TERMINO AVENUE DRAIN

Final EIR
Technical Appendices

State Clearinghouse No. 2000111022

Prepared For:
County of Los Angeles
Department of Public Works
900 South Fremont Avenue
Alhambra, California 91803

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TECHNICAL APPENDICES

APPENDIX A

NOTICE OF PREPARATION, INITIAL STUDY, AND

RESPONSES TO NOTICE OF PREPARATION

NOTICE OF PREPARATION AND NOTICE OF PUBLIC SCOPING MEETINGS

To: State Clearinghouse, Responsible and Trustee Agencies, and Interested Individuals

Subject: Notice of Preparation of an Environmental Impact Report and **Two Scoping Meetings** for the **Termino Avenue Drain Project**

Project Title: **Termino Avenue Drain Project**

Lead Agency: **County of Los Angeles, Department of Public Works**
P.O. Box 1460
Alhambra, CA 91802-1460
Contact: Mr. James Yang, Project Manager

The County of Los Angeles Department of Public Works, as the lead agency, will be preparing an Environmental Impact Report for the proposed project described below. Public Works is soliciting input from members of the public, organizations, and government agencies on the scope and content of the information to be included and analyzed in the Environmental Impact Report. Agencies should comment on the elements of the environmental information that are relevant to their statutory responsibilities in connection with the proposed project.

The project description, location, and potential environmental effects of the proposed project (to the extent known) are described in this Notice of Preparation. **Two public scoping meetings will be held in May 2004 to solicit input from interested parties on the scope and content of the Environmental Impact Report in conformance with Section 21083.9 of the Public Resources Code.**

The first meeting will be held on Wednesday, May 19, 2004, from 7 p.m. to 8:30 p.m.
Location: Lowell Elementary School
Auditorium
5201 East Broadway
Long Beach, CA 90803

The second meeting will be held on Saturday, May 22, 2004, from 10 a.m. to 11:30 a.m.
Location: Jefferson Leadership Academies
Auditorium
750 Euclid Avenue
Long Beach, CA 90804

The same information will be presented at both meetings.

Scoping comments on the Environmental Impact Report should be sent to Public Works ***no later than 30 days*** after the posting of this notice, which will occur on May 10, 2004. Accordingly, letters should be postmarked by June 9, 2004. Please send your written response to Mr. James Yang, Project Manager, Public Work, at the address shown above. Responses should include the name of a contact person.

Project Location/ Description

The proposed project is located in the City of Long Beach (see attached Project Vicinity map, Figure 1). The project area is included on the USGS 7.5 Minute Topographic Long Beach quadrangle. The project involves the construction of a new underground storm drain system, which is intended to provide increased flood protection in the project area. The majority of the storm drain project construction would be within portions of

the abandoned Pacific Electric Railroad right of way, which is currently owned by the City of Long Beach. At the southern end of the Pacific Electric right of way, the mainline would continue along Appian Way to Marine Stadium Park parking lot and terminate at a newly constructed outlet at Marine Stadium. The proposed storm drain system also includes the construction of an in-line trash screening device to remove trash from the low flows prior to discharging into Marine Stadium. In addition, a sewer diversion system will also be constructed to take the "nonstorm" flow to a nearby sewage treatment plant for treatment. A map of the proposed alignment is attached (Figure 2).

Potential Environmental Effects

Based on the resource characteristics of the project area, the following potentially significant environmental effects will be addressed in the Environmental Impact Report:

- Impacts to eel grass, aquatic organisms, and other biological resources at Marine Stadium due to a change in water quality parameters during high flows.
- Impacts to biological resources at Colorado Lagoon from the change in freshwater input.
- Water quality impacts at Marine Stadium due to the increased concentrations of stormwater and pollutant loads during high flows.
- Aesthetic impacts of the proposed outlet structure at Marine Stadium for the nearby residential community and Marine Stadium recreational users.
- Temporary air quality impacts on nearby residential areas from earthwork and operation of heavy equipment during construction.
- Temporary increase of noise levels in the residential areas from the use of heavy equipment during construction in the Pacific Electric right of way.
- Potential impacts to cultural resources along the Pacific Electric right of way during construction.
- Temporary impacts to recreational users at Marine Stadium during construction of the outlet structure.
- Temporary recreation impacts during construction due to closed or limited access to recreation areas along the proposed alignment.

If you have any questions regarding the project, please contact Mr. James Yang, our Project Manager, at (626) 458-5152, JYANG@ladpw.org, or TDD (626) 282-7829 between the hours of 7:15 a.m. and 5 p.m., Monday through Thursday. **In case of an emergency, please contact our help desk at (800) 675-4357**.

Si necesita asistencia con la traducción a Español, por favor comuniquese con el representante del departamento de Obras Públicas del Condado de Los Angeles, Sr. Jose Pou (626) 458-3962.

Upon 72 hours' notice, Public Works can provide program information and publications in alternate formats or make other accommodations for people with disabilities. In addition, program documents are available at our main office in Alhambra (900 S. Fremont Ave.), which is accessible to individuals with disabilities. To request accommodations ONLY or for more Americans with Disabilities Act information, please contact our departmental Americans with Disabilities Act Coordinator at (626) 458-4081 or TDD (626) 282-7829, Monday through Thursday, from 7 a.m. to 5:30 p.m.

Attachments: Project Vicinity Map (Figure 1)**;** Project Alignment Map (Figure 2)

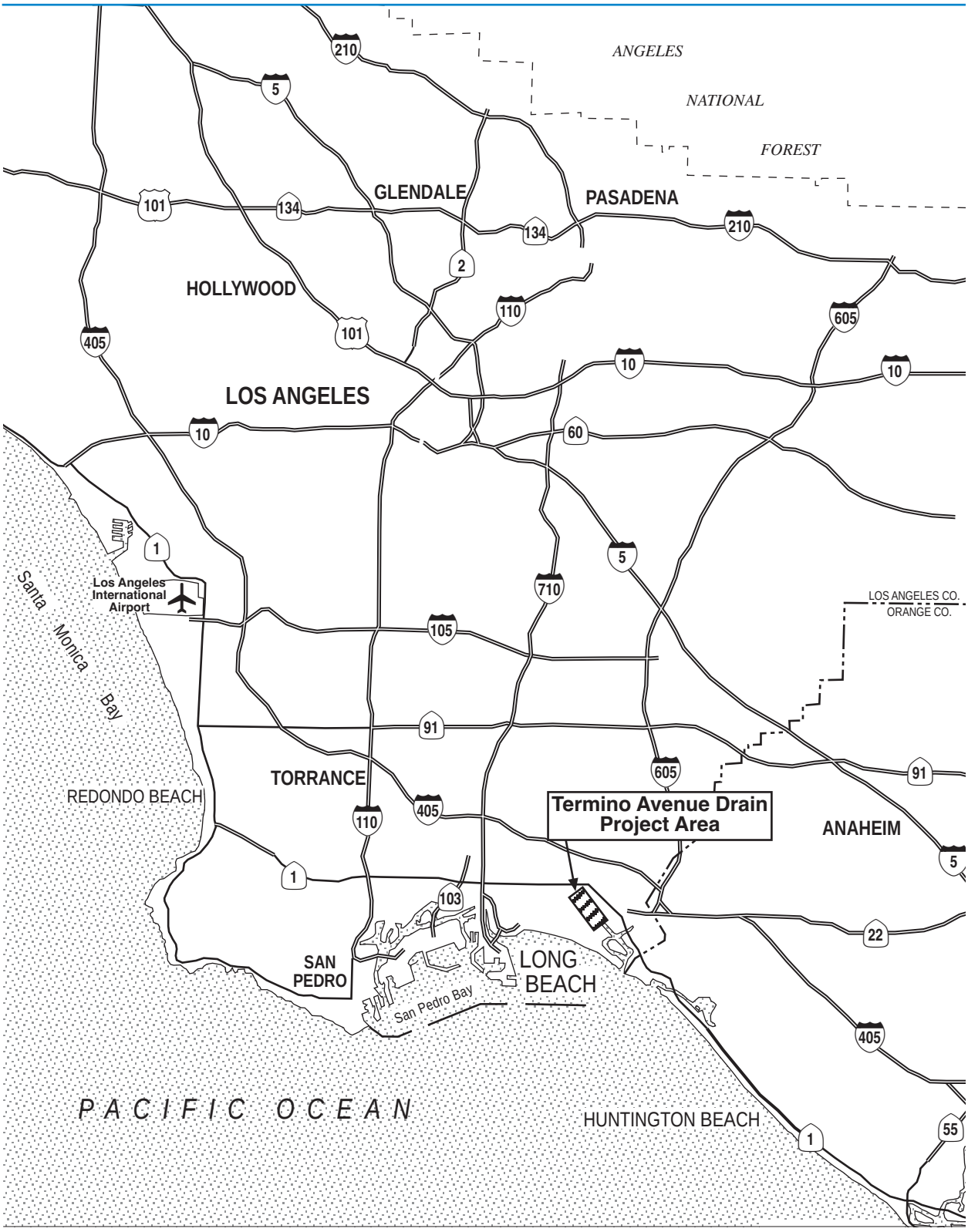

Figure 1
Regional Map

Source: Thomas Bros. 2003

NORTH

NO SCALE

Figure 2
Vicinity Map

County of Los Angeles
Department of Public Works

Termino Avenue Drain Project
CEQA Initial Study

1. **Project title:** Termino Avenue Drain Project

2. **Lead agency:** Los Angeles County Department of Public Works
   900 South Fremont Avenue
   Alhambra, CA 91803

3. **Contact person:** Ed Dingman
   County of Los Angeles Department of Public Works
   Programs Development Division
   P.O. Box 1460
   Alhambra, CA 91802-1460
   Phone: (626) 458-3933

4. **Project location:** The proposed project is located in the City of Long Beach (see Figure 1). The mainline of the proposed project would run along Termino Avenue between 8th Street and 11th Street, along a former Pacific Electric (PE) Railway right-of-way, across several streets, along Appian Way, terminating at Marine Stadium. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. The project area is included on the USGS 7.5 Minute Topographic Long Beach quadrangle.

5. **General plan designation:** The General Plan land use designation for the project area is: Open Space/Parks - Marine Stadium and Colorado Lagoon; Right-of-Way - PE Railroad; Townhomes, Moderate Density Residential, and Mixed Style Homes - Portions of Termino Avenue; and Mixed Office/Residential Strip - Connection at Anaheim Street.

6. **Zoning:** The project area is zoned as: Planned Development (PD1) - Marine Stadium; Park (P) - Colorado Lagoon; Two-family Residential, standard lot (R-2-N) - adjacent to abandoned PE Railroad right-of-way; Community Commercial pedestrian-Oriented (CCP) and Community R-4-N Commercial (CCN) at Anaheim, Street; and Low-Density Multi-family Residential, small lot (R-3-S) and Low-density multi-family residential (R-3-4) along Termino Avenue.

7. **Description of project**: The proposed project entails the construction of a new underground storm drain system, which is intended to provide increased flood protection within the project area. The majority of the storm drain project construction would be within portions of the abandoned PE Railroad right-of-way, which is currently owned by the City of Long Beach. At the southern end of the PE right-of-way, the mainline would continue along Appian Way to Marine Stadium Park parking lot and outlet to Marine Stadium. The alignment would include crossings at Anaheim Street, 11th Street, 10th Street, 8th Street,

Termino Avenue, Roswell Avenue, Bennett Avenue, 7th Street, Ximeno Avenue, 6th Street, and Park Avenue. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. The drainage system would convey flows directly to Marine Stadium and an in-line trash screening device and a low-flow treatment pumping station would be installed for water quality improvement. The in-line trash screening system would remove suspended solids and floatables from the urban runoff and light storm flows. The low-flow treatment would also improve water quality by diverting non-rainy season low flows to the County's sewage treatment system. A map of the proposed alignment is shown on Figure 2.

Several alternatives have been considered for this project, including alternative storm drain alignments, outfall locations, and flood control facilities. Pursuant to CEQA, a reasonable range of potentially feasible alternatives will be evaluated in the EIR, including an alternative that would discharge heavy storm flows into Colorado Lagoon.

8. **Surrounding land uses and setting:** Immediate surrounding land uses adjacent to the storm drain alignment are primarily residential, which includes high density, medium density, and single family homes. Commercial businesses are located at a few of the street intersections where the storm drain crosses. The land use at the storm drain outlet to Marine Stadium is recreation. Marine Stadium is a rectangular inlet within Alamitos Bay.

9. **Other public agencies whose approval is required:** (e.g., permits, financing approval, or participation agreement.)

Prior to implementation of the proposed project, a series of approvals, permits, and notifications must be obtained from several federal, state, and local area regulatory agencies. The required permits and approvals for the proposed project include, but are not limited to those described in Table 1 below. In addition, the County will initiate informal consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service under Section 7 of the Endangered Species Act.

TABLE 1. PROJECT ENTITLEMENTS AND REGULATORY PERMITS

Agency	Permit/Action
Federal	
U.S. Army Corps of Engineers	Section 404 (Clean Water Act) and Section 10 (Rivers and Harbors Act) Permit for the discharge of dredged or fill material into Marine Stadium.
State	
California Coastal Commission (City of Long Beach Department of Planning and Zoning)	Coastal Development Permit for development within a coastal zone.

Agency	Permit/Action
California Regional Water Quality Control Board, Los Angeles Region	Section 401 Certification and National Pollutant Discharge Elimination System (NPDES) permit for discharge of stormwater into Marine Stadium; Stormwater Pollution Prevention Plan (SWPPP) for construction activity; waste discharge permit for construction dewatering if groundwater is encountered during construction.
City	
City of Long Beach, Department of Public Works	Various approvals (e.g., utility relocation, grading, drainage, and traffic control).

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

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

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

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

[ ] I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will a significant effect in this case because revisions to the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

[X] I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

[ ] I find that the proposed project MAY have a "potentially significant impact" or "potentially significant mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

[ ] I find that although the proposed project could have a significant effect on the environment, because potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature _____ **Date** _____

Printed Name Ed Dingman

EVALUATION OF ENVIRONMENTAL IMPACTS:

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The analysis of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS - Would the project:				
a. Have a substantial adverse effect on a scenic vista?				X
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c. Substantially degrade the existing visual character or quality of the site and its surroundings?		X		
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

The proposed storm drain project is located in the City of Long Beach. The majority of the storm drain facilities would be constructed underground and would not be visible upon completion of the project. After the project is constructed, manhole covers would be visible in the roadway and along the PE right-of-way (ROW). Some vegetation would be removed during construction; however, no large trees would be removed. In the southern portion of the alignment, some visual changes would occur including the construction of a new storm drain outlet structure. The new outlet structure would be located on the western side of Marine Stadium along the existing riprap bank. The visual impacts associated with the outlet structure will be evaluated in the EIR and mitigation measures will be identified, if necessary, to reduce these impacts to a less than significant level. Renderings of the proposed outlet structure will also be provided in the EIR.

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

There are no designated scenic vistas open to the public within the project area that would be affected, nor would the project result in any buildings or other obstructions to scenic resources. In general, the project site currently includes arterial streets and local residential streets and built-up residential and commercial developments that would not be affected by the buried storm drain facilities. However, the construction of the proposed project has the potential to alter the existing visual quality near Marine Stadium. For example, a new outlet structure would be constructed at Marine Stadium which would be visible from some surrounding areas. The new outlet structure would be constructed along the western bank of Marine

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Stadium and the design of the structure would be visually harmonious with existing riprap slopes. Further analysis of these potential impacts will be undertaken in the EIR.

The proposed project would not introduce any new sources of light and would not use construction materials that would reflect natural sunlight or otherwise result in glare. No further evaluation of impacts related to light and glare is required.

II. AGRICULTURAL RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural and farmland. Would the project:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

Geographic Information System (GIS) coverages of the affected project area were overlain with farmland mapping information provided by the California Department of Conservation (2000). There is no designated farmland within the project area; therefore, no impacts to Prime, Unique, or Statewide Important Farmland would occur. Similarly, no conflicts with existing zoning for agricultural uses would occur. No further evaluation of this issue is necessary.

III. AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?			X	
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		X		
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emission which exceed quantitative thresholds for ozone precursors)?		X		
d. Expose sensitive receptors to substantial pollutant concentrations?		X		
e. Create objectionable odors affecting a substantial number of people?			X	

The project is located in the South Coast Air Basin, which is designated nonattainment for state particulate matter (PM_{10}), ozone (O_3), and carbon monoxide (CO) standards, and federal PM_{10}, O_3, and CO standards. The closest air monitoring station to the site is located in north Long Beach, approximately 5 miles northwest of the project site. CO, nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) standards have not been exceeded at this monitoring station in the last five years. PM_{10} levels periodically exceed the state standards, but have not exceeded the federal standard in the past five years. The state and federal ozone standards have not been exceeded in the past two years and have not exceeded the standards for more than three days per year in the past five years.

Air quality impacts from construction and operation of the Termino Avenue Drain will be evaluated using the thresholds of significance established by the South Coast Air Quality Management District (SCAQMD) as presented in the *CEQA Air Quality Handbook* (SCAQMD 1993). Short-term emissions would result from the use of construction equipment and trips generated by construction workers and haul/material delivery trucks. These emissions, which may temporarily increase pollutant concentrations in the area, may result in the violation of air quality standards or the exceedance of air quality thresholds of significance, which may contribute to the existing or projected air quality violation. The air quality impacts associated with project construction will be calculated and analyzed in the EIR, including impacts associated with diesel construction vehicles. Operation of the proposed project would not result in long-term emissions that would significantly impact air quality in the project area.

Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to locate. These land uses may

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

include residences, schools playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The majority of land uses bordering the alignment are comprised of single-family residences, which are not typically defined as sensitive receptors. Some sensitive receptors are located near the proposed alignment, including at least four schools within ¼ mile of the construction area. Construction and operation of the proposed project may expose these sensitive receptors to substantial pollutant concentrations. Air quality impacts will be evaluated in the EIR, and mitigation measures would be required.

IV. BIOLOGICAL RESOURCES - Would the project:

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

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

Biological surveys will be conducted for the entire project area and the project's impacts to biological resources will be evaluated in the EIR. To the north of Colorado Lagoon, the proposed alignment follows the PE right-of-way and several paved roads; therefore, impacts to biological resources resulting from the project would be minimal and less than significant, due to the urbanized nature of the area. The in-line trash screening device and low-flow pumping station would be constructed near Park Avenue and 4th Street; however, the proposed project would not involve any construction in or around Colorado Lagoon.

The proposed outlet structure would be located on the west side of Marine Stadium, southwest of End Beach Mitigation site. Construction of the new outlet structure at Marine Stadium may require mitigation measures or design modifications to avoid impacts to marine biological resources. Southern tarplant and eel grass are located within the boundaries of End Beach and could be impacted by construction of the storm drain. Furthermore, California least tern and brown pelican forage at End Beach and rely on eel grass habitat. Impacts to End Beach and the sensitive species that occur within Marine Stadium would require further analysis in the EIR. Mitigation measures may be necessary to protect the biological resources during construction.

The project would improve water quality in the project area by diverting the dry season flows to the County's sewer system for treatment. A Continuous Deflective Separator (CDS) would also be used to remove suspended solids and floatables during low flow conditions; however, water quality in Marine Stadium could still be degraded by some polluted low-flow runoff. This could negatively affect some aquatic resources near the outfall. Also, adverse water quality impacts could occur at Marine Stadium resulting from the increased concentration of wet weather flows being discharged directly from the new outlet structure. The faster rate of flow delivery could result in changes to water quality parameters (e.g., salinity) that might adversely impact the aquatic organisms in Marine Stadium, especially in the vicinity of the eelgrass mitigation area.

The EIR will evaluate the project's impacts on wetlands and "waters of the U.S." under the jurisdiction of the U.S. Army Corps of Engineers (ACOE) and the California Department of Fish and Game (CDFG). The EIR will also evaluate the consistency of the project with local policies and ordinances protecting biological resources.

Although some benefits to water quality would occur as a result of the project, some potentially significant impacts to biological resources may occur at Marine Stadium and Colorado Lagoon. Accordingly, impacts to biological impacts will be further evaluated in the EIR.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES - Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?				X
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		X		
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d. Disturb any human remains, including those interred outside of formal cemeteries?				X

No properties that are eligible or potentially eligible for inclusion on the National Register of Historic Places (36 CFR Part 800) or the California Register are located within the construction area. Marine Stadium was constructed in 1920 and was the site of the rowing competitions in the 1932 Summer Olympics held in Los Angeles. Marine Stadium is identified as a historic and cultural site of local significance on the City's General Plan (City of Long Beach 2002). The proposed project would not demolish or alter any historic structures at Marine Stadium; therefore, no impacts are anticipated. The project alignment is presently developed and there are no known or recorded paleontological resources, unique geologic features, or recorded cemeteries on or near the project site; therefore, no impacts on these resources would occur. There are no known or recorded archaeological sites in the vicinity of the project alignment. However, portions of the abandoned PE railroad alignment have not been disturbed since the track bed was removed. Since portions of the abandoned PE right-of-way contain native undisturbed soil, there is a potential that buried historic or historic archaeological deposits associated with the abandoned PE railroad may be disturbed during trenching for the storm drain. Impacts to cultural resources will be further evaluated in the EIR and mitigation measures may be required.

VI. GEOLOGY AND SOILS - Would the project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b. Result in substantial soil erosion or the loss of topsoil?				X
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?				X

The project is located within a seismically active region and new development will be subject to ground shaking hazards associated with earthquake events on active faults and other faults throughout the region. However, these hazards are not unique to the project. The most significant fault within the City and the project area is the Signal Hill uplift which is a portion of the Newport-Inglewood fault zone. Segments of this fault zone extend from the cities of Newport Beach to Beverly Hills. The fault zone varies in width between ¼ mile and 3 miles. The maximum probably earthquake magnitude (M) for the Newport-Inglewood fault is 6.5 M, which is capable of producing property and structural damage. Several segments of this fault zone have a history of moderate to high seismic activity, but no surface faulting has been attributed to this activity. The alignment is not located within an Alquist Priolo Earthquake Fault Zone. Seismic ground shaking from other major faults in the region is not expected to be greater than at other sites in southern California and is not considered to pose an unusual risk to the proposed storm drain. The project would not affect any habitable structures and no new buildings are proposed.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Potential impacts during a seismic event would be a rupture of the storm drain that would occur as a result of surface displacement during a seismic event. Based on adherence to current design and construction requirements in the State of California, including the use of low shear strength backfill (such as sand), the proposed project would not result in a significant adverse impact by exposing people or property to major seismic hazards beyond that which is considered normal for southern California. Implementation of the site-specific design features and adherence to all applicable seismic design codes and building requirements would reduce impacts related to seismic ground shaking to a less than significant level.

The project area along the alignment is currently developed and site topography is relatively level; the possibility of a seismically-induced landslide is remote. Additionally, the site is located near any known historical landslides. According to the California Department of Conservation's Seismic Hazard Zones Map for the Long Beach quadrangle (released March 25, 1999), the project area does not fall within any Earthquake-Induced Landslide zones. No further evaluation of this issue is required.

The project would require excavation of soils and backfilling with compacted soils along the storm drain alignment. This work would be associated with trenching for the storm drain. Since all soils used in the project would be properly compacted in accordance with DPW specifications, no significant impacts related to soil erosion or loss of topsoil would occur. The project design incorporates the use of rip rap and other erosion controls to reduce erosion and scour at the Marine Stadium outlet structure. Accordingly, no further evaluation of this issue is required.

Due to the presence of loose unconsolidated silty sands underlain by sandy silts and a shallow groundwater table (groundwater levels vary between 5 feet at Marine Stadium to 15 feet below ground surface along other sections of the alignment) potential subsidence and liquefaction risks are considered moderate to high. According to the California Department of Conservation's Seismic Hazard Zones Map for the Long Beach quadrangle (released March 25, 1999), portions of the alignment are located in an area of liquefaction potential. As a standard practice, a soils report would be prepared for this project which would provide design recommendations to minimize the potential for liquefaction impacts. Because the site is located in a liquefaction hazard zone, mitigation measures, as defined in Public Resource Code 2693(c), would be required for construction of the storm drain facilities. Implementation of the site-specific mitigation measures and adherence to all applicable seismic design codes and building requirements would reduce impacts related to liquefaction to a less than significant level. No habitable structures are proposed for the project.

The project is not underlain by expansive soils nor would the project use expansive soils as defined by Table 18-1-B of the Uniform Building Code. No further evaluation of this issue is required.

The project does not propose septic tanks or alternative waste water disposal systems; therefore no further evaluation of this of this issue is required.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?		X		
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?		X		
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

The project would require excavation of soils in order to construct the storm drain trench. These trenching activities may intercept shallow groundwater in some areas. A Phase II Environmental Site Assessment (County of Los Angeles 2000) prepared for the project's original MND detected hydrocarbon contaminated soil in the vicinity of Colorado Street. Accordingly, potentially significant impacts associated with excavating contaminated soils and dewatering could occur during construction. Surface and groundwater quality could be degraded if soils were to come into contact with water. This may create a significant hazard to the public or the environment during site clearance and construction. In addition, there are three elementary schools and one high school within ¼ mile of the proposed alignment. Impacts associated with hazardous materials encountered during construction will be further evaluated in the EIR.

The project is not located on the list of hazardous materials sites pursuant to Government Code Section 65962.5. The project site is not located within a 2-mile radius of any public airport or private airstrip. Accordingly, the proposed project would not result in a safety hazard for people residing or working in the project area. No further evaluation of this issue is required.

The proposed project would not interfere with a current emergency response plan or an emergency evacuation plan for local, state, or federal agencies. Access to all local roads would be maintained during construction and project operation. Any emergency procedures would be implemented within local, state, and federal guidelines during construction and operation of the proposed project. No further evaluation of this issue is required.

As previously mentioned, the project site is located in a urbanized area; no areas of wildlands are located on or adjacent to the project site. Accordingly, the proposed project would not contribute to wildland fire hazards. No further evaluation of this issue is required.

VIII. HYDROLOGY AND WATER QUALITY - Would the project:

a. Violate any water quality standards or waste discharge requirements?				X
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?		X		
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			X	
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				X
f. Otherwise substantially degrade water quality?	X			
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j. Inundation by seiche, tsunami, or mudflow?				X

The proposed project includes a diversion line system which would collect the nuisance dry weather flows from the low-flow drain and direct the nuisance flows into an existing County sanitary sewer line. A pump unit would be constructed to convey the stormwater due to differences in elevation between the diversion system and the sanitary sewer line. The diversion system would be located southeast of the Colorado Lagoon outfall at Eliot Street. The County Sanitation District would be responsible for treating the stormwater at existing sewage treatment plants. The City would be responsible for the operation and maintenance of the diversion system.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Implementation of the project would improve water quality during dry weather via diversion of nuisance flows into the County sewer line. None of the contaminants associated with dry weather flows (e.g., trash, oil & grease, nutrients) that currently enter the Colorado Lagoon through this storm drain would enter the lagoon. Accordingly, the project would improve the water quality within Colorado Lagoon. The reduction in storm water flows into the lagoon during storm events would reduce the amount of freshwater in the lagoon. This will be further evaluated in the EIR.

Since all storm flows would be directed to Marine Stadium, there would be beneficial impacts to water quality within Colorado Lagoon. However, there could be adverse impacts on the water quality within Marine Stadium resulting from the increased concentration of storm flows being discharged directly to Marine Stadium. The faster rate of flow delivery could result in changes to water quality parameters (e.g., salinity) that might adversely impact the aquatic organisms in Marine Stadium, especially in the vicinity of the eelgrass mitigation area located adjacent to the ocean outlet of the tidal culvert that connects Colorado Lagoon and Marine Stadium. Due to much greater volumes of seawater in Marine Stadium compared to Colorado Lagoon, and no restrictions on mixing, the low salinity effects would be diluted relatively quickly in the larger Marine Stadium waters. The water quality modeling for the EIR will quantify and evaluate the anticipated impacts at Marine Stadium resulting from the discharge of storm water flows directly into Marine Stadium.

The project is not anticipated to violate any water quality standards or waste discharge requirements; however, some adverse impacts to water quality (e.g., increased turbidity and contaminant resuspension) may occur during project construction. The proposed construction activities, individually or cumulatively, could have a significant impact on the water quality if construction material is allowed to enter the drainage systems that flow to Marine Stadium or Colorado Lagoon. Construction activities, if uncontrolled, could also result in the discharge of disturbed sediment/soils into the ocean, and/or release petrochemicals from construction equipment. To address potential water quality impacts during construction, a National Pollution Discharge Elimination System (NPDES) permit and a Stormwater Pollution Prevention Plan (SWPPP) would be required for the project. In addition, project-specific mitigation measures may also be required to address construction-related water quality impacts. Water quality impacts from project construction will be further evaluated in the EIR.

Groundwater levels would not be affected by the project. The project site is not used as a groundwater recharge basin. Construction of the storm drain facilities would not alter regional groundwater flow characteristics and storm water flows would not contact groundwater during normal operation. The project would not result in the use of any water that would result in a net deficit in aquifer volume or lowering of the groundwater table. As such, the project would not affect groundwater quality, substantially deplete groundwater supplies, or interfere substantially with groundwater recharge.

The project would result in a new outlet structure and increased discharge into the Pacific Ocean via Marine Stadium, which be examined in the EIR. Although the project would not alter the course of any streams or rivers, existing drainage patterns would be changed as a result of the project. The project would improve storm water conveyance by replacing inadequate storm drain facilities in the City of Long Beach;

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

however, further evaluation of the potentially significant drainage impacts will be required in the EIR.

No housing or other habitable structures would be constructed. The project would provide increased flood protection for the watershed by increasing the capacity of the storm drain system to accommodate the 50-year frequency storm conditions. All wet weather storm flows would drain into Marine Stadium thereby reducing potential flood risks in the project area.

IX. LAND USE AND PLANNING - Would the project:

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

The project site is located in an area that is already developed with a mix of uses. Construction would be generally confined within the existing City streets and PE right-of-way. Since the storm drain would be underground, the project would not introduce a physical barrier that would divide an established community. No further evaluation of this issue is required.

The proposed project area is under the jurisdiction of the City of Long Beach General Plan Land Use Element, as well as the approved Local Coastal Program (LCP) and associated Resource Management Plan (RMP). The project area crosses a mix of land uses and zoning designations, and involves one body of water. Project consistency with the adopted General Plan Land Use Element and LCP will be evaluated in the EIR. The project is expected to comply with all applicable plans, policies, and regulations.

Due to the fact that the project is within a highly developed urban area there are no applicable habitat conservation or natural community conservation plans in effect within the proposed alignment and therefore no conflicts with such plans would occur. No further evaluation of this issue is required.

X. MINERAL RESOURCES - Would the project:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				X

There are no known mineral deposits of economic importance underlying the project site. Construction and operation of the new drainage system would not result in the loss of availability of any known mineral resource. No further evaluation of this issue is required.

XI. NOISE - Would the project result in:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?		X		
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Construction of the proposed drainage system would result in temporary noise impacts to the surrounding residents and park visitors. Construction would not involve groundborne vibration or noise levels. Operation of the drainage system would result in infrequent noise disturbance during maintenance activities or in the event of an emergency; however, this minor noise increase would not be typical of project operation. Noise impacts generated by the construction of the proposed project and their effects on

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

adjacent sensitive receptors will be evaluated in the EIR.

There are no public airports or private airstrips in the project vicinity. No further evaluation of this issue is required.

XII. POPULATION AND HOUSING - Would the project:

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

The proposed project does not involve any residential uses, nor would it displace any homes that would result in the need for replacement housing. The project would provide flood control features that would further protect the increased population levels that are expected to occur in the region. It would not provide infrastructure that would directly or indirectly result in population growth. No new jobs would be created upon completion of the project. Operation of the drainage system would therefore not induce employment growth or household formation. Construction personnel would be drawn from the existing labor force. No further evaluation of this issue is required.

XIII. PUBLIC SERVICES

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

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Police protection?			X	
Schools?				X
Parks?			X	
Other public facilities?				X

The City's Fire Department provides fire protection services within the project area. The nearest fire station is located immediately adjacent to the storm drain on Eliot Street at Colorado Street. Construction would occur directly in the immediate vicinity of the fire station; however, the construction activities and staging areas would not impact operations at this fire station. Impacts to fire protection would be less than significant; no further evaluation of this issue is required.

The proposed improvements would not induce development resulting in increased response time or the need for additional staffing and equipment. Impacts to police protection would be less than significant and no further evaluation of this issue is required.

The closest schools to the project are Lowell Elementary School and Rogers Middle School, both located adjacent to Marine Stadium. Wilson High School and Jefferson Middle School are also located in the vicinity of the alignment near 7th street. The proposed project would replace an existing storm drain and would not generate additional students within the City's Unified School District. No direct impacts to schools would occur other than potential traffic impacts during construction. No further evaluation of this issue is required.

Colorado Lagoon Park, Recreation Park, Marina Vista Park, and Marine Stadium Park are in the immediate vicinity of the proposed project and operated and maintained by the City's Parks, Recreation and Marine Department. Temporary pedestrian access restrictions within the construction area would occur at Colorado Lagoon Park and Marina Vista Park. Construction activities would not impact the golf course. Upon completion of construction, all areas physically disturbed would be returned to their existing condition. As a result, no permanent impacts to parklands are expected to occur and no further evaluation of this issue is required.

No impacts to other public services would occur. No further evaluation of this issue is required.

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. RECREATION				
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X	

The four parks in the project area, as mentioned above, are Colorado Lagoon Park, Recreation Park, Marina Vista Park, and Marine Stadium Park. Recreational activities at these parks consist of playground facilities, golf, walking, jogging, swimming, and other water activities at Colorado Lagoon and Marine Stadium. Temporary impacts to recreation may occur during construction; however, no long-term significant impacts would occur. Impacts to recreational facilities and recreational users in the project vicinity will be further evaluated in the EIR.

The project is not expected to induce population growth or create demand for new housing in the project area; therefore, no increase in localized or area-wide demands for recreational facilities would occur. In addition, the proposed project does not include recreational facilities and would not require expansion or construction of new recreational facilities. No further evaluation of this issue is required.

XV. TRANSPORTATION/TRAFFIC - Would the project:				
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?		X		
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			X	
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e. Result in inadequate emergency access?				X
f. Result in inadequate parking capacity?				X
g. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

Operation of the proposed drainage facilities would not increase traffic or alter traffic circulation patterns in the project area. The proposed project is not a transportation project, nor would it alter roads adjacent to the site from the existing conditions. No impacts to emergency access, parking capacity, or alternative transportation programs would occur and no further evaluation of this issue is required.

Construction of the proposed project would result in temporary impacts to traffic. Heavy equipment, construction vehicles, and construction employee vehicles would use portions of the PE right-of-way, Colorado Street, Appian Way, Termino Avenue, Ximeno Avenue, 7th Street, 10th Street, and 11th Street during the 18 to 24 month construction period. Further analysis and mitigation measures would be required in the EIR to reduce impacts resulting from project construction to a less than significant level.

XVI. UTILITIES AND SERVICE SYSTEMS - Would the project:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g. Comply with federal, state, and local statutes and regulations related to solid waste?			X	

The proposed project would not result in point source discharge of wastewater. However, the project would convey stormwater directly into Marine Stadium; therefore, a NPDES permit would be required for project operation. All required water and wastewater connections are currently constructed and in operation. The project would not require the need for expanded facilities.

The purpose of the project is to replace and expand the existing storm drain in order to adequately convey off-site stormwater flows for the 50-year frequency storm event. The project would not require additional drainage systems, nor would it result in the need for expanded off-site drainage facilities. The project has been designed to reduce flooding. Therefore, no significant impacts to storm drain facilities would occur.

Operation of the proposed project would not require use of water, generate wastewater, or create solid waste. Solid waste would not be created by the proposed project; however, the CDS would collect the trash that enters the storm drain. The trash would be routinely cleaned from the CDS. Construction activities would require minimal use of water and solid waste would be generated. Construction waste would be disposed of at a local landfill. Given the small quantity of material, the project is not expected to substantially affect the capacity of existing landfills in the project area. No further evaluation of this issue is required.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a		X		

Issues & Supporting Information Sources	Potentially Significant Impact	Potentially Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?				
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)		X		
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		X		

Based on this Initial Study, the proposed project is not anticipated to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Impacts to aquatic resources at Marine Stadium (including eel grass habitat) will need to be further analyzed in the EIR to determine if mitigation measures are required to reduce the impacts to a less than significant level.

The proposed project is not expected to eliminate important examples of the major periods of California history or prehistory; however, further cultural resource investigations must be conducted in order to verify this conclusion.

The cumulative impacts of the proposed project will be evaluated in the EIR. The cumulative impact analysis will be consistent with the appropriate CEQA Guidelines, including the requirements for determining reasonably foreseeable projects.

Although the proposed project is not anticipated to degrade the quality of the environment, as mentioned above, the proposed project may have significant environmental effects (e.g., air quality, noise, recreation) on human beings, either directly or indirectly. These environmental effects will be evaluated in the EIR.

PUBLIC SCOPING MEETING

WEDNESDAY, MAY 19, 2004

7:00 P.M.

LOWELL ELEMENTARY SCHOOL

AUDITORIUM

5201 EAST BROADWAY

LONG BEACH, CALIFORNIA 90803

APPEARANCES

TOM LARKIN

ERIC WILSON

DAVID CANNON

ZAHID ATASHZAY

FRANK COLONNA

ED DINGMAN

JAMES YANG

KIM HAVENS

PAGE

INTRODUCTION

MR. LARKIN: Thanks, everybody, for coming this evening. This is a public scoping meeting for the Termino Drain Flood Control Improvement Project. I'm Tom Larkin with EDAW. We're a consulting firm to the County. The Department of Public Works is the sponsor for the project and agenda showing on the screen.

Briefly, we'll go through introductions. We'll give a brief description of the project and the background of the project, then talk about what some of the environmental issues may be that we want to address in the environmental section, then explain to you what the environmental review process is and how you can participate.

Then we'll open it up for public comment. So we should have plenty of time for everybody to speak and give us your concerns about the environmental issues as we get going on the project.

So, I'd like to first introduce the staff. As I said, I'm with EDAW, a consulting firm for the County. Ed Dingman is the environmental manager for the County in charge of the environmental review process. James Yang is the engineer for the County. And Sahid is also an engineer for the flood hydraulic studies for the County.

We'd also like to thank Frank Colonna, the vice mayor for Long Beach, for helping us set up the meeting.

Frank, do you want to say something?

MR. COLONNA: You guys have seen enough of me. It's a good evening for all of us. I think this has been through what, probably three presidential administrations.

MR. LARKIN: Thanks to Frank and the City staff for helping us set up this meeting, and there will be another meeting on Saturday. It will be identical to this, so you don't need to attend that. You're certainly welcome to attend. Or if any of your family and friends or neighbors were not able to attend tonight, Saturday morning will be the identical same scoping meeting to receive your comments and present to you the information about the project.

So I'd like to start with a brief discussion of the background of the project.

(PRESENTATION)

MR. LARKIN: One thing I also want to mention that the board of supervisor's hearing is one final chance for you to also present your comments and concerns about the project either for or against at the board hearing.

So we'd now like to open up the meeting to hear your comments. We have given you an opportunity to fill in written comments if you're uncomfortable speaking. We

can take written comments. You can send us letters over the next couple of weeks until the end of the scoping period. And we have about an hour and a half. I think that should be plenty of time for everybody to present their issues and concerns. You can come up and speak in the mike. We can probably move it over here where it would be more convenient. Just come up one at a time and please state your name and address and then give us your comments. If we can keep it to three or four minutes, that will probably be best.

And we can open up it now. If you want to give me a show of hands of who would like to speak so we know approximately how many. We don't have too many speakers. So we shouldn't have any trouble at all in terms of time. If you want to come up one by one over here on this aisle we can give you this microphone.

MS. VERRECCHIA: My name is Yolanda Verrecchia, and I live in the area that's flooded. And I'm sure a lot of people here know me. I want to understand, there were changes from the first proposed project to the one that you're presenting tonight; is that right?

And the changes are no water is going to be going into the Colorado Lagoon? Did I hear that correct?

MR. LARKIN: That's correct.

MS. VERRECCHIA: No water, no flow. So the outlet in

the Colorado Lagoon is not going to be changed at all. It remains as is -- the outlet?

MR. LARKIN: We should clarify. There is an outlet that serves this area now that discharges to Colorado Lagoon. This new proposed project would replace that outlet so that although the outlets may remain in place, there will be no flows through that. All those flows that currently go into the lagoon will be diverted to the new system and carried to Marine Stadium.

MS. VERRECCHIA: Thank you.

MR. OUTTEN: May name is Tom Outten. I live at 5277 Appian Way. I thought that this project was defeated basically two years ago, and I'm surprised to see it come back again.

There are a lot more people that live along the surrounding Marine Stadium than that lived around the Colorado Lagoon. And I think you'll find more people using the Colorado -- the Marine Stadium, Mother's Beach and area for recreation than you do in the Colorado Lagoon. So I think you'll probably find more friends of Marine Stadium that would object to this project than it was two years ago.

And I can't understand why you don't take the obvious route and take it directly to the ocean so you don't bring all the pollution and the sediment into the

Marine Stadium, Mother's Beach, Long Beach Marina and Alamitos Bay area instead of just taking it directly to the ocean.

MR. LARKIN: Thanks. There is an alternative that has been looked at preliminarily by the County in terms of taking it more due west in this general direction. And the engineering feasibility of that because of the additional cost and length was determined not to be feasible. We will address that in the Environmental Impact Report.

Also, I just want to make sure you all know that there is a court reporter so we're going to have a transcript of the hearing tonight and all of your comments, and those will be addressed specifically as we go forward in the Environmental Impact Report.

MR. MAGREE: I'm Alan Magree. I live on 3rd Street in Long Beach. If you could clarify something, are there two proposals? There's a proposed project and the Colorado Lagoon alternative that will be looked at in the EIR?

MR. LARKIN: The Marine Stadium on the top is the proposed project, and so that's what is proposed by the County. We will look at the other alternative and give it a thorough analysis, as well. So there will be a comparison of the two, but one is proposed right now.

MR. MAGREE: Couple questions for hydrology.

Will the hydrology do a study on the sediments to determine whether or not the scouring could suspend lead, DET, etc., etc., that might be in either the alternative plan in Colorado Lagoon or in Marine Stadium?

MR. LARKIN: Yes. Dave talked about that, that there would be a study of erosion and sedimentation effects from the alternative.

MR. MAGREE: But will there be specific studies that determine how much lead or how much DET are in those sediments?

MR. LARKIN: Maybe I better let him answer that.

Did you hear that, Dave?

MR. CANNON: No.

MR. LARKIN: He wanted to know the detail of the study in terms of lead and other contaminants in the sediments.

MR. MAGREE: In both Marine Stadium and Colorado Lagoon.

MR. CANNON: The contaminants that have been identified in the lagoon previously, that is one of the things that we have to assess as part of the water quality and the sediment quality portion of the project.

MR. MAGREE: And then as part of the alternative plan, will you look at mitigation for the possible

flooding in Colorado Lagoon enlarging the tidal culvert to Marine Stadium?

MR. CANNON: I'm not sure. Enlarging the tidal culvert to Marine Stadium?

MR. MAGREE: Right. So that if there is -- for instance, if the alternative plan goes through and there is a significant amount of water that goes in Colorado Lagoon that could cause flooding, would enlarging the tidal culvert to Marine Stadium be part of that plan?

MR. LARKIN: We have added more data since the original study on the capacity of that tidal culvert. That was one of the issues raised earlier. That will be input into Dave's model.

In terms of whether that is an alternative previously proposed or evaluated, we need to evaluate it. We're here to listen to your comments, and we really don't have the answers for everything at this point.

MR. MAGREE: Right. But my question is will it be addressed in the EIR?

MR. LARKIN: We'll work with the County on that as an alternative.

MR. MAGREE: Will there be any upstream measures that are being looked at to cut down on BOCs or bacteria or trash that will flow into or through the Termino Avenue Drain Project other than the low-flow bypass?

MR. LARKIN: That's something that the County has looked at in terms of catch basins at the inlet, and that's something we will talk to them about, as well, in terms of evaluating whether that's necessary or feasible for this project.

MR. MAGREE: Thank you.

MR. THOMPSON: My name is Ben Thompson. I live at 635 St. Joseph. And really I just have one question, and it concerns your in-line trash screening device that you show on some of these various diagrams.

And I guess what I'm wondering is, is this really a device or is this a facility? Is it bigger than a bread box? Is it going to have to be emptied every five minutes? Are we going to have sanitation trucks coming and maintaining it and pumping it out? In other words, what is the localized environmental impact of having that trash being removed at that particular spot?

MR. LARKIN: I'm not sure I can answer that, but that's something we would evaluate. We would get the impacts of maintenance of the facility as well as construction of the facility and what effect that would have on the neighborhood.

MR. THOMPSON: So that's something that's yet to come?

MR. LARKIN: Yes.

MR. ATASHZAY: The location of the proposed device to remove the trash would be in the PE right-of-way which is away from street and residential. So this way if the maintenance crew, they are getting into it, it will be less disturbance or noise to the neighborhood.

But nevertheless, we are going to look into it to see how often it needs to be cleaned. So those are the factors that are going to be analyzed later on.

MR. KINCAID: Andrew Kincaid. 5275 Paoli Way. And my question had to do with the culvert, the outflow. What's its footprint and what's its profile?

MR. LARKIN: We will describe that. I don't have the specs right here, but that will be clearly defined. It will be a large storm discharge.

