25-15	Will there be any structural damage to homes as a result of pile driving?	Refer to response to comment 18-3.
25-16	Any plan to hook up streets running into ROW to the stormwater system? Currently these drain into the greenway.	As discussed in Section 2.0, new laterals would be constructed in addition to the mainline. These laterals would connect these streets to the new stormdrain and catch basins would collect incoming flows.
25-17	What is the size of the splitter structure?	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) occurring north of 7th Street from the storm drain and direct them into an existing County sanitary sewer line. The splitter structure has been replaced with a mainline diversion berm located near Roswell Avenue and the PE railway right-of-way intersection (see Sections 2 and 6).
25-18	How about the low flow pump at the park?	The location of the low-flow pump station has been moved to Roswell Avenue and the PE railway right-of-way intersection.
25-19	How noisy is the pumping station and what will be the hours of its operation?	The pumping station would be located 12 feet below ground surface, and would not create any noise disturbance aboveground. Pumping would only occur between midnight and 5 AM.
25-20	Please comment on why the large flood basins alternative was not carried forward.	As discussed in Section 5.1.3, this alternative was eliminated from further consideration due to the excessively high construction and operating costs, combined with the environmental impacts to the schools. In addition, there was insufficient area available to construct the facilities and connect them to the stormdrain.
25-21	30% or 50% picked up?	The sewer line has the capacity to receive a maximum of 40,000 gallons per day from the proposed project.
25-22	Are the photos of the site shown in this presentation in the Draft EIR?	The photos shown in the Public Meeting Presentations were included in various places throughout the Draft EIR.
25-23	What are the criteria for determining which trees will be removed?	All trees within the stormdrain footprint will be removed; however, none of the trees to be removed are protected species.
25-24	Suggest doing the northern parts of the ROW first so as to relocate from south as move south and provide habitat throughout	As stated in Section 2.5, construction would begin at the northern end of the alignment and progress south to Colorado Lagoon.

	construction.	
March 27, 2007 Public Meeting		
25-25	I own a 100+ year old home at 8th and Termino. What will be the vibration effects on housing?	Refer to response to comment 18-3.
25-26	What is the planned phasing for construction?	As discussed in Section 2, the proposed project would be constructed in continuous operation in sections, with the longest section being approximately 1,700 feet. 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.
25-27	What is the excavation depth?	The deepest portion of the excavation would be located at 8th Street and Termino Avenue and would be 25 feet deep (see Section 2).
25-28	How much water would be diverted during low flows, and what is the county's capacity to accept stormwater?	As discussed in Section 2, the capacity for diversion is based on the County's ability to accept water at the treatment plant. DPW has coordinated with the Sanitation Districts to determine the size of the system in order to ensure that the plant is capable of meeting the needs of the project.
25-29	Is there opportunity for the county and City of Long Beach to coordinate on biofiltration structure?	Refer to response to comment 9-1.
25-30	What is the restoration timeline for the greenbelt?	Section 3.3 includes mitigation for the restoration of the greenbelt. As discussed, the restoration area shall be monitored quarterly for the first two years and biannually for three more years.
25-31	Will the construction area be fenced during construction?	The construction area will be blocked from traffic by K-rails, plates, and detours as needed. Open areas of excavation will be covered or fenced off to prevent unauthorized access during non-work hours.
25-32	What is the amount of dry weather flow that can be accepted?	Refer to response to comment 25-28.
25-33	Low flows below the green line at 8th street – why aren't these captured?	The project will include two systems operating in tandem to capture low flows in the project area. Non-stormwater flows occurring above 8th Street will be collected by the low-flow diversion berm; while those occurring below 8th Street will be collected in the catch basins.
25-34	Why was the detention alternative eliminated?	Refer to response to comment 25-20.
25-35	Will the project alleviate flooding within the PE ROW between 7th and 4th Streets, between 6th and Quincey? Got 33 feet of flood water in 1995 at this location.	The project will alleviate flooding on all lateral streets connecting to the PE right-of-way, including between 7th and 4th Streets and between 6th and Quincey.
25-36	1995 storm was a 100-150 year storm. This project will protect against the 50 year flood, so still some potential for flooding. Is there any monitoring program for water quality, eelgrass, and loading?	Refer to response to comment 2-5 for a discussion of eelgrass mitigation and to response to comment 7-2 for a discussion of water quality and pollutant loading monitoring.
25-37	Construct where magenta lines appear on the map?	Construction will occur where the magenta line is located on Figure 2-4.
25-38	Will the project drain the area, make it drier?	The project would capture stormwater flows and non-stormwater low flows (such as from irrigation), and would not affect groundwater.