MR. ATASHZAY: Again, this is very preliminary, but the initial size we have, it's about 11 foot by 8 foot wide double box, which is 20 feet wide by 8 foot outlet structure. It's an enforced concrete box. But nevertheless, more than half of it will be submerged.

And, again, we're going to look into it to see how are we going to locate that to have the least exposures, but that's the size of the box.

How we're going to design the aesthetic, we haven't got to that. But generally the size of the box is going to be 11 foot by 8 double box. Which "double" means

two boxes next together about 20 feet wide by 8 feet high.

MR. KINCAID: So does that mean -- when you say "8 foot high," does that mean 8 foot above mean high tide or 8 foot above the sidewalk? What does that mean?

MR. ATASHZAY: That's the height of opening. But how far it's going to be, I think again the preliminary design we have is about minus five. And your high tide is around 4. -- 4 feet.

So the inverse is about 10 foot below the high tide, the bottom of it. So if you add 8 feet to it, that would be plus 3. So the top of it will be 1 to 2 feet below the high tide. The top of the box.

MR. KINCAID: Okay.

MR. THORPE: I'm Darwin Thorpe. 4532 Peckwood Avenue. I'm a member of the Board of Long Beach Organy. This study, I think you said, was only regarding flood control.

Are there any projections to do a study of the recouping any of the water, the high flood exit to put in a cistern to recoup some of that water for use in Long Beach Garden? We have a 1,000-gallon cistern at our nursery. Is there anything like that that will be studied in the EIR?

MR. LARKIN: We haven't currently proposed that, but that's something that we'll take your comment into account

and see how that could be commented on. Thank you.

MS. PEKAR: Good evening. My name is Nadine Pekar. I live at 4665 East 4th Street. It's known as Bridgeport Condominiums.

And have there been any studies done on what you will do after -- let's say you do the storm drain. What are you going to do to Pacific right-of-way after you're done? Because this is my main concern. Do you have plans for it?

MR. LARKIN: There are several short-term leases. Currently people use it for various uses. And they understand that there are -- there's a right-of-way easement to allow us to put the storm drain in.

The area will be restored to the existing condition at the completion of the project. So that will be part of our study of what the impact of construction and how will it be restored to at least the quality of the existing condition.

MS. PEKAR: But the existing condition is deplorable. And I was hoping that since you will be allowed to put in this wonderful storm drain, why don't you give us a park on top of that? I mean if you're going to spend all this money, give us a park.

MR. LARKIN: We will work with the County and the City in terms of what their plans will be for restoration

of that.

MS. PEKAR: Thank you.

MR. COLONNA: I'll just insert that in. That is actually our goal is to once the project is completed to make a pedestrian-friendly walkway with native trees and bus partnering the college and having a botanical walk.

We would look into grant fundings. It's just that the project's been taking such a long time that the partnership we had with the organization that helped just to sort of maintain the native plant side of it has just been basically minimal. And the Parks and Recreation Department just took that over about a year ago.

So once the project is done, there will be funds that will be used in order to make it more pedestrian friendly and basically cleaning it up. And it's actually a connection from Colorado Lagoon all the way up to about 10th Street. So it does qualify for grant funding to allow communities to basically either have a bike path in there or walking trail to get to the ocean.

So we have significant more funding available. So it's not going to be left the way it is just in disrepair. Or what we'd like to think of it now as gone to native habitat where --

MS. PEKAR: It's gone to mud.

MR. COLONNA: And it's been that way for many, many,

many years. So the objective is we've been waiting to get something resolved with the flooding, as Yolanda pointed out, upstream and then resolve that matter and come back and the City will take the project over once the County is done with it.

MS. PEKAR: Thank you.

MR. GUACCI: Gary Guacci. I live at 601 Quincy Avenue. Besides the storm system -- storm drain system collecting storm runoff in the upstream portion of the storm drain, does this also tie into other storm drains downstream to collect runoff in those areas, as well? Flooding areas down in that area?

MR. LARKIN: I don't know the answer to that. That's something we'll evaluate.

MR. COLONNA: Those are City-owned drains.

MR. GUACCI: In the 1995 flood there was about 3 feet of water over the Quincy and Prospect area, and a lot of it comes down actually from 4th Street down Fremont Avenue across the right-of-way down to that small storm drain.

MR. COLONNA: You're going to increase the capacity.

MR. LARKIN: Yeah. The capacity of this system will be increased, but I don't know if it --

MR. GUACCI: Ties in or intercepts. I can send you some photos.

MR. PIRAZZI: Good evening. My name is Dave Pirazzi.

I live at 445 Los Altos Avenue in Alamitos Heights which borders on the edge of Colorado Lagoon. I'm also on the board of directors for the Alamitos Heights Improvement Association.

I want to thank you for coming here and doing this tonight. I think you got a really good presentation. I'll tell you that our whole neighborhood is very interested in the progress and will be following the EIR and the things that follow on afterwards very closely.

I did have a specific question. I know there are some additional drains going into the lagoon along the side where the proposed new drain would be, and I haven't heard anything tonight about whether you're going to pick those up additionally and take that runoff that normally goes into the lagoon and put that into your new drain.

MR. LARKIN: As I understand it, the design would pick up the drainage up from the northwest, but it is not going to pick up other -- intercept other runoff into the lagoon. So those other storm drains would remain in place.

MR. PIRAZZI: Maybe a suggestion because it looks like that route is actually going to cross some of these drains that are running into the lagoon. It might be something that can be done without too much additional resources. So it might be something you might want to

look at and study.

MR. LARKIN: Thank you.

MS. VERRECCHIA: My name is Yolanda Verrecchia, and I live at 1133 Ximeno Avenue. The original design up north in the north area of the neighborhood, you were going to have some catch basins that filter out the trash over there, too. About 150 or 100 catch basins were going to be filtered, also.

Is that going to remain the same?

MR. LARKIN: I don't believe a decision has been made on that. It's been looked at. That's something that will be evaluated as we go forward whether those catch basins as well as the diversion to the sewer both are needed or not. We don't have an answer to that, but we'll evaluate that.

MS. VERRECCHIA: Thank you.

MR. LARKIN: Any other questions or comments or concerns want to be raised? There is another meeting on Saturday morning. It will be at another school in the neighborhood. And so if you have other comments or if you have neighbors or family or friends that would like to come to the meeting, that would be identical to this and we'd like to encourage you to have other people attend and give us their comments.

MS. REED: Thank you. Alicia Reed, 335 St. Joseph,

Long Beach. My question is I just picked up the initial study for the proposed project, and I'd like to find out how far in the CEQA, in the EIR process, would your firm be evaluating other alternatives?

MR. LARKIN: In terms of the process we're just getting started. This is the notice of preparation period. We will evaluate these two alternatives shown in detail. There were several others that were mentioned today, the catch basins, the alternative to take it to the ocean. So, we will look at those perhaps not in quite as much detail. But there will be a variety of alternatives that will be evaluated from here on through in the Environmental Impact Report.

MS. REED: So it won't be concurrently?

MR. LARKIN: Yes. It will be one document that looks at a variety of alternatives.

MS. REED: Will there be a separate initial study prepared for the other alternatives?

MR. LARKIN: No. This is the initial study for the project and the --

MS. REED: The proposed project.

MR. LARKIN: Yes. And from that we'll look at the project and alternatives from here on out.

MS. REED: Thank you for clarifying that.

SPEAKER: Harold (inaudible). 400 Monrovia Avenue,

Long Beach. Seems like you're on the right track to me. I'm glad to see it.

One thing I'd like to see you keep in mind foremost is try to improve the water quality in the lagoon and Marine Stadium. There are so many children that swim in there all year long. They used to have swim races for the kids every summer. They don't have those anymore. The water quality has deteriorated over the past 20 or 30 years. It's really bad. Every time the Bay checks the pollution in the lagoon, it gets terrible grades. You're afraid to stick your toe in it. So maybe your solution is going to help, and keep the water quality in mind.

Thank you very much.

MR. LARKIN: Thank you.

MS. PIRAZZI: My name is Tina Pirazzi. I live at 445 Los Altos Avenue. And thank you very much. I can tell you've done a lot of work and both alternatives look interesting.

I would just like to include on public record another proposal, and perhaps it's one that you're already considering. But that would be to consider opening up the culvert between Marine Stadium and the Colorado Lagoon. And granted you would sacrifice a little bit of park space, but what it would do for tidal flushing in exchange I think would solve a lot of the problems. And we'd just

like that to be put on public record.

MR. LARKIN: So you're saying an open channel as opposed to a larger pipe.

MS. PIRAZZI: Right. Just completely open it up.

MR. LARKIN: Yes.

MS. WOOD: My name is Barbara Wood. I live at 4th Street and Monrovia. I'm wondering, do I understand correctly that all the existing drains emptying into the lagoon will remain as is which includes the runoff from the golf course creating an awful lot of scum?

MR. LARKIN: All but one. We're replacing the major one on the west side of Colorado Lagoon. That's what this project is about. The other storm drains would remain in place.

MS. WOOD: Now, my east and wests aren't that great. Does that include controlling the runoff from the golf course?

MR. LARKIN: No, it does not.

MS. WOOD: So we still get those nitrogens in the water.

MR. LARKIN: That's correct. This project would not address runoff from the golf course.

MS. WOOD: Thank you.

MR. LARKIN: Any other comments? Questions?

SPEAKER: Can I ask a question from right here? Is

there a reason why this project does not include in its scope demolition of the existing outlet to the Termino Avenue drain?

MR. LARKIN: I would say primarily cost. There is a separate study for restoration of Colorado Lagoon by the Coastal Conservancy, and that project is just getting started. So in terms of evaluating restoration of the lagoon, removal of that outlet may be considered at that time. But it is not proposed currently for removal by the County. It would just simply be abandoned in its place.

MS. DAVIS: How long once they go through everything is the time limit proposed for completing all of this and the construction that goes on and the digging that goes on? Barbara Davis, 328 Granada.

MR. LARKIN: I don't have that. That is something we would specifically address. The construction impacts in the city streets in the right-of-way and down to the lagoon, that would be a significant concern. So we will analyze what equipment is necessary, the duration of the construction and how long it would be in each segment of the alignment. But that will be specifically addressed. Air quality, noise, traffic disruption, those sorts of effects as we go through with the construction.

MS. DAVIS: Thank you.

MR. LARKIN: Okay. Thank you very much for coming

and, again, there's a meeting Saturday morning, and we've got the details on that.

(At 8:00 P.M., the proceeding was concluded.)

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STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, LISA L. GROOM, C.S.R. No. 11765, do hereby certify:

That said proceeding was taken before me at the time and place therein set forth and was taken down by me in shorthand and thereafter was transcribed into typewriting under my direction and supervision, and I hereby certify the foregoing transcript is a full, true and correct transcript of my shorthand notes so taken.

I further certify that I am neither counsel for nor related to any party to said action nor in any way interested in the outcome thereof.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 28th day of May, 2004.

_____
LISA L. GROOM, CSR #11765
Registered Professional Reporter

PUBLIC SCOPING MEETING

SATURDAY, MAY 22, 2004

10:00 A.M.

JEFFERSON LEADERSHIP ACADEMIES

AUDITORIUM

750 EUCLID AVENUE

LONG BEACH, CALIFORNIA 90804

APPEARANCES

ERIC WILSON

DAVID CANNON

ED DINGMAN

JAMES YANG

ZAHID ATASHZAY

KIM HAVENS

PAGE

INTRODUCTION

MR. WILSON: We're going to go ahead and get started. I opted not to use the microphone this morning. If everyone can hear me back there, is it okay if I don't use the microphone?

The reason we're here this morning is for the public scoping meeting. This is the second of two meetings. We had a meeting on Wednesday night down on the southern portion of the alignment. This is a meeting being held pursuant to CEQA, the California Environmental Quality Act, to solicit public comments on the Environmental Impact Report that's being prepared. This is the very beginning of the EIR process, and I'll talk a little bit about that more later this morning. But, initially, we're just starting the process tonight for the environmental analysis of the Termino Avenue storm drain project.

My name is Eric Wilson. I'm with EDAW. We're a consultant that's been hired by Los Angeles County Department of Public Works to prepare the environmental document for the project.

And by way of some introductions, the County folks here this morning are Ed Dingman and James Yang. And I'd like to thank Jeanine of Frank Colonna's office

for helping set up this meeting. And we've got a few EDAW staff here, as well.

With that I'd like to talk about how we're going to form this morning's discussion. Ed from the County will talk a little bit about the project and some of the history of the project. Some of you are probably familiar with the evolution of this project, and we'll talk a little bit about that in a few moments.

I'm going to then continue with David Cannon of Everest International. He'll talk a little bit about the key environmental issues. There are a number of issues associated with the project that we're going to evaluate and then finish off talking about the environmental review process and how you guys are going to be involved in that process as we move forward. There are going to be a number of opportunities to comment.

And then we're going to open the microphone up to you to talk a little bit about your concerns. There aren't too many people here today. We're going to try to keep it to three minute per comment. I'll talk a little about that in a moment.

So, without further ado I'd like to pass it to Ed to talk about the project.

(PRESENTATION)

MR. WILSON: Can I have a show of hands who might

want to comment today?

SPEAKER: Can we ask questions?

MR. WILSON: There will be a question-and-answer component, but it's essentially more clarifications on the project itself versus answering what the impact will be because we don't necessarily know that yet.

MS. VERRECCHIA: I went to the Wednesday meeting. And my name is Yolanda Verrecchia, and I live at 1133 Ximeno. Maybe you would like to tell the people the time frame you're talking about.

MR. WILSON: Sure. Are you asking a time frame for the construction of the project or this process?

MS. VERRECCHIA: This process and what happens after that process.

MR. WILSON: So the time frame for the CEQA process is sometime probably in the late summer. We'll put the document forward for the 45-day public review period. So we'll spend the next several months preparing the EIR. And if some of you aren't familiar with the EIR, it's a fairly thick document and it's a very comprehensive analysis. But a lot of that document is the technical support, and we boil that down to user-friendly language for the EIR. So, it's going to take a couple months to prepare that document. Probably be ready for your review by late summer.

And then the 45-day public review period will start. So that will take another couple months, and then we'll move forward with the final EIR process which would probably conclude sometime early in 2005.

So with that I guess we'll ask for public comments.

MR. BALDWIN: Comments would be questions?

MR. WILSON: Can you also -- I'm sorry. Everyone that's going to comment, please state your name and your address or where you live for the record because these will be included in the public record for the project.

MR. BALDWIN: My name is Richard Baldwin. I live at 5279 East Paoli in Long Beach. I have several questions.

First of all, what is the timetable for the project -- for the total project?

No. 2, you're going to have to have a pumping station, as I understand. Where will that be located? What will the noise level from that be?

I want to know, also, you're going to have to have trash rates or some sort of a trash removal system. Who will maintain that and what will be the effect of that? I think I already asked where the pumping station would be located. We need to do that. Thank you.

MR. WILSON: Ed, do you want to address some of those or should we -- to answer your question about the location

of the pumping station it will be in the PE right-of-way.

James, you want to --

MR. YANG: The location of the low-flow diversion to the sewer or PE right-of-way or the parking area adjacent to Colorado Lagoon, we haven't figured out exactly where it is. It's going to be away from the residents, and it's going to be buried underground. And the noise is no louder than a pump for your swimming pool.

And regarding the trash screens and separation system, it's going to be maintained by the City of Long Beach. It's either going to be located on the PE right-of-way or the parking area adjacent to Colorado Lagoon. So it's going to be away from homes.

And the maintenance, it's not going to stop traffic either because it's going to be outside the street right-of-way.

And regarding the construction, the project can take -- construction downstream and all the way upstream can take anywhere from 12 months to 24 months. We don't have an exact number yet because we don't know what alternative we're going with and what features we have to include as part of our project at this point. So rough time frame is 12 months to 24.

MR. WILSON: I'd just like to add one more thing.

Your question about the noise impacts, James mentioned it's a small pump similar to a swimming pool, but we'll actually do noise calculations in the EIR. We'll do ambient noise measurements near the sight of the pumping station. And then based on modeling will be predicted noise levels and see if that would break any thresholds of any local noise ordinances. We will analyze that.

Next.

MR. KLOTZ: This pumping station what -- my name is Ed Klotz, 517 Roycroft. The pumping station, is that going to be run by natural gas? Is it going to be diesel or is it going to be electrical?

MR. YANG: It's going to be electrical.

MR. KLOTZ: What if there's an electrical power failure and is there a way to divert the water -- all the water to a sanitation district?

MR. YANG: Are you talking about all the storm water? Because the low-flow diversion system is only for the summer, dry weather runoff. When you water your lawn the excess runoff, that's what we use it for.

So we will have a backup generator at the site, will be probably solar-powered. But if those fail, then occasionally it may -- the summer, dry weather storm may bypass the local diversions.

MR. KLOTZ: During the early part of a storm, how are

you going to divert the first runoff the first hour? Does that go directly into Marine Stadium?

MR. YANG: That goes through the trap screening device. That's a gravity system.

MR. KLOTZ: So, any kind of hydrocarbon or anything else, there's no station to divert water in case of a spill?

MR. YANG: If there's a spill, no.

MR. KLOTZ: Another question, this is my first meeting I've attended. Over the past 35 years or 40 years, where has the storm drains and why haven't the storm drains -- I mean have they always flowed into the Colorado Lagoon or did they go to some other direction besides the Colorado Lagoon?

MR. YANG: Actually, there's a city storm drain service in the area right now. They all ultimately end in the Colorado Lagoon, being a natural roll spot. And, ultimately, everything ends in Marine Stadium because Colorado Lagoon breaks off Marine Stadium. That's where the flow goes.

MR. KLOTZ: Now, you mentioned the flooding in '95. I was here and my house was flooded up to a foot deep of water in the garage area and the alley area. All the water at that time, I believe, was going directly into the Colorado Lagoon. And the tide gates that separate the

Colorado Lagoon from the Marine Stadium were closed at that time. And I was wondering why they weren't open.

And that was one of the reasons there was flooding. The sewers backed up and flooded this whole area.

MR. YANG: I don't have a record of that, and I work for the County. The culvert is operated by the City of Long Beach. You might want to check with them.

MR. KLOTZ: I notice this because I came over immediately from where I live in Huntington Beach to the property and --

MR. YANG: We have no record of the culvert being closed, because we don't operate that through the tide gate.

MR. KLOTZ: That's what I observed.

MR. YANG: In the future we will take it directly to Marine Stadium, so that won't be an issue.

MR. KLOTZ: Well, we're going to have a higher volume of flow with this new storm drain system than what we would have normally had in the past.

MR. YANG: Yes. It's going to be a much larger system.

MR. KLOTZ: And it's going to go directly into the Marine Stadium.

MR. YANG: That's one of the alternatives.

MR. KLOTZ: And if it's extremely high tide at that particular time --

MR. YANG: It still will work.

MR. KLOTZ: It will work?

MR. YANG: Yes. Designed to work that way.

MR. KLOTZ: That's all I have for now.

MS. VERRECCHIA: Because this is my neighborhood association, I just want to make everything clear.

The difference between the project proposed now and the project proposed a year and a half ago is that all the water will now be diverted to Marine Stadium. No water will be going to the Colorado Lagoon. Low flow, high flow, medium flow. Everything will be going to Marine Stadium. But low flow, I think that water is going to go to the sanitation district, okay.

Is that right, James?

MR. YANG: Yeah. The summer dry weather flows will go to the sanitation district. The low flows from the storm runoff will go through the trash screening system and then goes to Marine Stadium directly.

With regarding to the high flows, we won't have any in-line trash screening system which we can treat that. That's relatively clean water. After the first hour or so of the storm, the water is very clean.

MR. KLOTZ: That's why I wondered, if you divert it

for the first hour and then let it go, if it goes in the first flow, you're going to have all kinds trash going through.

MR. YANG: It's a in-line system. So everything during the first -- I don't want to use the first hour because I'm not sure exactly how much flow we can divert. But we will divert the majority of the low flow through an in-line screening system, trash separating system. And then we'll come back to the main line, and it goes to the Colorado Lagoon. Once the capacity of that system is reached, then everything just goes to Marine Stadium directly.

MS. VERRECCHIA: Another thing I'd ask the County is that last year or a year and a half ago, they suggested putting in these flood basins, a system where it would catch all the trash at the local sewage drains or water drains. And I asked if that's still being in mind or designed, and they're going to keep that in mind.

MR. YANG: We're going to look at it because our understanding is originally we quoted a catch basin. We would provide some kind a screening device for the catch basins.

But since we don't have a trash separation system downstream, we're going to look at it as a duel system is needed or not. We may get rid of the screens

and catch basins. But we're going to look at it in more detail through the EIR process.

MR. HAMBLETON: Larry Hambleton. 5273 Appian Way. What type of bacteria monitoring system do you have?

MR. YANG: In the storm drain system?

MR. HAMBLETON: Yeah. Are you going to shut it down when bacteria increases to the maximum threshold allowed?

MR. YANG: Right now we don't have anything in mind. We'll look at it to see if it's necessary through the EIR process.

MR. DINGMAN: There are no real thresholds right now for bacteria delivering into the storm drain. Are you asking are we going to have a monitoring system in the storm drain?

MS. VERRECCHIA: Can I ask, it's important that you go up to the mike and ask these questions for the record so we don't have any back slashes on this project. It's important that we get everything documented.

MR. YANG: We don't have anything proposed right now. We will look at it to see if there's any legal responsibility upon us to put in such a system as you suggest.

MS. GARVEY: Kim Garvey. 389 Haines Avenue. I have one comment and two questions.

First comment is as part of the process I'd like

to see addressed the aesthetics of the screening device, the pump station, the outlet structure in the Marine Stadium. So that wasn't talked about. You talked about the noise. But I think that's also an important factor because it is a very natural environment and you need to create something that fits into the natural environment.

Second two questions are -- one is -- and they're both related -- if you are driven to go back to the alternative where you would have to divert directly into the Colorado Lagoon, would this process start over again? Would you have another one of these scoping meetings and would it start over again? And when would be the opportunity to comment should that alternative come?

And then the second related question is what do you foresee would drive you to have to go back to a diversion into the Colorado Lagoon? What would be the negative impacts that you would see coming out of the Marine Stadium diversion that would drive you to have to go back into the Colorado Lagoon?

MR. WILSON: I'll answer the first two, and then on the third one maybe, James, you can take that.

The first aesthetic question, it is an important question, and it is something that will be analyzed. In the initial study we talk about the studied impacts of the

different components. We probably didn't mention this enough but most of this project, probably 90 percent of it, is underground. These are structures that will be buried and you won't see them. They'll be within the PE right-of-way.

But things like the pumping station and this outlet at Marine Stadium will be visible. And maybe, James, you can talk about how visible that will be.

MR. YANG: The pumping station will be also buried. So it won't be visible other than you'll see the manholes on the ground.

The outer structure will be visible, but we will work with the community regarding the aesthetics of it. And we definitely want to build something that's not too intrusive. So we'll go through the EIR process, and we'll work with you guys.

MR. WILSON: And then, too, you had a question about the alternatives being analyzed if that would restart the process.

The second alternative on the bottom is the same project that was analyzed in the MND, the main dec that was prepared in the past. And that will be included as an alternative that will be analyzed in the EIR for this project. So you can comment on this EIR and comment on the merits of that alternative. So it will be

evaluated. The impact itself will be evaluated in this document as an alternative.

MS. GARVEY: But if it's selected, the process won't start over again?

MR. WILSON: No, it won't.

MR. YANG: Correct me if I'm wrong, Eric, through this process the alternative could become the preferred at the end.

MR. WILSON: It could be approved. It could be selected as the project if decision-makers were so inclined. But generally in the EIR process you evaluate a preferred alternative and then look at alternatives because you're required under the CEQA process to look at alternatives.

So the County's mandated in this case to look at a reasonable range of feasible alternatives, and that fits within that range. So it will be looked at and analyzed. It won't be analyzed as the preferred project. It will be analyzed as an alternative. To answer the ultimate question, it could be approved.

MS. GARVEY: And if it's approved, what's the opportunity to comment on that?

MR. WILSON: This is your opportunity to comment. This process is your opportunity to comment on that as well as the preferred.

MS. GARVEY: Need to be clear to everybody.

MR. CANNON: If I can mention also the permitting process is another chance for public comment.

MR. WILSON: Correct. And after the EIR process is done there will be other regulatory permit actions that will be required. The County will have to go through and actually acquire permits through the U.S. Army Corp of Engineers, California Department of Fish and Game potentially. And that would be another process for you to evaluate those permits.

MS. GARVEY: There was another question that I had which is what would drive you to go to that alternative?

MR. YANG: If the environmental impacts through the EIR process we come to a conclusion, the environmental impact at Marine Stadium is much greater than Colorado Lagoon, then we may go back to the Colorado Lagoon option.

MR. WILSON: But we have looked at this preliminarily and compared the two, and preliminarily the Marine Stadium alternative results in less environmental impacts than putting the flows in the Colorado Lagoon.

MS. KINNEY: Frances Kinney. 507 Roycroft Avenue. I'm not sure this is part of this project, but what is the concern about the neighbor who overlooks the dirt path called the railroad running in this project eating the

dirt every day while you put the pipes in? Unacceptable. I'm getting older. You know what I mean? But come on. I mean this is a major issue.

MR. YANG: We will look at air quality issues regarding your construction.

MS. KINNEY: Dirt.

MR. YANG: Yes. The dust level might be elevated during construction. We'll look through some mitigation measures, see what we can do to keep the dust levels down. That's going to be looked at through the EIR process.

MS. KINNEY: Thanks.

MS. DAVAR: Thank you. My name is Laurel Davar. I have apartment buildings at 1032 and 1038 Roswell. I live in Los Alamitos.

I've been attending meetings on this subject since before the last big hundred-year flood. I've surveyed the neighborhood. I took photographs which were used in the initial studies.

I can say that I'm kind of tired of waiting. My tenants have had cars lost in the floods. I've had three feet of water in my front yard. So while everybody's talking about not in my backyard, it's already in my front yard, and I'm kind of tired of it. And I'm tired of paying flood insurance. I'm tired of cleaning up the messes. I'm tired of people having to move because

they're afraid that toddlers might get caught in it or that they'll lose another BMW or even a big size car.

So my comment is that this can't happen fast enough, and it's a great exercise and the best possible solution for the longest term for Long Beach. But I think all of us should be thinking about what's best for the overall community. What is the best possible overall situation with the least amount of impact. Everybody's going to get a bit of dust. I've been eating water for several years, and I think it's my turn to have the water moved away. Thank you very much.

MS. GIBBONS: My name is Maryann Gibbons. I live at 2534 Lomis in Lakewood. My mother and father live at 1220 Termino. I just wanted to make a comment.

My mother and father are getting way beyond their years of having to sandbag. Everybody -- I sympathized with the people in the lagoon area and the Marine Stadium. But like this nice young lady said here, how long does this have to go on before something is done?

I've been attending these meetings for year and a half now. And every time there's a meeting, there's an obstacle or some sort of stoppage to allow this project to continue forward to continue on. Something needs to be done. We cannot continue to have flooded houses, flooded garages, flooded appliances. I mean it's got to stop.

And I want to know how long it's going to take.

I mean my husband and I, we don't mind, but we have to continually go over to my mother and father's house and sandbag the house two feet high. When is it going to stop? How long will this go on? Five years from now we'll all be standing here with no conclusion yet to this problem, and I want to know how long it's going to be.

MR. WILSON: Well, I think James gave the construction length, and that's the period -- the length of time with regard to construction of the project.

As I mentioned earlier the CEQA process, there are certain statutory limitations in terms of the review periods. But as the County consultant, we're going to be moving forward as fast was we can to process the document.

SPEAKER: Maxine (inaudible). 5279 East Paoli.

If there's no concern about the bacteria level, I think that your notice hasn't gone out to enough of the community because the water-skiers, the rowers, the swimmers in Marine Stadium, the human element will all be affected by bacteria flowing unless there is something put into the system to check the bacteria. You're going to have more ill effect on humans than you are on the environment and the wildlife surrounding.

MR. CANNON: I just want to make it clear, it's

not -- there is concern for bacteria. We will be looking at that. We will be looking at what impacts does the project have on the bacteria levels that are getting to the Lagoon and Marine Stadium with the project compared to existing conditions now. So that will be looked at.

SPEAKER: I don't think the notice is sufficient if you are only notifying the people in the general area because that Marine Stadium is used by people all over Long Beach. I don't think your notice legally has gone out to everyone within the city of Long Beach.

MR. WILSON: The notices did go to the City of Long Beach. There are certain requirements for actually drafting the notices. And the County has prepared the notice -- and, Ed, correct me if I'm wrong -- within how many hundred feet of the alignment?

MR. YANG: Almost a thousand feet.

MR. WILSON: So the mailing list --

SPEAKER: That's not sufficient.

MR. WILSON: I'm going to get there. It's also sent to a number of agencies that are required to receive notices. Regional Water Quality Control Board, number of jurisdictions.

And the point of this process, why we're here today is to hear exactly what you're saying. Get those people involved early in the process so they'll be added

to the mailing list. We'll go back and do the same thing. If you've got notification addresses you'd like us to send it to, this is the time to do it because we're in the very beginning of the process now.

SPEAKER: Don't you think that all the water-skiers, they don't all live right within a thousand feet of that Marine Stadium.

MR. WILSON: That's correct.

SPEAKER: I think you need to address the fact that the water quality isn't going to change all that much. The water that's going there now to the lagoon goes to the Marine Stadium and gets diluted as it travels to the ocean. We're not putting more water with more bacteria. We're just diverting it past the lagoon.

SPEAKER: Right. So it --

SPEAKER: It won't flood it. This is a myth and I think if you read it yourself -- if you sit down and read the Environmental Impact Report when it comes out and if you read the history on this project, you will find that this area of bacteria in the water has been a primary concern from day one. And it's been a concern where people are talking about simple things like dog feces that gets into the lagoon and so on.

Well, wild bird feces gets in there, too. Nobody seems to be concerned about that when they're

swimming in it. The same stuff is in the Marine Stadium on it's way to the ocean. The water-skiers and water aquatic life and people who do their rowing and so on in that area are not going to be so greatly affected. I doubt very much if they will even notice a difference.

But what's happening today is an announcement that these studies addressing bacteria and other things way broader than has ever been addressed before is now about to happen. And I think that we should applaud the fact that it's moving forward and that you should come to these meetings as we all have for years and especially the next one when the results of these studies actually are known. Right now we're all hypothetical.

But the next meeting is going to be the one that you should attend to satisfy your concerns.

MS. VERRECCHIA: I just wanted to add, the water going to Marine Stadium is going to be a lot cleaner than what's going in there right now, no doubt.

SPEAKER: What about the flooding of Marine Stadium?

SPEAKER: There won't be flooding.

MR. CANNON: That will be looked at as part of the document. As I mentioned before, flooding of Marine Stadium as well as Colorado Lagoon from the different alternatives is one of the things we're going to address, looking at the water levels and things either

with or without project. So that will be addressed.

Because there are a number of things that are being talked about, I think one of your primary concern about the water quality was notifying the different people that would use it like the water-skiers. That issue will be addressed. As Eric's saying, if you have certain people to notify, great, let us know.

But, also, when we look at water quality using the model. One of our goals is looking at how are the concentrations of bacteria affected by the project? There are certain standards and criteria for bacteria levels that are for different user groups such as swimmers, such as people in boats, water-skiers. So that is considered in the analysis that we're going to do is will the water quality be -- will there be a significant impact of water quality relative to water-skiers or wildlife, as well. So that will all be addressed.

SPEAKER: Is your notice sufficiently legally going to those people?

MR. CANNON: From a process standpoint, yes.

MR. WILSON: Yeah. I think legally the notices so far for the phase of the project that we're in, legally the notices have gone out according to the letter of the law. But, like I said earlier, that's exactly why we're here to expand that list. And everyone who signed up

today will be on that list, and everyone who is added including recreation users in Marine Stadium which we will investigate who to add to that list after this meeting. That's exactly why we're here tonight. So legally, yes, the County has performed their obligations.

SPEAKER: In and out every weekend.

SPEAKER: They can put a sign there.

SPEAKER: It's been in the Press Telegram for years, this whole issue. I don't think you can notify any water-skiers that come from every area. The only thing you can do is follow the parameters of the letter of the law and move it forward so that people are abreast of the situation and attending meetings. We're talking about a situation that's so greatly improved from what it was before that I think you'll be very happy in the long run.

SPEAKER: You don't face Marine Stadium, we do, and the trash that comes through --

SPEAKER: It's going to be improved is what we're trying to tell you.

SPEAKER: -- that's not filtered at this point.

SPEAKER: Yeah. That's right. And they have this system at great expense to improve that for you. You won't be seeing it float around.

MR. CANNON: From a process standpoint, if I can explain how it works is right now the water comes in the

Colorado Lagoon with the levels of trash and other constituents, goes through the tidal culvert and into the Marine Stadium during a flood.

SPEAKER: There's no removal.

MR. CANNON: The proposed project is for what's going in, that is going to be screened. The low flow will be diverted. During a storm event there's going to be screening of the trash at the beginning of the flood. So some of that trash will be taken out. And the cleaner water will be sent to Marine Stadium. So there's less of it coming out. So it's not going through Colorado Lagoon to a tidal culvert to Marine Stadium. It's going directly.

And that's what we're going to be analyzing is that an impact -- a significant impact or not? That's what we're going to look at. But the overall, there's a lowering of the concentration of trash relative to what's there that's coming down to that. That's what we're doing.

MR. ATASHZAY: I just want add, of course you guys know there's an existing 36 and 43-inch drain, and that's the drain we are trying to replace and upgrade. And although we are extending furthermore and enlarging the capacity, but nevertheless all the pollutants and trash and oil which directs to Colorado and Marine Stadium, it

happens at the lower stage of the flow because that's where at the first flush you have all this oil.

So the existing drain is capable of bringing all this trash and contaminants. And although we are enlarging the capacity but most of those contaminants are the same. So we are not really bringing more stuff except by adding those trash separation systems and also the system that at summertime it diverts the low flow which contains all those bacteria and goes to sewer system. We are removing.

But in a sense although the system it enlarges to make sure to minimize the flooding, but nevertheless it's improved the water quality of the flow which would have been diverted either to Colorado or Marine Stadium.

SPEAKER: And primarily the water that is travelling in the winter months that's the rainy season which is the months that these big floods occurred when people in our area have been flooded, there aren't any water-skiers or swimmers or any of these people out. There are boaters at that time of year. But generally you're not going to have an impact.

But what we're talking about is a greatly vastly improved -- this is a state of the art operation that's going on here. And it's going to be something that's talked about all over California once it gets

accomplished. I think we'll greatly improve your living environment and the view of the trash that you now see.

SPEAKER: It's been filthy for years.

MR. WILSON: In the spirit of what we're here today for, I'd really like to make sure that we do keep this to people one at a time commenting. Because the dialogue, there are a lot of issues that we still have to analyze in the document. And I don't want to get too carried away with discussion.

I mean your points are valid. We're going to look at those in the EIR. But what these folks are saying are correct in that there currently are no physical features in this -- in line in the system that remove those pollutants, and the project would put those there. So by virtue of the fact that there would be new components, it would be an improvement to the existing conditions.

And David's models will quantify that, will tell us what those changes will be. So it's going to be a very informational document. It's going to come out in --

SPEAKER: Without any pumps to assist this flow, I'd like to know when it's high tide and we have a real high tide again and a heavy storm system rolls in, how do you expect that gravity flow system to maintain the flow from these flood areas? It's still going to back up, and I

don't care how big a sewer pipe you put in.

SPEAKER: You've got a vastly widened channel that will take that water.

MR. ATASHZAY: We've looked into it. As you go up the stream, the elevation of the ground increases. And the impact is it forces us to put much larger system in order to compensate for the hydraulic loss or prevention we have at the end. But nevertheless we check into it.

Because the issues, you have actually those low quantity areas on Roosevelt, Bennett and Redondo, and those are actually the areas that get flooded the most. And definitely when we designed, we make sure that in a sense that the high tide which eventually gets affected, the level should be below this ground surface wherever you are. So as it gets below the ground surface the catch basins or those collector systems will be able to function.

So definitely that's part of our objective when we do hydraulic calculation, make sure that the hydraulic system are going to work at the worst situation.

SPEAKER: So are you going to eliminate the old system completely?

MR. YANG: We're going to replace it.

SPEAKER: But the old system will not be active at all?

MR. YANG: Basically, we replace the old system with the same alignment with the larger system. Because the old system is too small to handle the flow of the project area. So we're basically enlarging it.

Right now it flows. It's just too much water, and it's not adequate enough, not large enough to carry the water to Colorado Lagoon and Marine Stadium. So we're just basically enlarging the existing system. In a sense everything goes there right now, all the trash.

SPEAKER: To me it would seem like you'd put in better catch basins, monitoring system, sampling systems where people would be monitoring the water; put in some pumps and pump it out instead of on a gravity flow.

MR. ATASHZAY: You're talking about a large amount of flow. And besides we normally do that. We put pump station if again hydraulic-wise we have problem with flowing the flow.

But you don't have the situation. And, again, I just want to clear this up, when we say existing system, you are talking about two 36 and 42-inch pipe where they come together. Because there are other drains that we are not touching those. But in brief we are adding more than 100 catch basins on the street that you don't have. So we can see the significance of those intakes that we are adding on the streets to make sure that they are going to

catch.

MR. WILSON: State your name, please.

SPEAKER: Just a quick question. When you talk about enlarging the system, are talking about also the culvert between the lagoon and the --

MR. YANG: No.

MR. WILSON: Yes.

MR. CAIRO: My name is Joe Cairo. Last name is C-a-i-r-o. I live at 800 Mira Mar, right across the street. And it's a tough puzzle.

First of all, you have to balance, obviously, the potential destruction to property with the destruction of habitat of environment, so it's not an easy thing to do. I have a couple of questions.

And, first of all, I run the youth programs at the police athletic league up on Freeman in Anaheim, and I work with the park department in that regard, and I've been given permission by my bosses to submit an interim use right-of-way that you'll be using to construct this which is right here behind the Armstrong Nursery connecting 10th to Termino.

I'm a firm believer in garden-based education and after school programs. I like to teach when I have an opportunity to use science to teach. I notice that in the map here that you've got the in-line trash screening

device and low-flow pumping station at the end of the right-of-way closest to the lagoon.

What is the volume of low-flow summertime water that's flowing to that? Do you have an idea of what that is?

MR. YANG: We are trying to get a better answer for that. We are going to work with Long Beach Water Department to see if there's anything better than they gave us last time. It's roughly -- I believe it was 200 GP.

MR. CAIRO: Do we have any idea -- I would imagine the toxicity of that low-flow water would be very high.

MR. YANG: It typically fluctuates because we do a lot of these diversions in the urbanized part of the county now because we believe that's the most polluted water. You look at the rain storm in the summer. People will irrigate. There's a lot of nitrogens coming up and also the street has a lot of dust and so forth and trash. And that gets into the storm drain, and that somehow makes it's way into the ocean. So a lot of the summer dry weather pollution that's occurring in the beach areas will typically go away.

MR. CAIRO: Has there been any thought about diverting some of this low-flow summer water above ground and maybe try and create a riparian environment to sort of

recharge and mitigate some of the water flowing into that area. If the lagoon is indeed a low spot and it would act as a tributary, if you will in a sense, and maybe to help to remediate that water going into the lagoon.

MR. YANG: We can look at it. You are talking about some kind of natural treatment system that's bio-eco type of system.

MR. CAIRO: At least for that portion of the water flowing into that summer low flow.

MR. YANG: We can definitely look at it. But the thing is the availability of land regarding this type of system, but we can look at it.

MR. CAIRO: Park and Recs has some claim to that right-of-way after the project is completed. And to my knowledge their plans are, first of all, based on your time schedule and not necessarily set in stone as to what type of recreational use there would be for Park and Recs to take that land and develop it later.

MR. YANG: We will look at it through the EIR process. If it's possible submit it as comment, and we'll definitely look at it and see how feasible it is. Because these type of situations requires a large -- you need a lot of land to develop this type of system.

MR. CAIRO: And it's sitting right there waiting.

MR. YANG: You're talking about the PE right-of-way.

MR. CAIRO: Absolutely.

MR. YANG: We may need more right-of-way than that, but we will look at it.

And there is also other issues that we are waiting to pass. You're saying some kind of meandering stream and vegetation that will -- not everybody likes that. With that, you will have other environmental issues. So we will look at it through the EIR, see if it's a feasible alternative or not.

MR. CAIRO: Last thing, anyone who surfed in these waters -- and I grew up here in Long Beach. Anyone who uses the ocean to recreate understands that if you enter the ocean after a storm, you do so at your own risk because the pollution levels in the ocean after a storm are substantial. And so I don't know of many people who would enter into the water after a storm without knowing that there is some apparent physical risk doing that, health risks.

And as far as Marine Stadium goes as flooding, I'm not an engineer, but I would think that a flooding aspect comes in when you have a large flow of water coming into a limited space that can't empty quickly. But it seems to me that Marine Stadium is pretty much open. And I would be hard pressed to figure out how you could flood Marine Stadium. That's a lot of water.

SPEAKER: Go over the rocks at high tide.

MR. YANG: We will look at it through the EIR regarding if Marine Stadium will be flooded. And right now we believe our project will improve the water quality in Colorado Lagoon and in Marine Stadium, but it's only our assumption right now. It's through our preliminary analysis. And we will look at it in detail if our assumption is true or not through the EIR process.

Just wanted to add, right now the perimeter of the Marine Stadium is at such an elevation that at high tide gets close to the surface, that has nothing to do with amount of flow that's coming in and going out. The amount of flow coming in does not really affect that. That's just the high tide elevation which gets to a certain elevation which, I believe, is 7 inches below the perimeter. So you're going to have that situation during the summer which is the same and during winter when it rains. So that's the way the elevation of the surrounding has been set.

SPEAKER: So you're saying that the flow of the water coming through the drains is not going to raise the level of Marine Stadium.

MR. WILSON: That's something that we're going to look at, as David mentioned, in his model. We're going to actually quantify the amount of water in a computer model

and see the amount of water coming in through the system, the most at full capacity. And we're going to look at that impact, and we're going to actually numerically answer your question for you.

But what they're trying to say now, it's essentially connected to the ocean and the flooding should really -- it's going to be a drop in the bucket. But it's something we're going to analyze.

SPEAKER: We're going to verify the drop in the bucket.

MR. WILSON: Yes.

MR. ATASHZAY: So, pretty much what we're saying, if the amount of flow entering ocean is going to affect the ocean. It's pretty much the same, but we're going look into it.

MR. WILSON: We have a question up here.

MS. BUTLER: I'm Ellen Butler. I'm at 4450 East 6th.

I don't know if this is in the scope of this project to answer, but I'm concerned to know if the drain is built what will happen to the existing greenbelt that's on the right-of-way? And what is the plan for the right-of-way between Ximeno and Park once it's built?

MR. YANG: The right-of-way is owned by the City of Long Beach. We will be working with the City of Long Beach exactly what we will do with the greenbelt and

what the City of Long Beach plans is regarding future improvement within the PE right-of-way.

But as of now whatever improvement that happens in PE right-of-way is under some type of lease with the City of Long Beach Park and Rec Department. And they are all aware our project might be coming in the next few years, and they all know the impact that they won't have to relocate their facility if they do choose to put something within the next several years before our project.

MS. BUTLER: I didn't get an answer. I'm sorry.

Do you know what's going to happen to the greenbelt?

MR. YANG: I don't because I work for the County, and the right-of-way is owned by the City.

MS. VERRECCHIA: I'm part of the greenbelt board member and I don't know if you know this, but the greenbelt has been dissolved -- the greenbelt committee. But what we did is we turned the greenbelt over to the City. And in the agreement when this project goes to the greenbelt, the County has to restore the greenbelt to what it was when they started the digging. It will be restored.

MS. BUTLER: And between Ximeno and Park is still --

MS. VERRECCHIA: It's still open and to be honest

with you, I heard that the City might be putting a park there.

MS. BUTLER: Thank you.

MS. VERRECCHIA: I just want you to know, I just heard. I'm not going to promise you. But the Parks and Recreation did take over that area. The greenbelt committee was leasing that area from the City. But I think the City eventually will put a park there between Ximeno and Park.

MR. WILSON: Are there comments or questions?

Well, thanks for coming today. We appreciate it, and please make sure and sign in if you want to be on the mailing list for future notices.

(At 11:20 A.M. the proceeding was concluded.)

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STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

I, LISA L. GROOM, C.S.R. No. 11765, do hereby certify:

That said proceeding was taken before me at the time and place therein set forth and was taken down by me in shorthand and thereafter was transcribed into typewriting under my direction and supervision, and I hereby certify the foregoing transcript is a full, true and correct transcript of my shorthand notes so taken.

I further certify that I am neither counsel for nor related to any party to said action nor in any way interested in the outcome thereof.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 7th day of June, 2004.

_____
LISA L. GROOM, CSR #11765
Registered Professional Reporter

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Orange County Transportation Authority: Charles Smith Orange County

Riverside County Transportation Commission: Robin Lowe Hemet

Ventura County Transportation Commission: Bill Davis, Simi Valley

Printed on Recycled Paper 553-5/10/04

June 8, 2004

Mr. James Yang
Project Manager
County of Los Angeles
Department of Public Works
P. O. Box 1460
Alhambra, CA 91802-1460

RE: SCAG Clearinghouse No. I 20040310 Termino Avenue Drain Project

Dear Mr. Yang:

Thank you for submitting the **Termino Avenue Drain Project** for review and comment. As areawide clearinghouse for regionally significant projects, SCAG reviews the consistency of local plans, projects and programs with regional plans. This activity is based on SCAG's responsibilities as a regional planning organization pursuant to state and federal laws and regulations. Guidance provided by these reviews is intended to assist local agencies and project sponsors to take actions that contribute to the attainment of regional goals and policies.