25-39	Noise from construction, hours of construction?	Refer to section 3.7 for a description and analysis of noise associated with the proposed project. In accordance with the City of Long Beach noise ordinance, construction will only occur between the hours of 7 AM and 7 PM Monday through Friday, and 9 AM and 6 PM on Saturday.
25-40	NO_X and noise – no regulations.	Sections 3.6 and 3.7 of the EIR discuss Air Quality and Noise impacts associated with the proposed project, including a discussion of all applicable laws and regulations.
25-41	Was the pipe blocked or inadequate in 1995?	The existing drain system is deficient and will only convey a 6 to 7 year flood capacity.
25-42	Will there be any impact to the organic community garden just north of 10^{th} street in the PE ROW?	The organic community garden will be removed during construction of the project; however, as discussed in the Project Description, the alignment would be returned to its original condition, including the replacement of the TAD project. garden.
25-43	Was the county required to look at groundwater recharge?	As discussed in Section 3.9, the project area is not a designated groundwater recharge area and the project would not result in a substantial increase in impervious surface area. The project would not affect groundwater recharge.
25-44	Outfall structure location siting. Did you look at major flood and does it go back into Colorado Lagoon?	A flooding analysis was conducted specifically for this EIR. Refer to response to comment 14-1.
25-45	Green belt survey was conducted in 1994 at which time there were only 9 native plant species present. Today there are 34, as well as animals. How mitigate/restore if the document does not have up-to-date survey information?	Refer to response to comment 7-4.
25-46	Diesel NO_X emissions. Use cleaner diesel? Lives and works in the green belt. Look at what was evaluated. Already a bad NO_X environment. How cleanly can the project be constructed? Compare the cost of different diesel alternatives.	Refer to response to comment 7-5.
April 26, 2008 Public Meeting		
25-47	How far into the parking lot will the proposed outlet structure go?	The outlet structure would be located along the edge of Marine Stadium as shown in Figure 2-5. No parking spaces would be removed as a result of the project.
25-48	Where is the low-flow diversion system located? How far has it been moved upstream?	The proposed project would include a diversion system that would divert the non-storm flows (i.e., irrigation and other sources of urban runoff) occurring north of 7th Street from the storm drain and direct them into an existing County sanitary sewer line. A diversion berm would be located in the mainline near Roswell Avenue and the PE railway right-of-way intersection.
25-49	Catch basin screens – how are they designed?	Catch basin screens would capture suspended solids and water-borne litter and debris known as floatables before they enter Marine Stadium. The screens would be installed in all 89 catch basins within the storm drain system.

25-50	What are the maintenance requirements or hydrocarbon filters in catch basin screens?	Inspection and maintenance of the catch basins would occur after major storm events in order to ensure that the system operates efficiently. Additionally, the catch basins would be inspected and cleaned once during the summer, prior to and following a rain event, and when the sump is 40 percent full during the winter, or as needed. Maintenance and operation of the water quality features would be undertaken by the City of Long Beach.
25-51	Does the LA County sewer treatment plant have enough capacity for the Termino Avenue Drain dry-flows, in addition to other drains that flow into Colorado Lagoon (452, etc.)? How much flow from Drain 452 will be picked up by this project?	DPW has coordinated with the Sanitation Districts to determine the size of the storm drain diversion system. 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.
25-52	What about the heavy metals? Will the catch basin screens remove these pollutants?	DPW and the City of Long Beach will test results of catch basin screens to determine effectiveness of pollutant removal.
25-53	Retention basins and bioswales should be added to the project.	The comment of support has been noted and will be provided to the Board of Supervisors for consideration in the decision-making process for the project.
25-54	Flooding was occurred at Apian Way near Colorado Lagoon. Will the project “pick up” these flows?	The Termino Avenue Drain would pick up the flows along Apian Way near Colorado Lagoon.
25-55	Will trash separation devices be installed in the laterals?	As part of the project, trash separation devised would be installed along the main line and laterals.
25-56	How will project tie-in to Colorado Lagoon Restoration Project?	The Colorado Lagoon Restoration Project is evaluated in Section 4.3, Cumulative Impacts.
25-57	Will Colorado Lagoon outlet structure be removed as a part of this project?	No construction would occur within Colorado Lagoon as a result of the proposed project.
25-58	What is the construction schedule?	Construction is anticipated to begin in Summer of 2009.
25-59	When would benefits to Colorado Lagoon occur?	Upon completion of the project, low-flows from the Termino Avenue Drain would no longer flow into Colorado Lagoon.
25-60	What is the funding situation for this project?	This comment is beyond the scope of the EIR analysis.

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8 MITIGATION MONITORING AND REPORTING PROGRAM

Public Resources Code, Section 21081.6 (Assembly Bill 3180) requires that mitigation measures identified in environmental review documents prepared in accordance with CEQA are implemented after a project is approved. Therefore, this Mitigation Monitoring and Reporting Program (MMRP) has been prepared to ensure compliance with the adopted mitigation measures during the pre-construction, construction, and post-construction phases of the Termino Avenue Drain Project.

The County of Los Angeles (County) is the agency responsible for implementation of the mitigation measures identified in the EIR. This MMRP provides the County with a convenient mechanism for quickly reviewing all the mitigation measures including the ability to focus on select information such as timing. The MMRP includes the following information for each mitigation measure:

- the phase of the project during which the required mitigation measure must be implemented;
- the phase of the project during which the required mitigation measure must be monitored;
- the enforcement agency; and
- the monitoring agency.

The MMRP also includes a checklist to be used during the mitigation monitoring period. The checklist will verify the name of the monitor, the date of the monitoring activity, and any related remarks for each mitigation measure.