We have reviewed the **Termino Avenue Drain Project**, and have determined that the proposed Project is not regionally significant per SCAG Intergovernmental Review (IGR) Criteria and California Environmental Quality Act (CEQA) Guidelines (Section 15206). Therefore, the proposed Project does not warrant comments at this time. Should there be a change in the scope of the proposed Project, we would appreciate the opportunity to review and comment at that time.

A description of the proposed Project was published in SCAG's **May 16-31, 2004** Intergovernmental Review Clearinghouse Report for public review and comment.

The project title and SCAG Clearinghouse number should be used in all correspondence with SCAG concerning this Project. Correspondence should be sent to the attention of the Clearinghouse Coordinator. If you have any questions, please contact me at (213) 236-1867. Thank you.

Sincerely,

JEFFREY M. SMITH, AICP
Senior Regional Planner
Intergovernmental Review

WATER RECLAMATION
SOLID WASTE MANAGEMENT

COUNTY SANITATION DISTRICTS
OF LOS ANGELES COUNTY

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 699-5422
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JAMES F. STAHL
Chief Engineer and General Manager

May 25, 2004

File No: 03-00.04-00

Mr. James Yang, Project Manager
Department of Public Works
County of Los Angeles
P.O. Box 1460
Alhambra, CA 91802-1460

Dear Mr. Yang:

Termino Avenue Drain Project

The County Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report and a Notice of Public Scoping Meetings for the subject project on May 14, 2004. The proposed project area is located within the jurisdictional boundaries of District No. 3. We offer the following comments:

1. The proposed project will impact several existing and/or proposed Districts' trunk sewers and facilities in public right of way and within easements. The Districts cannot issue a detailed response to or permit construction of the proposed project until project plans and specifications that incorporate Districts' sewer lines are submitted. In order to prepare these plans, you will need to submit a map of the proposed project alignment, when available, to the attention of Mr. Darrell Hatch of the Districts' Planning Section at the address shown above. The Districts will then provide you with the plans for all Districts' facilities that will be impacted by the proposed project. Then, when revised plans that incorporate our sewers have been prepared, please submit copies of the same for our review and comment. Approval to construct improvements within a Districts' sewer easement is required before construction may begin. A copy of the Districts' buildover procedures and requirements is enclosed for your information. For additional information regarding the buildover procedure, please contact Mr. Hatch at extension 2766.

If you have any questions, please contact the undersigned at (562) 699-7411, extension 2717.

Very truly yours,

James F. Stahl

Ruth I. Frazen

Ruth I. Frazen
Engineering Technician
Planning & Property Management Section

RIF:eg
Enclosure
c: D. Hatch

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COUNTY SANITATION DISTRICTS OF LOS ANGELES COUNTY
1955 Workman Mill Road / P.O. Box 4998 / Whittier, California 90607-4998 / (562) 699-7411

BUILDOVER PROCEDURES AND REQUIREMENTS

The Districts do not encourage the building of improvements over sewer easements as such encroachments may result in limited access or damage to the underlying sewers. The Districts consider "buildover" proposals on a case-by-case basis. The following explains the Districts' procedure for processing buildover requests.

A developer or property owner (applicant) desiring to construct an improvement over a Districts' sewer easement is required to obtain a "Buildover Agreement" (BOA) from the Districts. Four (4) sets of the following information are required from the developer or property owner in order for Districts' staff to evaluate the proposal:

1. A vicinity map showing the general location of the proposed improvements in relation to the surrounding streets;
2. A grading plan* and site plan showing the location of the sewer easement, sewer line, and manholes in relation to the proposed improvement. Include information regarding the removal and replacement of unsuitable soil along with cut/fill depths;
3. The calculated footing** and/or traffic loadings resulting from the project, project-related activity, and post-construction activity. A list of construction equipment to be used at the site and a soils report for the project are also required; and
4. A foundation plan and a footing detail,** showing the elevations* and locations of the footings for the improvement(s). Also include profile and/or cross section drawings showing the proposed improvement(s) in relation to the sewer line.

NOTE: Your request will <u>not</u> be processed unless the above-specified information is provided.***

This information is simultaneously forwarded to various departments within the Districts for review. Their comments serve as the basis by which the Districts' acceptability of a proposed buildover case is determined.

Subsequent to the Districts' review of the proposed buildover request, the applicant will be advised in writing of the Districts' decision. The applicant is then required to submit six (6) sets of plans that incorporate corrections, as applicable. The submitted plans must include the following note:

> *No grading, soil removal, soil fill, or construction activity shall be performed within the Districts' easement without on-site approval of the proposed activity by a Districts' inspector. Contractor shall contact Mr. Phil Friess, Sewerage System Manager, at (310) 638-1161, a minimum of two weeks prior to the start of construction to make the necessary arrangements.*

Upon receipt of the final plans, the Districts will mail a BOA detailing the conditions under which the proposed improvement is acceptable to the Districts. It shall be the responsibility of the <u>fee owner</u> of the property to sign the BOA (the signature <u>must</u> be notarized) and return it to the Districts. The BOA is subsequently executed by the Districts' Chief Engineer (or designee) and is submitted to the Los Angeles County Recorder's Office for recordation. After the recorded BOA is received from the Recorder's Office, a copy of the document along with one set of final plans is returned to the applicant.

Under normal conditions, approximately six to eight weeks are required for Districts' staff to properly evaluate a buildover proposal. It is recommended that the Districts be contacted as early as possible during planning of the project. If you have any further questions regarding Buildover Procedures and Requirements, please contact Mr. Darrell Hatch at (562) 699-7411, extension 2766, or by e-mail at *dhatch@lacsd.org*.

*All elevations must be based on U.S.G.S. datum.
**All plans must be prepared by a registered Civil/Structural Engineer in the State of California.
***For proposed minor surface improvements, contact the Districts prior to submittal. Some of the information requirements may be waived.

COUNTY OF LOS ANGELES

FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES CALIFORNIA 90063-3294

(323) 890-4330

P. MICHAEL FREEMAN
FIRE CHIEF
FORESTER & FIRE WARDEN

July 22, 2004

James Yang, Project Manager
Los Angeles County Department of Public Works
P O Box 1460
Alhambra, CA 91802-1460

Dear Mr. Yang:

NOTICE OF PREPARATION FOR A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PROPOSED CONSTRUCTION OF THE TERMINO AVENUE DRAIN PROJECT, "CITY OF LONG BEACH" -- (EIR #2013/2004)

The Notice of Preparation for a Draft Environmental Impact Report for the aforementioned project has been reviewed by the Planning Division, Land Development Unit, and Forestry Division of the County of Los Angeles Fire Department. The following are their comments:

PLANNING DIVISION – SERVICE RESPONSIBILITY:
The subject property is totally within the City of Long Beach and does not appear to have any impact on the emergency responsibilities of this Department. It is not a part of the emergency response area of the Consolidated Fire Protection District.

LAND DEVELOPMENT UNIT:
This project is located entirely in the City of Long Beach. Therefore, the City of Long Beach Fire Department has jurisdiction concerning this project and will be setting conditions.

This project is located in close proximity to the jurisdictional area of the County of Los Angeles Fire Department. However, this project is unlikely to have an impact that necessitates a comment concerning general requirements from the Land Development Unit. Should any questions arise, please contact Inspector Marvin Dorsey at (323) 890-4243.

FORESTRY DIVISION:

The statutory responsibilities of the County of Los Angeles Fire Department, Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones or Fire Zone 4, archeological and cultural resources, and the County Oak Tree Ordinance. These issues should be fully addressed in the Final Environmental Impact Report.

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

Very truly yours,

DAVID R. LEININGER, CHIEF, FORESTRY DIVISION
PREVENTION BUREAU

DRL:lc

Jim Clark
781 Roswell Ave.
Long Beach, CA 90804
562.439.3960
jimclark@jimclark.org

Mr. James Yang – Project Manager
Los Angeles Dept. of Public Works
P. O. Box 1460
Alhambra, CA 91802-1460

May 21, 2004

Re: Termino Avenue Drain Project

Dear Mr. Yang,

This letter is to offer my scoping comments on the **Initial Study for the Environmental Impact Report for the Termino Avenue Storm Drain** project currently under development by the Dept. of Public Works.

My concerns focus primarily on the work and mitigation to be done on the Pacific Electric Right-of-Way portion of the project, from Loma Ave. to 4th St. & Park Ave. Details, ordered in reference to your CEQA Initial Study, are as follows:

General Plan Designation (page 1)
The Initial Study lists the area as having a "right-of-way" (ROW) designation in the general plan. It appears you are working from an outdated version because, as of Oct 15, 2002, the ***Open Space Element of the Long Beach General Plan*** was updated. The former Pacific Electric Right-of-way was re-designated as parkland with the City Council approval of this document. This will directly affect the "public services" portion of your CEQA analysis, however it will not modify the necessity of an E.I.R.

Other Public Agencies (page 2)
In the environmental documents for the previous design of a few years ago, the area of the ROW between 7th and 8th Streets was erroneously described as "landscaped." The Long Beach Greenbelt is, in fact, a habitat restoration project of both coastal sage scrub and riparian communities. This successful project currently supports the return of both native insect and bird species. As such, this area may come under the jurisdiction of the US Fish and Wildlife Service. It will also require more detailed study and mitigation efforts.

Aesthetics (page 6)
The Initial Study states "there are no... scenic highways" or "vistas" within the project area. The Long Beach Greenbelt was designated a *White House Millennium Trail* in 1999. This may not technically fall under the standards of CEQA, but it most certainly falls within the spirit of the environmental evaluation.

Land Use and Planning (page 18)
The Initial Study lists "no impact" in response to "Conflict with any applicable habitat conservation plan..." The Long Beach **Open Space Element**, mentioned above, states, as policy, "[to] promote the creation of new and reestablished natural habitats...including...native plant communities"

Public Services (page 20)
Considering the rezoning of the area as parkland, the response to this item, should read "Potentially significant impact" under the "Parks" element.

Transportation/Traffic (page 22)
Currently, the Long Beach Greenbelt is a regularly utilized pedestrian easement. It connects a densely populated neighborhood in the north to a recreation area at Colorado Lagoon. This easement will be significantly impacted during construction and its importance must be considered during post-construction design considerations.

Additional suggestions
For the protection of the reconstructed habitat portion of the Greenbelt during construction, the section between 7th and 8th streets should not be used for staging of either equipment or materials in order to minimize demolition by the easement footprint.

Whereas this project's primary concern is storm water containment and control, and whereas a significant portion of the project is to be located below open space, it becomes obvious that any post-construction design factors should include landscaping contours that facilitate the containment of storm water runoff.

Thank you in advance for your consideration on these issues. I urge you to work closely with the Long Beach Department of Public Works and the Department of Parks, Recreation and Marine to construct a practical and efficient project in a cost effective way while preserving and enhancing the surrounding aesthetics and environment.

Regards,

Jim Clark

CC: Frank Colonna – Long Beach Vice-Mayor & 3rd District Councilmember
Phil Hester -- Director, Long Beach Parks, Recreation & Marine
Christine F. Andersen – Director, Long Beach Dept. of Public Works
Ken Cory – U. S. Department of Fish and Wildlife

May 31, 2004

Mr. James Yang, Project Manager
County of Los Angeles Department of Public Works
P.O. Box 1460
Alhambra, CA 91802-1460

Re: Notice of Preparation: Termino Avenue Drain Project, Long Beach

Dear Mr. Yang:

Please consider these comments on the proposed NOP for the Termino Avenue Drain Project, with the anticipation that they will be addressed in the EIR:

1. The former Pacific Electric right-of-way is subject to a rental agreement for a tree farm, pumpkin patch and other seasonal uses. Please describe the impacts of the proposed project on these uses, and if any relocation of these uses to another site for the duration of construction is planned.

2. The construction of the project will require substantial trenching to the streets, particularly along Appian Way east of Park Avenue. Please describe the planned street improvements, i.e. whether the project contemplates the complete resurfacing of the streets once construction is finished, versus just patching the trenching areas.

3. How long is construction anticipated to occur? Please identify the truck haul routes and the hours of construction.

4. Please identify the length and duration of street closure patterns in the vicinity of the Appian/Park and Appian/Colorado intersections.

5. Figure 2: Alignment Map did not clearly indicate the route of the storm drain between Colorado Avenue and Nieto Avenue. Please provide more details of the storm drain route. Does the route go through the Marine Stadium parking lot and access road?

6. Please identify impacts to emergency vehicle circulation from the Long Beach Fire Station located adjacent to Marina Vista Park. In particular, describe the impacts to emergency vehicles on the Appian/Park, Appian/Colorado and Appian/Nieto intersections.

7. The proposed project will remove the substantial landscape improvements along the Pacific Electric right-of-way along the Greenbelt, between 10th

Street and 7th Street. Please identify the proposed improvements to the Greenbelt after construction, including replacement of vegetation, if any.

8. Please describe the regular maintenance program associated with the proposed in-line trash screening device, which would remove trash from the low flows prior to discharging into Marine Stadium. Identify the frequency of maintenance of this screening device, i.e. how often County employees would clean it out, etc. I ask this question because in other areas of Long Beach, the County has been negligent in maintaining the County-owned storm drain infrastructure, and the burden of the maintenance often falls on the City of Long Beach. If the County cannot or will not maintain the trash screening device on a regular basis, please identify alternatives for the City of Long Beach to recoup the cost of their involvement.

9. What will happen to the existing outlet into Colorado Lagoon, just east of Park Avenue? Will that outlet be closed?

Thank you for the opportunity to comment on the proposed scope of the EIR. Please consider this letter a request to be included on the mailing list for future meetings and for review of the EIR.

Sincerely,

A. Bodek and M. Hewitt
341 Roycroft Avenue
Long Beach, CA 90814

C:\Documents and Settings\User\My Documents\Amy's files\LACounty termino EIR.doc

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

(please hand in or mail back by June 9, 2004)

Name: Elizabeth Reyburn

Organization (if any):

Address: 345 Corona Ave

City, State, Zip: Long Beach, CA 90803

Phone (optional):

E-mail (optional):

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

Comments Dear Mr. Young

I was unable to attend the last meeting re: this issue but a neighbor gave me a copy of the Environmental Impact Report & I was stunned at what I was reading re impact on biological resources & water quality.

My husband & I live very near Marine Stadium & have done so for the past 31 yrs I walk there almost daily & rarely do I see it not being utilized by multiple groups. - I cannot understand why this project is being considered given the potential of doing great harm to this wonderful water resource. I certainly don't want to diminish my support of

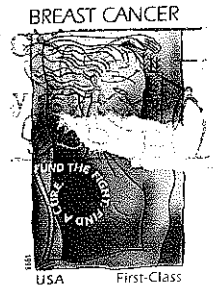
Comments continued Cleaning up Colorado Lagoon as I see that also as something very worth saving but not at the expense of another recreational asset.
Marine Stadium hosts so many events that bring people to Long Beach:
Rowing competitions
Dragon boat races
L.B. Marathon goes through Marine Stadium
Summer band concerts @ Marina Vista Park bringing multiple concert goers via boat
Boat races etc. etc.
To risk polluting this area which is also adjacent to two schools is ridiculous. Surely there must be an alternative to creating turbid water, chasing the water fowl away, + detracting from all the improvements (new Rowing Center - Jack Dunster Center) that have taken place
Please don't do this!!! Roger + Elizabeth Reyburn
345 Corona Ave. L.B. 90803

---Please fold in thirds---

Tape it closed, affix a 37 cent stamp and mail by June 9, 2004 Thank you!

Roger and Liz Reyburn
345 Corona Ave.
Long Beach, CA 90803

PROG



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

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

(please hand in or mail back by June 9, 2004)

Name: LAUREL DAVAR

Organization (if any): OWNER 4PLEX 1032, 1034, 1036, 1038 Roswell

Address: 12761 INTERIOR CIRCLE

City, State, Zip: LOS ALAMITOS, CA 90720

Phone (optional): 562-594-5589

E-mail (optional): ljdavar@aol.com

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

Comments This project can't happen fast enough. It is my opinion that the first plan where water went to the Colorado LAGOON WAS THE MOST COST EFFECTIVE. THIS LATEST PLAN, WHILE IT IS STATE OF THE ART AND THE BEST LONG TERM PLAN MAY WELL BE TOO AMBITIOUS FOR THE RESOURCES AVAILABLE AND GET SIDELINED AS A RESULT

Roswell Ave has been flooding and ruining CARS and property for 30 years that I know of.

DON'T BE FOOLED BY THE COLORADO LAGOON PEOPLE WHO PUBLICLY STATE THEY ARE FOR A Project. IN PRIVATE THEY CLAIM VICTORY OVER DEFEATING THIS PROJECT.

Comments continued

AND FOR WHAT? I DOUBT VERY MUCH THAT WATER QUALITY IN THE LAGOON WILL IMPROVE IF THIS AREA IS BYPASSED.

IT MAY EVEN BECOME MORE STAGNANT AND CREATE EVEN MORE PROBLEMS.

SO WHILE SOLVING THIS PROBLEM MAY BE AN ENGINEERS DREAM — TAKING IT TO COMPLETION HAS BEEN MY NIGHTMARE.

PRESS ON

---------- Please fold in thirds ----------

affix a 37 cent stamp and mail by June 9, 2004. Thank you!

Ms Laurel Davar
12461 Interior Cir
Los Alamitos, CA 90720-5106

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

91802+2460

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

(please hand in or mail back by June 9, 2004)

Name: PERRY D. GRIFFITH

Organization (if any):

Address: 4424 Vermont St.

City, State, Zip: Long Beach, CA 90814

Phone (optional):

E-mail (optional):

	Yes	No
Would you like to remain on our mailing list to receive future project updates?	☒	☐

Comments

We just like to learn more about this Project.

Sincerely

Perry L Griffith

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

(please hand in or mail back by June 9, 2004)

Name: HERMINE A. BURG

Organization (if any): —

Address: 364 XIMENO AVENUE

City, State, Zip: LONG BEACH, CA 90814-2945

Phone (optional):

E-mail (optional):

	Yes	No
Would you like to remain on our mailing list to receive future project updates?	☒	☐

Comments

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

(please hand in or mail back by June 9, 2004)

Name: Mr & Mrs Paul Gibbons

Organization (if any):

Address: 2534 Loomis St

City, State, Zip: Lakewood, California 90712

Phone (optional): 562) 422-1273 or 562) 773-7876

E-mail (optional): Puchocky@aol.com

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

Comments

Our parents live at 1220 Termino Ave. They have lived in this home since 1970 and have had to deal with flooding issues since then. They should not have to keep sand-bagging every time it rains. They are also too old to have to worry about flooding and damage to their property year after year. Why keep pro-longing the issues of the Termino Ave Drain Project. Just do the work necessary. I guess you'll be here years from now discussing the same issues. Want to see some pictures of what my parents have to go through every rainy season?

Maryanne Gibbons

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

(please hand in or mail back by June 9, 2004)

Name: Frances Kinney

Organization (if any):

Address: 507 Roycroft Ave

City, State, Zip: Long Beach CA 90814

Phone (optional): 562-438-5652

E-mail (optional):

	Yes	No
Would you like to remain on our mailing list to receive future project updates?	☑	☐

Comments Please keep in mind, when the project starts, how the dirt 'flying' in the air affects the surrounding homes. Please use ~~mist~~ wetting down the dirt daily during the project

F. Kinney

From: Kim Havens
To: Eric Wilson
Date: 6/7/2004 8:32:31 AM
Subject: Fwd: RE: Termino Ave Drain Scoping Meeting

FYI

>>> "joe cairo" joecairo@hotmail.com> 6/3/2004 8:04:07 PM >>

mail them to:
Joe Cairo
800 Mira Mar Ave. #1
Long Beach, 90804
(562)439-1869

I still think that a bioremediation component for low-flow would make perfect sense for the drain project.

I'm forwarding a reply eMail that I got from Dennis Eschen at Long Beach Parks. They are researching a man-made wetland for El Dorado Regional Park and this would fit in nicely with that mindset.

I'm going to push for a public discussion of this idea so kindly alert your colleagues to this eventuality. Sooner or later, someone is going to have to PROVE why this won't work.

It seems to me, being new to the process, that just advocating a "do no harm" approach to the environment isn't going to cut it. Protecting property and ENHANCING the environment is far more enlightened and bound to draw a greater number of supporters. win-win-win. Very symmetrical.

Parks would love it because the post-construction phase would leave the parcels better than how they are now. And the teaching opportunities are boundless.

Anyway, that's my story and I'm sticking to it.

joe cairo

MSN Toolbar provides one-click access to Hotmail from any Web page – FREE download! http://toolbar.msn.click-url.com/go/onm00200413ave/direct/01/

APPENDIX B

BIOLOGICAL TECHNICAL REPORT

BIOLOGICAL TECHNICAL REPORT
FOR THE
TERMINO AVENUE DRAIN PROJECT
LONG BEACH, CALIFORNIA

Prepared for:

Los Angeles County Department of Public Works
900 South Fremont Avenue
Alhambra, California 91803

Prepared by:

EDAW, Inc.
3780 Wilshire Boulevard, Suite 250
Los Angeles, California 90010

March 2008

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CHAPTER 1.0
INTRODUCTION

The County of Los Angeles Department of Public Works (County) is proposing storm drain improvements in southeastern Long Beach (Figure 1). The project area is located in the southern portion of the San Gabriel River watershed, which has historically had flooding problems. The project would include the construction of a new underground storm drain system to provide increased flood protection within the project area. The proposed storm drain components are described further below.

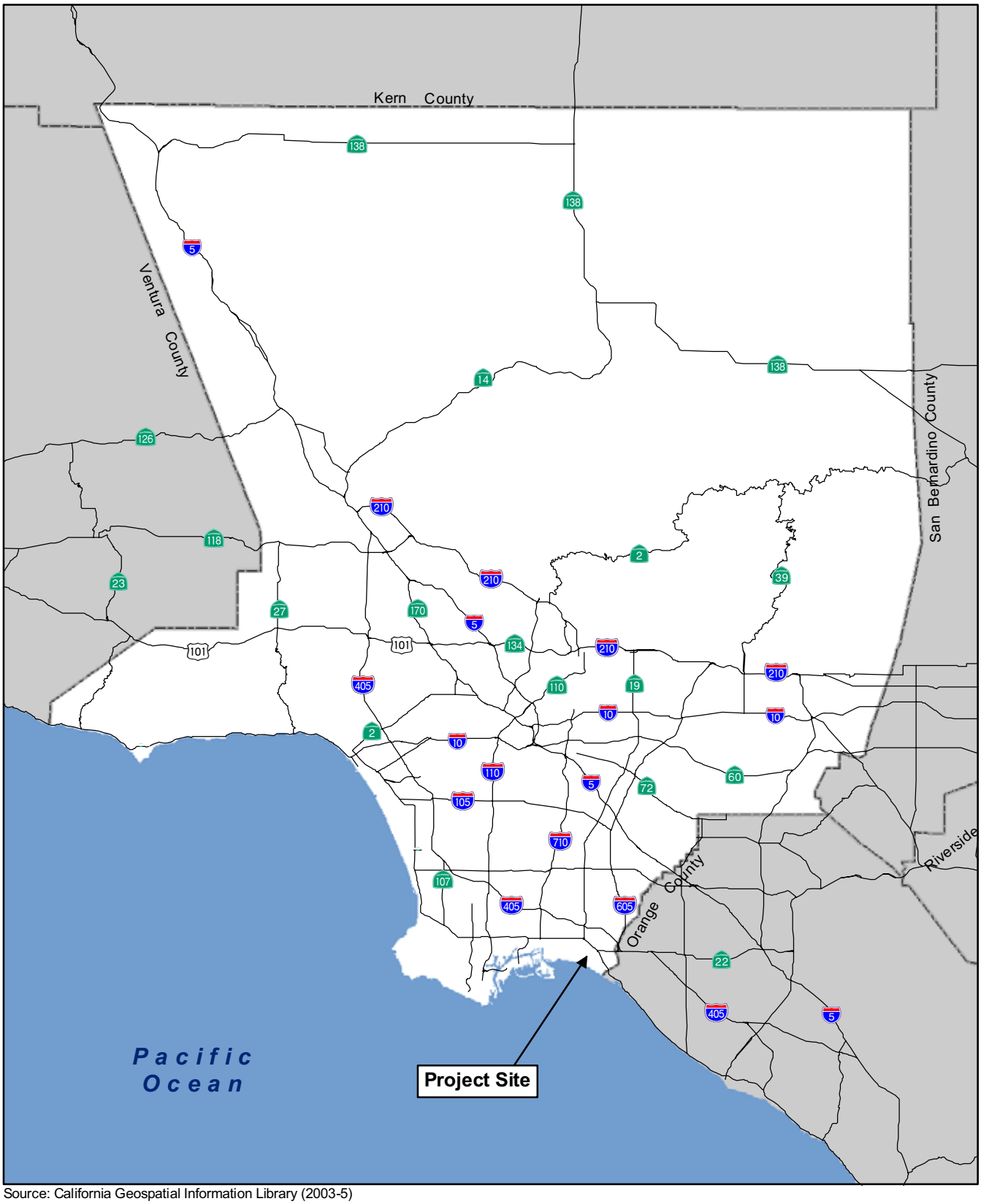
The purpose of this analysis is to characterize the current biological resources within the project area and determine whether development of the storm drain would result in significant impacts to biological resources. In addition, mitigation measures are recommended that would reduce potentially significant impacts.

PROJECT LOCATION AND DESCRIPTION

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

The project addresses a 596-acre sub-watershed that drains into Colorado Lagoon. In 1995, severe flooding caused extensive property damage in this area, which has been designated as a special flood hazard area by the Federal Emergency Management Agency. The existing drainage system in this portion of the watershed is not sufficient to control the runoff that would occur in a 50-year flood event.

The project entails the construction of a new underground storm drain system, which would provide increased flood protection within the project area. The new drainage system would



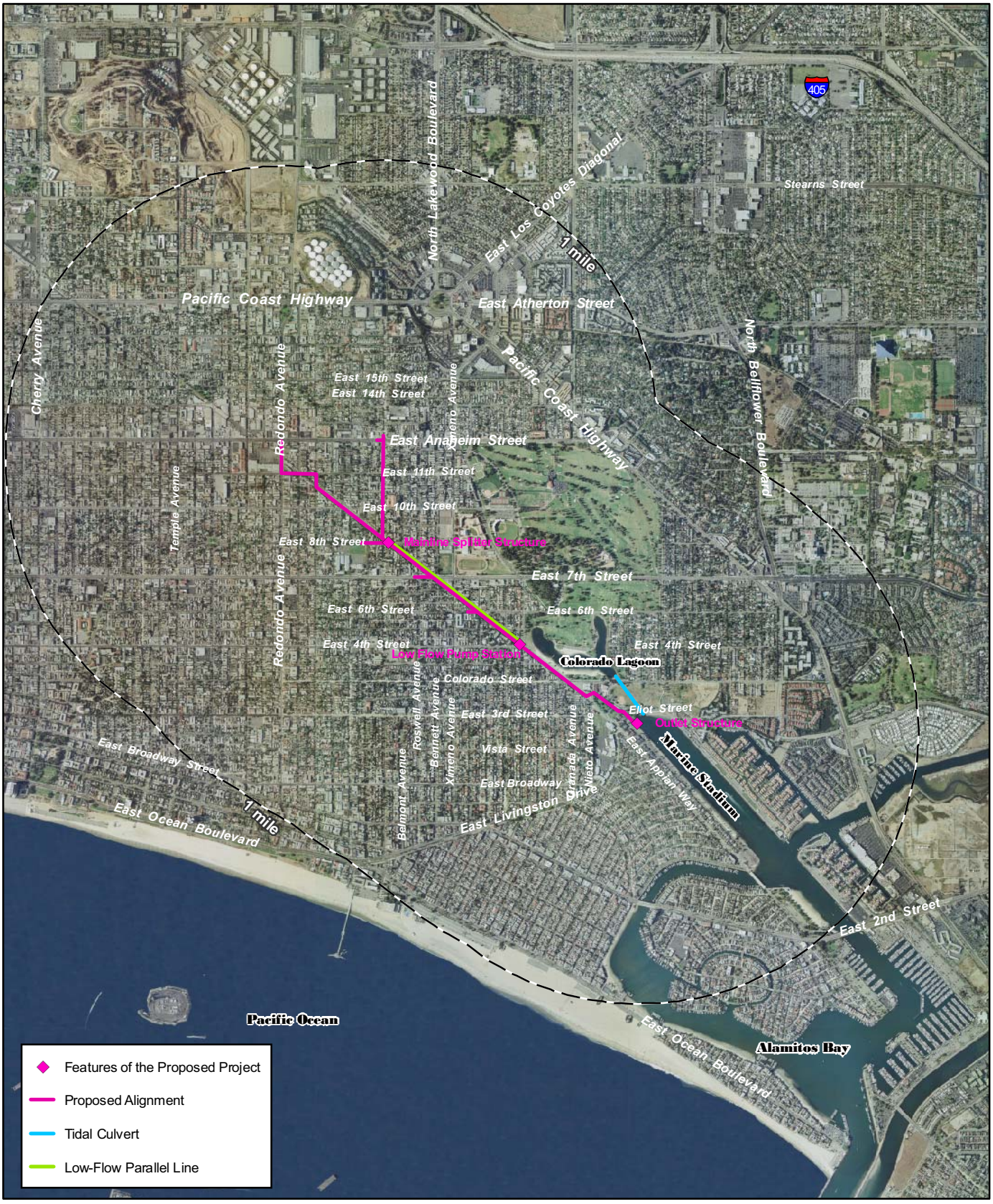
Source: California Geospatial Information Library (2003-5)

N

1 inch equals 12 miles

0 3 6 12 18 24 Miles

Figure 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
Project Area Map

convey storm flows directly to Marine Stadium and would have the capacity to convey the 50-year frequency storm event. The mainline of the proposed drainage system would run along a former PE right-of-way and across several streets. A lateral storm drain would extend along Termino Avenue from the PE right-of-way to Anaheim Street. Aside from the new outlet structure at Marine Stadium, the proposed storm drain components would all be located underground. Upon completion of the project, the alignment would be returned to its existing condition. In particular, following the conclusion of construction, the planted native landscaping area in the PE right-of-way between 7th and 8th Streets, called the Long Beach Greenbelt, would be revegetated with native species appropriate to the site (occurring within the Los Angeles Basin and of local genetic stock). To the extent feasible, plants, soil, and woody material from the areas to be impacted would be made available for salvage and use in planting efforts. Only the portion of the PE right-of-way between 7th and 8th Streets would be replanted with the native upland scrub vegetation.

The project would improve water quality by eliminating an existing source of urban runoff into Colorado Lagoon. In addition, an in-line trash screening device and a low-flow treatment pumping station would be installed for water quality improvement. The in-line trash screening system would remove suspended solids and floatables from the urban runoff and light storm flows. The low-flow treatment would improve water quality by diverting non-rainy season low flows to the County's sewage treatment system.

The proposed new drainage system is currently surrounded by a mix of residential, commercial, and recreational land uses. The upstream portion of the alignment is predominantly characterized by residential and commercial development; whereas, the downstream portion of the alignment near Colorado Lagoon and Marine Stadium mostly includes open space and recreational uses. The project activity within Marine Stadium is limited to the outfall location.

METHODOLOGY

Background research for the project included a literature review, which included use of data collected during surveys previously conducted at Colorado Lagoon. These include *Colorado Lagoon Watershed Impacts Report, City of Long Beach, Colorado Lagoon Restoration Feasibility Study* (HDR and CGvL 2004); *Special Status Species Considerations for the Colorado Lagoon Restoration Feasibility Study for the City of Long Beach* (Chambers Group 2004a); and *Habitat Assessment for the Colorado Lagoon Restoration Feasibility Study for the City of Long Beach* (Chambers Group 2004b). In addition, EDAW biologists conducted

vegetation mapping, general wildlife surveys, and rare plant surveys according to the schedule in Table 1. No focused surveys were conducted.

Table 1
Biological Surveys Conducted for the Termino Avenue Drain Project

Survey Date	Survey Purpose	Field Personnel
July 2, 2003	Rare Plant Survey, Vegetation Mapping	EDAW
June 16 through August 27, 2004	California Least Tern and California Brown Pelican Surveys	Keane Biological Consulting
May 9, 2005	Eelgrass Survey	Coastal Resources Management
May 10, 2005	Eelgrass Survey	Coastal Resources Management
May 11, 2005	Eelgrass Survey	Coastal Resources Management
November 17, 2005	General Wildlife Survey, Vegetation Mapping, Rare Plant Survey	EDAW
August 2007	Jurisdictional Waters Assessment	EDAW

Terrestrial Vegetation Mapping

Vegetation mapping for the project site, including a 100-foot buffer, was conducted twice during the months of July and November. Separate communities were mapped onto an aerial of the project site and the results were subsequently transferred to geographic information system (GIS) data to calculate acreages.

Marine Data Collection

Eelgrass vegetation was mapped using a Global Position System (GPS) by a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel. The scuba-diving biologist first located the beginning of an eelgrass bed and marked it with a yellow buoy. The surface support biologist working from a kayak then initiated tracking of the biologist diver using GPS technology as the diver swam the perimeter of the individual eelgrass bed. Once the diver returned to the beginning point, the GPS track was terminated. Eelgrass patches that were too small to survey or considered distinct growth centers were referenced as a GPS "patch" and a size of the eelgrass patch was estimated by the diver.

In addition, Everest International Consultants (2005) conducted hydrologic and water quality analyses, including salinity analysis, to determine potential impacts of the project on Colorado Lagoon and Marine Stadium.

Wetland Delineation

A federal wetland delineation was not conducted for the project, however, a focused assessment of potential jurisdictional waters was conducted throughout the entire study area in August 2007. It was determined that tidal waters regulated under both the U.S. Army Corps of Engineers (ACOE) and the California Coastal Commission (CCC) are present at Marine Stadium. Permits will be obtained from the ACOE, CCC, and the Regional Water Quality Control Board (RWQCB).

Sensitive Plant Surveys

The project site, including a 100-foot buffer, was surveyed for the presence of sensitive plant species during the months of July and November. This involved searching for target sensitive species expected in the region by walking meandering transects through all habitats on and immediately surrounding the site. Several of the potentially occurring sensitive plant species may not have been detectable during the November survey because it was outside of their blooming periods; however, the July survey was conducted during the appropriate time for blooming plants.

Wildlife Surveys

California Least Tern and California Brown Pelican Surveys

Surveys for California least tern and California brown pelican were conducted at the north end of Marine Stadium and Colorado Lagoon. Surveys were conducted by observing foraging areas over a period of 2 months.

General Wildlife Survey

The project site, including a 100-foot buffer, was surveyed for the presence of wildlife species in November 2005. This involved walking meandering transects throughout the project study area and recording observed or detected terrestrial species. Marine species were recorded during eelgrass surveys.

CHAPTER 2.0
EXISTING CONDITIONS

TOPOGRAPHY

Marine Stadium is an outlet to the Pacific Ocean and therefore is at sea level. The northern end of the project near Anaheim Street is at an elevation of 36 feet. A park and pedestrian walkway surround the stadium. The proposed storm drain alignment is located within an existing PE right-of-way and residential streets, which have relatively flat topography.

SALINITY

Hydrological and water quality testing were conducted in Colorado Lagoon and Marine Stadium by Everest International Consultants (2005). As part of the testing, the salinity of the water was recorded. The results of this study and an analysis of the potential effects to marine species are discussed in *Eelgrass (Zostera marina) Habitat Mapping Survey and Environmental Assessment for the County of Los Angeles Termino Avenue Storm Drain Outlet Study, Los Alamitos Bay (Long Beach), California* (CRM 2005a).

SOILS

The watershed consists of two similar types of soil series, the Ramona Series and the Tujunga Series (HDR/CGvL 2004). Typically, Ramona soils have brown, slightly acid and medium acid, sandy loam and fine sandy loam A horizons; reddish brown and yellowish-red, slightly acid, sandy clay loam B2t horizons; and strong brown, neutral, fine sandy loam C horizons. Ramona soils dominate the watershed. The Ramona Series is well-drained, slow to rapid runoff and has moderately slow permeability. The Tujunga Series consists of very deep, somewhat excessively drained soils formed in alluvium weathered mostly from granitic sources. Tujunga soils are on alluvial fans and floodplains and have slopes of 0 to 9 percent. Tujunga soils are found directly adjacent to Colorado Lagoon. They are somewhat excessively or excessively drained and have negligible or very low runoff and rapid permeability. Flooding is none to frequent.

VEGETATION COMMUNITIES AND OTHER COVER TYPES

Vegetation types or communities are assemblages of plant species that usually coexist in the same area. The classification of vegetation communities is based upon the life form of the dominant species within that community and plant physiognomy. Due to the urban and disturbed nature of the project area, minimal natural habitat is present on the site. Much of the project study area is developed and therefore unvegetated. Other unvegetated areas, e.g., the beach area of Colorado Lagoon, also coincides with the project study area. There are six vegetation communities and other cover types within the project study area.

- Marine
- Native Landscaping
- Disturbed Habitat
- Ornamental
- Developed
- Other

The biological resources that occur within the study area are depicted in Figures 3 and 4. Vegetation communities and other cover types are described below. Acreages provided below include the entire survey area, or project study area, boundary.

Marine

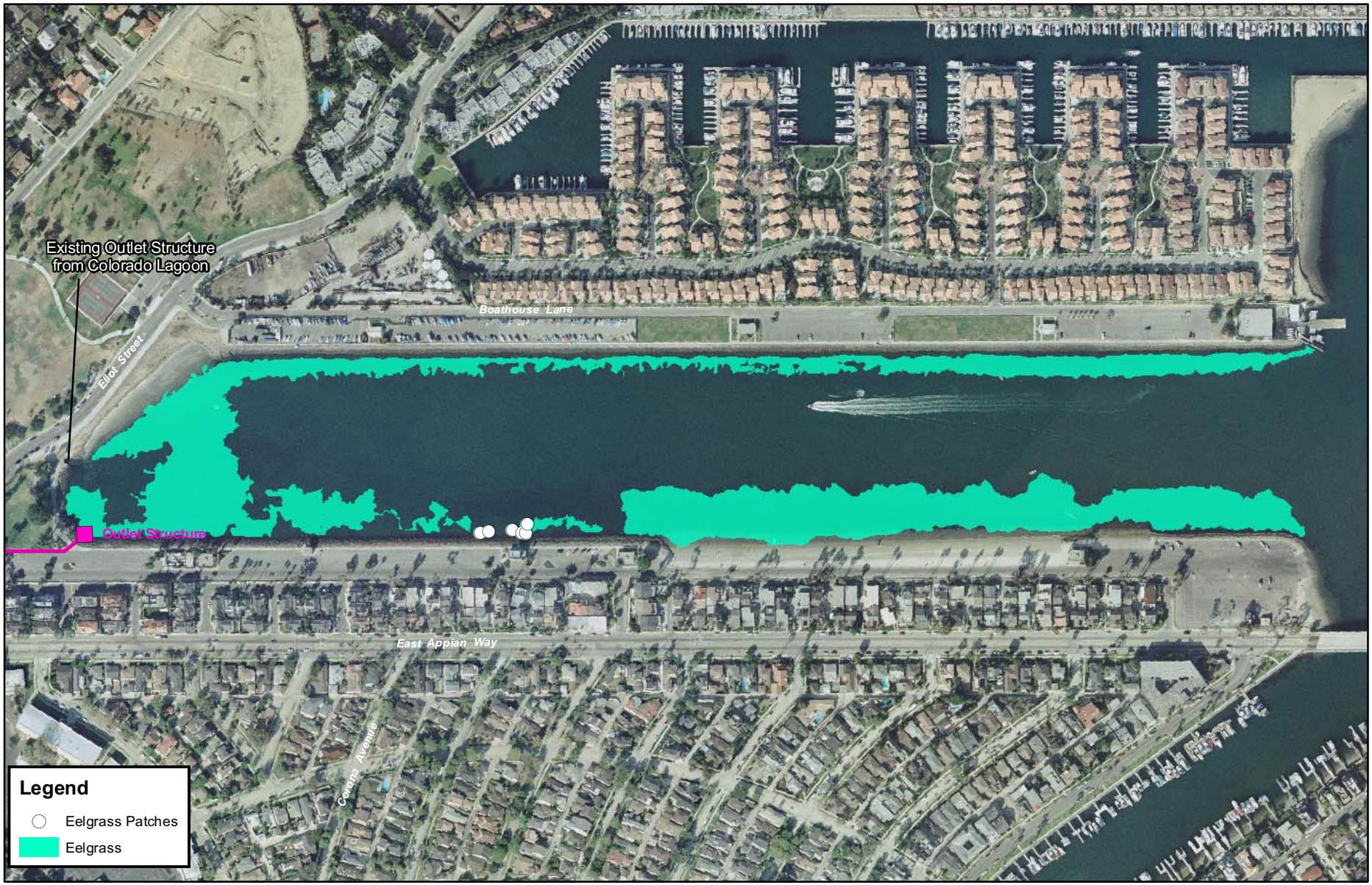
The marine portion of the study area is within Marine Stadium, which was used for the 1932 Olympic rowing competition and is now used for water skiing, high performance boat racing, crew competition, and outrigger canoe competition. Marine habitats in Marine Stadium include sand beach, mudflat, intertidal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

The subtidal soft bottom of Marine Stadium provides habitat for eelgrass (Zostera marina) beds. Eelgrass is a flowering marine plant that forms meadows in southern California embayments.

This species of seagrass grows in Alamitos Bay between the ocean entrance channel and Marine Stadium at depths between 0.0 feet MLLW and -12 feet MLLW. Figure 3 maps the existing eelgrass in Marine Stadium. Eelgrass vegetation was mapped using a Global Position System (GPS) and a team of biologists consisting of a scuba-diving biologist, a surface support biologist, and a safety vessel/safety diver (CRM 2005a). The eelgrass canopy (consisting of shoots and leaves approximately two to three feet long) attracts many marine invertebrates and fishes, and the added vegetation and the vertical relief it provides enhances the abundance and the diversity of the marine life compared to areas where the sediments are barren. The vegetation also serves a nursery function for many juvenile fishes, including species of commercial and/or sportsfish value (California halibut and barred sand bass). A diverse community of bottom-dwelling invertebrates (i.e., clams, crabs, and worms) lives within the soft sediments that cover the root and rhizome mass system. Eelgrass meadows are also critical foraging centers for seabirds (such as the endangered California least tern) that seek out baitfish (i.e., juvenile topsmelt) attracted to the eelgrass cover. Eelgrass is an important contributor to the detrital (decaying organic) food web of bays as the decaying plant material is consumed by many benthic invertebrates (such as polychaete worms) and reduced to primary nutrients by bacteria. Approximately 0.0189 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 area.

Native Landscaping

An area of native landscaping exists within the PE right-of-way, which includes California buckwheat (Eriogonum fasciculatum), California sagebrush (Artemisia californica), and various sage species (Salvia sp.) typical of southern California native scrublands. In addition to the above species, the area is dominated by species such as goldenbush (Isocoma menziesii var. vernonioides), coyote brush (Baccharis salicifolia), and big saltbush (Atriplex lentiformis ssp. lentiformis). The native landscaping area is not naturally occurring, and was planted, at least in part, in November of 2000. The plantings appear to be healthy and thriving. The native landscaping area is encroached upon by many escaped ornamental plants, has a significant cover of mulch, and experiences foot-traffic from recreational trail users. Approximately 2.54 acres of this habitat occur within the project area shown on Figure 4.



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

Figure 3
Eelgrass Map

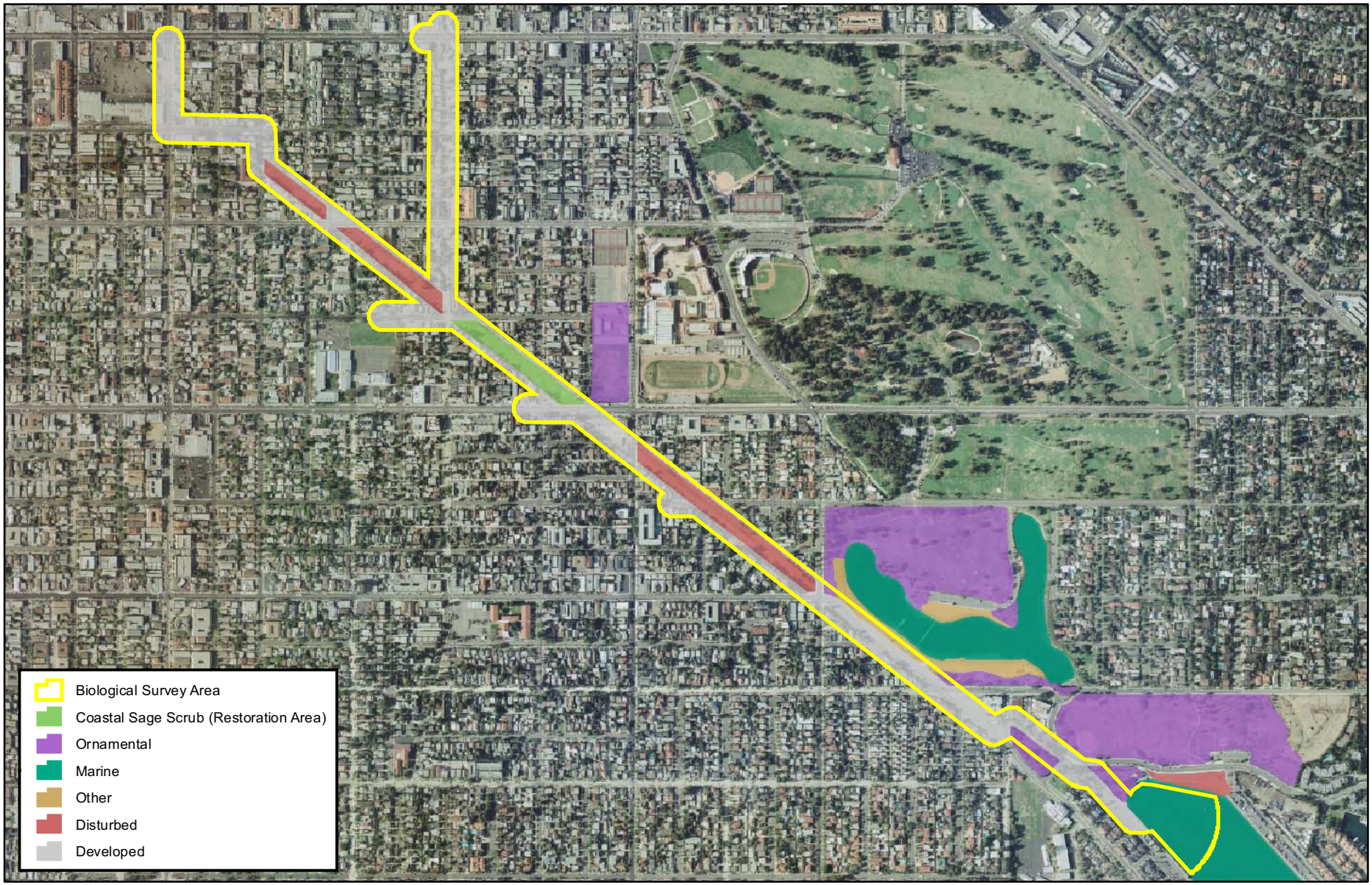


Figure 4
Vegetation Map

Disturbed Habitat

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

Ornamental

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

Developed

Developed areas include roadways, residences, and commercial development. Ornamental landscaping associated with these facilities, if minimal in area, is also included in this category (more extensive areas of ornamental landscaping are mapped as ornamental, as described above). There are few or no native plant species in developed areas. The developed areas include invasive, exotic species such as eucalyptus (*Eucalyptus* sp.) and iceplant (*Carpobrotus edulisi*) that have been used as ornamentals and in some instances slope stabilization. Approximately 43.89 acres of developed areas occur within the project study area.

Other

A portion of the 100-foot buffer in the study area includes the unvegetated beach area of Colorado Lagoon. This beach sand area is an additional cover type. This area is heavily used for recreational purposes. Approximately 0.75 acre of this habitat occurs within the project study area.

FLORA

A total of 71 plant species, of which 18 species (approximately 25 percent) are native, were observed on the property. The more common species are listed in the descriptions of the vegetation communities in the preceding section. A complete floral species list is included as Appendix A.

FAUNA

The project study area includes a variety of urban terrestrial species as well as bird species at Colorado Lagoon and Marine Stadium. Several marine species frequent Marine Stadium near the outfall. During the general wildlife and eelgrass surveys, a total of 52 bird species, 2 terrestrial species, and 16 marine species were detected in the project area. A faunal inventory was compiled of species encountered or detected during the surveys and is included as Appendix B to this document.

SENSITIVE BIOLOGICAL RESOURCES

The property was evaluated for the extent, quality, and significance of existing sensitive biological resources. The surveys provide an update to the previous environmental studies conducted for the project site. Special status plant and wildlife species are species that are either legally protected under the federal and state Endangered Species Acts (ESAs) or other regulations, or species considered by the scientific community to be sufficiently rare to qualify for such listing. Special status species include species listed or proposed for listing as endangered or threatened under the federal ESA (USFWS 1999), the California ESA (CDFG 2005 a, b), or the California Native Plant Protection Act. Also included below are species that are of special concern to the California Department of Fish and Game (CDFG 2005c), species of special concern to the U.S. Fish and Wildlife Service (USFWS 2005), and species covered under the Migratory Bird Treaty Act (MBTA). For this report, all birds included in the sensitive species list are protected under the MBTA. Furthermore, it is mandatory that California Native Plant Society (CNPS) lists 1A, 1B, and 2 species be fully considered during the preparation of environmental documents relating to the California Environmental Quality Act (CNPS 2001) as they meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California ESA). Finally, species listed as sensitive by the Western Bat Working Group are considered below as well. All species identified through California Natural

Diversity Database (CNDDB) searches as known to occur or known to have occurred within the project vicinity are considered below.

Sensitive Vegetation Communities

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

Sensitive Plant Species

A CNDDB search of the Long Beach and seven adjacent quadrangles – Inglewood, South Gate, Whittier, Los Alamitos, Seal Beach, San Pedro, and Torrance – resulted in a total of 25 plant species known to occur in the general area of the project site (CDFG 2005d). All sensitive plant species that were determined to have a potential to occur on the property, their sensitivity status, and descriptions of their general habitat are listed below in Table 2. Only one sensitive species, the southern tarplant (*Centromadia parryi* ssp. *australis*), a CNPS 1B species, was observed near the project area during the 2003 biological survey; however, this species has since been replaced with ornamental vegetation and is outside of the 100-foot buffer. In addition, no sensitive plant species were observed in surveys undertaken in 2004 (Chambers Group 2004a).

Table 2
Sensitive Plant Species Known to Occur, or with the Potential to Occur, in the Vicinity of the Termino Avenue Drain Survey Area

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
aphanisma *Aphanisma blitoides*	CNPS: 1B	Beach dunes, coastal bluffs, and coastal bluff scrub. Most of the existing populations located on the Channel Islands.	Low potential to occur due to lack of suitable habitat present.
Ventura marsh milk-vetch *Astragalus pycnostachyus* var. *lanosissimus*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Found in coastal dunes and coastal scrub, as well as coastal marshes and swamps. Occurs almost always under natural conditions in wetlands.	Low potential to occur due to lack of suitable habitat present.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
coastal dunes milk-vetch *Astragalus tener* var. *titi*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Sandy areas of coastal bluff scrub, coastal dunes, and mesic areas of coastal prairie. Known from only one occurrence on the Monterey Peninsula.	Low potential to occur due to lack of suitable habitat present.
south coast saltscale *Atriplex pacifica*	CNPS: 1B	Coastal bluff scrub, coastal dunes, coastal scrub, playas. Rare throughout its range.	Moderate potential to occur due to potentially suitable habitat. Nearest occurrence is on a beach in Torrance.
Parish's brittlescale *Atriplex parishii*	CNPS: 1B	Chenopod scrub, playas, and vernal pools. Known only from three occurrences in southern California.	Low potential to occur due to lack of suitable habitat present.
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	CNPS: 1B	Coastal bluff scrub and alkaline areas of coastal scrub.	Low potential to occur due to lack of suitable habitat present.
Santa Barbara morning-glory *Calystegia sepium* ssp. *binghamiae*	CNPS: 1A	Coastal marshes and swamps. Probably extirpated.	Low potential to occur due to presumed extinction in California. Nearest historical occurrences were in Bolsa Chica and Cienega.
southern tarplant *Centromadia parryi* ssp. *australis*	CNPS: 1B	Marshes and swamps (margins), valley and foothill grassland, vernal pools. From southern California and Baja California. Often in disturbed sites near the coast; also in alkaline soils sometimes with saltgrass; also vernal pools.	Moderate potential to occur based on suitable habitat. This plant was formerly located in a patch between Marine Vista Park and Marine Stadium.
salt marsh bird's-beak *Cordylanthus maritimus* ssp. *maritimus*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Coastal dunes and coastal salt areas of marshes and swamps. Higher reaches of coastal salt marshes to intertidal and brackish areas influenced by freshwater input.	Low potential to occur due to lack of suitable habitat present.
Catalina crossosoma *Crossosoma californicum*	CNPS: 1B	Chaparral and rocky areas of coastal scrub. Most known occurrences are on San Clemente Island.	Low potential to occur due to lack of suitable habitat present.
island green dudleya *Dudleya virens* ssp. *insularis*	CNPS: 1B	Coastal bluff scrub and rocky areas of coastal scrub.	Low potential to occur due to lack of suitable habitat present.
Mexican flannelbush *Fremontodendron mexicanum*	USFWS: Endangered CDFG: Rare CNPS: 1B	Closed-cone coniferous forest, chaparral, cismontane woodland. Gabbroic, metavolcanic, or serpentinite soils.	Low potential to occur within the survey area due to lack of suitable habitat.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	CNPS: 1B	Marshes and swamps, playas, vernal pools.	Low potential to occur due to lack of suitable habitat present.
Santa Catalina Island desert-thorn *Lycium brevipes* var. *hassei*	CNPS: 1B	Coastal bluff scrub, coastal scrub (coastal salt).	Low potential to occur due to lack of suitable habitat present.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
mud nama *Nama stenocarpum*	CNPS: 2	Marshes and swamps (lake margins, riverbanks). Intermittently wet areas.	Moderate potential to occur based on potentially suitable habitat.
spreading navarretia *Navarretia fossalis*	USFWS: Threatened CNPS: 1B	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools.	Low potential to occur due to lack of suitable habitat present.
prostrate navarretia *Navarretia prostrata*	CNPS: 1B	Coastal scrub, meadows and seeps, alkaline areas of valley and foothill grassland, vernal pools and/or mesic areas.	Low potential to occur due to lack of suitable habitat present.
coast wooly-heads *Nemacaulis denudata* var. *denudata*	CNPS: 1B	Coastal dunes.	Low potential to occur due to lack of suitable habitat present.
California Orcutt grass *Orcuttia californica*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Vernal pools. Known only from southern California and Baja.	Low potential to occur within the survey area due to sparse presence or lack of suitable habitat.
Lyon's pentachaeta *Pentachaeta lyonii*	USFWS: Endangered CDFG: Endangered CNPS: 1B	Chaparral, valley and foothill grassland. Edges of clearings in chaparral, usually at the ecotone between grassland and chaparral or edges of firebreaks.	Low potential to occur within the survey area due to sparse presence or lack of suitable habitat.
Brand's phacelia *Phacelia stellaris*	CNPS: 1B	Coastal dunes, coastal scrub.	Low potential to occur due to lack of suitable habitat present.
Sanford's arrowhead *Sagittaria sanfordii*	CNPS: 1B	Marshes and swamps (assorted shallow freshwater areas).	Low potential to occur due to lack of suitable habitat present.
salt spring checkerbloom *Sidalcea neomexicana*	CNPS: 2	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas / alkaline, mesic.	Low potential to occur due to lack of suitable habitat present.
estuary seablite *Suaeda esteroa*	CNPS: 1B	Marshes and swamps (coastal salt).	Low potential to occur due to lack of suitable habitat present.
San Bernardino aster *Symphyotrichum defoliatum*	CNPS: 1B	Meadows and seeps, marshes and swamps, coastal scrub, cismontane woodland, lower montane coniferous forest, valley and foothill grassland (vernally mesic) / near ditches, streams, springs.	Low potential to occur due to lack of suitable habitat present.

[1]Sensitivity Status Key

Federal U.S. Fish and Wildlife Service (USFWS)
State California Department of Fish and Game (CDFG)
Other California Native Plant Society (CNPS)
1A: Plants presumed extinct in California
1B: Plants rare, threatened, or endangered in California and elsewhere
2: Plants rare, threatened, or endangered in California, but more common elsewhere
3: Plants more information is needed for
4: Plants of limited distribution – a watch list

Detailed descriptions are provided below for the three non-listed, sensitive plant species that had a moderate potential to occur; none were detected on-site. All other listed and sensitive species were determined to have a low potential to occur on the site. See Table 2 for information on habitat affinities and notes on why these species were considered to have lower potentials to occur on the property.

South coast saltscale – *Atriplex pacifica*

USFWS Status:	None
CDFG Status:	None
CNPS rating:	List 1B
Natural History:	South coast saltscale is an annual plant of the goosefoot family (Chenopodiaceae). It has a mat-like form with prostrate to decumbent stems and ascending branches. Its leaves are elliptic to oblanceolate and are greenish above and gray to white-scaly below (Hickman 1993). This is a summer-blooming (March-October) annual plant.
Distribution:	The south coast saltscale is known from Ventura County south to Baja California, and including the Channel Islands. In Los Angeles County, the species is known from Redondo Beach and San Pedro (CNPS 2005).
Habitat:	South coast saltscale occurs on bluffs and shrubland at elevations of less than 300 feet (Hickman 1993). There is at least one known occurrence of this species in beach habitat.
Conservation Status:	Remaining populations are threatened by urbanization and recreation.
Status On-site:	This species was not detected during focused surveys. Habitat on-site may be suitable.

Southern tarplant – *Centromadia parryi* ssp. *australis*

USFWS status:	None
CDFG Status:	None
CNPS rating:	List 1B
Natural History:	Southern tarplant is a mildly scented annual plant of the sunflower family (Asteraceae). The plants are generally erect and are densely glandular, especially above (Hickman 1993). It is a summer-blooming (May-November) species. Its ray flowers are yellow, often becoming more orange with age, and its disk flowers have brown or black anthers (Hickman 1993).

Distribution: This species is distributed throughout the southern coast and northern Baja California (Hickman 1993). The nearest current location is in Seal Beach.

Habitat: Southern tarplant occurs in seasonally moist (saline) grassland at elevations of less than 650 feet (Hickman 1993).

Conservation Status: This species is threatened by development, urbanization, and foot traffic from recreational use.

Status On-site: Multiple southern tarplant were observed on the north end of Marine Stadium during the 2003 biological survey; however, it has since been replaced with ornamental vegetation. Habitat on-site remains suitable for the southern tarplant.

Mud nama – *Nama stenocarpum*

USFWS status: None

CDFG Status: None

CNPS rating: List 2

Natural History: Mud nama is a taprooted annual of the waterleaf family (Hydrophyllaceae). It is short-soft-silky-hairy and short-glandular-hairy with some stiff hairs at its base. It has a white to cream-colored funnel-shaped flower with bristly petals and its leaves have wavy margins. The mud nama blooms from approximately January to July (CNPS 2005).

Distribution: This species is distributed in southwestern California and Texas and Mexico (Hickman 1993). The nearest location to the project site is in Seal Beach.

Habitat: Mud nama occurs in intermittently wet areas at elevations of less than 1,700 feet (Hickman 1993). It occurs within muddy embankments at the edge of rivers and lakes.

Conservation Status: This species is threatened by development and recreational use.

Status On-site: This species was not detected on-site during focused surveys. Habitat on-site may be suitable. However, it has a low to moderate potential to occur on-site due to negative survey results during the appropriate survey period.

Sensitive Wildlife Species

A CNDDB search of the Long Beach and seven adjacent quadrangles resulted in a total of 36 sensitive animal species known to occur in the general project area. All sensitive wildlife species that were detected or have a potential to occur on the property are listed below in Table 3, including their sensitivity listings, habitat requirements, and probabilities for occurrence. Eight

sensitive species listed below have been observed directly in the project area (Table 3). Seven additional threatened or endangered wildlife species have a potential to occur within the project area based on the presence of suitable habitat and/or the proximity of known populations, including four with a moderate potential to occur, and three with a low potential to occur. Finally, an additional 19 sensitive wildlife species are known to occur in the project vicinity, but are not expected to occur on or near the project site due to a lack of suitable habitat.

Table 3
Sensitive Wildlife Species Known to Occur, or with the Potential to Occur, in the Vicinity of the Termino Avenue Drain Survey Area

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
Invertebrates			
Palos Verdes blue butterfly *Glaucopsyche lygdamus palosverdesensis*	USFWS: Endangered	Shrubland and chaparral.	Low. No habitat exists in the project vicinity. Has been observed approximately 3 miles from the project site but adequate habitat does not occur on the project site.
Amphibians			
western spadefoot *Spea hammondii*	CDFG: Species of Special Concern	Temporary ponds, vernal pools, and backwaters of slow-flowing creeks. Also upland habitats such as grasslands and coastal sage scrub where burrows are constructed.	Moderate. Not observed during surveys; suitable habitat is present on-site.
Reptiles			
green sea turtle *Chelonia mydas*	USFWS: Threatened	Completely herbivorous marine reptile, feeds almost exclusively on seagrasses and marine algae. Generally found in shallow waters (except when migrating) inside reefs, bays and inlets. Strong nesting site fidelity; requires open, sloping beaches and minimal disturbance.	Low. Limited foraging/nesting habitat occurs within the project area but geographic distribution limits probability of occurrence.
southwestern pond turtle *Emys marmorata pallida*	CDFG: Species of Special Concern	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 600 feet. Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks; also needs suitable nesting areas.	Low. Habitat occurs within the project area but geographic distribution limits probability of occurrence.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
San Diego horned lizard *Phrynosoma coronatum blainvillei*	CDFG: Species of Special Concern	Suitable habitat consists of mixed chaparral and scrub habitats with rocky or sandy soils.	Moderate. Not observed during surveys; suitable habitat is present on-site.
Birds			
Cooper's hawk *Accipter cooperi*	CDFG: Species of Special Concern	Variety of mixed woodlands and urban areas.	Detected. Species observed during previous survey (Bonterra Consulting 2002).
sharp-shinned hawk *Accipter striatus*	CDFG: Species of Special Concern	Woodlands or streamside groves.	Moderate. Species may occur as migrant. Suitable roosting but no breeding habitat.
tricolored blackbird *Agelaius tricolor*	CDFG: Species of Special Concern	Suitable habitat for this species includes emergent wetland with dense cattails or dense riparian willow vegetation.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
burrowing owl *Athene cunicularia*	CDFG: Species of Special Concern	(Burrow sites) open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, depends upon burrowing mammals, most notably, the California ground squirrel.	Low. No habitat exists due to the developed nature of the area. No recorded observations.
Rhinoceros auklet *Cerorhinca monocerata*	CDFG: Species of Special Concern	Common along west coast in winter in large numbers near shore.	Low. No habitat exists due to the developed nature of the area.
Vaux's swift *Chaetura vauxi*	CDFG: Species of Special Concern	Woodlands near water.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
western snowy plover *Charadrius alexandrinus nivosus*	USFWS: Threatened CDFG: Species of Special Concern	Beaches with dry mud or sandflats, along sandy shores of rivers, lakes, and ponds. Nests on ground in open beaches with scattered clumps of vegetation.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
western yellow warbler[2] *Dendroica petechia brewsteri*	CDFG: Species of Special Concern	Wet habitats, open woodlands, gardens, and orchards.	Detected. Species observed during current survey.
common loon *Gavia immer*	CDFG: Species of Special Concern	Nests on large lakes. Migrates over land. Winters in coastal waters or on ice-free inland lakes.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
salt marsh yellowthroat *Geothlypis trichas sinuosa* (nesting)	CDFG: Species of Special Concern	Grassy fields, shrubs, marshes, reeds.	Moderate. Not observed during surveys; suitable habitat is present on-site.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
California horned lark *Eremophila alpestris actia*	CDFG: Species of Special Concern	Dirt fields, gravel ridges, and shores.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
American peregrine falcon *Falco peregrinus anatum*	CDFG: Endangered	Open wetlands near cliffs; also nest on bridges and tall buildings.	Moderate. Not observed during surveys; suitable habitat is present on-site.
western least bittern *Ixobrychus exilis hesperis*	CDFG: Species of Special Concern	Reeds, wetlands.	Low. No habitat exists due to the developed nature of the area.
California gull *Larus californicus*	CDFG: Species of Special Concern	Beaches, coastal areas.	Detected. Species observed during current survey.
loggerhead shrike *Lanius ludovicianus*	CDFG: Species of Special Concern	Open or brushy areas.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
long-billed curlew *Numenius americanus*	CDFG: Species of Special Concern	Nests in wet and dry uplands; during migration can be found in wetlands	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
osprey (nesting) *Pandion haliaetus*	CDFG: Species of Special Concern	Coastal lagoons, rivers, bays, reservoirs.	Detected. Species observed during recent survey (Chambers Group 2004b).
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	CDFG: Endangered	Herbaceous wetlands and salt - marshes. Nests on ground in natural depressions primarily in pickleweed above highest reach of spring tides.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
California brown pelican *Pelicanus occidentalis californicus*	USFWS: Endangered CDFG: Endangered	Coastal salt water lagoons, beaches, bays, marshes, and open ocean.	Detected. Species observed during current survey.
double-crested cormorant *Phalacrocorax auritus*	CDFG: Species of Special Concern	Coastal salt water lagoons, beaches, bays, marshes, and open ocean.	Detected. Species observed during current survey.
coastal California gnatcatcher *Polioptila californica californica*	USFWS: Threatened CDFG: Species of Special Concern	A permanent resident of coastal sage scrub in arid washes, mesas, and slopes.	Low. A small amount of habitat occurs in the revegetated area between 7th Street and 8th Street but is disconnected from contiguous habitat.
light-footed clapper rail *Rallus longirostris levipes*	USFWS: Endangered CDFG: Endangered	Herbaceous wetlands, cordgrass-pickleweed salt marshes. Nests in clumps of pickleweed or in cordgrass slightly above ground.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.

Common Name (Scientific Name)	Sensitivity Status[1]	General Habitat Description	Potential for Occurrence
black skimmer *Rynchops niger*	CDFG: Species of Special Concern	Primarily along coastal waters, bays, lakes, or estuaries. Nests on sandy beaches and shell banks.	Moderate. Species may occur as migrant. Suitable roosting/foraging but no breeding habitat.
California least tern *Sterna antillarum browni*	USFWS: Endangered CDFG: Endangered	Sand dunes, sea coasts, bays, estuaries, lagoons, lakes, and rivers. Nests on open flat beaches along lagoons or estuary marshes.	Detected. Species observed during previous survey (Keane Biological Consulting 2004). Suitable roosting and foraging but no breeding habitat.
elegant tern *Sterna elegans*	CDFG: Species of Special Concern	Sea coasts, bays, estuaries, lagoons.	Detected. Species observed during previous survey (Keane Biological Consulting 2004).
Mammals			
pallid bat *Antrozous pallidus*	CDFG: Species of Special Concern WBWG: H	Rock crevices, trees, shrubs, and grasslands	Moderate. Not observed during surveys; suitable habitat is present on-site.
western yellow bat *Lasiurus xanthinus*	WBWG: H	Roosts in trees, generally palms, but is also associated with riparian woodland.	Moderate. Not observed during surveys; suitable habitat is present on-site.
big free-tailed bat *Nyctinomops macrotis*	CDFG: Species of Special Concern WBWG: M	Bare rock/talus/scree, cliffs, desert, and hardwood woodlands.	Moderate. Not observed during surveys; suitable habitat is present on-site.
Pacific pocket mouse *Perognathus longimembris pacificus*	USFWS: Endangered	Burrows in loose soil, shrubland with firm sand or soil; coastal dunes, river alluviums, and coastal sage.	Low. No habitat exists due to the developed nature of the area.
southern California saltmarsh shrew *Sorex ornatus salicornicus*	CDFG: Species of Special Concern	Coastal marshes, specifically fallen logs and woody debris.	Low. No habitat exists due to the developed nature of the area.
American badger *Taxidea taxus*	CDFG: Species of Special Concern	Cropland/hedgerow, desert, chaparral, grassland/savana; burrows in loose soil.	Low. No habitat exists due to the developed nature of the area.

[1] **Sensitivity Status Key**
Federal U.S. Fish and Wildlife Service (USFWS)
State California Department of Fish and Game (CDFG)
WBWG Western Bat Working Group Conservation Priority (H) High, (M) Medium, and (L) Low

[2] The subspecies of yellow warbler considered a CDFG species of special concern is *brewsteri*. It has been determined by multiple sources (Unitt 2004) that the subspecies of yellow warbler nesting and migrating within California is *morcomi*. It is assumed that the CDFG status intends to cover subspecies of yellow warbler occurring within the state despite taxonomic arguments.

In addition, Marine Stadium is considered Essential Fish Habitat (EFH), defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S.C. 1802(10)). The proposed project is located within an area designated as EFH for one

Fisheries Management Plan (FMP), the Coastal Pelagics Management Plan. Of the 86 species managed under all of the FMP, 4 are known to occur in the San Pedro Channel area, and potentially within Alamitos Bay (Table 4) (CRM 2005b).

Species accounts for those federally and state-listed species and other special status species detected on-site are provided below. Discussions of those species that have a moderate to high potential for occurring are also provided below.

Threatened and Endangered Wildlife Species Observed On-site

Two listed wildlife species have been observed on-site, the federal and state endangered California brown pelican and the California least tern. Species accounts for these species are included below. Seven additional threatened or endangered wildlife species have a potential to occur within the project area based on the presence of suitable habitat and/or the proximity of known populations, including four with a moderate potential to occur, and three with a low potential to occur (Table 3).

Table 4
Coastal Pelagic Management Plan Species Potentially Affected by the Termino Avenue Drain Project

Common Name	Scientific Name	Comment
Northern anchovy	*Engraulis mordax*	Common to abundant during each of 11 surveys between 1972 and 1997. Second most abundant species overall offshore. Adult and larvae present in area.[1,2,3]. Present to abundant in fish trawls in Alamitos Bay Marina.[4]
Pacific sardine	*Sardinops sagax*	Present during 6 of 11 surveys, low to moderate abundance; mid-ranked in abundance compared to other species. Mostly adults in the general area.[1,2] Not known within Alamitos Bay proper.
Pacific mackerel	*Scomber japonicus*	Incidental catch at depths shallower than 30 feet. Present in one survey (1997). Predominantly adults in project area.[1,2,3] Not known within Alamitos Bay proper.
Jack mackerel	*Trachurus symmetricus*	Incidental catch at depths shallower than 30 feet. Present during one survey (1994). Predominantly adults in project area.[1,2,3] Not known from within Alamitos Bay.

[1] MBC 1997
[2] MEC 1988
[3] MEC 1999
[4] Intersea Research Corporation 1981
Source: CRM 2005b

California brown pelican - *Pelecanus occidentalis californicus*

USFWS Status: Endangered

CDFG Status: Endangered

Other Status: MBTA covered

Listing Data: This species was federally listed as endangered on June 2, 1970, for all of the U.S. populations, and the southeastern U.S. population was later removed from endangered status (50 Federal Register 4938). The California population remains a federally listed endangered species. A recovery plan was published for the California brown pelican (USFWS 1983). Critical habitat has not been designated. The state of California listed the California brown pelican as endangered on June 27, 1971.

Distribution: The California brown pelican is found primarily within 12 miles of shore, but regularly up to 100 miles away from the coast. The pelicans are common along the coast throughout the year. The area extent of the foraging range of the brown pelican off the California coast is greatest in the South California Bight. This wide distribution is likely tied to the presence of several offshore islands that provide roosts and subsea topography that enhances thermal upwelling, which both support healthy populations of prey items.

Habitat: The brown pelican is found in estuarine, marine, subtidal, and marine pelagic waters. The brown pelican requires water, rocky cliffs, jetties, sandy beaches or mudflats for roosting, and open water for foraging. Nesting colonies occur on the Channel Islands and on the Coronado Islands (Garrett and Dunn 1981). Within California, nesting is restricted to these rocky islands, although onshore nesting has been noted to occur in Baja California. The brown pelican will rest on water or inaccessible rocks. It will not roost overnight on water (Briggs et al. 1981).

Natural History: The brown pelican is a yearlong diurnal species. It breeds from March to early August. The brown pelican forages mainly in early morning or late afternoon, or when the tide is rising. The species feeds almost entirely on fish, caught by diving from 6 to 12 meters in the air. The primary food item of the California brown pelican in southern California is northern anchovy (*Engraulis mordax*), although it also feeds on crustaceans, carrion, and other fish. The brown pelican builds a nest shaped as a small mound of sticks or debris on rocky, or low, bushy slopes of undisturbed islands (Cogswell 1977). The species usually nests on the ground, and less often in bushes (Palmer 1962). Clutch size is usually three eggs

(Granholm 2005a). Young are altricial and tended by both parents. Young are capable of breeding at approximately 2 to 3 years old. After breeding, individuals will leave the nesting colonies and disperse along the entire California coast. Gulls and vultures are typical nest predators.

Comments: The brown pelican population declined sharply in the 1960s due to the introduction of pesticides such as DDT into the food chain, although the population trend is currently increasing. Current threats include oil spills and entanglement in fishing tackle.

Status On-site: Observed on-site during wildlife surveys. California brown pelicans forage in the lagoon and were observed roosting on pedestrian bridges, beaches, and other areas of Colorado Lagoon.

California least tern - *Sterna antillarum browni*

USFWS Status: Endangered

CDFG Status: Endangered (nesting colony)

Other Status: MBTA covered

Listing Data: The California least tern was listed by the USFWS on October 13, 1970 (Federal Register 35 FR 16047). This listing status applies to the entire population of *S. a. browni*. Critical habitat has not been determined by the USFWS, although there is an approved recovery plan for the species. The state listed the subspecies as endangered on June 27, 1971.

Distribution: The California least tern is migratory in California. The species breeds from San Francisco Bay south to Baja California. Wintering areas are thought to be along the Pacific coast of South America.

Habitat: The species historically nested colonially on beaches that are undisturbed, sparsely vegetated, flat areas with loose, sandy substrate. Few beach nesting areas remain and least terns are now found in varied habitats ranging from mudflats to airports. Adults roost primarily on the ground. They typically forage in areas with water less than 60 feet in depth (Atwood and Minsky 1983).

Natural History: This small migratory tern begins nesting in mid-May and is present at nesting colonies from April through August. The species nests in loose colonies in areas relatively free of human or predatory disturbance. Nests are on barren to sparsely vegetated sites near water, usually with a sandy or gravelly substrate. Least terns lay from one to four eggs, which are incubated for 20 to 25 days by both adults. Young fledge 28 days after hatching and are fed by adults for an additional 2 weeks. The terns

abandon the nesting colonies by mid-August and generally migrate south by mid-September. Banding returns indicate that least terns exhibit fidelity to the site where they first bred successfully. Prey items include northern anchovy, topsmelt, killifish, mosquitofish, shiner, surfperch, and mudflat gobies. Significant predators include burrowing owls and American kestrels (Collins and Bailey 1980).

Comments: Human disturbance has displaced the least tern from much of its traditional nesting habitat. Accelerated silting in of lagoons has also eliminated some former nesting sites. Populations appear to have increased over the last quarter of the 20th century. However, development along the California coastline continues to threaten the species' survival as no alternatives to its current nesting sites remain.

Status On-site: Species was observed during Keane Biological Consulting surveys of Colorado Lagoon in 2004. Roosting and foraging habitat occurs on-site but nesting is not expected due to the highly developed nature of the area and high probability of human disturbance.

Non-listed, Sensitive Wildlife Species Detected On-site

Six additional sensitive species have been observed on-site during recent surveys: Cooper's hawk, western yellow warbler, California gull, osprey, double-breasted cormorant, and elegant tern. Species accounts for all six species are included below.

Cooper's Hawk - *Accipiter cooperii*

CDFG Status: Species of Special Concern (nesting)

Other Status: MBTA covered

Distribution: The Cooper's hawk is a breeding resident throughout wooded areas of California (Polite 2005a). The species ranges in elevation from sea level to above 8,850 feet. Outside of the breeding season, it disperses widely from southern Canada to northern Mexico. The species is sparser in the mountains than at lower elevations.

Habitat: Cooper's hawks nest primarily in oak woodlands but occasionally in willows or eucalyptus. The species most frequently prefers dense stands of live oak, riparian deciduous, or other forest habitat near water. The species usually nests and forages near open water or riparian vegetation.

Natural History: The Cooper's hawk is mostly a yearlong resident. Winter visitors occur in San Diego County from September to March. This species breeds from

January through June in the county. Cooper's hawks build nests high in trees but beneath the canopy. Sometimes they will nest in riparian willows, but oaks and eucalyptus trees are the species' most common nest sites (Asay 1987). The Cooper's hawk will catch small birds, especially young during nesting season, and small mammals. They will also take reptiles and amphibians. Cooper's hawks will catch their prey in the air, on the ground, and in vegetation. Cooper's hawks hunt in broken woodland and habitat edges. The average distance between Cooper's hawk nests ranges from approximately 0.5 to 2.5 miles apart (Asay 1987; Polite 2005a). Young are born altricial.

Comments: This species has declined as a breeding species in California because of destruction of riparian woodland, contamination with pesticides and shooting. Numbers appear to be increasing as the species adapts to the urban environment.

Status On-site: Cooper's hawk was observed in the vicinity of Colorado Lagoon during Bonterra Consulting surveys in 2002.

Yellow warbler - *Dendroica petechia morcomi*

USFWS Status: None

CDFG Status: Species of Special Concern (nesting)

Other Status: MBTA covered

Distribution: The yellow warbler is a common to uncommon summer visitor and a rare but regular winter visitor (in coastal areas) in California. In southern California, it is uncommon and localized as a breeding species, but common and widespread as a migrant. The species is also a common migrant on Channel and Farallon islands in spring and fall (DeSante and Ainley 1980; Garrett and Dunn 1981).

Habitat: This species nests in mature riparian woodland from coastal and desert lowlands up to 8,000 feet in the Sierra Nevada. Specifically, it prefers to nest in mature cottonwood, willow, alder, and ash trees. The yellow warbler will also breed in montane chaparral, and in open ponderosa pine and mixed conifer habitats with substantial amounts of brush. In general, the species frequents open to medium-density woodlands and forests with a heavy brush understory in breeding season. At low elevations the species is more confined to larger streams; in the foothills and mountains, it will inhabit narrow strips and patches of riparian trees. Migratory stopovers include a variety of dense woodland and forest habitats.

Natural History: The yellow warbler a nocturnal migrant. The species typically arrives in southern California during late March. Migration of populations heading farther north will occur later from April through June. Fall migration occurs from mid-August through mid-October. The species builds an open cup nest placed in upright forks of twigs in a deciduous sapling or shrub 2 to 35 feet above ground. Territories often include tall trees for singing and foraging and a heavy brush understory for nesting (Ficken and Ficken 1966). Territory size has been recorded as 0.08 acre to 0.9 acre. The species is known to drink from a water source regularly in desert environments (Smyth and Coulombe 1971). The yellow warbler feeds mostly on insects and spiders. It will glean and hover in the upper canopy of deciduous trees and shrubs. It will also occasionally pick insects from the air or eat berries (Bent 1953; Ehrlich et al. 1988). The yellow warbler breeds from mid-April through early August with peak activity occurring in June. Pairs breed solitarily. Typically, three to six eggs are laid and incubated by the female for approximately 11 days. Altricial young are tended by both parents until fledging at 9 to 12 days (Harrison 1978). Young will breed the following year.

Comments: Like least Bell's vireo, the yellow warbler is a frequent victim of the brown-headed cowbird (Rothstein et al. 1980; Verner and Ritter 1983; Airola 1986). The species is also subject to predation by small mammals, accipiters, corvids, and snakes. The numbers of breeding pairs have declined in recent decades in many lowland areas (southern coast, Colorado River, and San Joaquin and Sacramento valleys). The species is now considered rare to uncommon in many lowland areas where formerly common (McCaskie et al. 1979; Garrett and Dunn 1981). Declines are due to habitat destruction and fragmentation and pesticide use. Populations in the west have been shown to increase where reduction of grazing and cessation of herbicide spraying of willows have led to regrowth of riparian vegetation (Ehrlich et al. 1988).

Status On-site: Observed foraging during recent survey in ornamental trees between Colorado Lagoon and Marine Stadium.

California gull - *Larus californicus*

CDFG Status: Species of Special Concern (nesting colony)

Other Status: MBTA covered

Distribution: In the United States the California gull occurs along the Pacific coast. The northern extent of the range reaches northwestern Canada, and as far south as Baja California Sur. In southern California, the California gull is most concentrated along the coast during the winter.

Habitat: Wintering habitats include coasts, estuaries, lakes, and rivers. Individuals use shorelines and islands to roost. During the breeding season, the California gull migrates to inland prairie habitat, consisting of open annual grasslands with less than 5 percent woody cover. The species is also a fairly common nester at alkali and freshwater lacustrine habitats east of the Sierra Nevada and Cascades. The species needs undisturbed, isolated islands for nesting with food supplies nearby.

Natural History: The California gull is an opportunistic feeder, foraging on whatever is available. It frequently feeds in garbage dumps, ingests fruits, preys on small mammals, and is considered a major predator at waterfowl nesting areas. Adults roost in large concentrations. This colonial species breeds from mid-April through mid-August in low flat nests. Nesting California gulls will eat its neighbor's eggs whenever possible. Nests are scrape lined with grasses, feathers, or rubble, on sparsely vegetated portions of isolated islands. Clutch size is one to three eggs (Harrison 1978). The species has one brood per season and both parents incubate. Young are precocial (Smith and Diem 1972). It is a migratory species, departing for breeding grounds in April. After breeding, the California gull will move northwest to the coast as far north as British Columbia, and west and southwest to the coast of California.

Comments: Threats include receding waters at nesting sites, which allow mainland predators to access and destroy populations. Overall, population size appears to be increasing through the second half of the 20th century (Conover 1983; Shuford and Ryan 2000).

Status On-site: Observed during multiple recent surveys in Colorado Lagoon. Individuals utilize beach areas for roosting and forage in garbage cans, dumpsters, and other opportunistic scenarios.

Osprey - *Pandion haliaetus*

CDFG Status: Species of Special Concern (nesting)

Other Status: MBTA covered

Distribution: Ospreys breed throughout California around large bodies of water but are more common in northern California and along the coast. The species is

an uncommon year-round resident and more common winter migrant in southern California.

Habitat: Nests are generally built near water, often in large trees, snags, and dead-topped trees in open forest habitats for cover. The species requires clear, open waters for foraging.

Natural History: The osprey is a yearlong, diurnal species. It preys mostly on fish but will also take mammals, birds, reptiles, amphibians, and invertebrates. The osprey breeds from March through September. An average clutch size is one to four eggs (Polite 2005b). Colonial nesting is common. Ospreys will build large stick nests and often reuse them year after year (Unitt 2004). They will build nests on trees, cliffs, or man-made structures. Territories typically average from approximately 60 to 1,700 square feet (Polite 2005b). Young can breed when 3 years old. In California, the osprey migrates south along the coast and the western slope of the Sierra Nevada to Central America and South America in October. Ospreys will arrive on their nesting grounds mid-March to early April.

Comments: Pesticides have caused reproductive failure in the past (Garber 1972). However reproductive success appears to be increasing since the early 1970s (Airola and Shubert 1981; Unitt 2004).

Status On-site: Osprey were observed in the vicinity of Colorado Lagoon by Chambers Group during surveys in 2004.

Double-crested cormorant - *Phalacrocorax auritus*

CDFG Status: Species of Special Concern (rookery site)

Other Status: MBTA covered

Distribution: The double-crested cormorant is a yearlong resident along the entire coast of California and on inland lakes. It occurs year-round but is far more abundant in fall and winter. The established nesting sites closest to the project site include the Channel and Coronado islands and the Salton Sea.

Habitat: Double-crested cormorants are common in the coastal waters, bays, and inland ponds and lakes of southern California. The species requires undisturbed nesting sites next to water on offshore rocks, islands, steep cliffs, dead branches of trees, wharfs, or jetties. Perching sites include unvegetated areas.

Natural History: The double-crested cormorant feeds mainly on fish (Cogswell 1977; Robertson 1974). It will also feed on crustaceans and amphibians. The species will dive from the water surface to pursue prey underwater,

typically remaining submerged for approximately 30 seconds. The species will sometimes feed cooperatively in flocks. The species must visit perching sites daily to dry plumage. It will rest or sleep on water in the daytime. The double-crested cormorant will migrate during day and night. The species breeds from April through August. Pairs are monogamous. Cormorants will nest in colonies of a few to thousands of pairs. Clutch size is usually three to four eggs (Granholm 2005b). Young are born altricial and are tended by both parents. Approximately 25 percent of adults at breeding colonies are prebreeders (Mendall 1936). The species builds a nest of bulky sticks and debris, placing it usually in a tree surrounded by water or on the ground.

Comments: The species is declining in numbers primarily as a result of habitat destruction, boating, and fishing activities. It is also susceptible to reduced nesting success from pesticides in the water. Human disturbance can cause nest abandonment and increased predation by gulls on eggs and young (Ellison and Cleary 1978). In the last quarter of the 20th century, the population over much of North America increased (Hatch and Weseloh 1999), potentially due to adaptation to artificial nesting sites and the building and fish-stocking of reservoirs.

Status On-site: Double-crested cormorants have been observed during multiple recent wildlife surveys in Colorado Lagoon, foraging and roosting on beaches, bridges, and man-made floating structures.

Elegant tern - *Sterna elegans*

CDFG Status: Species of Special Concern (nesting colony)

Other Status: MBTA covered

Distribution: The elegant tern is common to southern California and rare in northern California. It breeds from San Diego Bay south to central Baja California. The species is a common spring and winter visitor to San Diego County. A single nesting colony is known from the south end of San Diego Bay (Unitt 1984).

Habitat: This species prefers to inhabit coastal mudflats, lagoons, and bays. The elegant tern nests on undisturbed island beaches and on dikes. It feeds primarily in shallow ocean waters beyond the turbulent breaker zone but also may forage in protected bays and lagoons (Cogswell 1977). The elegant tern will congregate on beaches and tideflats when not feeding.

Natural History: Elegant terns nest in tight clusters, often in association with Caspian terns, on the bare dirt on top of dikes. Within each subcolony, egg laying is usually synchronous, after the Caspians begin (Kirven 1969). Nests are shallow scrapes in the sand about 18 meters from the surfline (Bent 1921). Clutch size is one egg, occasionally two eggs. After hatching, the young cluster into crèches. Elegant terns begin returning to southern California typically during mid-March. Postbreeding dispersal from Mexico may begin as early as late May (Burness et al. 1999). The species feeds primarily on fish.

Comments: Tropical storms pose a threat to colonies on low-lying Mexican islands (Dawson 1923). Because the species nests very gregariously at few sites, it is vulnerable. Disturbance caused by humans and domestic animals has affected populations. Population numbers have been increasing since the 1950s. The species' numbers and nesting success in San Diego Bay are linked to the abundance of the northern anchovy offshore, thereby suggesting that the tern could be affected by overfishing or other effects to the anchovy (Schaffner 1986).

Status On-site: Species was observed during Keane Biological Consulting surveys of Colorado Lagoon in 2004. Roosting and foraging habitat occurs on-site but nesting is not expected due to the highly developed nature of the area and high probability of human disturbance.

Listed Wildlife Species with Potential to Occur On-site

No other state or federally listed wildlife species were determined to have a high potential to occur on the site; however, as noted previously, four listed species have a moderate potential to occur on the project site. These species and the green sea turtle are discussed further below. Information about those other species that were determined to have a low potential to occur on the site is provided only in Table 3.

Western snowy plovers nest between March and September on marine and estuarine beaches. Outside of the plover's breeding season, individuals may be observed throughout the southern California coast. Human disturbance and development have led to a decrease in the plover's population. Snowy plovers have not been observed in Colorado Lagoon during recent surveys but ample foraging habitat is available for winter visitors.

Belding's savannah sparrow exists in coastal marsh habitats of southern California and northern Baja; this species breeds in pickleweed *(Salicornia* sp.*)* habitat. Limited breeding habitat occurs in Colorado Lagoon; however, Belding's savannah sparrow could forage in the area outside of breeding season.

Light-footed clapper rail, which occurs in reeds and grassy marshes, may occur on-site to forage or roost, but breeding habitat does not exist in the project vicinity due to its developed state.

American peregrine falcon may occur on-site but has not been observed in recent surveys. The American peregrine falcon population was decimated during the middle 1900s by the use of DDT, a pesticide that weakened the species' egg strength. Since DDT was banned from use in the United States, the species numbers have increased but have not reached historical levels. This raptor inhabits wetlands near cliffs and has adapted to urban settings, nesting on bridges and tall buildings. Foraging areas include tidal flats where shorebirds congregate. The species was considered to have a moderate potential to occur on-site due to the urban habitat and possible foraging opportunity, but has not been observed on-site.

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. 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.

Other Non-listed, Sensitive Wildlife Species with Potential to Occur On-site

Western spadefoot toad and San Diego horned lizard have a moderate but limited chance to occur on-site. Habitat occurs in the vicinity of the site, though urbanization and development decrease the chance of geographic distribution from other natural populations.

Sharp-shinned hawk has a moderate potential to occur in the project vicinity given the similar foraging and roosting patterns of Cooper's hawk, which has been observed on-site.

Species that utilize wetland or tall grass habitats, including tricolored blackbird, salt marsh yellowthroat, and long-billed curlew, have a moderate potential to occur on-site, though none

have been observed. Common loon and black skimmer could both forage in wetland areas but are not expected to nest on-site.

Loggerhead shrike, Vaux's swift, and California horned lark have a moderate chance of occurring in the tree, beach, and water interface as they migrate and forage through the project site.

Three species of bats have a moderate potential to occur on-site: pallid bat, western yellow bat, and big free-tailed bat. The trees, shrubs, and urban buildings adjacent to water could serve as habitat for foraging, roosting, or breeding.