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TABLE 8-1 MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Implementation Phase[1]	Monitoring Phase[1]	Enforcement Agency	Verification of Compliance		
				Initial	Date	Remarks
Biological Resources						
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.	Pre-construction	Construction	County of Los Angeles, Department of Public Works			
BIO-B A qualified marine biologist will resurvey the extent of eelgrass coincident with the construction easement to confirm the extent of eelgrass within the permanent and temporary impact areas. Based on 2005 surveys, the direct permanent and temporary impacts to marine sea grasses in Marine Stadium (i.e., 0.0189 acre total) shall be mitigated at a ratio of 1.2:1, in accordance with the Southern California Eelgrass Mitigation Policy (http://swr.nmfs.noaa.gov/hcd/policies/EELPOLrev11_final.pdf). A total of 0.0227 acres of eelgrass will be replanted by DPW, including at least 0.0181 acres in the temporary impact area when sediment conditions stabilize following the completion of outlet construction. The remaining 0.0046 acres of eelgrass shall be planted within Marine Stadium or elsewhere within Alamitos Bay in a location determined by a qualified biologist. The location of eelgrass transplant mitigation shall be in areas similar to proposed outlet structure location. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that shall be considered in evaluating potential sites. Monitoring the success of eelgrass mitigation shall be required for a period of five years in accordance with the Southern California Eelgrass Mitigation Policy. A wetland eelgrass mitigation plan shall be prepared to discuss the methods and schedule for planting eelgrass at the Marine Stadium and Alamitos Bay locations, and post-planting monitoring. In accordance with the California Coastal Commission's (CCC's) Procedural Guidance for the Review of Wetland Projects in California's Coastal Zone, the mitigation plan will include the following information, as relevant to the eelgrass mitigation sites: 1) Clearly stated objectives and goals consistent with regional habitat goals. These regional goals must identify functions and or habitats most in need of enhancement or restoration and must be as specific as possible. If the regional goals have not been identified, then the applicant and CCC staff should work with relevant federal, State, or local agencies to determine if the proposed plan is consistent with the ecology and natural resource composition of the area. 2) Adequate baseline data regarding the biological, physical, and chemical criteria for the mitigation area. 3) Documentation that the project will continue to function as a viable wetland over the long term. 4) Sufficient technical detail in the project design including, at a minimum, an engineered grading plan and water control structures, methods for conserving or stockpiling topsoil, a planting program including removal of exotic species, a list of all species to be planted, sources of seeds and/or plants, timing of planting, plant locations and elevations on the mitigation site base map, and maintenance techniques. 5) Documentation of performance standards, which provide a mechanism for making adjustments to the mitigation site when it is determined through monitoring, or other means that the enhancement or restoration techniques are not working. 6) Documentation of the necessary management and maintenance requirements, and provisions for remediation should the need arise. 7) An implementation plan that demonstrates there is sufficient scientific expertise, supervision, and financial resources to carry out the proposed activities. 8) A five-year monitoring program.	Operation	Operation	County of Los Angeles, Department of Public Works			
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.	Pre-construction	Pre-construction	County of Los Angeles,			

[1] The Implementation and Monitoring phases are broken down into four categories: Final Plans and Specifications, Pre-Construction, Construction, and Operation. "Final Plans and Specifications" indicates that the mitigation measure must be incorporated into the final approved design, plans, and specifications for the project. "Pre-Construction" refers to measures that are required prior to the start of construction. "Construction" refers to all aspects of project construction, including, but not limited to, site preparation, paving, material hauling, and construction of new facilities. "Operations" includes all measures that must be implemented during routine operations of the storm drain.

Mitigation Measure	Implementation Phase[1]	Monitoring Phase[1]	Enforcement Agency	Verification of Compliance		
				Initial	Date	Remarks
			Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
BIO-K A qualified marine biologist shall be on site during the construction period to monitor the potential presence of green sea turtles. The onsite biological monitor shall have the authority to halt construction operations and shall determine when construction operations can proceed.	Construction	Construction	County of Los Angeles, Department of Public Works			
BIO-L Construction crews and work vessel crews shall be briefed on potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.	Construction	Construction	County of Los Angeles, Department of Public Works			
BIO-M In the event that a sea turtle is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea turtle(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.	Construction	Construction	County of Los Angeles, Department of Public Works			
BIO-N The biological monitor shall prepare an incident report of any green sea turtle activity in the project area and shall inform the construction manager to have his crews aware of the potential for additional sightings. The report shall be provided within 24 hrs to the California Department of Fish and Game and the National Marine Fisheries Service.	Construction	Construction	County of Los Angeles, Department of Public Works			
BIO-O In the event that a California sea lion or a Pacific harbor seal is sighted within 500 meters (1,640 feet) of the construction zone, all construction activity shall be temporarily stopped until the sea lion(s) or seal(s) is safely outside the outer perimeter of construction. The onsite biological monitor shall have the authority to halt construction operation and shall determine when construction operations can proceed.	Construction	Construction	County of Los Angeles, Department of Public Works			