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.

Wildlife Corridors

In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two patches of comparatively undisturbed habitat, or between a patch of habitat and some vital resources. Regional corridors are defined as those linking two or more large areas of natural open space, and local corridors are defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development.

Wildlife migration corridors are essential in geographically diverse settings, and especially in urban settings, for the sustenance of healthy and genetically diverse animal communities. At a minimum, they promote colonization of habitat and genetic variability by connecting fragments

of like habitat and they help sustain individual species distributed in and among habitat fragments. Habitat fragments, by definition, are separated by otherwise foreign or inhospitable habitats, such as urban/suburban tracts. Isolation of populations can have many harmful effects and may contribute significantly to local species extinction.

A viable wildlife migration corridor consists of more than a path between habitat areas. To provide food and cover from predators for transient species as well as resident populations of less mobile animals, topography and vegetative cover are important site-specific factors. They should direct animals to areas of contiguous open space or resources and away from humans and development. The corridor should be buffered from human encroachment and other disturbances (e.g., light, loud noises, domestic animals) associated with developed areas.

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

REGULATORY REQUIREMENTS

The following provides a general description of the applicable permitting requirements for the project. Since the project will not result in the direct take of federally regulated species, USFWS consultation is not expected to occur. However, for purposes of disclosure, information regarding the Section 7 consultation process is included below. 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 regulates activities within the coastal zone.

Federal Endangered Species Act

Under the federal ESA, *take* (defined as *hunt, pursue, catch, capture, or kill; or attempt to hunt, pursue, catch, capture, or kill*) of listed species is prohibited unless authorized by the USFWS. This process involves consultation with the USFWS, pursuant to Section 7 of the federal ESA, to

determine if a project will jeopardize the continued existence of any of these federally regulated species. As part of the Section 7 consultation process, a Biological Assessment is required to be submitted to the USFWS outlining the potential impacts to federally listed, proposed, and candidate species and will also suggest mitigation measures for unavoidable impacts to these species. The USFWS issues a Biological Opinion (BO) to document the effects of the proposed project on the long-term viability of the species affected and any incidental *take* provisions. The BO *take* statement is referred to as the "incidental *take* permit."

Migratory Bird Treaty Act

The MBTA restricts the killing, taking, collecting, and selling or purchasing of native bird species or their parts, nests, or eggs. Certain gamebird species are allowed to be hunted for specific periods determined by federal and state governments. The intent of the MBTA is to eliminate any commercial market for migratory birds, feathers, or bird parts, especially for eagles and other birds of prey. Although no permit is issued under the MBTA, if vegetation removal within the project area occurs during the breeding season for raptors and migratory birds (February 15 through September 15), the USFWS requires that surveys be conducted to locate active nests within the construction area. If active raptor or migratory bird nests are detected, project activities may be temporarily curtailed or halted.

Section 404 and 401 of the Clean Water Act

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

California Coastal Act of 1976

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

together, meet the requirements of, and implement the provisions and policies of [the Coastal Act] at the local level" (PRC Section 30108.6).

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

Magnuson-Stevens Fishery Management and Conservation Act

An EFH Assessment for the project has been provided in conformance with the 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (FR 62, 244, December 19, 1997). The 1996 amendments set forth a number of new mandates for the NMFS, eight regional fishery management councils, and other federal agencies to identify and protect important marine and anadromous fish habitat. The councils, with the assistance from NMFS are required to delineate EFH for all managed species. Federal action agencies that fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential effects of their actions on EFH, and respond in writing to the NMFS recommendations.

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CHAPTER 3.0
POTENTIAL EFFECTS

Development of the Termino Avenue Drain would result in both direct and indirect impacts to biological resources. Biological resources may be either directly or indirectly impacted. Direct and indirect impacts may furthermore be either permanent or temporary in nature. These impacts are defined below.

Direct: Any alteration, disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Examples include clearing vegetation, encroaching into wetlands, diverting surface water flows, and the loss of individual species and/or their habitats.

Indirect: As a result of project-related activities, biological resources may also be affected in a manner that is not direct. Examples include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and the introduction of invasive wildlife (domestic cats and dogs) and plants.

Permanent: All impacts that result in the irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources.

Temporary: Any impacts considered to have reversible effects on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction, or removal of vegetation for underground pipeline trenching activities and allowing the natural vegetation to recolonize the impact area.

SALINITY CRITERIA

The salinity criteria consist of two conditions during a 10-year flood event such that no significant impacts would likely occur to marine species (Table 5). The first criterion (Criterion 1) states that the salinity concentration should not fall below 30 percent of normal seawater or 10 parts per thousand (ppt) for more than 1 hour. This criterion was established to protect the less mobile marine invertebrates that are susceptible to low salinity levels. The second criterion (Criterion 2) states that the salinity concentration should recover to greater than 75 percent of

normal seawater or 25 ppt within 10 hours from when the salinity concentration falls below 25 ppt. This criterion was established to protect marine fish species that prefer normal ocean water salinity concentrations (e.g., juvenile halibut).

Table 5
Marine Species Salinity Criteria

Criterion	Salinity Concentration	Duration
1	Should not fall below 30% of normal seawater concentration or 10 ppt	Greater than 1 hour
2	Must recover to greater than 75% of normal seawater concentration or 25 ppt	Within 10 hours starting when salinity concentration falls below 25 ppt

Source: Chambers Group 2000

Significant biological impacts include, but are not restricted to:

- Impacts to water quality and turbidity that have the potential to affect marine species
- Impacts to EFH
- All impacts to federally or state listed species or sensitive habitats
- All impacts to federally or state regulated habitats
- Impacts to high-quality or undisturbed biological communities and vegetation associations that are restricted on a regional basis or serve as wildlife corridors
- Impacts to habitats that serve as breeding, foraging, nesting, or migrating grounds that are limited in availability or serve as core habitats for regional plant and wildlife populations.
- Impacts to migratory birds
- Impacts to local policies or ordinances protecting biological resources or adopted Habitat Conservation Plans

Adverse but not significant impacts would include:

- Impacts that adversely affect biological resources but would not significantly change or stress the resources on a long-term basis

- Impacts to biological resources that are already disturbed or lack importance in the preservation of local or regional native biological diversity and productivity

The following sections discuss the potential effects development of this project will have on the biological resources along the proposed alignment.

DIRECT IMPACTS

Salinity

The locations of Marine Stadium salinity analyses stations include Station E (near the outfall structure), Station F (midpoint of the length of Marine Stadium), and Station G (Intersection of Cerritos Channel/Marine Stadium, south end entrance to Marine Stadium). In Marine Stadium, all three locations meet Criterion 1 under the existing conditions. Criterion 2 is not met at Location E but is satisfied at Locations F and G.

Under the project, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than existing conditions, thereby suggesting an improvement in salinity levels (i.e., more stable salinity levels). However, salinity levels in Marine Stadium would drop suggesting a degradation of salinity levels compared to existing conditions. Criterion 1 is satisfied at all three locations in Marine Stadium, and Criterion 2 is satisfied at only Location G. Criterion 2 also failed under existing conditions in Marine Stadium, which indicates no overall change in this criterion under the project, and the only major failure in criteria passing is at Station F.

The significance of the decreased salinity in Marine Stadium, as reported in Everest International Consultants (2005), relative to impacts on eelgrass and other species, is based upon species' tolerances to low salinity, and the time in which recovery to ambient salinity occurs. Eelgrass can survive in a wide range of water salinities, including the range of salinities in Marine Stadium. Therefore, it is likely to be able to withstand periodic flooding events that reduce salinities in Marine Stadium below 25 ppt for a maximum of 48 hours. In addition, eelgrass growth is generally dormant through the winter months, with most growth occurring during spring and summer (Phillips and Watson 1984). Therefore, most storm-related events occur when eelgrass is within its dormant growing phase, which reduces the potential for impacts to eelgrass. Impacts to eelgrass from a change in salinity levels would be less than significant.

Many benthic bay invertebrates tend to be introduced euryhaline species. In the sediments around the outlets, some species respond by burrowing deeper into the sediments where salinity is less affected. Those invertebrates that cannot escape the effects of lowered salinity and that may not be as tolerant of initial low salinities, such as species living on eelgrass blades (gammarid and caprellid amphipods, polyclad worms, polychaete worms), will be killed; however, invertebrate recolonization will begin to occur as soon as salinity returns to ambient conditions—within approximately 48 hours. Fishes, such as surfperch, topsmelt, and halibut, will temporarily move away from low-salinity areas of Marine Stadium and then return to the areas near the outlets when salinity reaches ambient levels. Again, this would likely occur within 48 hours of the flood event, or when prey items for fishes again become prevalent.

The overall results indicate that only a small area near the outlet would be affected by reduced salinity, and that, overall, average salinity would be higher in both Colorado Lagoon and Marine Stadium. Impacts to marine life from a change in salinity levels would be less than significant.

Water Quality

Construction of the outlet structure in Marine Stadium would involve constructing a coffer dam around the proposed construction zone, removing and replacing riprap along the shoreline, and recontouring the riprap shoreline to depths of –5 feet 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. Water quality conditions would return to ambient when construction activity is completed.

Impacts to marine organisms during construction would result in an initial mortality of algae and benthic invertebrates living on the riprap (e.g., green and red algae, mussels, sponges, limpets, barnacles, shore crabs) and on the bayfloor (e.g., green and red algae, polychaete worms, amphipods, isopods, clams, snails, octopus, hydroids) and resident benthic fishes (e.g., gobies) within the construction easement zones and within the areas where the coffer dam is constructed. There will be a permanent loss of benthic invertebrate biomass and goby biomass within the footprint of the outlet. Water column fishes such as topsmelt, black surf perch, and bottom fish such as California halibut, round sting ray, and barred sand bass will swim away from the zone of construction and will likely avoid any significant mortality to their populations. The restoration of intertidal and subtidal riprap, unvegetated bay soft bottom habitat, and bayfloor

eelgrass habitat in the months following the completion of the outfall will allow the establishment of basic habitat requirements for other marine organisms to recolonize these areas. Once the zone within the coffer dam is restored to tidal action, algae, eelgrass, benthic invertebrates, and benthic-dwelling gobies will recolonize the substrate, beginning immediately after construction is completed and possibly taking 1 to 5 years for full recolonization. Implementation of mitigation measures would ensure that impacts would be less than significant.

Essential Fish Habitat

Project activities that would affect identified FMP species (northern anchovy) include increased water turbidity caused by the construction of the outlet structure, and potential temporary resuspension of any contaminants in the immediate area of the outlet during flood periods. These impacts could result in northern anchovy temporarily avoiding the project area, and a minimal potential for mortality of larval anchovy. An increase in the suspended sediment load would temporarily increase the exposure of these species to potentially harmful levels of contaminants (CRM 2005b).

All four FMP species are pelagic schooling species that utilize large expanses of San Pedro Bay. Of the four species, only the northern anchovy is expected to be in Alamitos Bay, but numbers within the Marine Stadium and the Colorado Lagoon portion of Alamitos Bay are not expected to be a major part of the northern anchovy population. The majority of the anchovy population is expected to occur nearshore, outside of Alamitos Bay, at depths greater than 12 feet deep.

Based upon these determinations, the proposed project is unlikely to have adverse effects on populations of the four identified FMP species. However, mitigation should be provided to ensure minimal turbidity and water quality impacts.

Vegetation Communities

Construction of the proposed project is scheduled to take approximately 18 to 24 months, contingent on weather conditions suitable for construction. All cut and fill would be balanced on-site. Staging of construction equipment would occur in areas that are disturbed and developed. These areas are already flat and in some areas paved in concrete. No existing terrestrial plant communities would be removed for construction staging. Table 6 shows the temporary and permanent impacts that would occur as a result of the project.

Table 6
Permanent and Temporary Vegetation and Other Land Cover Impacts

Vegetation/Cover Type	Permanent/Direct Impacts[1] (acres)	Temporary Impacts[1] (acres)
Marine/Eelgrass	0/0.0008	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 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 in Figure 4; "Eelgrass" includes only eelgrass patches, as shown in Figure 3.

A total of 0.0189 acre of eelgrass is located within the outlet structure construction easement zone (Figure 5). Initially, all will be removed once the coffer dam is constructed, the area is dredged, and the waters are pumped out of the coffer dam. Once the outlet is constructed, and the coffer dam is removed, a total of 0.0008 acre will be permanently lost in the footprint of the outlet structure or by riprap placed along side and in front of the structure to depths of -6 feet MLLW. The remaining 0.0181 acre of removed eelgrass habitat within the coffer dam will be available for on-site eelgrass mitigation once the bayfloor is restored to tidal action.

The loss of 0.0189 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. Further details are provided below.

Eelgrass beds located near the construction zone will be potentially affected by short-term increases in turbidity when the coffer dam is constructed. This may result in the deposition of fine sediments on eelgrass blades and may reduce underwater light levels that will temporarily reduce eelgrass primary productivity. However, with the implementation of water quality BMPs and mitigation measures to reduce the spread of any turbidity plume, there should be no significant impacts to eelgrass bed resources outside of the localized construction zone. Mitigation is further discussed below.

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

N

0 50 100 Feet

Figure 5
Direct and Temporary Impacts to Eelgrass

On-land construction activities would primarily affect developed and disturbed areas. All of the Long Beach Greenbelt restoration area within the PE right-of-way (2.54 acres) would be removed for construction of the proposed project, including planted oak trees. As part of the proposed project, at the conclusion of project construction, all impacted areas would be restored to their existing condition, including the Long Beach Greenbelt. The replanting would include native species appropriate to the site. Therefore, the impacts to the planted restoration area would be temporary. The remainder of the Long Beach Greenbelt project remains ruderal and disturbed; therefore, no significant impacts to these areas would occur.

Project impacts to the disturbed, ruderal, and ornamental portions of the impact area would not result in significant impacts to biological resources. However, removal of ornamental plants may have an adverse impact to the aesthetics of the area. Mitigation should be provided to reduce these impacts to a less than significant level.

Sensitive Plant Species

No sensitive plant species were found during the focused botanical surveys during the appropriate survey windows for the potentially occurring species (Table 2). The area that previously had southern tarplant is outside of the project impact area. The proposed project would not affect future growth of southern tarplant in this area. No federally or state-listed species are expected to occur within or adjacent to the potential area of impact based on survey results and habitat suitability; therefore, no impacts to sensitive plants are expected to occur as a result of the project.

Sensitive Wildlife Species and Wildlife Corridors

The project would not result in impacts to species that are federally or state-listed as threatened or endangered. Foraging behavior by California least terns is rare at Colorado Lagoon and occasional at Marine Stadium, and foraging and roosting behavior by California brown pelicans is rare at both locations. The California brown pelican and California least tern that use Colorado Lagoon and Marine Stadium would not be affected by project construction or operation (Keane Biological Consulting 2004). Impacts to marine species are discussed above in *Salinity*.

The project has the potential to directly affect individuals of Cooper's hawk, western yellow warbler, California gull, osprey, double-crested cormorant, and elegant tern, as well as numerous other bird species that are protected under the MBTA. Removal of habitat, including ornamental trees, within the 60.09 acres that would be temporarily affected by the project has the potential to

directly affect bird species that may be nesting within the impact area. However, if the habitat or individual trees are removed outside of the breeding/nesting season no impact would occur. The breeding/nesting season for raptors is February 1 through August 30. This period also encompasses the breeding/nesting season for non-raptor bird species.

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

INDIRECT IMPACTS

Sensitive Vegetation Communities

As there are no sensitive vegetation communities in the project study area, indirect impacts would not occur. However, indirect impacts could occur to the nearby Colorado Lagoon. Indirect impacts would include fugitive dust deposition on the native vegetation during construction and increased runoff into the lagoon. These potential indirect impacts may be significant depending upon their extent and intensity.

Indirect impacts to sensitive habitats will be avoided or minimized through the use of appropriate BMPs and implementation of the project environmental commitments listed in the Project Description. These measures will reduce potential indirect impacts to below levels of significance.

Sensitive Plant Species

No indirect impacts are expected to occur to sensitive plant species.

Sensitive Wildlife Species and Wildlife Corridors

As discussed above, the potential for green sea turtles to occur in the project area is relatively low. Green turtles are mostly herbivorous and spend most of their time feeding on algae in the sea and the grass that grow in shallow waters. As juveniles, they eat plants and other organisms such as: jellyfish, crabs, sponges, snails, and worms. As adults, they are strictly herbivorous.

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 have been recommended by the US National Marine Fisheries Service (NMFS) to 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 (Appendix C). These measures have been incorporated into Chapter 4 of this report. Accordingly, 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 indirectly, on California sea lions or Pacific harbor seals due to the low potential for these species to occur in the project area and because in the event that either of these species is sighted within 500 meters (1,640 feet) of the construction zone, mitigation measures are identified to 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. 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.

No further indirect impacts are expected to occur to sensitive wildlife species or wildlife corridors.

CHAPTER 4.0
MITIGATION

WATER QUALITY

The following mitigation measures would reduce impacts to water quality to a less than significant level:

- No construction materials, equipment, debris, or waste shall be place or stored where it may be subject to tidal erosion and dispersion. Construction materials shall not be stored in contact with the soil. Any construction debris within the temporary cofferdam area shall be removed from the site at the end of each construction day.
- During construction of the Marine Stadium outlet structure, floating booms shall be used to assist in containing debris discharged into Marine Stadium, and any debris discharged shall be removed as soon as possible but no later than the end of each day.
- A silt curtain shall be utilized to assist in controlling turbidity during construction of the cofferdam at Marine Stadium. The County of Los Angeles shall limit, to the greatest extent possible, the suspension of benthic sediments into the water column.
- Reasonable and prudent measures shall be taken to prevent all discharge of fuel or oily waste from heavy machinery or construction equipment or power tools into Marine Stadium. Such measures include deployed oil booms and a silt curtain around the proposed construction zone at all times to minimize the spread of any accidental fuel spills, turbid construction-related water discharge, and debris. Other measures include training construction workers on emergency spill notification procedures, proper storage of fuels and lubricants, and provisions for on-site spill response kits.
- A qualified marine biologist shall monitor the construction process on a weekly basis to ensure that all water quality Best Management Practices (BMPs) are implemented, and to assist the project engineer in avoiding and minimizing environmental effects to benthic communities, including eelgrass. Within thirty days after the project is completed, a post-construction marine biological survey shall be conducted to determine the extent of any construction impacts on eelgrass habitat. The survey report will be completed within 30 days and shall be submitted to the California Coastal Commission and the U.S. Army Corps of Engineers.

SENSITIVE VEGETATION COMMUNITIES

The preferable mitigation is the avoidance of impacts to sensitive resources by project design. If avoidance is not possible, all possible mitigation measures should be incorporated into the project such that the minimal environmental damage occurs. Mitigation for impacts to biological resources will be accomplished through the replacement of sensitive plant communities affected by development. No mitigation is required for impacts to the native landscaping area, as this area will be replanted as noted in the project description. Table 7 summarizes the mitigation requirements for the vegetation communities for the proposed project.

Table 7
Direct Impacts to Vegetation Communities and Mitigation Requirements

Vegetation Community Type	Total Permanent Impacts	Total Temporary Impacts	Mitigation Ratios for Permanent Impacts	Mitigation Ratios for Temporary Impacts	Total Mitigation Acreage
Marine/Eelgrass	0/0.0008	3.96/0.181[2]	1.2:1	1.2:1	0.0227
Native Landscaping	--	2.54	--	--	0[1]
Disturbed	--	7.27	--	--	0
Developed	--	43.89	--	--	0
Ornamental	--	1.66	--	--	0
Other	--	0.75	--	--	0
Total Acreages	***0.0008***	***60.25***	--	--	***0.0227***

[1] As part of the project, the area of native landscaping affected by construction will be replanted in place. No addition mitigation is required.

[2] "Marine" includes a 500 foot buffer from the outlet structure, as shown in Figure 4, "Eelgrass" includes only eelgrass patches, as shown in Figure 3.

Direct permanent and temporary impacts to marine sea grasses at a mitigation ratio of 1.2:1 are required in accordance with the Southern California Eelgrass Mitigation Policy (National Marine Fisheries Service 1991). Part of this total may be replanted on-site when sediment conditions stabilize following the completion of outlet construction. Mitigation of 1.2:1 for temporary impacts is required, as the eelgrass removed during construction is not guaranteed to reestablish in this area. In addition, the following mitigation measures should be implemented to reduce impacts to eelgrass beds:

- A qualified marine biologist shall 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 0.0189 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 shall 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.

- A project marine biologist shall mark the positions of eelgrass beds with buoys prior to the initiation of any construction to minimize damage to eelgrass beds outside the construction zone.
- The project marine biologist shall meet with the construction crews prior to dredging to review areas of eelgrass to avoid and to review proper construction techniques.
- If barges and work vessels are used during construction, measures shall be taken to ensure that eelgrass beds are not impacted through grounding, propeller damage, or other activities that may disturb the sea floor. Such measures shall include speed restrictions, establishment of off-limit areas, and use of shallow draft vessels.

SENSITIVE WILDLIFE SPECIES

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

No direct impacts to the California brown pelican and California least tern or habitat potentially occupied by these species would result from the project and no mitigation measures are required. The following mitigation would address potential impacts to green sea turtles:

- 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 crews and work vessel crews shall be briefed on potential for this species to be present and will be provided with identification characteristics of sea turtles, since they may occasionally be mistaken for seals or sea lions.
- In the event that a sea turtle is sighted within 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.
- 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.
- In the event that a California sea lion or a Pacific harbor seal is sighted within 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.

NATIVE LANDSCAPING

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.

CHAPTER 5.0
REFERENCES

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APPENDIX A

FLORAL SPECIES LIST

Appendix A
Plant Species Observed within the Termino Avenue Drain Project Study Area

Scientific Name	Common Name
Dicotyledoneae	
Agavaceae Family – Agave Family	
Yucca whipplei	Our Lord's candle†
Aizoaceae Family – Fig-Marigold Family	
Carpobrotus edulis	iceplant
Anacardiaceae Family – Laurel Family	
Rhus integrifolia	lemonadeberry*
Rhus ovata	sugar bush*
Schinus molle	pepper tree†
Shinus terebinthifolius	pepper tree†
Apiaceae – Carrot Family	
Foeniculum vulgare	fennel
Apocynaceae– Periwinkle Family	
Nerium oleander	oleander†
Araliaceae– Ginseng Family	
Hedera helix	English ivy
Arecaceae– Palm Family	
Washingtonia robusta	Mexican fan palm†
Asteraceae - Sunflower Family	
Ambrosia artemisifolia	common ragweed†
Artemisia californica	California sagebrush*
Artemisia douglasiana	mugwort*
Baccharis pilularis	coyotebrush *
Encelia californica	California sunflower*
Isocoma menziesii var. *vernonioides*	Goldenbush*
Osteospermum fruticosum	freeway daisy
Sonchus sp.	sow thistle†
Taraxacum officinale	dandelion†
Auraucariaceae– Monkey Puzzle Family	
Araucaria bidwillii	monkey puzzle tree†
Bignoniaceae– Trumpet Creeper Family	
Jacaranda mimosifolia	jacaranda†
Brassicaceae - Mustard Family	
Brassica nigra	black mustard
Hirschfeldia incana	mustard
Lepidium nitidum var. *nitidium*	peppergrass
Raphanus sativus	radish†
Caprifoliaceae Family – Honeysuckle Family	
Sambucus mexicana	Mexican elderberry*
Chenopodiaceae- Goosefoot Family	
Atriplex lentiformis ssp. *lentiformis*	big saltbush*
Crassulaceae- Stonecrop Family	

Scientific Name	Common Name
Crassula ovata	jade plant
Cycadaceae Family – Sago Palm Family	
Cycas sp.	cycad†
Euphorbiaceae Family – Spurge Family	
Chamaesce maculate	spotted spurge
Fabaceae – Pea Family	
Eythrina sp. (probably *caffra*)	coral tree†
Melilotus alba	white sweetclover †
Trifolium repens	white clover†
Fagaceae Family – Oak Family	
Quercus agrifolia	coast live oak*
Quercus ilex	evergreen oak†
Geraniaceae Family – Geranium Family	
Erodium cicutarium	filaree
Erodium moschatum	filaree
Pelargonium x hortorum	geranium
Juglandaceae Family – Walnut Family	
Juglans californica	California walnut*
Lamiaceae Family – Mint Family	
Rosemarinus officinalis	rosemary†
Salvia apiana	white sage*
Salvia mellifera	black sage*
Magnoliaceae- Magnolia Family	
Magnolia grandiflora	southern magnolia†
Malvaceae Family – Mallow Family	
Lavatera assurgentifolia	malva rosa*†
Malva parviflora	cheeseweed†
Moraceae Family – Fig Family	
Ficus carica	common fig
Myrtaceae Family – Myrtle Family	
Callistemon sp.	bottlebrush†
Eucalyptus sp.	eucalyptus†
Nyctaginaceae- Four O'clock Family	
Bougainvillea sp.	bougainvillea†
Papaveraceae- Poppy Family	
Escholzia californica	Californa poppy*
Pinaceae Family – Pine Family	
Pinus canariensis	Canary Island pine†
Pinus sp.	pine†
Pittosporaceae– Pittosporum Family	
Pittosporum sp. (possibly *tobira*)	pittosporum†
Plataganaceae Family – Plantain Family	
Plantago lanceolata	English plantain
Plumbaginaceae Family – Leadwort Family	
Limonium sp.	statice†

Scientific Name	Common Name
Podocarpaceae Family – Podocarp Family	
Podocarpus gracilior	fern pine†
Polygonaceae Family – Buckwheat Family	
Eriogonum fasciculatum	California buckwheat*
Primulaceae Family – Primrose Family	
Anagallis arvensis	scarlet pimpernel
Rosaceae Family – Rose Family	
Heteromeles arbutifolia	toyon*
Prunus ilicifolia	holly-leafed cherry*
Rhaphiolepis indica	Indian hawthorn†
Solanaceae - Nightshade Family	
Solanum rantonnetti	blue potato bush
Tropaeolaceae - Nasturtium Family	
Tropaeolum majus	garden nasturtium†
Verbenaceae - Verbena Family	
Lantana sp.	lantana
Monocotyledoneae	
Poaceae - Grass Family	
Arundo donax	giant reed
Cynodon dactylon	Bermuda grass†
Pennisetum setaceum	red fountain grass
Poa annua	annual bluegrass†
--	unknown bunch grass
Strelitziaceae – Bird of Paradise Family	
Strelitzia nicolai	giant bird of paradise†
Strelitzia reginae	bird of paradise†
Marine Species	
Gracilariopsis	
Gracilariopsis sp.	red algae
Ulvaceae – Sea-Lettuce Family	
Ulva californica	sea-lettuce*
Enteromorpha sp.	enteromorpha

*Denotes native plant

†Denotes ornamental plant

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APPENDIX B

FAUNAL SPECIES LIST

Appendix B
Faunal Species Observed On-site

Scientific Names	Common Names
Birds	
Order Anseriformes	Ducks, Geese, and Swans
Famiy Anatidae	
Anas platyrhynchos	mallard
Anas sp.	domestic duck
Mergus serrator	red-breasted merganser
Oxyura jamaicensis	ruddy duck
Order Apodiformes	Swifts and Hummingbirds
Family Apodidae	
Calypte anna	Anna's hummingbird
Order Charadriiformes	Shorebirds
Family Charadriidae	
Charadrius vociferus	killdeer
Pluvialis squatarola	black-bellied Plover
Family Laridae	
Larus heermanni	California gull
Larus delawarensis	ring-billed gull
Larus heermanni	Heermann's gull
Larus occidentalis	western gull
Sterna antillarum	least tern
Sterna caspia	Caspian tern
Sterna elegans	elegant tern
Sterna forsteri	Foster's tern
Family Scolopacidae	
Actitis macularia	spotted sandpiper
Calidris mauri	western sandpiper
Calidris minutilla	least sandpiper
Catoptrophorus semipalmatus	willet
Heteroscelus incanus	wandering tattler
Limosa fedoa	marbled godwit
Numenius americanus	long-billed curlew
Numenius phaeopus	whimbrel
Order Ciconiiformes	Storks and Relatives
Family Ardeidae	
Ardea herodias	great blue heron
Butorides virescens	green heron
Casmerodius albus	great egret

Scientific Names	Common Names
Egretta thula	snowy egret
Nycticorax nycticorax	black-crowned night-heron
Order Columbiformes	Doves and Pigeons
Family Columbridae	
Columba livia	rock dove
Streptopelia chinensis	spotted dove
Zenaida macroura	mourning dove
Order Coraciiformes	Kingfishers
Family Alcedinidae	
Ceryle alcyon	belted kingfisher
Order Gruiformes	Coots, Cranes, and Rails
Family Rallidae	
Fulica Americana	American coot
Order Falconiformes	Vultures, Hawks and Falcons
Family Acciptridae	
Buteo lineatus	red-shouldered hawk
Family Falconidae	
Falco sparverius	American kestrel
Order Passeriformes	Perching Birds
Family Corvidae	
Corvus brachyrhynchos	American crow
Family Emberzidae	
Dendroica coronata	yellow-rumped warbler
Dendorica petechia	yellow warbler
Family Fringillidae	
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch
Family Hirundinidae	
Hirundo pyrrhonota	cliff swallow
Hirundo rustica	bank swallow
Family Mimidae	
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
Family Passeridae	
Passer domesticus	house sparrow
Family Sturnidae	
Sturnus vulgaris	European starling
Family Tyrannidae	
Sayornis nigricans	black phoebe

Scientific Names	Common Names
Order Pelecaniformes	Pelicans and Relatives
Family Pelecanidae	
Pelecanus occidentalis	brown pelican
Family Phalacrocoracidae	
Phalacrocorax auritus	double-crested cormorant
Order Podicipediformes	Grebes
Family Podicipedidae	
Aechmophorus occidentalis	western grebe
Podilymbus podiceps	pied-billed grebe
Mammals	
Order Rodentia, Suborder Sciurognathi	Rodents—gophers, mice, rats, squirrels
Family Sciuridae	
Sciurus sp.	common squirrel
Invertebrates	
Order Lepidoptera, Suborder Macrolepidoptera	Butterflies and Moths
Family Nymphalidae	
Vanessa cardui	painted lady
Marine Species	
Order Amphipoda, Suborder Gammaridea	Amphipods, Gammarid Amphipods
Family Corophiidae	
Grandidierella japonica	amphipod
Order Atheriniformes, Suborder Atherinoidei	Rainbow Fishes and Silversides
Family Atherinidae	
Atherinops affinis	topsmelt
Order Cephalaspidea	Cephalaspids
Family Aglajidae	
Navanax inermis	California aglaja
Family Bullidae	
Bulla gouldiana	California bubble
Order Ceriantharia	Tube Dwelling Anenomes
Family Cerianthidae	
Pachycerianthus fimbriatus	cerianthid tube anemones
Order Hydroida, Suborder Anthomedusae	Medusae, Athecate Hydroids
Family Corymorphidae	
Corymorpha palma	fairy palm hydroid
Order Neogastropoda	Neogasropods
Family Columbellidae	
Alia carinata	carinate dovesnail

Scientific Names	Common Names
Order Perciformes, Suborder Labroidei	Perch-Like Fishes and Perchlike Fishes
Family Embiotocidae	
Embiotoca jacksoni	black perch
Cymatogaster aggregata	shiner perch
Order Perciformes, Suborder Gobioidei	Perch-Like Fishes and Perchlike Fishes
Family Gobiidae	
--	unidentified gobies
Order Perciformes, Suborder Percoidei	Perch-Like Fishes and Perchlike Fishes, Groupers and Seabasses
Family Serranidae	
Paralabrax nebulifer	barred sand bass
Order Pleuronectiformes, Suborder Pleuronectoidei	Dabs, Halibuts, Righteye Flounders
Family Paralichthyidae	California halibut
Paralichthys californicus	unidentified flatfish
Family Pleuronectidae	
--	unidentified flatfish
Order Rajiformes, Suborder Rajoidei	Rays, Sawfishes, and Skates
Family Urolophidae	
Urolophus halleri	round sting ray
Order Scorpaeniformes, Suborder Cottoidei	Scorpion Fishes and Sculpins
Family Cottidae	
Leptocottus armatus	Pacific staghorn sculpin

APPENDIX C

LETTER FROM NATIONAL MARINE FISHERIES SERVICE

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

SEP -5 2007

In response, refer to:
10014SWR2007PR000387

Ms. Shari Afshari
Assistant Deputy Director
Programs Development Division
Department of Public Works
900 South Fremont Avenue
Alhambra, California 91803-1331

Dear Ms. Afshari:

This letter responds to your letter, dated August 16, 2007, requesting NOAA's National Marine Fisheries Service (NMFS) to concur with the Los Angeles County Department of Public Work's (LACDPW) determination that the Termino Avenue Drain project is not likely to adversely affect the green sea turtle (*Chelonia mydas*). In response to our April 16, 2007, letter, which provided comments on the Draft Environmental Impact Report (DEIR), your letter is accompanied by an August 7, 2007, memo to my staff analyzing the effects of the project on green turtles, given proposed mitigation measures to reduce potential impacts.

Green turtles are the only species listed under the Endangered Species Act (ESA) and under NMFS' jurisdiction that may be affected by this project. Section 7(a)(2) of the ESA directs federal agencies to consult with NMFS to ensure that any action authorized (in this case) by such agency is not likely to jeopardize the continued existence of any endangered or threatened species. Because the Army Corps of Engineers is the federal agency permitting this activity, they should consult with NMFS if the determination has been made that the action may affect green turtles. Therefore, this letter does not constitute ESA section 7 consultation on the proposed action.

Proposed project and mitigation

In order to alleviate existing and potential flooding problems, the LACDPW is proposing to construct a storm drain mainline, six lateral drains, a low flow treatment pump station, catch basin screens, and an outlet to Marine Stadium, a mile-long inlet within Alamitos Bay, in the City of Long Beach, California. Construction of the outlet structure in Marine Stadium would involve constructing a temporary cofferdam around the proposed construction zone, removing and replacing rip rap along the shoreline, recontouring the rip rap shoreline and dredging approximately 250 cubic yards of bay floor. According to your consultants, construction may involve pile driving using either a hydraulic or vibratory hammer.

The August 7, 2007, memorandum reiterates the nine mitigation measures contained in the Termino Avenue Drain DEIR and proposes four additional procedures to minimize effects on green turtles, including the establishment and monitoring of a 100 meter "safety zone" surrounding the construction area. In the event that any sea turtle is sighted within 100 meters of the construction zone, all construction activity shall be temporarily stopped until the sea turtle(s) is safely outside the outer perimeter of construction.

Effects on marine mammals

California sea lions (*Zalophus californianus*) and Pacific harbor seals (*Phoca vitulina richardsi*) may also be found within the project area. These pinnipeds are protected under the Marine Mammal Protection Act (MMPA) and are under the jurisdiction of NMFS. Under the MMPA, it is illegal to "take" a marine mammal without prior authorization from NMFS. "Take" is defined as harassing, hunting, capturing, or killing, or attempting to harass, hunt, capture, or kill any marine mammal. "Harassment" is defined as any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild, or has the potential to disturb a marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

Concern has arisen that sounds introduced into the sea by man-made devices (e.g. pile-driving) could have a deleterious effect on marine mammals or sea turtles by causing stress, interfering with communication and predator/prey detection, and changing behavior. More significantly, acoustic overexposure to loud sounds can lead to a temporary or permanent loss of hearing (termed a temporary (TTS) or permanent (PTS) threshold shift). NMFS is currently in the process of determining safety criteria for marine species exposed to underwater sound. Based on past projects involving pile driving, consultations with experts, and on published studies, we have preliminarily determined that pinnipeds can be safely exposed to impulse sound pressure levels not greater than 190 dB re 1 microPa (μPa) root mean squared (RMS). However, marine mammals have also shown behavioral changes when exposed to impulse sound pressure levels of 160 dB re 1 μPa_{RMS}. In order to avoid the potential for "take, NMFS has recommended monitoring a 500-meter "safety zone" around pile driving activities for past projects involving pile driving where marine mammals may be present. If any marine mammal is observed within this safety zone, the contractor should cease pile driving until the animal has left the safety zone area. We have also recommended that the contractor ramp up pile driving, so that noise is introduced into the marine environment slowly and gradually increased, so marine species can be alerted to the activity.

Effects on green turtles

Based on past pile-driving projects, the establishment of a "safety zone" with a 500-meter radius around the pile driving operation appeared to be sufficient to reduce any impacts to marine mammals. While there is a lack of published studies on the impacts of pile driving on sea turtles, because sea turtles have higher hearing thresholds than most marine mammals at the frequencies where construction sound is concentrated, we believe that the 500-meter safety zone established for marine mammals should provide sufficient protection for sea turtles. Based on conversations with your consultants, we recommended, and they verbally agreed, to extend the 100-meter safety zone to 500 meters during pile-driving activities to ensure protection to sea turtles.

After reviewing the information provided in the August 7, 2007, memorandum, NMFS expects that, with all mitigation measures in place, in addition to the implementation of the recommendation outlined above to ensure safety to green turtles during pile driving, this project will not have a significant effect on sea turtles.

Lastly, in the unlikely event of an injury to or a collision with a marine mammal or sea turtle, officials must immediately contact the NMFS Stranding Coordinator, Joseph Cordaro at (562) 980-4017 or Joe.Cordaro@noaa.gov.

Thank you for coordinating with our agency to ensure protection to marine species. Questions regarding the ESA or MMPA may be directed to Christina Fahy at (562) 980-4023 or Christina.Fahy@noaa.gov.

Sincerely,

for Rodney R. McInnis
Regional Administrator

APPENDIX C

AIR QUALITY CALCULATIONS

3/31/2008 09:24:17 AM

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name: C:\Documents and Settings\boparaip\Desktop\Work\Termino Drain\Urbemis\Termino Small Equipment Included.urb924

Project Name: Termino Pavement Demolition

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2009 TOTALS (lbs/day unmitigated)	15.53	133.66	75.35	0.06	69.96	6.85	76.81	14.64	6.29	20.94	15,549.70
2009 TOTALS (lbs/day mitigated)	15.53	133.66	75.35	0.06	31.98	6.85	38.82	6.71	6.29	13.00	15,549.70
2010 TOTALS (lbs/day unmitigated)	13.26	113.19	61.08	0.04	69.90	5.80	75.71	14.62	5.33	19.96	13,444.72
2010 TOTALS (lbs/day mitigated)	13.26	113.19	61.08	0.04	31.92	5.80	37.72	6.69	5.33	12.02	13,444.72
2011 TOTALS (lbs/day unmitigated)	12.26	104.82	58.10	0.04	69.90	5.40	75.31	14.62	4.97	19.59	13,444.47
2011 TOTALS (lbs/day mitigated)	12.26	104.82	58.10	0.04	31.92	5.40	37.32	6.69	4.97	11.65	13,444.47

3/31/2008 09:23:46 AM

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name: C:\Documents and Settings\boparaip\Desktop\Work\Termino Drain\Urbemis\Termino Small Equipment Included.urb924

Project Name: Termino Pavement Demolition

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 6/1/2009-7/14/2009 Active Days: 32	2.08	17.20	16.00	0.02	0.07	0.95	1.02	0.02	0.87	0.90	2,711.29
Building 06/01/2009-08/31/2009	2.08	17.20	16.00	0.02	0.07	0.95	1.02	0.02	0.87	0.90	2,711.29
Building Off Road Diesel	1.30	9.79	4.94	0.00	0.00	0.63	0.63	0.00	0.58	0.58	893.39
Building Vendor Trips	0.59	7.04	4.87	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,134.96
Building Worker Trips	0.20	0.37	6.19	0.01	0.03	0.02	0.05	0.01	0.02	0.03	682.95
Time Slice 7/15/2009-7/31/2009 Active Days: 13	2.88	21.03	21.00	0.02	0.12	1.28	1.40	0.04	1.17	1.21	3,330.48
Building 06/01/2009-08/31/2009	2.08	17.20	16.00	0.02	0.07	0.95	1.02	0.02	0.87	0.90	2,711.29
Building Off Road Diesel	1.30	9.79	4.94	0.00	0.00	0.63	0.63	0.00	0.58	0.58	893.39
Building Vendor Trips	0.59	7.04	4.87	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,134.96
Building Worker Trips	0.20	0.37	6.19	0.01	0.03	0.02	0.05	0.01	0.02	0.03	682.95
Demolition 07/15/2009-03/15/2011	0.80	3.83	5.00	0.00	0.05	0.33	0.38	0.01	0.30	0.32	619.18
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.72	3.64	2.45	0.00	0.00	0.32	0.32	0.00	0.30	0.30	334.50
Demo On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo Worker Trips	0.08	0.15	2.54	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.97
Time Slice 8/3/2009-8/14/2009 Active Days: 10	10.66	83.96	54.42	0.04	54.90	4.75	59.65	11.49	4.36	15.85	10,015.21
Building 06/01/2009-08/31/2009	2.08	17.20	16.00	0.02	0.07	0.95	1.02	0.02	0.87	0.90	2,711.29
Building Off Road Diesel	1.30	9.79	4.94	0.00	0.00	0.63	0.63	0.00	0.58	0.58	893.39
Building Vendor Trips	0.59	7.04	4.87	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,134.96
Building Worker Trips	0.20	0.37	6.19	0.01	0.03	0.02	0.05	0.01	0.02	0.03	682.95
Demolition 07/15/2009-03/15/2011	0.80	3.83	5.00	0.00	0.05	0.33	0.38	0.01	0.30	0.32	619.18
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.72	3.64	2.45	0.00	0.00	0.32	0.32	0.00	0.30	0.30	334.50
Demo On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo Worker Trips	0.08	0.15	2.54	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.97
Mass Grading 08/01/2009-03/15/2011	7.78	62.93	33.42	0.02	54.78	3.47	58.25	11.45	3.19	14.64	6,684.74
Mass Grading Dust	0.00	0.00	0.00	0.00	54.70	0.00	54.70	11.42	0.00	11.42	0.00
Mass Grading Off Road Diesel	6.59	48.55	24.05	0.00	0.00	2.87	2.87	0.00	2.64	2.64	4,495.75
Mass Grading On Road Diesel	1.06	14.15	5.43	0.02	0.06	0.59	0.65	0.02	0.54	0.56	1,753.48
Mass Grading Worker Trips	0.13	0.24	3.95	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.51
Time Slice 8/17/2009-8/31/2009 Active Days: 11	**15.53**	**133.66**	**75.35**	**0.06**	**69.96**	**6.85**	**76.81**	14.64	**6.29**	**20.94**	**15,549.70**
Building 06/01/2009-08/31/2009	2.08	17.20	16.00	0.02	0.07	0.95	1.02	0.02	0.87	0.90	2,711.29
Building Off Road Diesel	1.30	9.79	4.94	0.00	0.00	0.63	0.63	0.00	0.58	0.58	893.39

Building Vendor Trips	0.59	7.04	4.87	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,134.96
Building Worker Trips	0.20	0.37	6.19	0.01	0.03	0.02	0.05	0.01	0.02	0.03	682.95
Demolition 07/15/2009-03/15/2011	0.80	3.83	5.00	0.00	0.05	0.33	0.38	0.01	0.30	0.32	619.18
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.72	3.64	2.45	0.00	0.00	0.32	0.32	0.00	0.30	0.30	334.50
Demo On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo Worker Trips	0.08	0.15	2.54	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.97
Mass Grading 08/01/2009-03/15/2011	7.78	62.93	33.42	0.02	54.78	3.47	58.25	11.45	3.19	14.64	6,684.74
Mass Grading Dust	0.00	0.00	0.00	0.00	54.70	0.00	54.70	11.42	0.00	11.42	0.00
Mass Grading Off Road Diesel	6.59	48.55	24.05	0.00	0.00	2.87	2.87	0.00	2.64	2.64	4,495.75
Mass Grading On Road Diesel	1.06	14.15	5.43	0.02	0.06	0.59	0.65	0.02	0.54	0.56	1,753.48
Mass Grading Worker Trips	0.13	0.24	3.95	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.51
Mass Grading 08/15/2009-03/15/2011	4.87	49.70	20.93	0.02	15.07	2.10	17.16	3.15	1.93	5.08	5,534.49
Mass Grading Dust	0.00	0.00	0.00	0.00	15.00	0.00	15.00	3.13	0.00	3.13	0.00
Mass Grading Off Road Diesel	3.76	35.52	13.84	0.00	0.00	1.50	1.50	0.00	1.38	1.38	3,603.22
Mass Grading On Road Diesel	1.06	14.07	5.40	0.02	0.06	0.59	0.65	0.02	0.54	0.56	1,744.62
Mass Grading Worker Trips	0.05	0.10	1.69	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.65
Time Slice 9/1/2009-12/31/2009 Active Days: 88	14.28	121.12	64.11	0.04	69.90	6.28	76.19	14.62	5.78	20.40	13,445.06
Asphalt 09/01/2009-03/15/2011	0.83	4.67	4.76	0.00	0.01	0.39	0.40	0.00	0.35	0.36	606.65
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.73	4.44	2.47	0.00	0.00	0.38	0.38	0.00	0.35	0.35	346.41
Paving On Road Diesel	0.01	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.38
Paving Worker Trips	0.07	0.14	2.25	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.86
Demolition 07/15/2009-03/15/2011	0.80	3.83	5.00	0.00	0.05	0.33	0.38	0.01	0.30	0.32	619.18
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.72	3.64	2.45	0.00	0.00	0.32	0.32	0.00	0.30	0.30	334.50
Demo On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo Worker Trips	0.08	0.15	2.54	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.97
Mass Grading 08/01/2009-03/15/2011	7.78	62.93	33.42	0.02	54.78	3.47	58.25	11.45	3.19	14.64	6,684.74
Mass Grading Dust	0.00	0.00	0.00	0.00	54.70	0.00	54.70	11.42	0.00	11.42	0.00
Mass Grading Off Road Diesel	6.59	48.55	24.05	0.00	0.00	2.87	2.87	0.00	2.64	2.64	4,495.75
Mass Grading On Road Diesel	1.06	14.15	5.43	0.02	0.06	0.59	0.65	0.02	0.54	0.56	1,753.48
Mass Grading Worker Trips	0.13	0.24	3.95	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.51
Mass Grading 08/15/2009-03/15/2011	4.87	49.70	20.93	0.02	15.07	2.10	17.16	3.15	1.93	5.08	5,534.49
Mass Grading Dust	0.00	0.00	0.00	0.00	15.00	0.00	15.00	3.13	0.00	3.13	0.00
Mass Grading Off Road Diesel	3.76	35.52	13.84	0.00	0.00	1.50	1.50	0.00	1.38	1.38	3,603.22
Mass Grading On Road Diesel	1.06	14.07	5.40	0.02	0.06	0.59	0.65	0.02	0.54	0.56	1,744.62
Mass Grading Worker Trips	0.05	0.10	1.69	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.65
Time Slice 1/1/2010-12/31/2010 Active Days: 261	13.26	113.19	61.08	0.04	69.90	5.80	75.71	14.62	5.33	19.96	13,444.72
Asphalt 09/01/2009-03/15/2011	0.78	4.42	4.57	0.00	0.01	0.37	0.38	0.00	0.34	0.34	606.58
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.68	4.21	2.44	0.00	0.00	0.36	0.36	0.00	0.33	0.33	346.41
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.38
Paving Worker Trips	0.07	0.12	2.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.79
Demolition 07/15/2009-03/15/2011	0.73	3.62	4.78	0.00	0.05	0.31	0.35	0.01	0.28	0.29	619.10
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00

Demo Off Road Diesel	0.65	3.45	2.41	0.00	0.00	0.30	0.30	0.00	0.27	0.27	334.50
Demo On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo Worker Trips	0.07	0.14	2.36	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.89
Mass Grading 08/01/2009-03/15/2011	7.29	58.66	32.05	0.02	54.78	3.20	57.98	11.45	2.94	14.39	6,684.61
Mass Grading Dust	0.00	0.00	0.00	0.00	54.70	0.00	54.70	11.42	0.00	11.42	0.00
Mass Grading Off Road Diesel	6.19	45.56	23.43	0.00	0.00	2.66	2.66	0.00	2.44	2.44	4,495.75
Mass Grading On Road Diesel	0.99	12.89	4.95	0.02	0.06	0.53	0.59	0.02	0.49	0.50	1,753.48
Mass Grading Worker Trips	0.12	0.22	3.67	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.38
Mass Grading 08/15/2009-03/15/2011	4.46	46.49	19.68	0.02	15.07	1.93	17.00	3.15	1.78	4.93	5,534.43
Mass Grading Dust	0.00	0.00	0.00	0.00	15.00	0.00	15.00	3.13	0.00	3.13	0.00
Mass Grading Off Road Diesel	3.43	33.57	13.19	0.00	0.00	1.40	1.40	0.00	1.29	1.29	3,603.22
Mass Grading On Road Diesel	0.98	12.82	4.92	0.02	0.06	0.52	0.58	0.02	0.48	0.50	1,744.62
Mass Grading Worker Trips	0.05	0.09	1.57	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.59
Time Slice 1/3/2011-3/15/2011 Active Days: 52	12.26	104.82	58.10	0.04	69.90	5.40	75.31	14.62	4.97	19.59	13,444.47
Asphalt 09/01/2009-03/15/2011	0.73	4.18	4.40	0.00	0.01	0.35	0.36	0.00	0.32	0.33	606.52
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.64	3.99	2.42	0.00	0.00	0.34	0.34	0.00	0.31	0.31	346.41
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.38
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 07/15/2009-03/15/2011	0.66	3.43	4.58	0.00	0.05	0.28	0.33	0.01	0.26	0.27	619.04
Fugitive Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Demo Off Road Diesel	0.59	3.27	2.37	0.00	0.00	0.27	0.27	0.00	0.25	0.25	334.50
Demo On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71
Demo Worker Trips	0.07	0.13	2.20	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.83
Mass Grading 08/01/2009-03/15/2011	6.76	54.25	30.66	0.02	54.78	3.01	57.79	11.45	2.77	14.22	6,684.52
Mass Grading Dust	0.00	0.00	0.00	0.00	54.70	0.00	54.70	11.42	0.00	11.42	0.00
Mass Grading Off Road Diesel	5.75	42.46	22.78	0.00	0.00	2.53	2.53	0.00	2.33	2.33	4,495.75
Mass Grading On Road Diesel	0.91	11.59	4.46	0.02	0.06	0.47	0.52	0.02	0.43	0.45	1,753.48
Mass Grading Worker Trips	0.11	0.20	3.41	0.00	0.02	0.01	0.03	0.01	0.01	0.02	435.29
Mass Grading 08/15/2009-03/15/2011	4.11	42.96	18.47	0.02	15.07	1.76	16.83	3.15	1.62	4.77	5,534.39
Mass Grading Dust	0.00	0.00	0.00	0.00	15.00	0.00	15.00	3.13	0.00	3.13	0.00
Mass Grading Off Road Diesel	3.16	31.34	12.57	0.00	0.00	1.29	1.29	0.00	1.19	1.19	3,603.22
Mass Grading On Road Diesel	0.91	11.54	4.44	0.02	0.06	0.46	0.52	0.02	0.43	0.45	1,744.62
Mass Grading Worker Trips	0.05	0.08	1.46	0.00	0.01	0.01	0.01	0.00	0.00	0.01	186.55

Phase Assumptions

Phase: Demolition 7/15/2009 - 3/15/2011 - Pavement Demolition

Building Volume Total (cubic feet): 32400

Building Volume Daily (cubic feet): 80

On Road Truck Travel (VMT): 1.11

Off-Road Equipment:

4 Concrete/Industrial Saws (6.5 hp) operating at a 0.73 load factor for 2 hours per day

1 Other Equipment (72 hp) operating at a 0.62 load factor for 2 hours per day

2 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 2 hours per day

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2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 2 hours per day

Phase: Mass Grading 8/1/2009 - 3/15/2011 - Excavation
Total Acres Disturbed: 3
Maximum Daily Acreage Disturbed: 0.75
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 400 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day
On Road Truck Travel (VMT): 413.71
Off-Road Equipment:
1 Air Compressors (49 hp) operating at a 0.48 load factor for 8 hours per day
1 Concrete/Industrial Saws (6.5 hp) operating at a 0.73 load factor for 8 hours per day
2 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
3 Generator Sets (6.5 hp) operating at a 0.74 load factor for 8 hours per day
2 Other Equipment (72 hp) operating at a 0.62 load factor for 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 8/15/2009 - 3/15/2011 - Pipe Construction and Backfill
Total Acres Disturbed: 3
Maximum Daily Acreage Disturbed: 0.75
Fugitive Dust Level of Detail: Default
20 lbs per acre-day
On Road Truck Travel (VMT): 411.62
Off-Road Equipment:
1 Generator Sets (403 hp) operating at a 0.74 load factor for 9 hours per day
1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
1 Other Equipment (72 hp) operating at a 0.62 load factor for 8 hours per day
1 Plate Compactors (8 hp) operating at a 0.43 load factor for 8 hours per day
1 Skid Steer Loaders (44 hp) operating at a 0.55 load factor for 8 hours per day
1 Water Trucks (189 hp) operating at a 0.5 load factor for 3 hours per day

Phase: Paving 9/1/2009 - 3/15/2011 - Paving
Acres to be Paved: 3
Off-Road Equipment:
4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 2 hours per day
1 Other Equipment (72 hp) operating at a 0.62 load factor for 2 hours per day
1 Pavers (100 hp) operating at a 0.62 load factor for 2 hours per day
2 Rollers (95 hp) operating at a 0.56 load factor for 2 hours per day

Phase: Building Construction 6/1/2009 - 8/31/2009 - Coffer Dam Construction

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Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

APPENDIX D

HYDROLOGIC AND WATER QUALITY ANALYSES REPORT AND

TIDAL CULVERT INSPECTION REPORT

TERMINO AVENUE DRAIN

HYDROLOGIC AND WATER QUALITY ANALYSES REPORT

Submitted to:

EDAW, Inc.
3780 Wilshire Boulevard, Suite 250
Los Angeles, California 90010

Contact: Eric Wilson

Submitted by:

Everest International Consultants, Inc.
444 West Ocean Boulevard, Suite 1104
Long Beach, California 90802

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February 2007

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1 INTRODUCTION

1.1 BACKGROUND

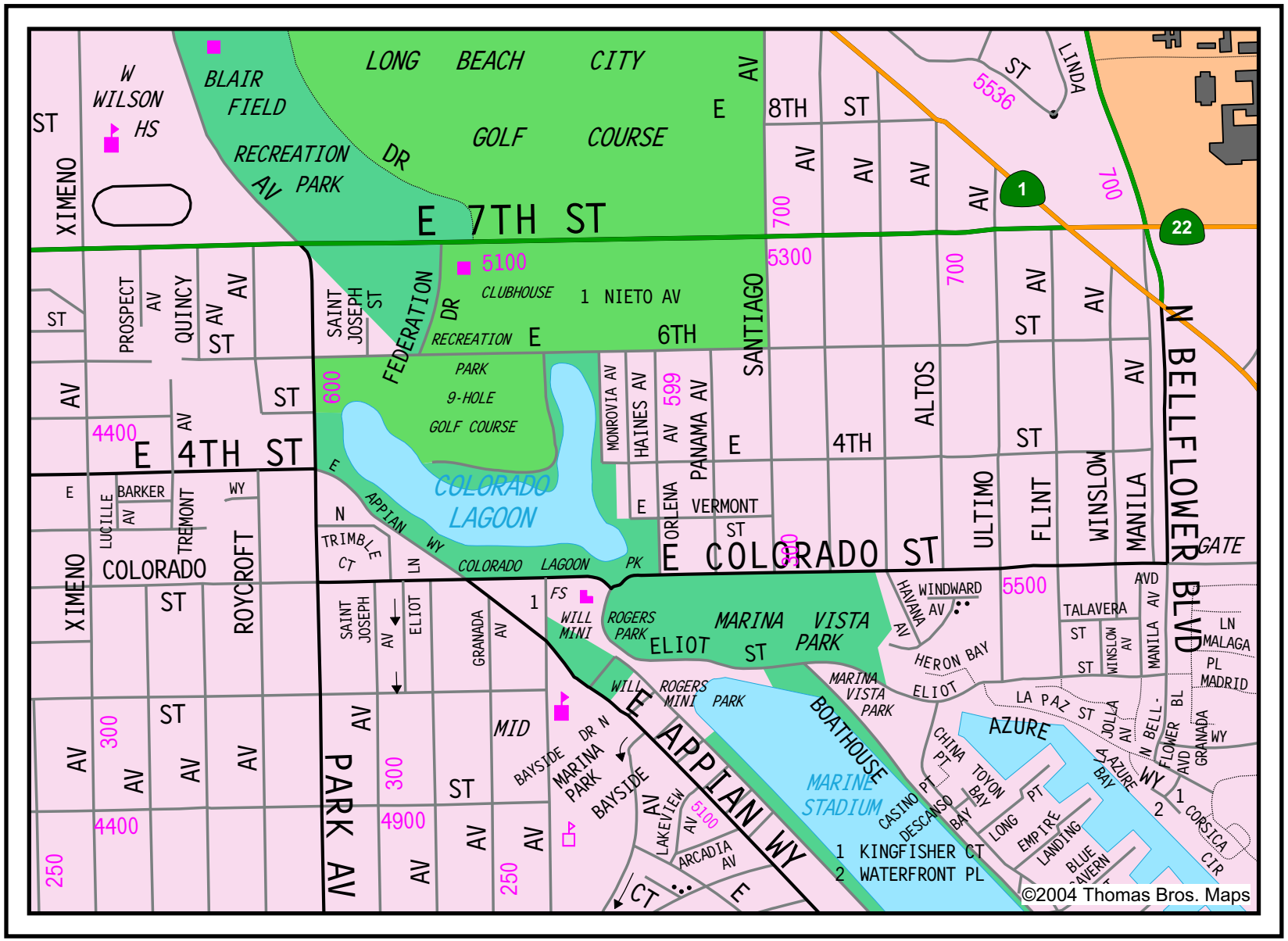
Colorado Lagoon and Marine Stadium are located in the City of Long Beach at the southern border of Los Angeles County, California (Figure 1.1). Colorado Lagoon is a salt water lagoon with beach area and picnic areas for recreational use (Figure 1.2). A tidal culvert located at the southeast end connects the lagoon to Marine Stadium. Originally constructed for the 1932 Olympic rowing competition, Marine Stadium is a rectangular waterway that joins Alamitos Bay. Today, Marine Stadium is used for recreational activities including rowing, water skiing, and boating racing. Colorado Lagoon and Marine Stadium are both operated and maintained by the Long Beach Department of Parks, Recreation, and Marine (LBPRM).

Colorado Lagoon and Marine Stadium serve as the terminus for several major storm drains located in the 1,172-acre drainage area classified as Basin 21 under the City of Long Beach Storm Water Management Program. This drainage area is composed of residential, commercial, institutional, and open space land uses (City of Long Beach 2001).

One of the major storm drains is the Termino Avenue Drain (TAD) that discharges into the northwest corner of Colorado Lagoon. The TAD watershed has a history of flooding problems. The existing drainage facilities of this watershed are not sufficient to convey the flow for a 50-year flood event. The Los Angeles County Department of Public Works (LACDPW) proposed a project to realign and increase the capacity of the TAD storm drain system that discharges to Colorado Lagoon. The goal of that proposed TAD Project was to provide better flood protection to the watershed. A mitigated negative declaration (MND) was approved by the County Board of Supervisors in June 2001. Following approval, the document was challenged in court by Friends of the Colorado Lagoon. The court found that the document provided inadequate CEQA analysis; consequently, the County was ordered to conduct a ". . . proper study of the baseline conditions of the tidal culvert connecting the Colorado Lagoon and the Marine Stadium."

LACDPW retained a consultant team to address the issues of water quality, hydrology, and biological resources and to prepare a comprehensive environmental impact report (EIR) for the proposed TAD project. As part of the EIR, this hydrologic and water quality analyses addresses the hydrology and water quality issues pertaining to the TAD Project.

Figure 1.1 Project Location


LONG BEACH CITY GOLF COURSE
BLAIR FIELD RECREATION PARK
W WILSON HS
E 7TH ST
E 6TH
E 4TH ST
E COLORADO ST
5100 CLUBHOUSE
1 NIETO AV
FEDERATION DR
RECREATION PARK
9-HOLE GOLF COURSE
COLORADO LAGOON
COLORADO LAGOON PK
APPIAN WY
MARINA VISTA PARK
ROGERS PARK
WILL ROGERS MINI PARK
ELIOT ST
BOATHOUSE
MARINE STADIUM
AZURE
1 KINGFISHER CT
2 WATERFRONT PL
E APPIAN WY
PARK AV
N BELLFLOWER BLVD
XIMENO
PROSPECT AV
QUINCY AV
SAINT JOSEPH ST
SANTIAGO
ALTOS
ULTIMO
FLINT
WINSLOW
MANILA
ROYCROFT
TREMONT
LUCILLE AV
BARKER AV
TRIMBLE CT
GRANADA AV
MONROVIA AV
HAINES AV
PANAMA AV
ORLENA
VERMONT ST
HAVANA AV
WINDWARD AV
HERON BAY
TALAVERA
MALAGA
MADRID
LA PAZ ST
JOLLA AV
CHINA PT
TOYON BAY
CASINO PT
DESCANSO BAY
LONG PT
EMPIRE LANDING
BLUE LAGOON
CORSICA CIR
LAKEVIEW AV
ARCADIA AV
MARINA PARK
BAYSIDE
MID
LINDA
GATE
5536
5300
5500
4400
4900
©2004 Thomas Bros. Maps

1.2 PURPOSE AND OBJECTIVES

The purpose of the study is to analyze the potential hydrologic and water quality impacts associated with the TAD Project. Potential impacts include increases in flooding associated with large storm events as well as water quality impacts to Colorado Lagoon and Marine Stadium.

To achieve the purpose presented above, the following objectives were developed.

- Establish significance criteria for changes in flood elevations
- Determine increases in flood elevation due to implementation of each alternative
- Evaluate the flood impact to water elevations of each alternative
- Establish significance criteria for changes in salinity levels
- Determine impacts to salinity levels due to implementation of each alternative
- Evaluate the flood impact to salinity levels of each alternative

This report summarizes the objectives, methods, results, findings, and recommendations of the hydrologic and water quality analyses.

1.3 SCOPE OF STUDY

The focus of this study is to determine the potential hydrologic and water quality impacts associated with the TAD Project. The study area is limited to Colorado Lagoon and the northwest portion of Marine Stadium. The potential hydrologic impacts are limited to changes in flood water elevations attributed to modifications in flood flow magnitude and timing. The potential water quality impacts include changes in salinity levels, potential changes in sediment erosion, and changes in other water quality constituents resulting from modifications in flood flow magnitude and timing.

2 EXISTING CONDITIONS

2.1 SITE DESCRIPTION

Colorado Lagoon and Marine Stadium, shown in Figure 2.1, are located in the City of Long Beach adjacent to Alamitos Bay. Colorado Lagoon is a salt water, 44-acre, Y-shaped lagoon with recreational and biological uses. Beach and grass areas surround the entire perimeter of the lagoon, as shown in Figure 2.2. The Recreation Park 9-Hole Golf Course is located along the northern boundary, between the west and east arms of the lagoon. Streets bordering the lagoon are 6th Street to the north, Park Ave and Appian Way to the west, Colorado Street to the south, and Orlena Ave to the east.

Marine Stadium is a mile-long, rectangular waterway located at the back end of Alamitos Bay. The entire perimeter is lined with riprap. The Will Rogers Mini Park and Marina Vista Park are located along the north edge. Site photos showing the north edge of Marine Stadium are shown in Figure 2.3.

Colorado Lagoon is hydraulically connected to Marine Stadium via an underground culvert located beneath Marina Vista Park. The tidal culvert inlet/outlet at Colorado Lagoon and Marine Stadium are shown in Figure 2.4. The inlet/outlet structure at Colorado Lagoon is 22 feet (ft) long, 22 ft wide with one flared and one straight wingwall. There is a tide gate operated by the City of Long Beach to regulate the flow between Colorado Lagoon and Marine Stadium. The inlet/outlet structure at Marine Stadium is 31.25 ft long, 22 ft wide with one flared and one straight wingwall. There is also a trash debris screen. The tidal culvert itself is a reinforced concrete box, which was designed with two distinctive cross sections. From the Colorado Lagoon side, the tidal culvert has a design cross-section of 14 ft by 7 ft for approximately 160 feet then transitions to a design cross-section of 12 ft by 8 ft for about 700 ft.

2.2 HYDROLOGY

2.2.1 Local Watershed

Colorado Lagoon and Marine Stadium are located in Basin 21 based on the City of Long Beach Storm Water Management Program. This 1,173-acre drainage area is composed of 773 acres residential, 125 acres commercial, 55 acres institutional, and 219 acres open space land uses (City of Long Beach 2001). Storm drains that discharge into Colorado

Figure 2.1 Colorado Lagoon and Marine Stadium

Figure 2.2 Colorado Lagoon Site Photos

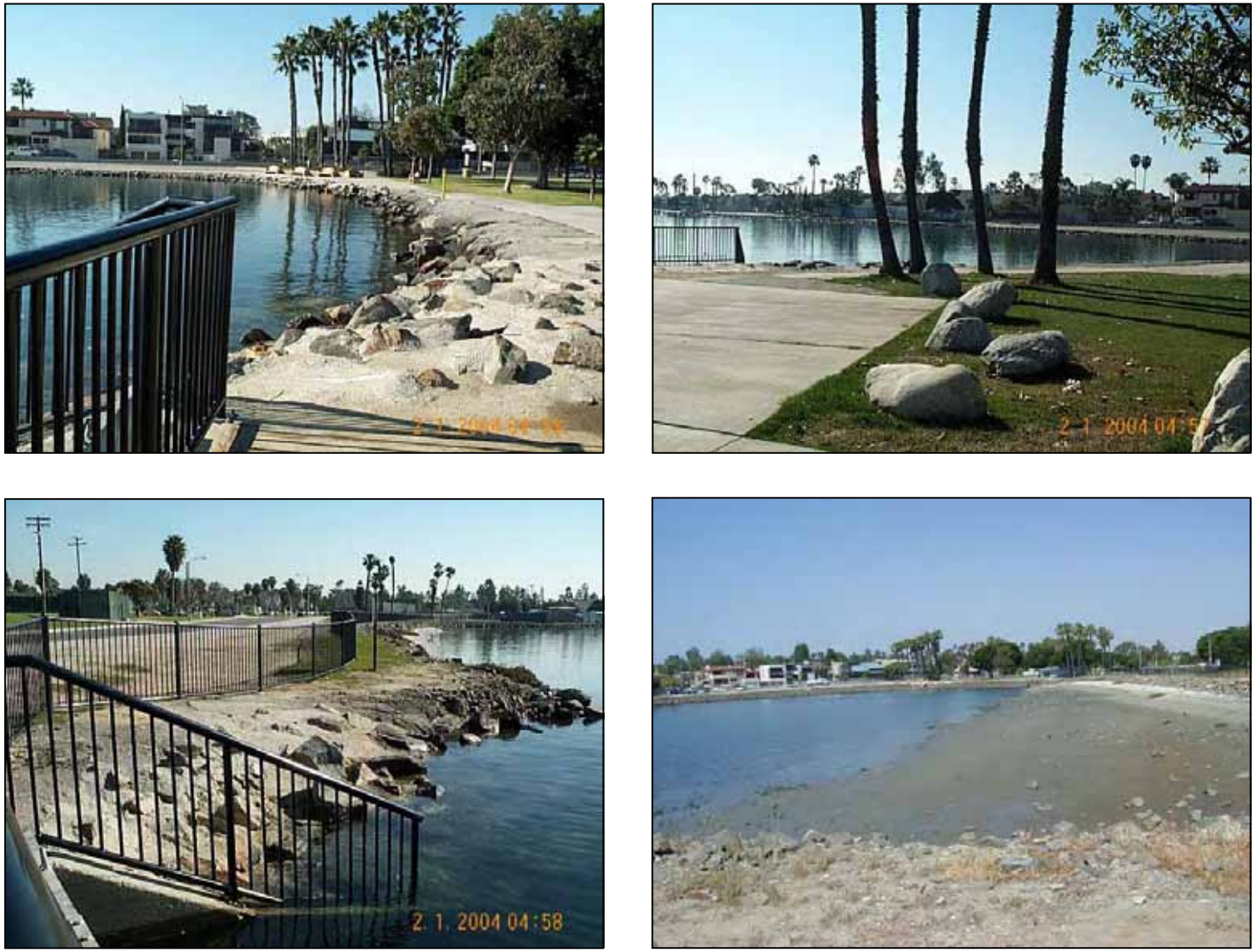


Figure 2.3 Marine Stadium Site Photos

Tidal Culvert at Colorado Lagoon

Tidal Culvert at Marine Stadium

Figure 2.4 Tidal Culvert Site Photos

Lagoon drain a total of 1,130-acres. The drainage area used in the LACDPW hydrology study (LACDPW 2003) is reproduced in Figure 2.5.

2.2.2 Precipitation

The climate conditions for Colorado Lagoon and Marine Stadium are similar to that of the general Southern California climate with the majority of rainfall occurring during winter months between October and May. The City of Long Beach has an average annual rainfall of 12.94 inches (City of Long Beach 2004b).

2.2.3 Local Runoff

Thirteen storm drains discharge into the study area, as shown in Figure 2.6. In the figure, the storm drains with available flow information are indicated by blue arrows, while storm drains with no data available are shown as black dashed-line arrows. In general, those storm drains with no flow information are minor storm drains that drain local areas, such as a local parking lot. Two storm drains were not observed in the field, but flows were provided by LACDPW. All storm drains are owned and operated by the City of Long Beach with the exception of the Project 452 and 5104 storm drains, which are owned and operated by LACDPW. Seven major and four minor storm drains discharge into Colorado Lagoon. One major and one minor storm drain discharge into the northwest portion of Marine Stadium.

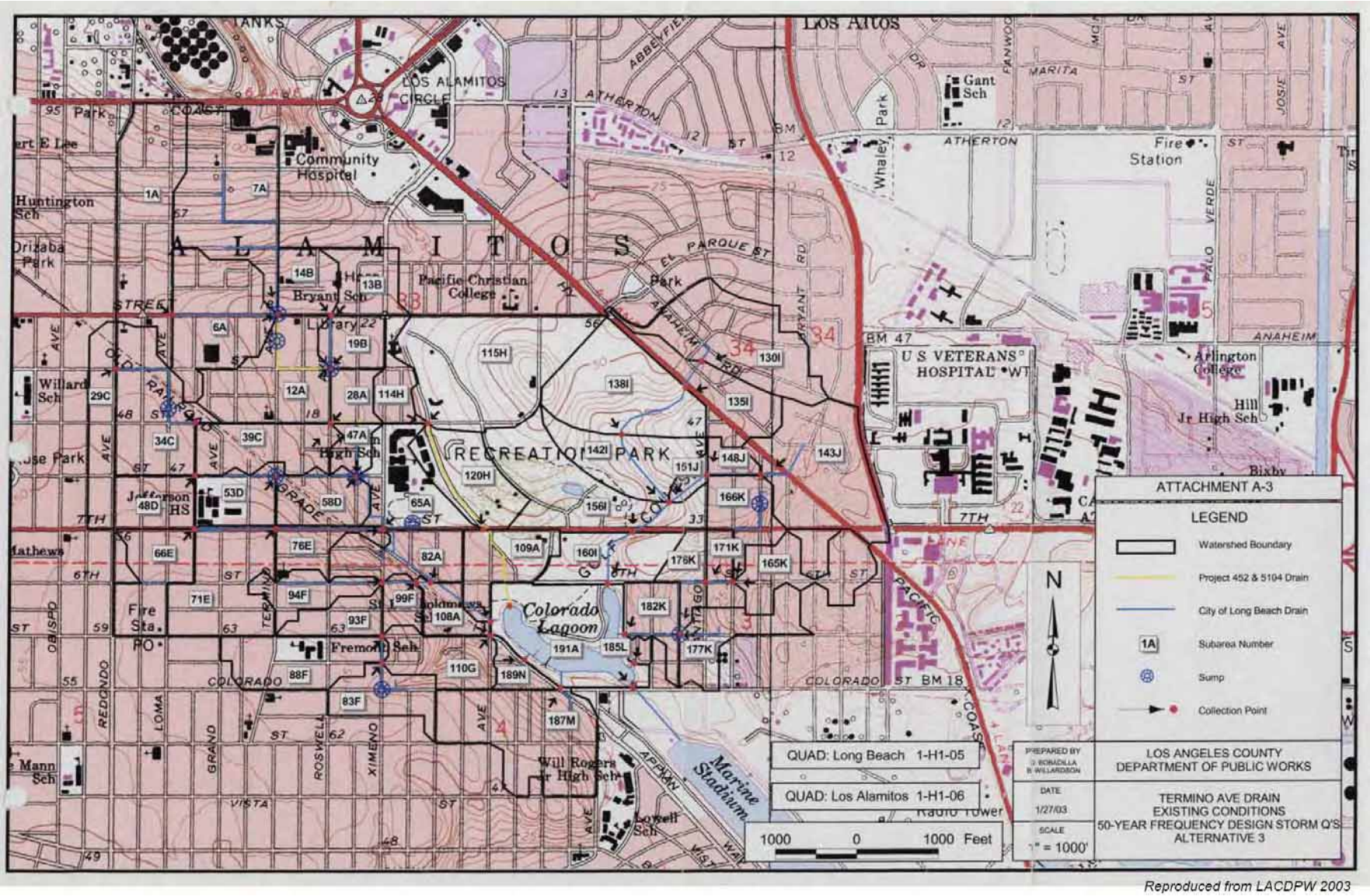


Figure 2.5 Existing Colorado Lagoon Storm Drain Drainage Area

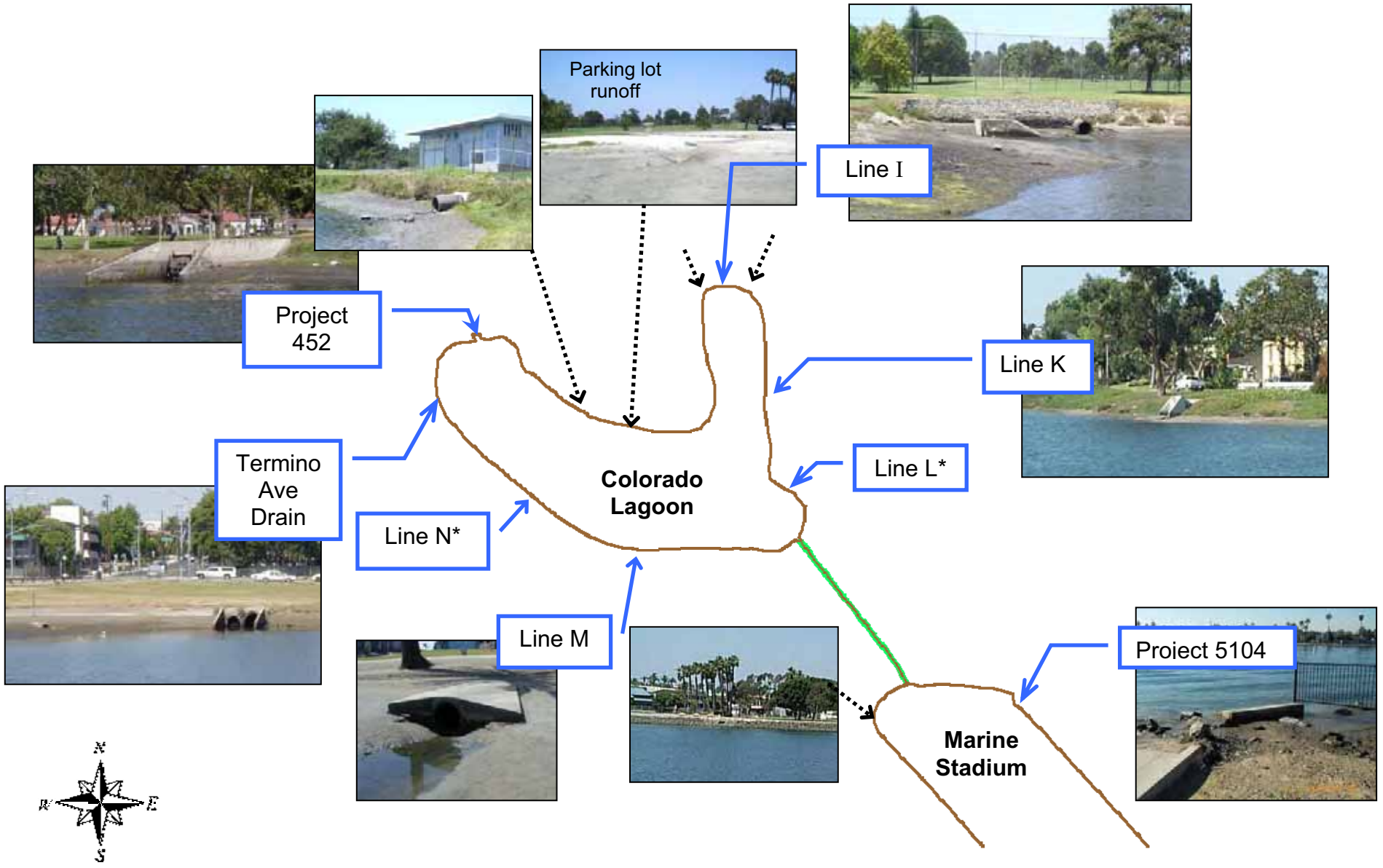


Figure Not to Scale
*Not observed during field survey

Figure 2.6 Existing Storm Drain Locations

3 TERMINO AVENUE DRAIN ALTERNATIVES

3.1 OVERVIEW

Hydrologic and water quality analyses were conducted for Existing Conditions and two alternatives. Under Alternative 1 the TAD outfall will be relocated to Marine Stadium, while under Alternative 2 the TAD outfall will remain in Colorado Lagoon. The alternatives are described in detail below. Alternative 1 in this report represents the proposed project evaluated in the TAD EIR, while Alternative 2 in this report represents the EIR's Alternative 1.

3.2 ALTERNATIVE 1 (EIR PROPOSED PROJECT)

Alternative 1, LACDPW's proposed project, consists of constructing a new mainline for the TAD with the outlet located at the northwest corner of Marine Stadium, adjacent to an existing storm drain. The Alternative 1 TAD would realign and increase the capacity of the existing TAD. The proposed TAD mainline would consist of 5,490 feet of storm drain conduit varying in size from a 48-inch reinforced concrete pipe at the upstream terminus at Termino Avenue and Anaheim Street to a 12 by 8-foot double reinforced concrete box conduit at the downstream terminus at Marine Stadium. The mainline would be sized to accommodate the 50-year storm flow of 1,060 cubic feet per second (cfs).

The majority of the mainline construction would be within portions of the abandoned Pacific Electric (PE) right-of-way, which is currently owned by the City of Long Beach. The mainline alignment will include crossings at Anaheim Street, Loma Avenue, Euclid Avenue, 11th Street, 10th Street, Termino Avenue, 8th Street, Roswell Avenue, 7th Street, Bennett Avenue, Ximeno Avenue, 6th Street, Park Avenue, Appian Way, Colorado Street, and Nieto Avenue. The mainline would connect to the existing drainage system at various locations via six laterals, totaling 5,570 linear feet of conduit. The laterals would vary in size ranging from 48 to 36 inches and be constructed of reinforced concrete pipe.

The outlet structure at Marine Stadium would consist of a double box culvert. The opening to the outlet structure would be approximately 25 feet wide. Energy dissipater blocks would be placed in the outlet opening to reduce the velocity of stormwater from the box culvert during major storm events. A woven geotextile fabric would be placed at the outlet to minimize erosion. In-line storm drain catch basin screens, located throughout the alignment, would prohibit suspended solids and floatables from entering Marine Stadium.

Based on discussions with the City of Long Beach and the Los Angeles County Sanitation Districts (Sanitation Districts), the proposed project includes a diversion line system that would divert the dry weather flows, primarily a result of irrigation, from the storm drain and direct them into an existing County sanitary sewer line. The line would have capacity to convey approximately 150 gallons per minute (230,000 gallons per day). A pump unit would be constructed to convey the dry weather flows due to differences in elevation between the diversion system and the sanitary sewer line. The Sanitation Districts would be responsible for treating the dry weather flows at existing sewage treatment plants. LACDPW would be responsible for the operation and maintenance of the diversion system.

3.3 ALTERNATIVE 2 (EIR ALTERNATIVE 1)

Alternative 2, LACDPW's Alternative 1, consists of re-aligning and increasing the TAD mainline in the same manner as Alternative 1, but with the outlet remaining at Colorado Lagoon. Modifications to the mainline and laterals will be the same from the upstream terminus at Termino Avenue and Anaheim Street to the intersection of Park Ave and 4th Street.

The outlet structure at Colorado Lagoon would replace the existing TAD outlet. The outlet structure will be similar to Alternative 1 with a flap gate apparatus, energy dissipater blocks, and woven geotextile fabric.

A 45-cfs low-flow splitter box at Park Avenue and 4th Street would also be constructed to convey low flows directly to Marine Stadium. The splitter structure would be 200 ft long, 5 ft high, and 22 ft wide with a diagonal weir. The low flow system would be a 2,931 linear feet storm drain varying from a 49-inch reinforced concrete pipe to a 6 ft by 4 ft reinforced concrete box. The low flow drain would be aligned with Appian Way to Colorado Street, run along Eliot Street and Marina Vista Park, and outlet at Marine Stadium near the tidal culvert. The outlet structure would be approximately 11 ft wide with riprap to reduce erosion. Alternative 2 would also include the dry weather flow diversion to the sanitary sewer system.

4 HYDROLOGIC ANALYSIS

4.1 OVERVIEW

The hydrologic analysis was conducted to determine the flood impacts to Colorado Lagoon and Marine Stadium attributed to changes under Alternatives 1 and 2, as well as to provide the hydrodynamic conditions for the water quality analysis described in Section 5. Both alternatives will change the magnitude of the peak flood flows, as well as the timing of when the flood flows will enter Colorado Lagoon and Marine Stadium. Increasing flood flows have the potential to increase the flooded area of the receiving water body. For this study, flood analyses were conducted using a hydrodynamic model to evaluate the changes in water elevations in Colorado Lagoon and Marine Stadium due to a 50-year flood event under Existing Conditions, Alternative 1, and Alternative 2.

4.2 FLOOD ANALYSIS

The hydrodynamic model, RMA2, was used to simulate the flood flows into Colorado Lagoon and Marine Stadium under a 50-year flood event. RMA2 is a two-dimensional, depth averaged hydrodynamic model developed by the U.S. Army Corps of Engineers (USACE) that is capable of simulating tidal conditions and flood flows. The hydrodynamic modeling was conducted based on the 25-hour and 50-year flood hydrographs for the storm drains discharging into Colorado Lagoon and Marine Stadium provided by LACDPW (2003 and 2004). The peak flows and associated flood volumes for each of the storm drains are summarized in Table 4.1 for Existing Conditions, Alternative 1, and Alternative 2. Under Alternative 1, the total volume of the 50-year flood event will be increased due to the increase in drainage area of the proposed TAD. Alternative 2 will increase the magnitude of the 50-year peak, although the total volume of water discharged into Colorado Lagoon will be reduced due to the low flow diversion to Marine Stadium.

Bathymetry and topography within the study area were based on a survey conducted in February 2004 by LACDPW. Bathymetry of the remaining portion of Marine Stadium, Alamitos Bay, and the ocean were based on the NOAA chart 18749. The bathymetry and hydrodynamic model grid are shown in Figure 4.1. The figure also shows the one-dimensional elements used to represent the tidal culvert between Colorado Lagoon and Marine Stadium, as well as the Haynes and AES Alamitos Generating Stations, which intake water from Alamitos Bay and then discharge into the San Gabriel River.

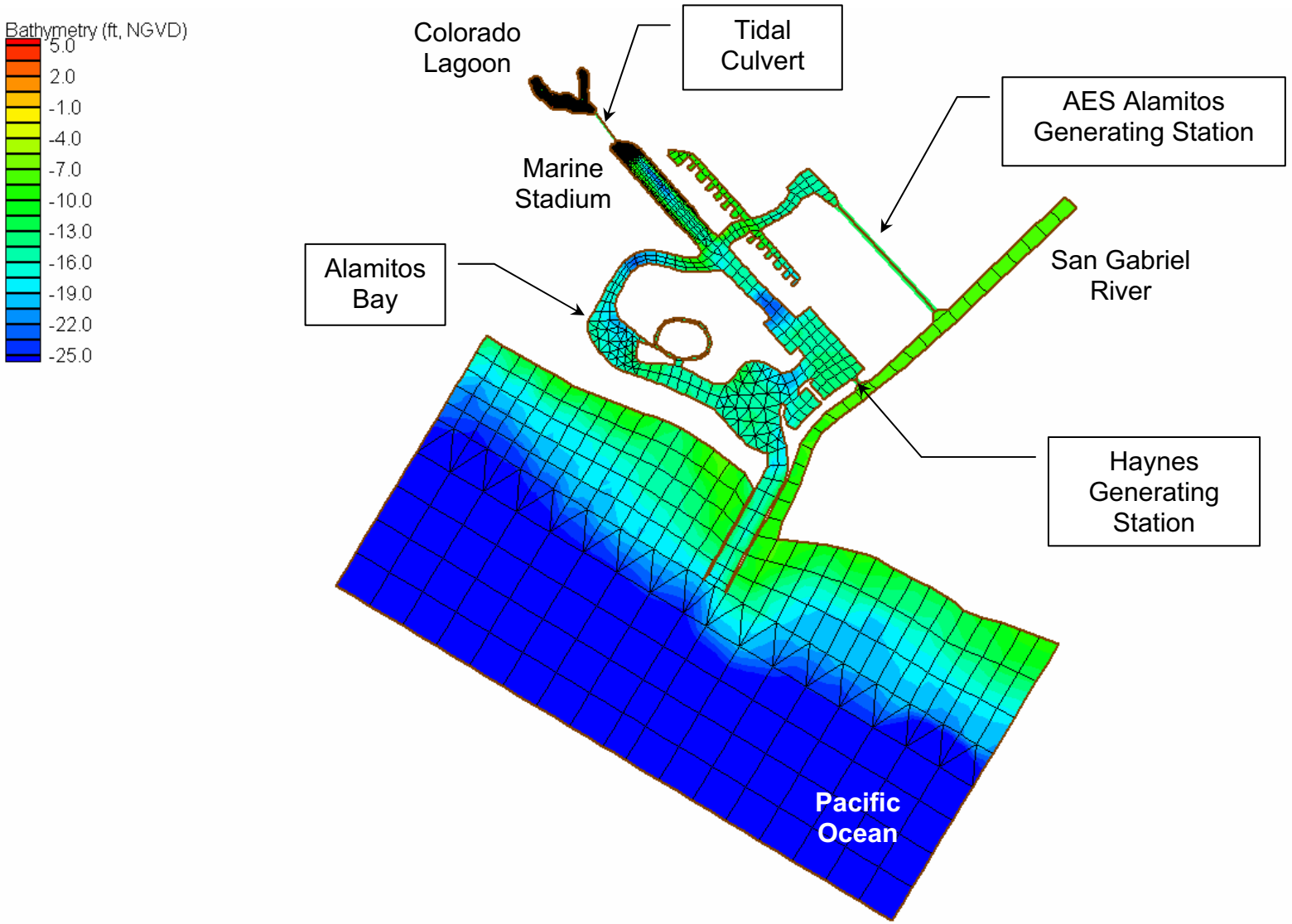


Figure 4.1 Hydrodynamic Model Bathymetry and Grid

Table 4.1 50-Year Flood Event Peaks and Volume

Storm Drain	Existing Conditions		Alternative 1		Alternative 2	
	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)
TAD	342	130.3	703*	209.2*	535	76.9
Project 452	119	53.4	97	12.1	97	12.1
Line I	191	38.3	191	38.3	191	38.3
Line K	99	21.4	99	21.4	99	21.4
Line L	2	0.1	2	0.1	2	0.1
Line M	42	8.4	42	8.4	42	8.4
Line N	7	0.7	7	0.7	7	0.7
Project 5104	51*	8.0*	51*	8.0*	51*	8.0*
Low Flow Diversion	--	--	--	--	45*	93.0*
Total	--	260.6	--	298.1	--	258.7

Source: LACDPW 2003 and 2004
* Flow discharges to Marine Stadium

The AES Alamitos Generating Station has three permitted discharges with a total average flow of 1,271 million gallons per day (MGD). Haynes Generating Station has three permitted discharges with a total average flow of 560 MGD. These permitted flows from the two generating stations are included in the hydrodynamic model simulations.

Flow through the tidal culvert was based on a rating curve, which was determined with an in-house link-node hydrodynamic model KAI. The existing conditions of the tidal culvert for modeling were based on a field inspection survey conducted in April 2005 (Global Inshore 2005). Due to biofouling in the tidal culvert, the tidal culvert survey was used to estimate the conveyance capacity (i.e., cross sectional area) and invert elevations at both ends of the culvert. The invert elevations were calculated as design elevation plus the thickness of biofouling at each end of the culvert. The design elevations were provided by LACDPW.

The downstream control for the flood analysis (i.e., tide elevation at the flood hydrograph peak) was provided by LACDPW. The standard practice for designing storm drains that discharge into the ocean is to use the mean higher high water (MHHW) tide elevation (2.8 ft, NGVD) as the downstream control. Under Existing Conditions and Alternative 2, the TAD discharges into Colorado Lagoon instead of the ocean and the tide range in Colorado Lagoon is muted relative to the ocean tide range due to the tidal culvert connecting Colorado Lagoon and Marine Stadium. In addition, Colorado Lagoon serves as a detention basin for the TAD flows prior to discharging into Marine Stadium via the tidal culvert. Therefore, a more conservative tide elevation of 3.6 ft, NGVD in Marine Stadium was selected for the downstream control.

The 3.6 ft NGVD tide elevation represents the highest tide elevation for 90% of the days observed in 2002. A diurnal tide sequence (i.e., two highs and two lows) with a high peak at 3.6 ft, NGVD was selected from the 2002 tide record. Under existing conditions, the peak TAD flow was timed to occur simultaneously with the peak tide elevation. Under Alternatives 1 and 2, the peak flows of the respective proposed TAD configurations were timed to occur simultaneously with the peak tide elevation. The timing of the 50-year peak flows and peak tide elevations are shown in Figure 4.2. The timing of the 50-year peak flows for Lines I, K, L, M, N, and Project 5104 are also shown for Existing Conditions.

4.3 FLOOD IMPACTS

The following criteria were developed for assessing whether or not a flood impact would occur.