Mitigation Measure	Implementation Phase[1]	Monitoring Phase[1]	Enforcement Agency	Verification of Compliance		
				Initial	Date	Remarks
BIO-P 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.	Final Plans and Specifications; Operation	Final Plans and Specifications; Operation	City of Long Beach			
Cultural Resources						
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
CUL-C In accordance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines, 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.	Construction	Construction	County of Los Angeles, Department of Public Works			
Transportation and Circulation						
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.	Final Plans and Specifications	Final Plans and Specifications	County of Los Angeles, Department of Public Works			
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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).	Construction	Construction	County of Los Angeles, Department of Public Works			
TRANS-D No construction shall occur at the intersection of Termino Avenue and Anaheim Street during the morning or evening peak traffic periods.	Construction	Construction	County of Los Angeles, Department of Public Works			
TRANS-E Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction and the "California Manual on Uniform Traffic Control Devices." These guidelines provide methods to minimize construction effects on traffic flow.	Construction	Construction	County of Los Angeles, Department of Public Works			
TRANS-F 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.	Construction	Construction	County of Los Angeles, Department of Public Works			
Air Quality						
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 25 percent NOX reduction. Acceptable options for reducing emissions may include use of late model engines, low-	Final Plans and Specifications; Pre-construction;	Final Plans and Specifications; Pre-construction;	County of Los Angeles, Department of			

Mitigation Measure	Implementation Phase[1]	Monitoring Phase[1]	Enforcement Agency	Verification of Compliance		
				Initial	Date	Remarks
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. All property owners within 300 feet of the proposed storm drain construction zone shall be notified, in writing, of the proposed construction schedule. Contact information for questions or to report air quality violations shall be provided, including phone numbers for the project's DOW inspector, area engineer, and office engineer. The notification, by standard mail, shall be delivered at least two weeks prior to the start of work.	Construction	Construction	Public Works			
AIR-B The construction contractor shall ensure that all excavation sites and excavated soil shall be watered to ensure that the soil is wet to minimize dust plumes. Haul trucks shall be covered when loaded with fill. Open storage piles shall have water applied once per hour or shall be covered to prevent fugitive dust plumes beyond the project boundary.	Final Plans and Specifications; Pre-construction; Construction	Final Plans and Specifications; Pre-construction; Construction	County of Los Angeles, Department of Public Works			
Noise						
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.	Construction	Construction	County of Los Angeles, Department of Public Works			
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. Due to traffic mitigation requirements, jack hammering shall be allowed to occur on 7th Street between 9:00 AM to 6:00 PM on Saturday and Sunday, not including state and federal holidays. No construction shall occur on Sundays without a permit from the City of Long Beach noise control officer.	Construction	Construction	County of Los Angeles, Department of Public Works			
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.	Pre-construction	Pre-construction	County of Los Angeles, Department of Public Works			
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.	Pre-construction	Pre-construction	County of Los Angeles, Department of Public Works			
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.	Final Plans and Specifications	Final Plans and Specifications				
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.	Pre-construction	Pre-construction	County of Los Angeles, Department of Public Works			
Hazards and Hazardous Materials						
HAZ-A 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 choose any of these three methods, as they are all acceptable to RWQCB and are all equally effective at	Pre-construction	Pre-construction	County of Los Angeles, Department of Public Works			

Mitigation Measure	Implementation Phase[1]	Monitoring Phase[1]	Enforcement Agency	Verification of Compliance		
				Initial	Date	Remarks
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 A special excavation criteria area has been designated for approximately 250 feet of PE right-of-way south of the intersection of 4th Street and Park Avenue. Soils excavated from this area shall not be used for backfill. The soils shall be segregated and covered during construction and shall be hauled to a Class I landfill or other appropriate soil treatment and recycling facility.	Construction	Construction	County of Los Angeles, Department of Public Works			

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11 ACRONYMS AND ABBREVIATIONS

µg/m3	micrograms per cubic meter
AAM	annual arithmetic mean
Acmes	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
cuffs	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
dab	A-weighted decibels
DDT	Dichloride Biphenyl Dichloromethane
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
Len	Day-Night Average Level
Lea	Equivalent Noise Level
Lax	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

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