1. A substantial increase in water elevation above Existing Conditions

2. Flooding of the areas outside of Colorado Lagoon and Marine Stadium due to overtopping

For Colorado Lagoon, the perimeter elevations vary, but are higher than the surrounding street elevations. The perimeter elevations were estimated based on the LACDPW topographic survey data and field observations. Although the topographic data did not extend to the surrounding streets, two spot elevations for Colorado Street were provided. The perimeter elevations around Colorado Lagoon range from 5.5 ft, NGVD to 10 ft, NGVD. The lowest elevations are along the northern edge from the parking lot and street towards 6th Street. The highest elevations are along the eastern edge of Colorado Lagoon. The top

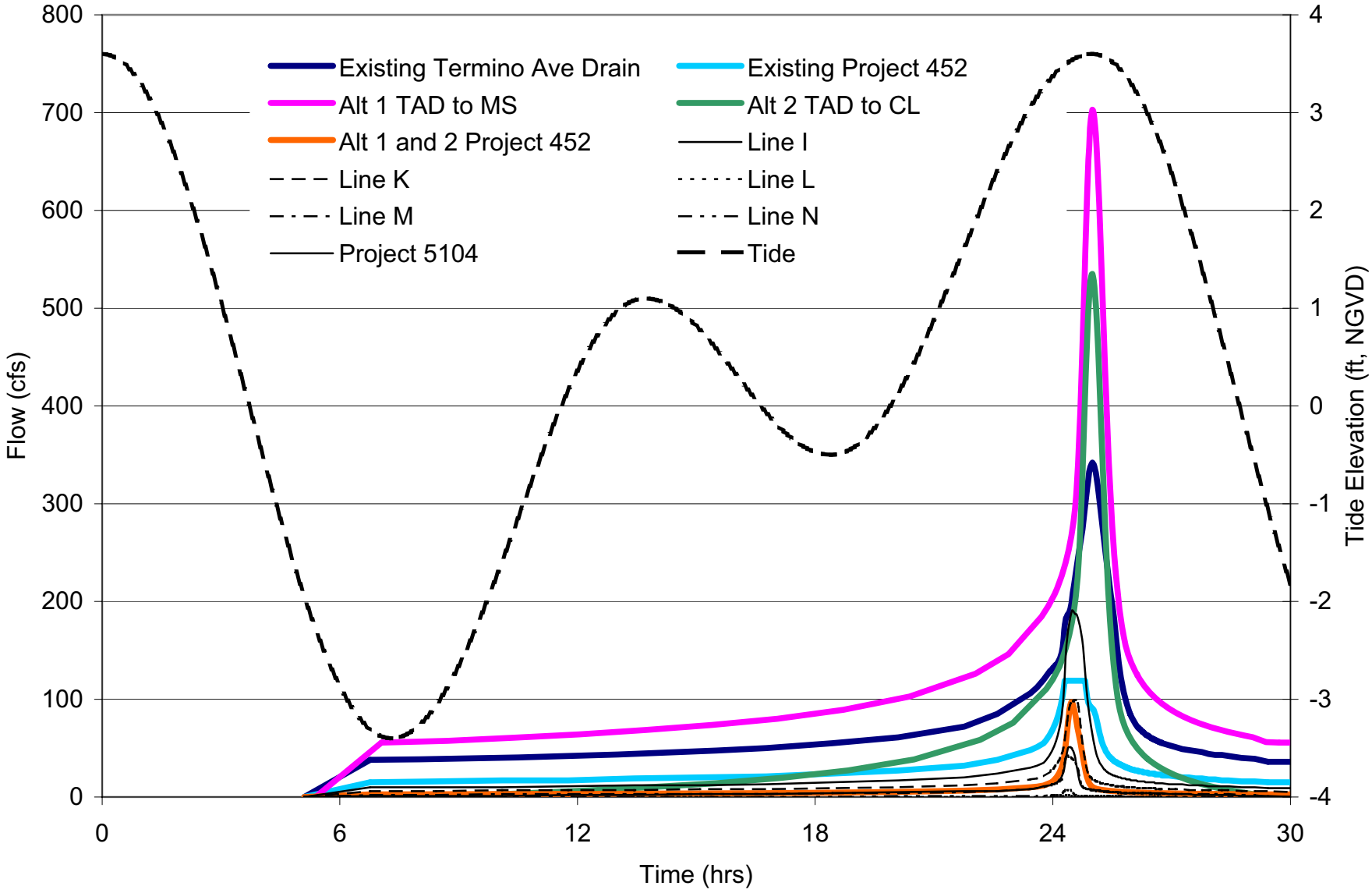


Figure 4.2 50-Year Hydrographs and Tide Elevations for Flood Analysis

elevation of the riprap bank protection along Marine Stadium is 5 ft, NGVD. The 50-year flood water elevations in Colorado Lagoon under Existing Conditions, Alternative 1, and Alternative 2 are shown in Figure 4.3. The highest water elevation occurred under Existing Conditions, followed by Alternative 2, then Alternative 1. Both alternatives decrease the 50-year flood elevation relative to Existing Conditions due to the reduction in the amount of water entering Colorado Lagoon. Approximately 200 and 93 acre-feet of water are diverted from Colorado Lagoon to Marine Stadium under Alternatives 1 and 2, respectively. In addition to decreasing flood elevations relative to Existing Conditions, Alternative 1 also reduces flood elevations within Colorado Lagoon to elevations below the lowest perimeter elevations surrounding Colorado Lagoon, thereby confining flood waters to Colorado Lagoon.

The 50-year flood water elevations in Marine Stadium are shown in Figure 4.4. There are no changes to the flood water elevations within Marine Stadium under Alternatives 1 and 2 compared to Existing Conditions. Under Existing Conditions and both alternatives, the highest flood water elevation in Marine Stadium is predicted to be 3.6 ft, NGVD, which is the high tide elevation used as the downstream control.

The maximum 50-year flood elevations in Colorado Lagoon and Marine Stadium for Existing Conditions, Alternative 1, and Alternative 2 are summarized in Table 4.2.

Table 4.2 Maximum 50-Year Flood Elevations

SIMULATION	MAXIMUM 50-YEAR FLOOD ELEVATION (FT, NGVD)	
	COLORADO LAGOON	MARINE STADIUM
Existing Conditions	6.9	3.6
Alternative 1	4.2	3.6
Alternative 2	6.4	3.6

It should be noted that the maximum 50-year flood elevation is controlled by the condition of the tidal culvert. The hydrologic analysis results presented here were conducted using the surveyed existing condition of the tidal culvert and estimated invert elevations assuming that the tidal gates are fully opened. Situations with higher invert elevations (e.g., due to continued biofouling) or partially closed tidal gates could increase the water elevations in Colorado Lagoon.

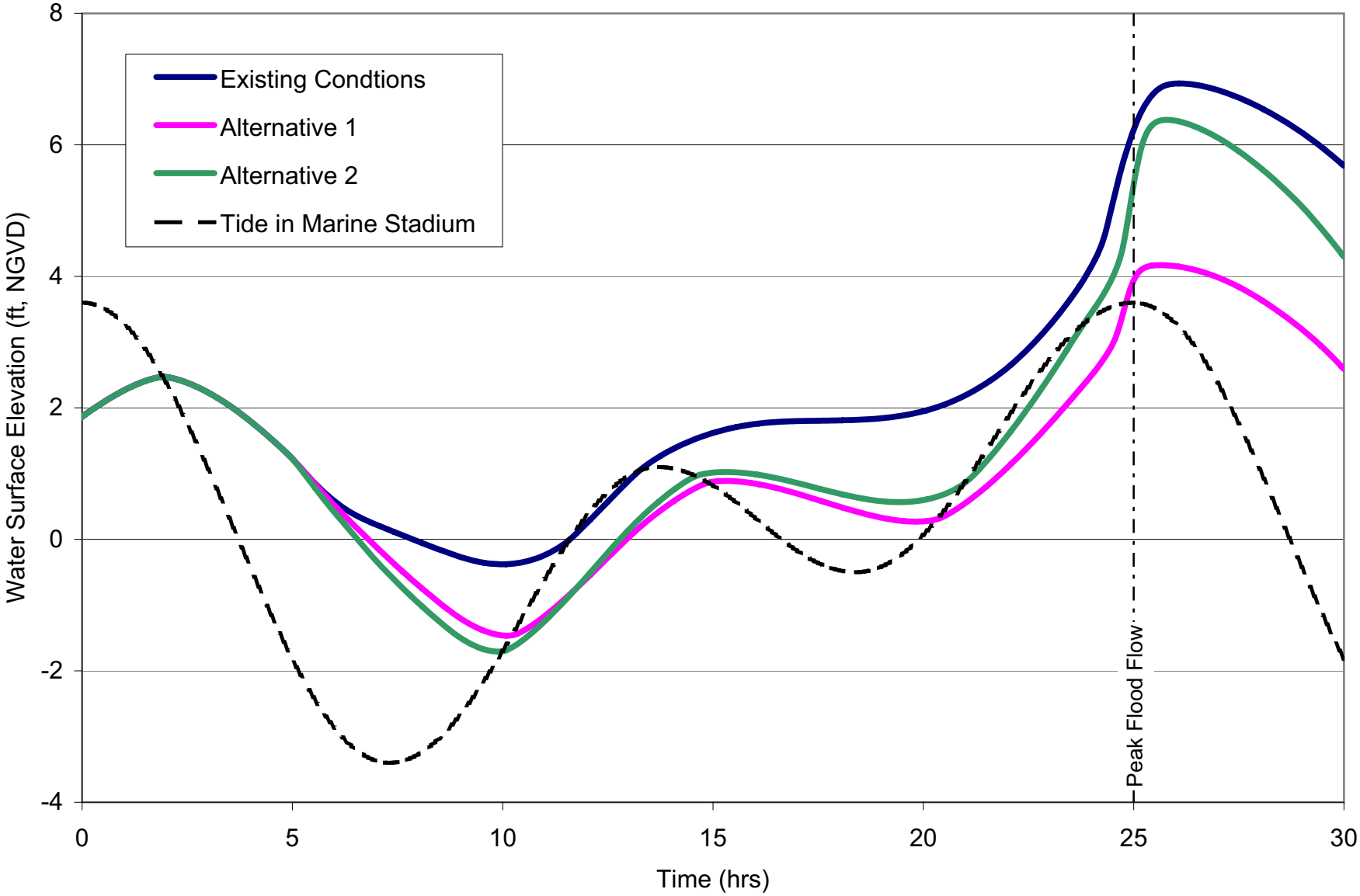


Figure 4.3 50-Year Flood Elevations in Colorado Lagoon

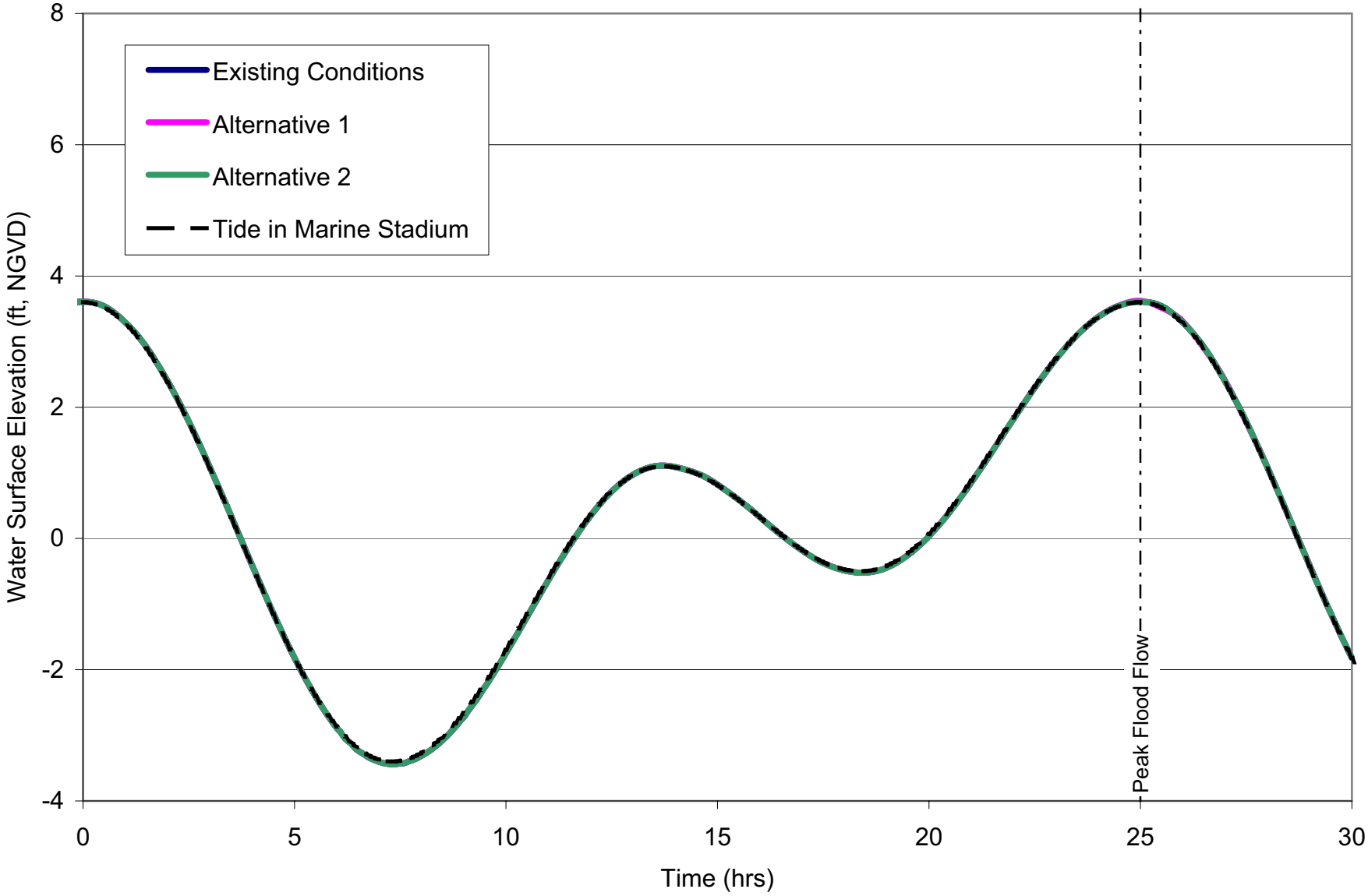


Figure 4.4 50-Year Flood Elevations in Marine Stadium

5 WATER QUALITY ANALYSIS

5.1 OVERVIEW

Colorado Lagoon is listed as an inland surface water with beneficial uses for water contact recreation (REC-1), non-contact water recreation (REC-2), warm freshwater habitat (WARM), commercial and sport fishing (COMM), wildlife habitat (WILD), and shellfish harvesting (SHELL). Marine Stadium is listed as a coastal feature with beneficial uses for REC-1, non-contact water recreation (REC-2), commercial and sport fishing (COMM), marine habitat (MAR), rare, threatened, or endangered species (RARE), and shellfish harvesting (SHELL) (LARWQCB 1994).

Colorado Lagoon is a 303(d) listed water body with impairments to the beneficial uses due to contaminated sediment. These impairments are listed in Table 5.1. Marine Stadium is not a 303(d) listed water body.

Table 5.1 2002 Clean Water Act 303(d) Impairments for Colorado Lagoon

303(D) IMPAIRMENTS
Chlordane (tissue and sediment)
DDT (tissue)
Dieldrin (tissue)
Lead (sediment)
PAHs (sediment)
PCBs (sediment)
Sediment toxicity
Zinc (sediment)

Source: SWRCB 2003

A water quality assessment of Colorado Lagoon conducted by the City of Long Beach (2004c) identified concerns for bacteria and nutrients, although Colorado Lagoon is not 303(d) listed for these constituents. Weekly bacteria monitoring is conducted by the City of Long Beach Health Department for compliance with Assembly Bill 411 (AB 411). There are

three monitoring sites along the pedestrian bridge that crosses the lagoon. Exceedances of bacteria concentrations above the AB 411 criteria have resulted in beach postings for Colorado Lagoon. Periodic decreased dissolved oxygen levels (< 5 mg/L) and algae blooms indicate excess nutrients. Visual observations of the lagoon water suggest the lagoon water is degraded compared to Marine Stadium and Alamitos Bay (City of Long Beach 2004c).

In addition to these water quality constituents, flood flows to marine environments can have detrimental effects to the salt water habitat due to decreases in salinity. Hence, a concern for the TAD project to water quality and marine habitats in Colorado Lagoon and Marine Stadium is the change in salinity in the water bodies during and following flood events. In this section, the salinity impact to Colorado Lagoon and Marine Stadium is first presented, followed by a discussion of other water quality constituents.

5.2 SALINITY ANALYSIS

Criteria for potential impacts associated with changes in salinity levels were adopted from the Bolsa Chica Lowlands Restoration Project Final EIR/EIS (Chambers 2000). These criteria were developed to be protective of marine species because the Bolsa Chica Lowlands Restoration Project was designed to mitigate for impacts to marine species associated with landfill projects within the Ports of Los Angeles and Long Beach. In addition, these criteria were developed to determine whether or not flood flows from the Wintersberg Flood Control Channel should be allowed to mix with saltwater under the various restoration alternatives. For these reasons, it is noted that application of these salinity criteria for the TAD Project should probably be considered somewhat conservative (i.e., overly protective) because the TAD Project is not being done as mitigation for marine species and the existing species within Colorado Lagoon have become adapted, to some degree, to storm flow-induced salinity changes.

The salinity criteria consist of two conditions during a 10-year flood event such that no significant impacts would likely occur to marine species (Table 5.2). The first criterion (Criterion 1) states that the salinity concentration should not fall below 30% of normal seawater or 10 parts per thousand (ppt) for more than one hour. This criterion was established to protect the less mobile marine invertebrates that are susceptible to low salinity levels. The second criterion (Criterion 2) states that the salinity concentration should recover to greater than 75% of normal seawater or 25 ppt within 10 hours from when the salinity concentration falls below 25 ppt. This criterion was established to protect marine fish species that prefer normal ocean water salinity concentrations (e.g., juvenile halibut).

Table 5.2 Marine Species Salinity Criteria

CRITERION	SALINITY CONCENTRATION	DURATION
1	Should not fall below 30% of normal seawater concentration or 10 ppt	Greater than one hour
2	Must recover to greater than 75% of normal seawater concentration or 25 ppt	Within 10 hours starting when salinity concentration falls below 25 ppt

Source: Chambers 2000

The impacts of flood flows to salinity levels in Colorado Lagoon and Marine Stadium under Existing Conditions, Alternative 1, and Alternative 2 were analyzed based on the 10-year flood event. The RMA2 model described previously in Section 4.2 was used in conjunction with a water quality model (RMA4) to simulate the 10-year flood flows, tidal conditions, and corresponding initial decrease and subsequent recovery of salinity levels in Colorado Lagoon and Marine Stadium. The significance of the impacts to the salinity levels were then determined based on comparison to the criteria above.

The 10-year flood hydrographs for the storm drains used for this analysis were provided by LACDPW. A summary of the 10-year peak flows and flood volumes for each storm drain is provided in Table 5.3. The tide elevations used for the salinity analyses were based on tide datums from the National Oceanic and Atmospheric Administration (NOAA) Los Angeles, Outer Harbor Station (Station ID 9410660) based on the most recent National Tidal Datum Epoch from 1983 to 2001 as presented in Table 5.4.

The time when the peak of the 10-year flood flow enters Colorado Lagoon and/or Marine Stadium relative to the tide elevation will result in different drops and recovery of the salinity in Colorado Lagoon and Marine Stadium. The 10-year flood for the hydrodynamic and water quality model simulations was timed with the peak arriving at MHHW as shown in Figure 5.1. The timing of the 10-year hydrographs (Lines I, K, L, M, and N, as well as Project 5104) is shown for Existing Conditions as examples.

For the water quality model simulation, an initial salinity concentration of 34 ppt was assumed for Marine Stadium, Alamitos Bay, and the Pacific Ocean. The initial salinity concentration for Colorado Lagoon was based on salinity data from water quality sampling conducted by Surfrider (2002). A total of 13 samples obtained during dry weather conditions between May 2000 and January 2002 resulted in an average salinity of 30.6 ppt.

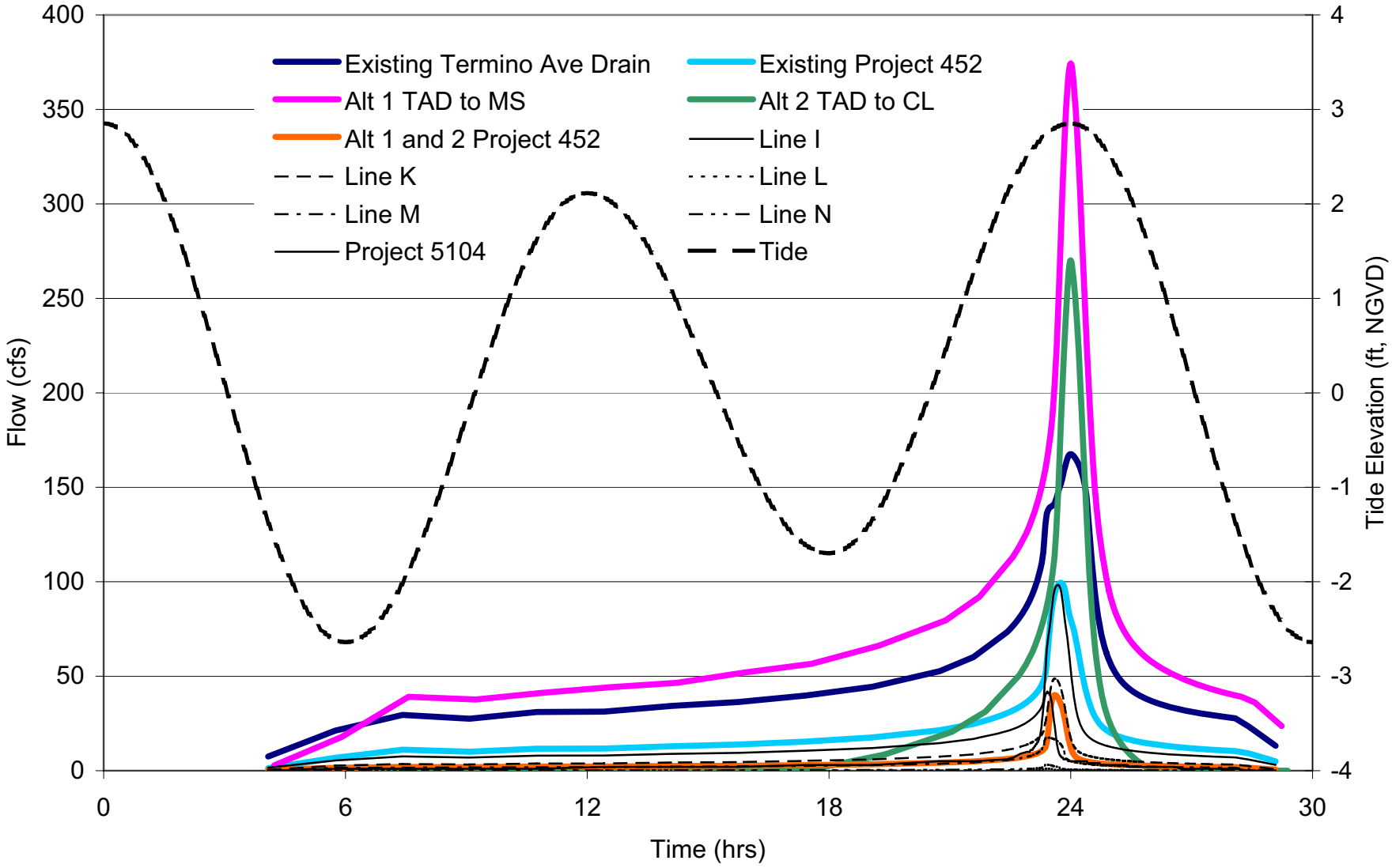


Figure 5.1 10-Year Hydrograph and Tide Elevations for Salinity Analysis

Table 5.3 10-Year Flood Event Peaks and Volumes

Storm Drain	Existing Conditions		Alternative 1		Alternative 2	
	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)	Peak Flow (cfs)	Volume (acre-ft)
TAD	167.59	88.49	374.39*	130.28*	270.13	30.01
Project 452	99.49	35.25	40.05	7.23	40.05	7.23
Line I	98.32	24.86	98.32	24.86	98.32	24.86
Line K	48.71	11.95	48.71	11.95	48.71	11.95
Line L	1.08	0.23	1.08	0.23	1.08	0.23
Line M	17.46	5.58	17.46	5.58	17.46	5.58
Line N	3.14	0.73	3.14	0.73	3.14	0.73
Project 5104	42.00*	6.04*	42.00*	6.04*	42.00*	6.04*
Low Flow Diversion	--	--	--	--	45.00*	92.98*
Total	--	173.13	--	186.90	--	179.60

* Flow discharges to Marine Stadium

Table 5.4 NOAA Tide Datums

Tidal Datums	Elevation (ft, MLLW)	Elevation (ft, NGVD)
Highest Observed Water Level (1/27/83)	7.821	5.181
Mean Higher High Water (MHHW)	5.492	2.852
Mean High Water (MHW)	4.754	2.114
Mean Sea Level (MSL)	2.825	0.185
National Geodetic Vertical Datum – 1929 (NGVD)	2.640	0.000
Mean Low Water (MLW)	0.942	-1.698
North American Vertical Datum 1988 (NAVD)	0.203	-2.437
Mean Lower Low Water (MLLW)	0.000	-2.640
Lowest Observed Water Level (12/17/33)	-2.730	-5.370

The salinity levels were analyzed at several locations through the study area. The salinity concentrations for the 10-year peak at MHHW under Existing Conditions, Alternative 1, and

Alternative 2 are shown in Figures 5.2 to 5.4, respectively. Under Existing Conditions, the salinity in Colorado Lagoon drops rapidly to below 10 ppt within the first 24 hours of the flood (peak occurs at hour 20) and remains below 10 ppt past hour 30, hence, violating both criteria shown previously in Table 5.2. In Marine Stadium, all three locations meet Criterion 1 under Existing Conditions. Criterion 2 is not met at Location E, but is satisfied at Locations F and G.

For Alternative 1 (TAD to Marine Stadium), Location A in Colorado Lagoon does not meet both criteria, while Locations B, C, and D meet only Criterion 1. In Marine Stadium, Criterion 1 is satisfied at all three locations and Criterion 2 is satisfied at only Location G.

For Alternative 2 (TAD to Colorado Lagoon), both criteria are not satisfied in Colorado Lagoon. In Marine Stadium, Criterion 1 is met at all three locations, while Criterion 2 is met only at Locations F and G.

5.3 SALINITY IMPACTS

A comparison of the salinity analysis under Existing Conditions, Alternative 1, and Alternative 2 at the four locations in Colorado Lagoon is shown in Figure 5.5. Overall, both alternatives reduce the drop in salinity levels compared to Existing Conditions. Location A shows the least amount of improvement since flows in that portion of the lagoon were not altered under either alternative. The greatest improvement occurs at Location D, which is closest to the existing TAD. Alternative 1 shows an improvement in Colorado Lagoon compared to Alternative 2.

A comparison of the salinity analysis under Existing Conditions, Alternative 1, and Alternative 2 at the three locations in Marine Stadium is shown in Figure 5.6. Overall, both alternatives reduce salinity levels in Marine Stadium below Existing Conditions, with Alternative 1 resulting in the greatest change. At Location E, both alternatives reduce salinity levels below Existing Conditions for the first 24-hours, but then salinity levels are similar to Existing Conditions beyond that timeframe. Alternative 1 has the greater impact at Location F, compared to Alternative 2. Salinity levels at Location G are reduced slightly under Alternatives 1 and 2.

The salinity recovery was simulated for nine days following the 10-year flood flow. The salinity recovery for Existing Conditions, Alternative 1, and Alternative 2 are shown in Figures 5.7 – 5.9, respectively. Recovery of salinity levels occurs much faster in Marine Stadium compared to Colorado Lagoon.

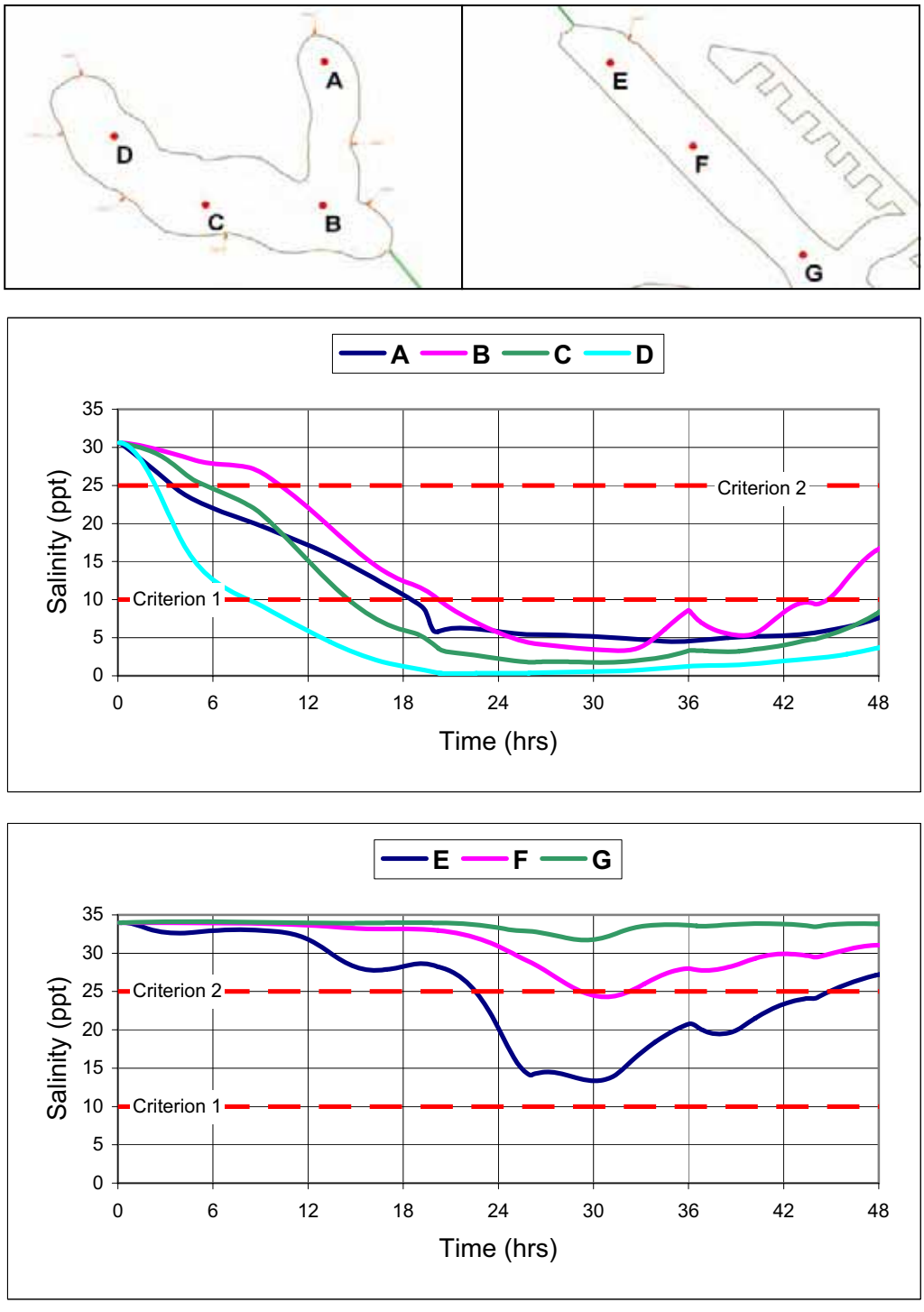


Figure 5.2 Salinity Concentrations for Existing Conditions with 10-Year Peak at MHHW

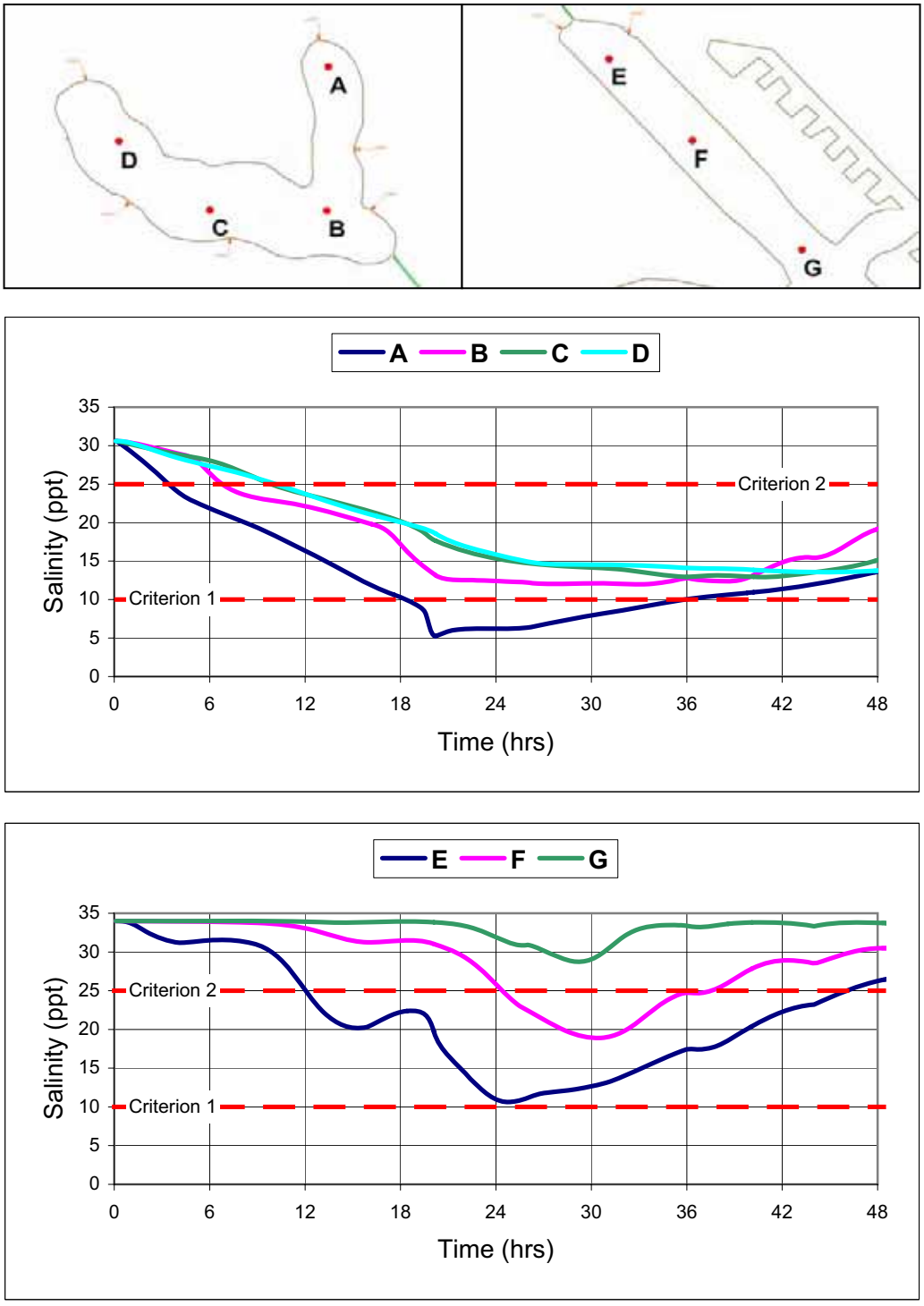


Figure 5.3 Salinity Concentrations for Alternative 1 with 10-Year Peak at MHHW

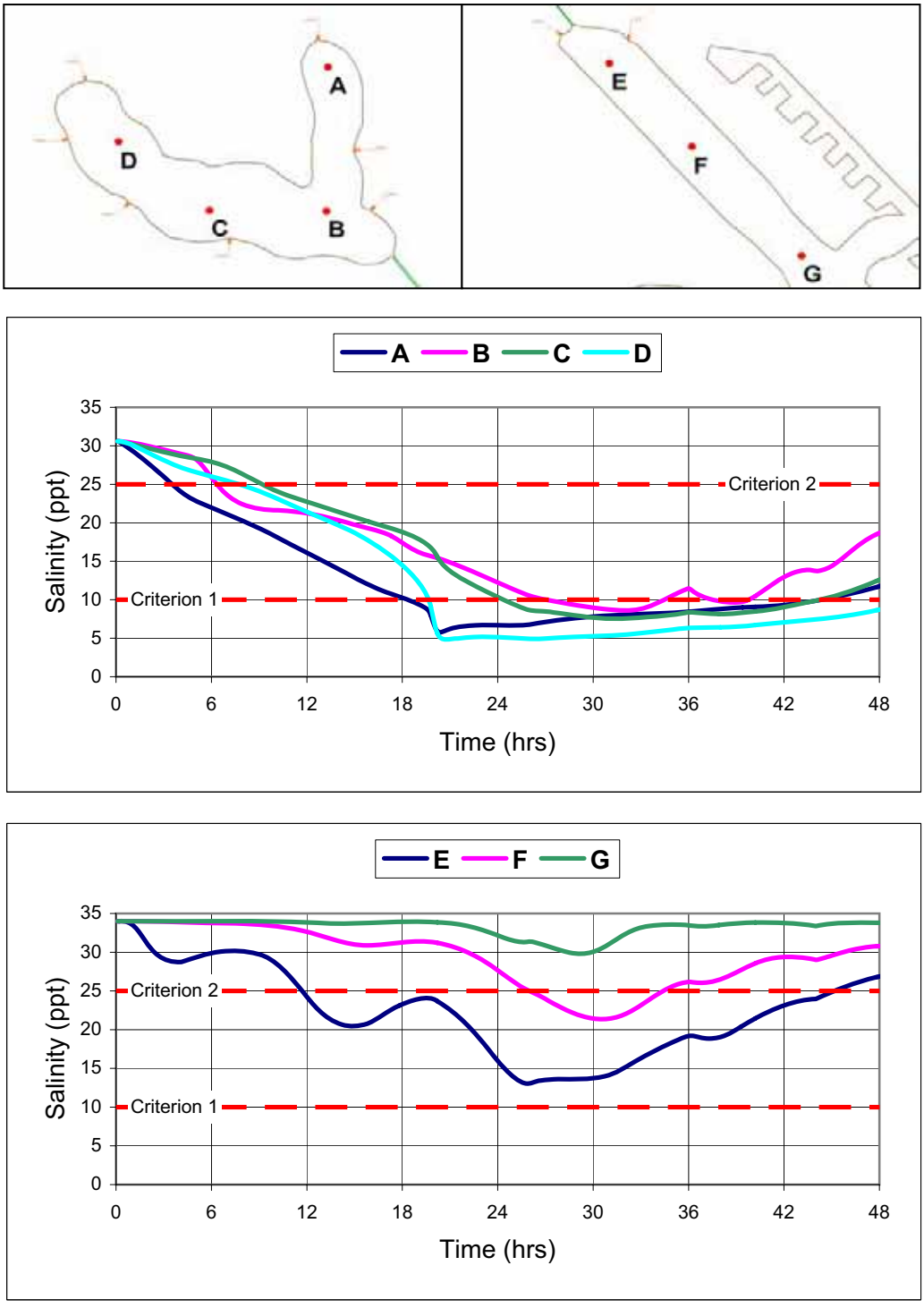


Figure 5.4 Salinity Concentrations for Alternative 2 with 10-Year Peak at MHHW

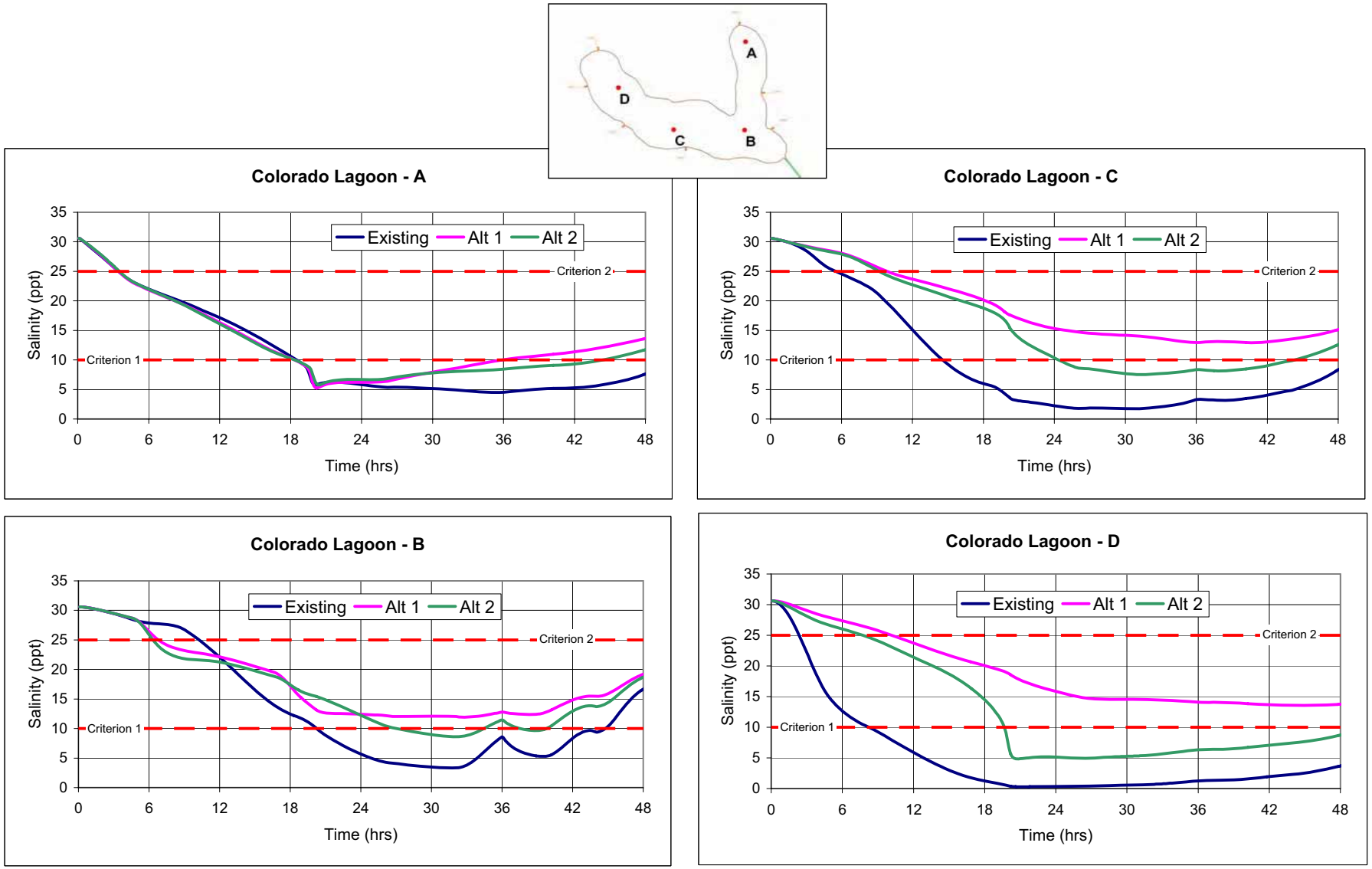
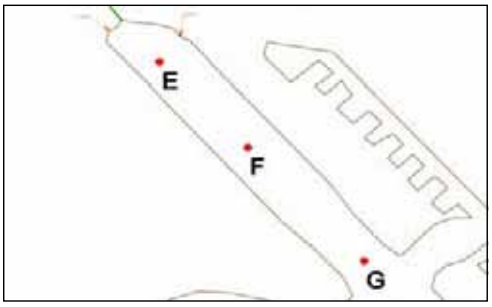
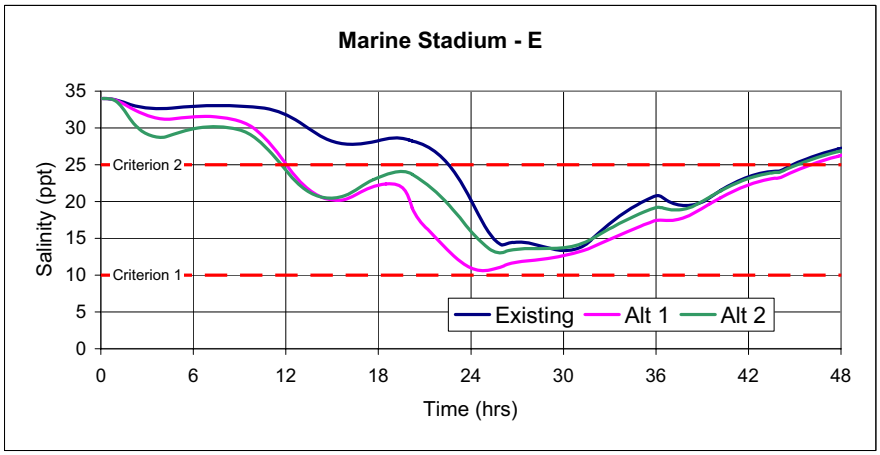
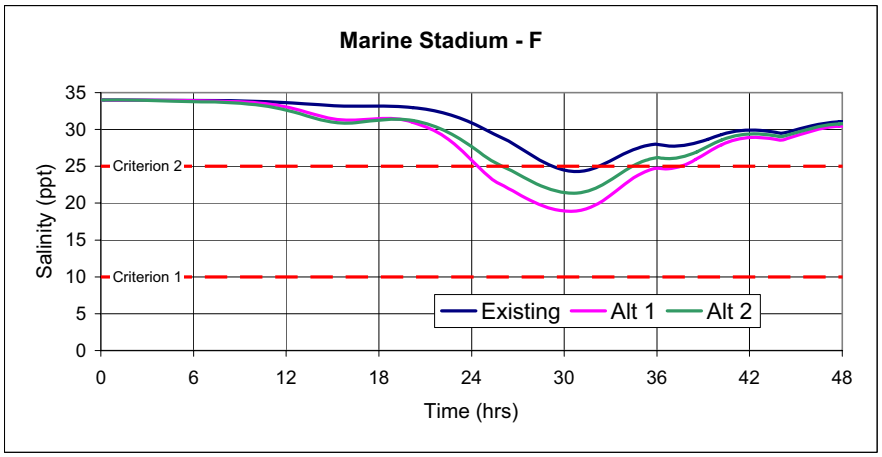


Figure 5.5 Salinity Ananlysis Summary for Colorado Lagoon







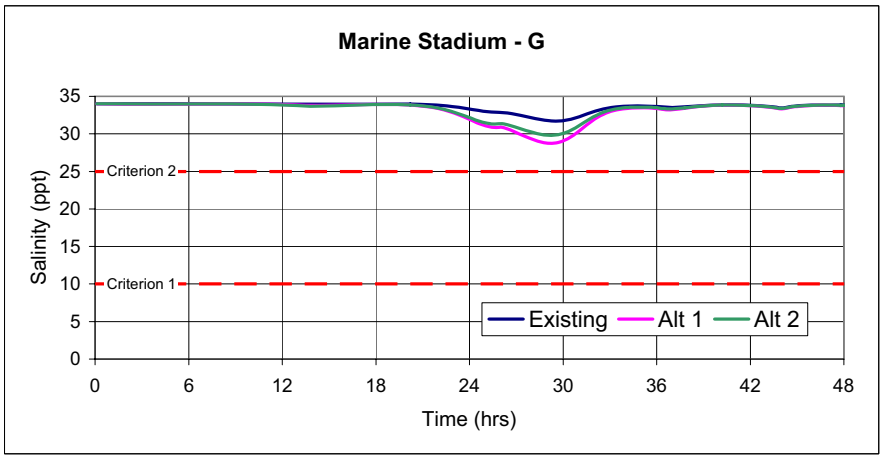


Figure 5.6 Salinity Ananlysis Summary for Marine Stadium

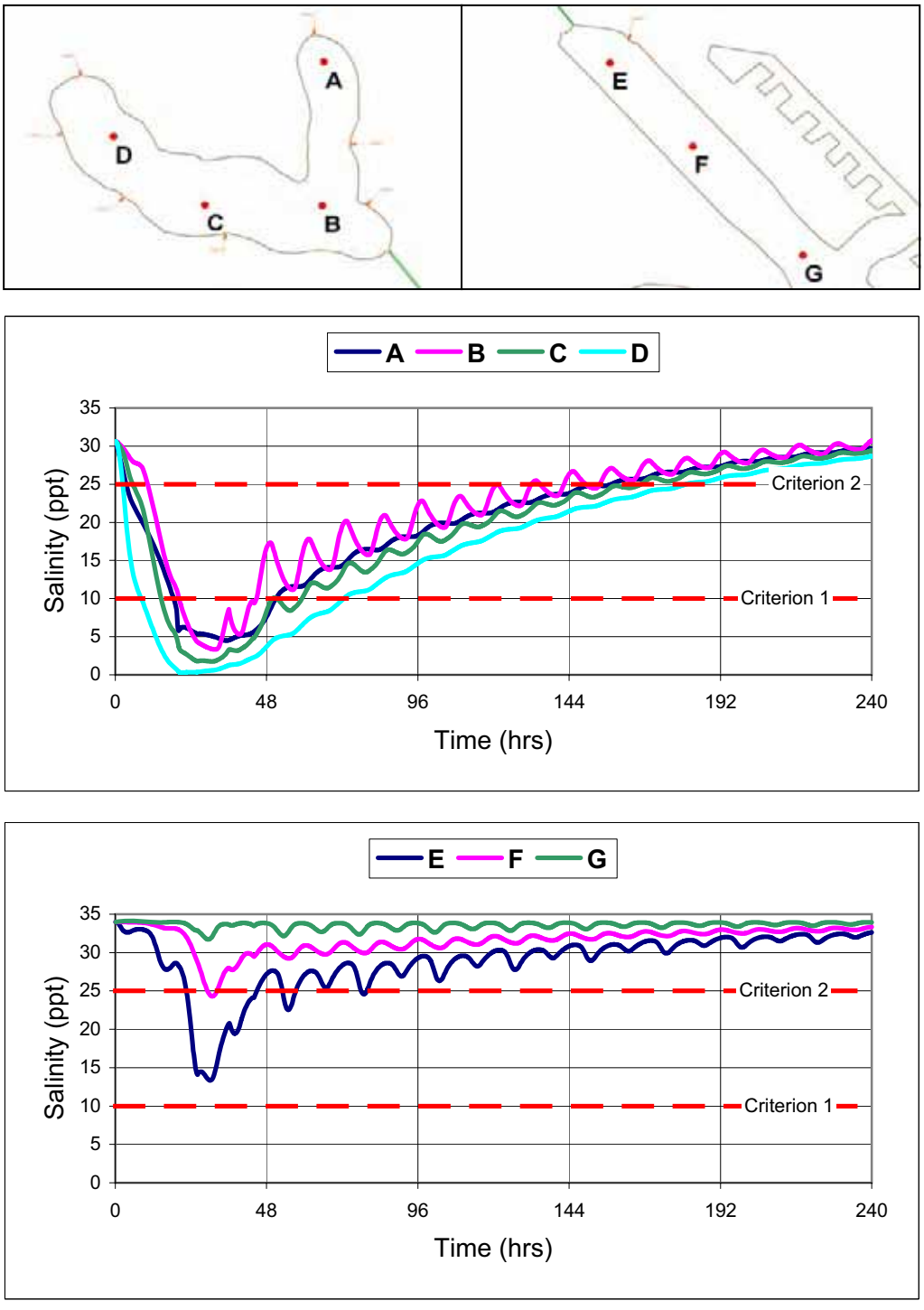
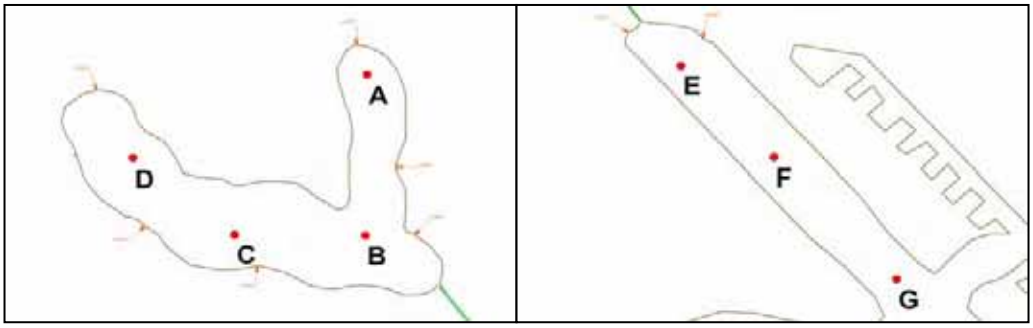
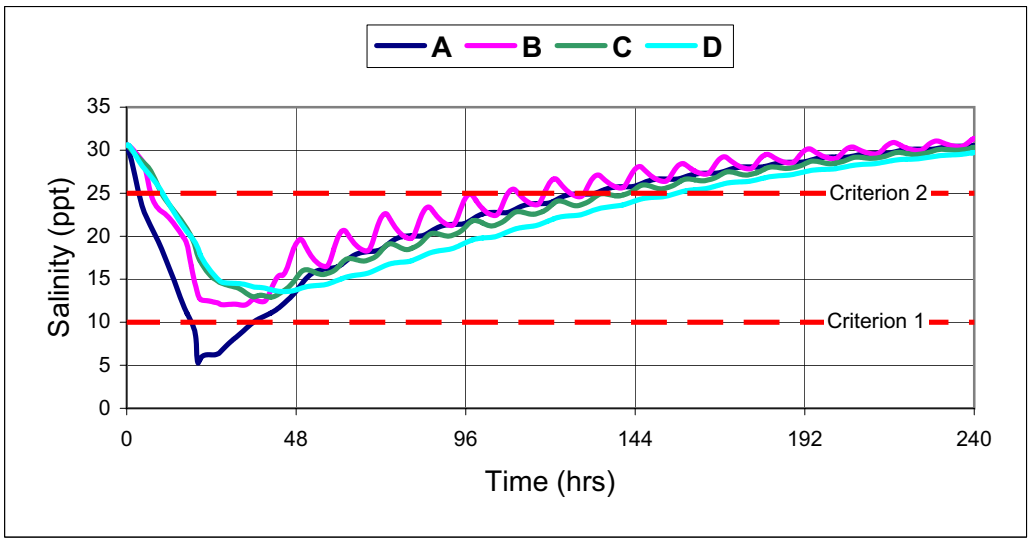


Figure 5.7 Salinity Recovery for Existing Conditions with 10-Year Peak at MHHW





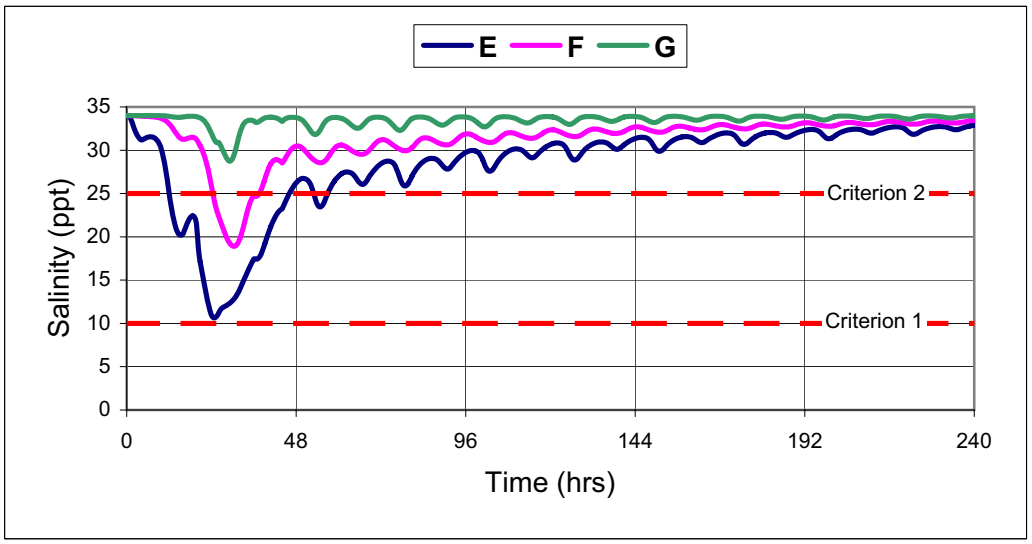


Figure 5.8 Salinity Recovery for Alternative 1 with 10-Year Peak at MHHW

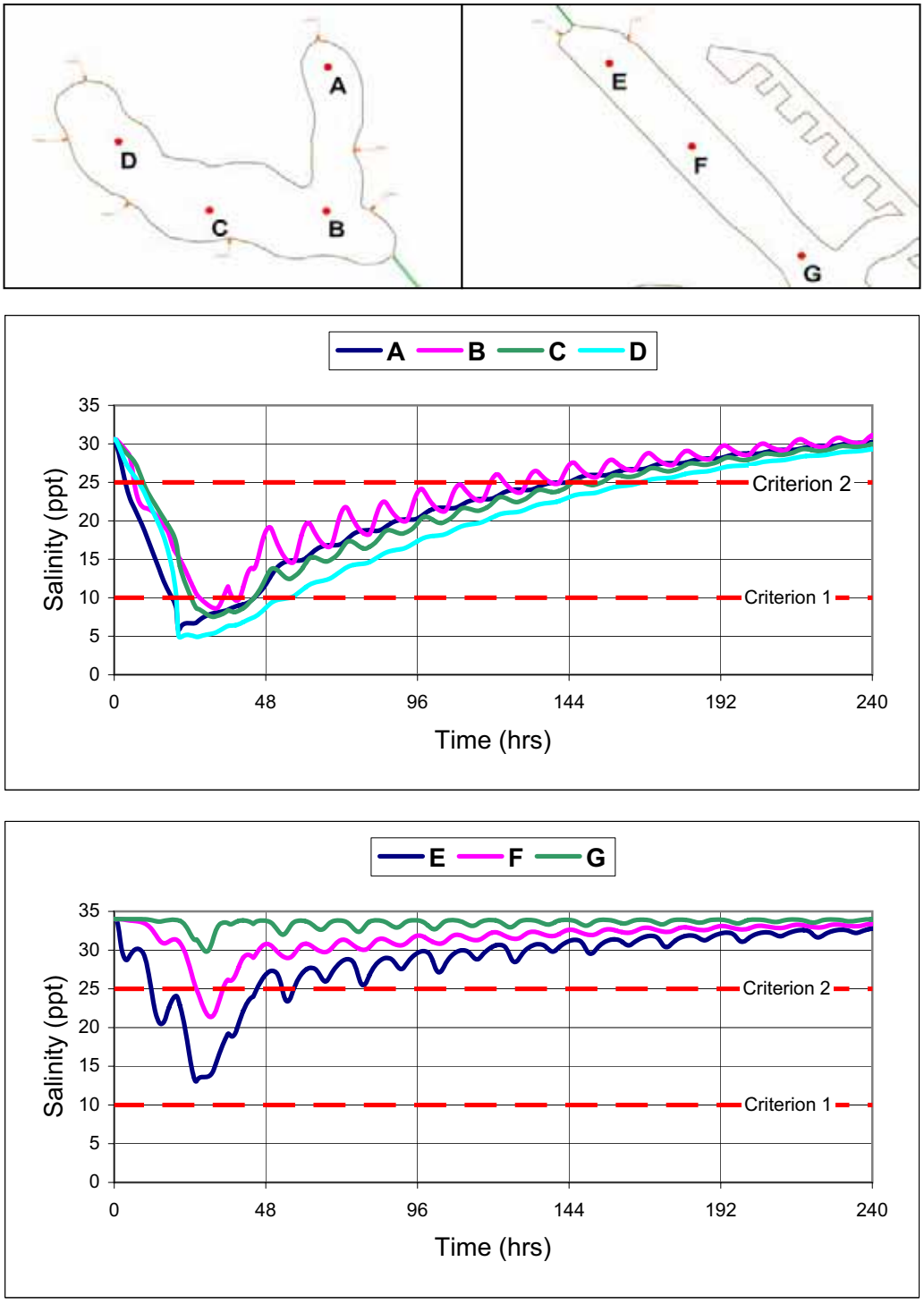


Figure 5.9 Salinity Recovery for Alternative 2 with 10-Year Peak at MHHW

The salinity analyses results based on the 10-year peak coinciding at MHHW are summarized in Table 5.5. Under Existing Conditions, the four locations in Colorado Lagoon violate both criteria. Under Alternative 1, Locations B, C, and D would pass Criterion 1, but all of the locations would still not pass Criterion 2. Alternative 2, like Existing Conditions, does not meet both criteria. At Marine Stadium, Criterion 1 is satisfied at all three locations under Existing Conditions, Alternative 1, and Alternative 2. Existing Conditions pass Criterion 2 at Locations F and G, but not E. Alternative 1 passes both criteria only at Location G, while Alternative 2 is the same as Existing Conditions.

Table 5.5 Salinity Analysis Summary for 10-Year Peak at MHHW

Colorado Lagoon	Existing Conditions		Alternative 1		Alternative 2	
	Criterion 1	Criterion 2	Criterion 1	Criterion 2	Criterion 1	Criterion 2
A	Fail	Fail	Fail	Fail	Fail	Fail
B	Fail	Fail	**Pass**	Fail	Fail	Fail
C	Fail	Fail	**Pass**	Fail	Fail	Fail
D	Fail	Fail	**Pass**	Fail	Fail	Fail
Marine Stadium	**Existing Conditions**		**Alternative 1**		**Alternative 2**	
	Criterion 1	**Criterion 2**	**Criterion 1**	**Criterion 2**	**Criterion 1**	**Criterion 2**
E	Pass	Fail	Pass	Fail	Pass	Fail
F	Pass	Pass	Pass	**Fail**	Pass	Pass
G	Pass	Pass	Pass	Pass	Pass	Pass

5.4 Sediment Analysis

Storm drain discharges into Colorado Lagoon and Marine Stadium can result in localized high velocities near the storm drain outfalls. High velocities from flood flows may resuspend sediment and associated pollutants into the water column. The potential impact of the proposed TAD alternatives to sediment resuspension in Colorado Lagoon and Marine Stadium was evaluated. First, the minimum velocity required to resuspend different sediment grain sizes or "critical velocities" were determined. Next, sediment in Colorado Lagoon and Marine Stadium were characterized by grain size distributions of sediment samples. The hydrodynamic model used in the salinity analysis was used to evaluate the velocities that occurred Colorado Lagoon and Marine Stadium during a 10-year flood event. These velocities were compared to the critical velocities that would resuspend sediment in

Colorado Lagoon and Marine Stadium. The areas susceptible to sediment resuspension under Alternative 1 and Alternative 2 were then compared to Existing Conditions to determine the sediment impacts.

The critical velocity is mainly a function of the grain size of the sediments in the bed. Larger grain sizes require a higher velocity to resuspend the sediment into the water column. The critical velocities for resuspension for various sediment grain sizes were determined based on a modified Shields diagram applicable for turbulent flows (USACE 2002). The modified Shields diagram is generally applicable for noncohesive sediment (e.g., sand) with grain sizes greater than 0.1 mm, but does include an alternate determination of the critical velocity for grain size diameters less than 0.1 mm (e.g., silts and clays). The critical velocities for different grain sizes are summarized in Table 5.6. Sand would be resuspended above a velocity of ranging from 0.87 feet per second (ft/sec) for fine sand to 1.54 ft/sec for very coarse sand, while, velocities above 0.73 ft/sec would resuspend silts.

Table 5.6 Critical Velocities for Resuspension

SEDIMENT GRAIN SIZE (MM)	SEDIMENT CLASSIFICATION	CRITICAL VELOCITY FOR RESUSPENSION (FT/SEC)
1	Very Coarse Sand	1.54
0.5	Coarse Sand	1.07
0.25	Medium Sand	0.87
0.125	Fine Sand	0.81
0.062	Silt	0.73

Characteristics of sediment in Colorado Lagoon were determined based on sediment data collected by the City of Long Beach (2004a). The grain size distribution was determined from a composite sample taken from three sediment cores in the northwest portion of Colorado Lagoon. The composite sample was divided into a top sample and bottom sample. The top sample ranged in depths from 2.5 to 4.5 ft. The bottom sample consisted of the 0.5 ft beneath the top sample interval for each core. Three sediment cores at depths taken at the central portion of the lagoon near the tidal culvert were combined for another composite sample with the top sample depths between 4.0 and 5.5 ft. A third composite was sampled from three sediment cores taken from the northeastern portion of the lagoon. The depth of

the top sample ranged from1.5 to 3.5 ft. The grain size distributions for each region of the lagoon are summarized in Table 5.7. Sediment in Colorado Lagoon is predominantly fines with grain sizes less than 0.062 mm.

Table 5.7 Colorado Lagoon Sediment Grain Size Distributions

Grain Size Interval (mm)	Interval Percent (%)					
	Northwest Composite		Central Composite		Northeast Composite	
	Top	Bottom	Top	Bottom	Top	Bottom
8 - 4	0.7	0.6	0.3	0.0	3.5	3.1
4 – 2	0.7	0.2	1.2	0.1	1.9	0.4
2 – 1	1.8	0.2	2.0	0.1	4.0	1.9
1 – 0.5	6.6	0.3	6.5	0.3	15.6	2.8
0.5 – 0.25	18.6	1.5	16.2	0.7	24.1	4.4
0.25 - 0.125	11.3	4.0	11.4	3.6	13.1	7.5
0.125 – 0.062	8.0	4.3	6.0	16.0	7.5	10.1
<0.062	52.3	88.9	56.4	79.3	29.9	69.8

Source: City of Long Beach 2004a

Characteristics of sediment in the northwest portion of Marine Stadium were determined based on three sediment samples taken on May 11, 2005 (Coastal Resources Management 2005). Sediment grain size distributions were determined from core samples taken to a depth of 1.5 ft. A summary of the grain size analysis is shown in Table 5.8. In general, the surface sediment (0.5 ft) was bay mud consisting of fine sediments underlain by silty sand.

Table 5.8 Marine Stadium Sediment Grain Size Distributions

SAMPLE	D_{50} (MM)	INTERVAL PERCENT		
		GRAVEL	SAND	SILT/CLAY
S-1	0.035	0.0	25.3	74.6
S-2	0.086	0.4	53.0	46.6
S-3	0.099	1.8	57.8	40.3

Source: Coastal Resources Management 2005

For flood events, the maximum velocity at a given location occurs at a different time then the time of the maximum velocity at another location. For example, the maximum velocity at a point near the existing TAD would occur at or near the peak of the hydrograph. The maximum velocity at a point near the tidal culvert would occur after the hydrograph peak, as the flood flow moves through the lagoon towards the tidal culvert. Therefore, the maximum velocity at each point in the study area was determined from the model results for the entire duration of each model simulation.

The maximum velocity distribution was determined under Existing Conditions, Alternative 1, and Alternative 2, as shown in Figure 5.10. The highest velocities occur at the storm drain outfalls, as well as at each end of the tidal culvert. Resuspension of silts occur in areas where velocities are above 0.7 ft/sec. Under Existing Conditions, the maximum velocities in Colorado Lagoon are sufficient to resuspend silt in the immediate vicinity of the storm drain outfalls. The largest scour area occurs at the Marine Stadium end of the tidal culvert, where velocities are sufficient to resuspend sands and silts. Alternative 1 increases the scour area in Marine Stadium at the TAD outfall. Alternative 2 increases the scour area in Colorado Lagoon at the TAD outfall.

5.5 SEDIMENT IMPACTS

The potential of each alternative to resuspend sediment was evaluated based on the change in scour area from Existing Conditions. The changes in the maximum velocity distribution from Existing Conditions to Alternatives 1 and 2 are shown in Figure 5.11. In the figure, velocity changes within plus or minus 0.1 ft/sec of Existing Conditions were grayed out in order to highlight the major differences. Blue areas indicate areas where the alternative will

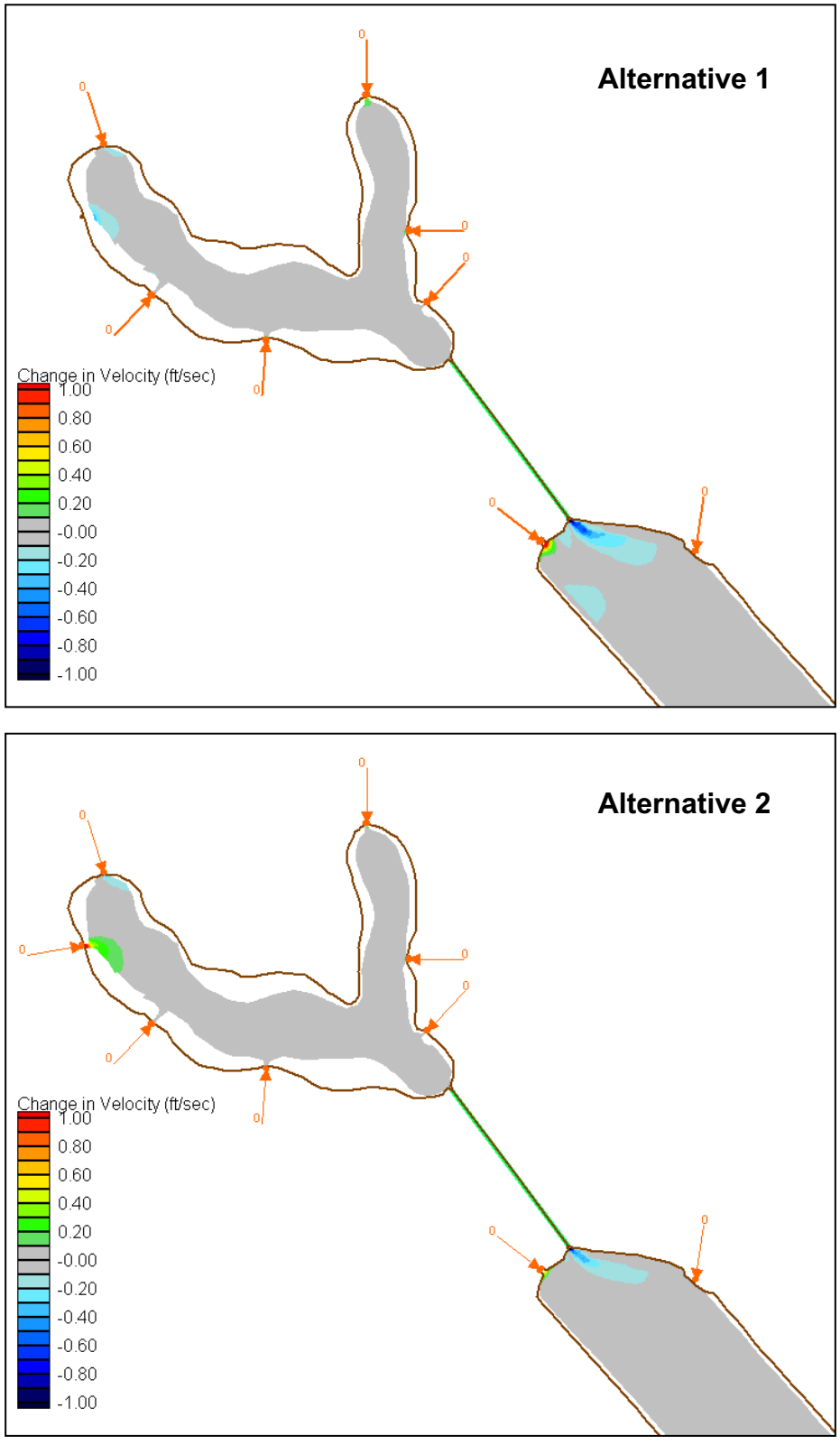


Figure 5.11 Change in Maximum Velocity Distribution from Existing Conditions

decrease velocities compared to Existing Conditions, while other colored areas indicate increases in velocities.

Alternative 1 will reduce the silt scour area in Colorado Lagoon due to the removal of the existing TAD flows. At Marine Stadium, velocities near the tidal culvert will also be reduced. Velocities in the immediate vicinity of the Alternative 1 TAD outfall will be increased.

The scour area in Colorado Lagoon under Alternative 2 will be increased at the Alternative 2 TAD outfall. Velocities at the Marine Stadium end of the tidal culvert will be reduced, but will be increased at the low flow outfall.

In general, both alternatives will increase velocities at the new outfall locations. These impacts will be minimized with the placement of properly designed energy dissipater blocks at the outfall that will reduce velocities from the storm drain flows. In addition, woven geotextile fabric will also be placed at the outfall to reduce erosion and associated resuspension.

5.6 POLLUTANT LOADING ANALYSIS

There are insufficient data available to determine the loadings of bacteria, nutrients, and other 303(d) constituents into Colorado Lagoon from each storm drain. Water quality data for constituent concentrations from individual storm drains are available, but do not include other storms drains for a relative comparison.

In lieu of storm drain water quality data, sediment quality data for Colorado Lagoon and Marine Stadium were used to generalize pollutant loading characteristics from the storm drains. The Colorado Lagoon sediment samples, discussed previously in Section 5.5, were also analyzed for organochlorine pesticides, polychlorinated biphenyls (PCBs), metals, and polycyclic aromatic hydrocarbons (PAHs). The study (City of Long Beach 2004a) concluded that the sediment sampling showed significantly higher pollutant concentrations at the northwest portion of the lagoon compared to the center and northeast areas. The primary constituents of concern identified were lead and some organochlorine pesticides (DDT compounds, chlordane, and dieldrin). Secondary constituents of concern identified were PCBs and metals (cadmium, copper, mercury, silver, and zinc). The Marine Stadium sediment samples were tested for metals, PCBs, total petroleum hydrocarbons (TPHs), semi-volatile organic compounds (SVOCs), and organochlorine pesticides (Coastal Resources Management 2005). The three sediment samples were non-detect for TPHs, organochlorine pesticides, and PCBs. Metals were within background concentrations of

terrestrial soils in Southern California. In the second sediment sample, bis-(2-ethylhexyl) phthalate was detected, while no SVOCs were detected in the other two samples.

Based on the sediment quality data, the largest concentration of pollutants occurs in the northwest portion of Colorado Lagoon, near the existing TAD and Project 452 storm drains. The existing TAD has the highest flood flow and the Project 452 storm drain has the second highest flood flow. The third largest storm drain (Line I) discharges into the northeast portion of Colorado Lagoon, where the sediment quality was better compared to the northwest portion. Therefore, it was assumed that the existing pollutant loading is proportional to the storm drain flows.

Implementation of either alternative will not change the total loading into the system, but it will redistribute the loading between Colorado Lagoon and Marine Stadium. This is a conservative assumption since the in-line storm drain catch basin screens and dry weather diversions were not considered. Under the assumption that the pollutant loading is proportional to the flood flow, the percentage of the total 10-year flood flow for each storm drain was determined for Existing Conditions, Alternative 1, and Alternative 2. The existing TAD contributes about 51% of the total flood flow. Under Alternative 1, approximately 70% of the total 10-year flood flow would be diverted to Marine Stadium. Alternative 2 would divert approximately 52% of the total flow to Marine Stadium via the low flow diversion, while the Alternative 2 TAD would account for about 17%. The percent loading contributions for each storm drain under Existing Conditions, Alternative 1, and Alternative 2 are summarized in Table 5.9.

To better illustrate the redistribution of pollutant loadings under the alternatives, a loading analysis was conducted with the same water quality model used for the salinity analysis. The pollutant loading was simulated as a conservative tracer with a concentration proportional to the 10-year flood flow was simulated under Existing Conditions, Alternative 1 and Alternative 2. The peak of the 10-year flood was timed to correspond to MHHW. The time series of the average concentration in Colorado Lagoon and the northwest portion of Marine Stadium were then compared.

The average concentrations in Colorado Lagoon under Existing Conditions, Alternative 1, and Alternative 2 are shown in Figure 5.12. The average concentrations are shown based on the time in days after the end of the storm with time -1 indicating the start of the storm, time 0 indicating the end of the storm, and time 1 indicating one day after the end of the storm. The highest concentrations occur under Existing Conditions. The average concentration is reduced by 25% within one day following the end of the storm flow and

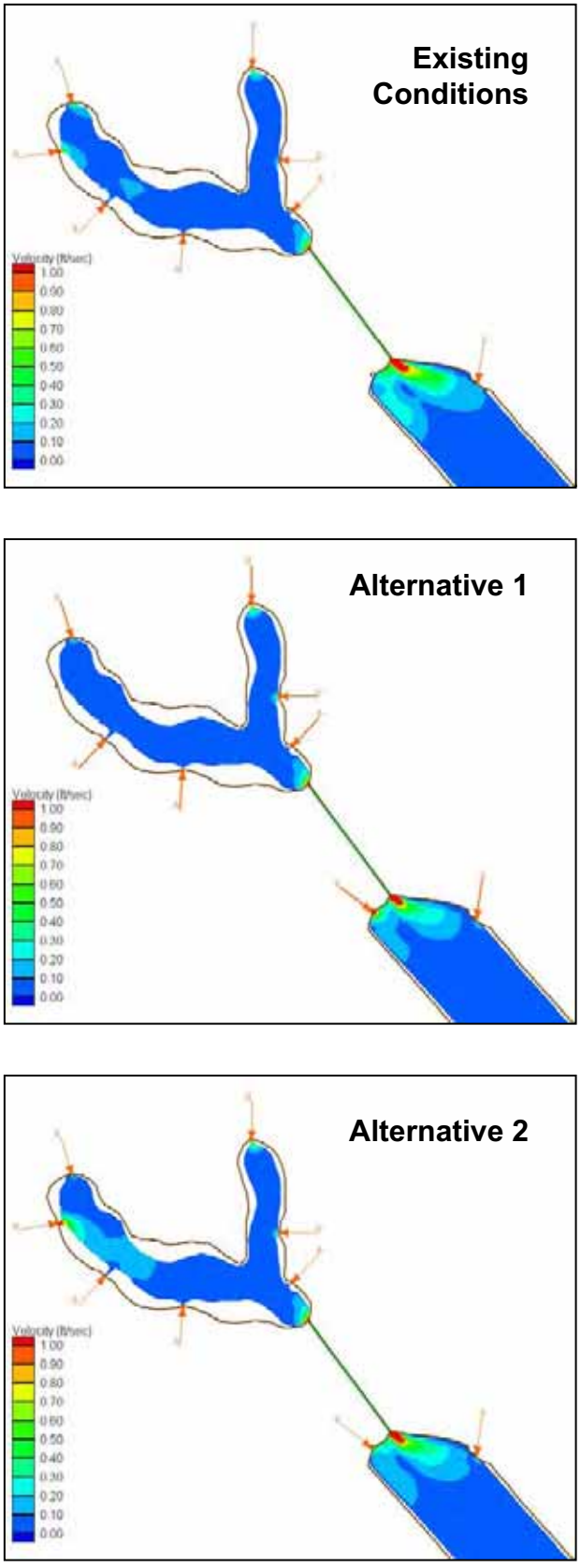


Figure 5.10 Maximum Velocity Distribution during 10-Year Flood Event

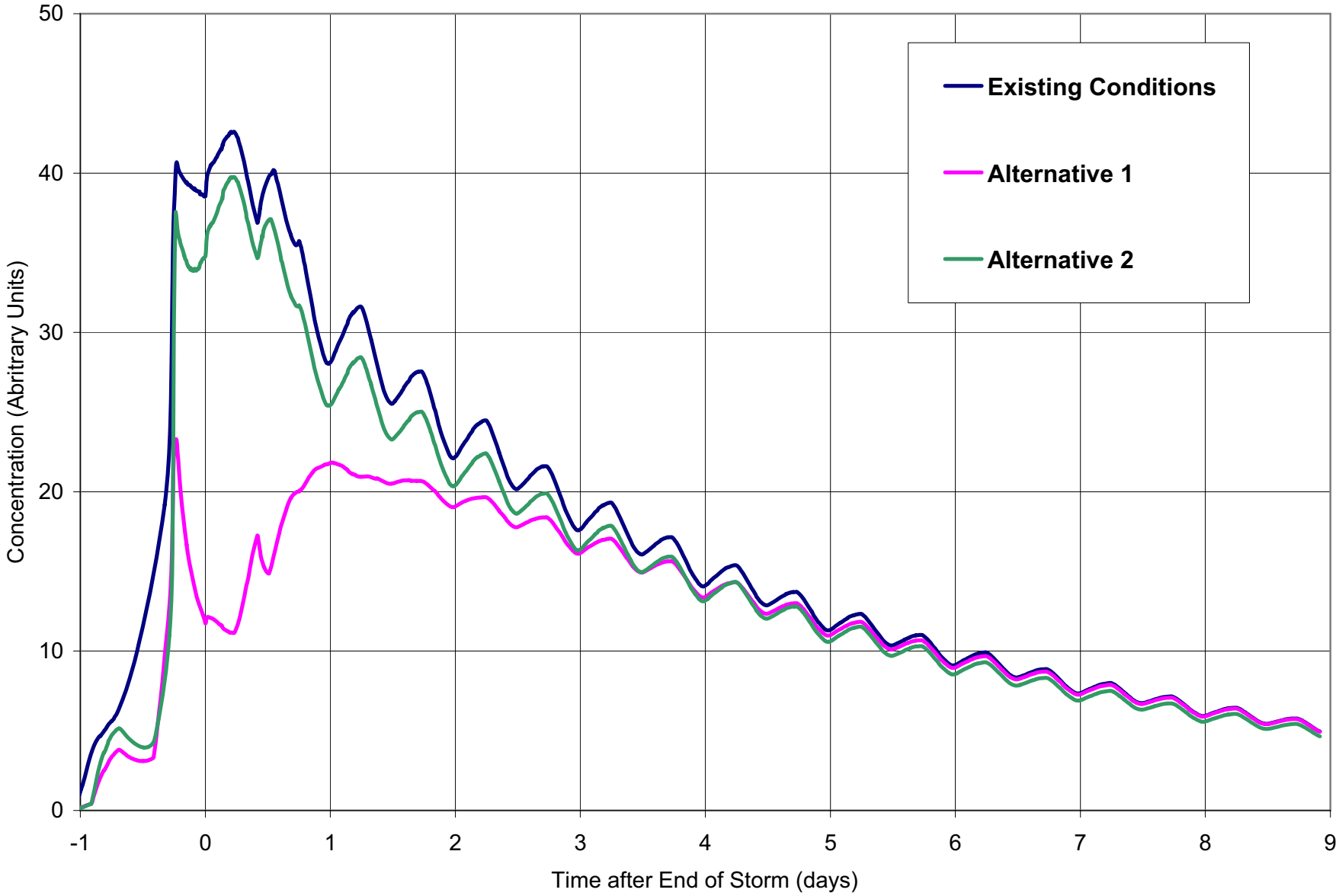


Figure 5.12 Loading Analysis for Colorado Lagoon

reduced by 50% within about three days. For Alternative 1, the peak average concentration into Colorado Lagoon is about half of the peak concentration under Existing Conditions. For the first day following the storm flow, the concentration in Colorado Lagoon increases since pollutants discharging into Marine Stadium during ebb tide is now returning into Colorado Lagoon during the flood tide. Alternative 2 follows the same trend as Existing Conditions, but at a lower concentration. The recovery beyond two days following the end of the hydrograph is similar for Existing Conditions, Alternative 1, and Alternative 2.

Table 5.9 Proportional Loading Contributions for Storm Drains

Storm Drain	Percentage of Total 10-Year Flood Volume		
	Existing Conditions	Alternative 1	Alternative 2
TAD	51.1	69.7*	16.7
Project 452	20.4	3.9	4.0
Line I	14.4	13.3	13.8
Line K	6.9	6.4	6.7
Line L	0.1	0.1	0.1
Line M	3.2	3.0	3.1
Line N	0.4	0.4	0.4
Project 5104	3.5*	3.2*	3.4*
Low Flow Diversion	--	--	51.8*

* Flow discharges to Marine Stadium

The average concentrations in Marine Stadium under Existing Conditions, Alternative 1, and Alternative 2 are shown in Figure 5.13. Existing Conditions shows the lowest average concentrations, with the peak occurring after the end of the storm flow as the pollutant moves out of Colorado Lagoon and into Marine Stadium. The average concentration is reduced by 50% in about one day. Alternative 1 has the highest concentrations due to the increase in loadings into Marine Stadium. However, the initial peak is quickly dispersed by the end of the storm flow, from which point the concentration is reduced by 50% within about one day. The results for Alternative 2 are similar to Alternative 1 without the sharp peak in concentration immediately following the storm flow.

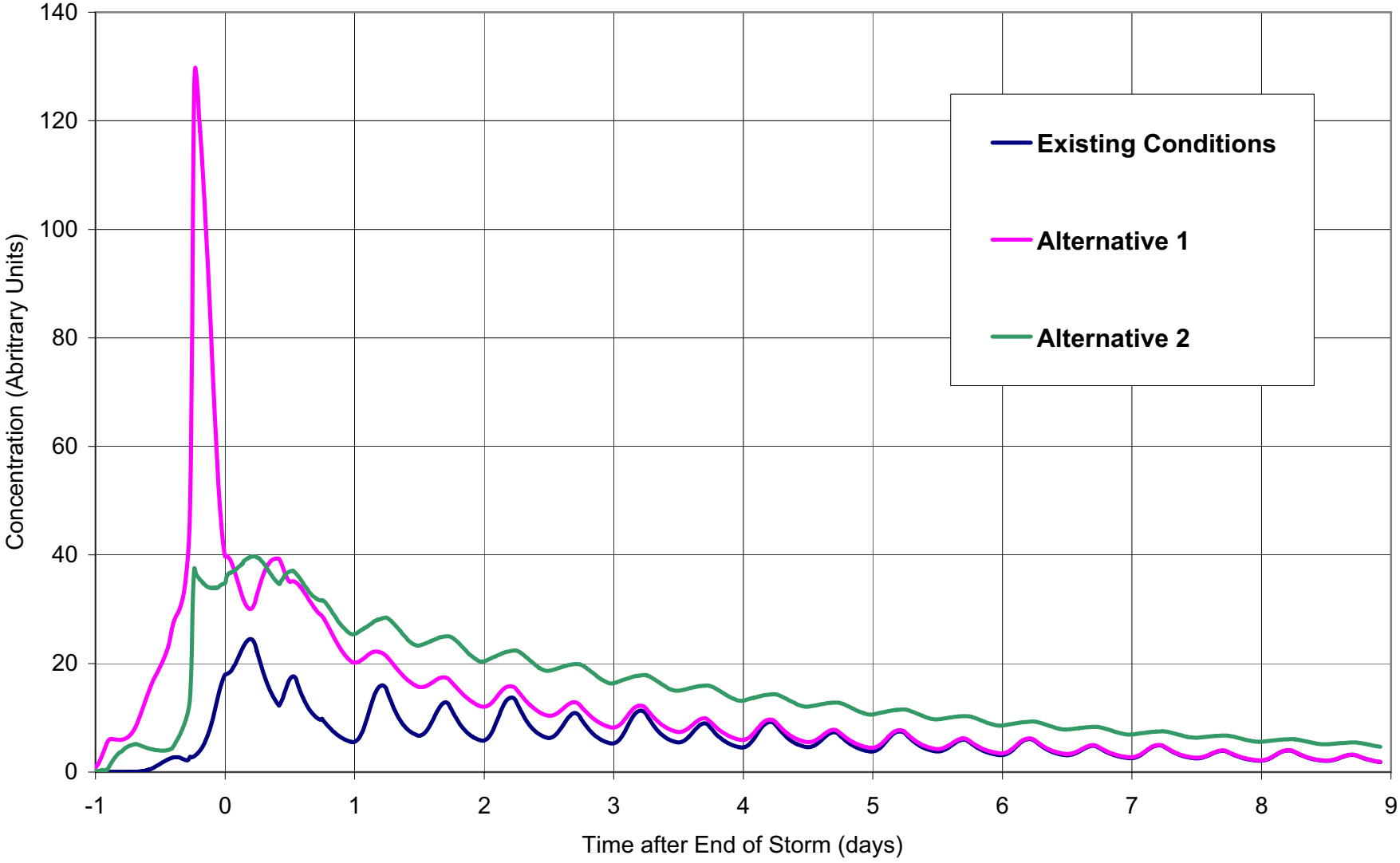


Figure 5.13 Loading Analysis for Marine Stadium

5.7 POLLUTANT LOADING IMPACTS

The pollutant loading impacts for the alternatives were evaluated based on the pollutant loading analysis. Both alternatives would increase loadings to Marine Stadium and decrease the loadings to Colorado Lagoon. However, the impacts to Marine Stadium would be less than Colorado Lagoon since Marine Stadium has better flushing. Based on the pollutant loading analysis, a 50% reduction in concentration occurs within about one day in Marine Stadium, but same reduction takes about three days in Colorado Lagoon. Therefore pollutant dispersal for the overall system (Colorado Lagoon and Marine Stadium) would improve for both alternatives. In addition, improvement in water quality would occur during dry weather conditions, as both alternatives would reduce the total loading in the system due to the in-line storm drain catch basin screens and through the diversion of dry weather flows to the sanitary system. Future pollutant loadings to Colorado Lagoon and Marine Stadium could also be reduced by other non-project related BMPs implemented within the watershed; however, such improvements are beyond the scope of the TAD project.

In addition to the pollutant loadings, most of the constituents on the 303(d) list are associated with the sediments. Scouring and resuspension of existing sediments in Colorado Lagoon and Marine Stadium during flood events may also contribute to additional pollutant loadings to Colorado Lagoon and Marine Stadium. Based on the previous sediment analysis, the resuspension of sediment would be minimized at the new outfalls under each alternative. Increases in scour are expected to occur mainly in Marine Stadium, where the sediment quality is better than that of Colorado Lagoon.

6 SUMMARY OF FINDINGS

The impacts of each alternative on flood elevations within Colorado Lagoon and the northwest portion of Marine Stadium (Marine Stadium) were evaluated based on a hydrologic analysis performed for the 50-year flood event. Under Existing Conditions the results indicted that flooding would occur within the vicinity of Colorado Lagoon, but not the vicinity of Marine Stadium. Under Alternative 1 the results indicated that flood elevations within Colorado Lagoon would be reduced compared to Existing Conditions and no changes would occur to flood elevations within Marine Stadium. In addition, the results indicated that no flooding would occur within the vicinity of Colorado Lagoon. Under Alternative 2 the results indicated that flood elevations within Colorado Lagoon would be reduced compared to Existing Conditions and no changes would occur to flood elevations within Marine Stadium. However, in contrast to Alternative 1, the results indicated that some flooding would still occur within the vicinity of Colorado Lagoon under Alternative 2.

The impacts of each alternative on salinity changes within Colorado Lagoon and Marine Stadium were evaluated based on salinity modeling simulations. The salinity modeling simulations were based on changes to salinity associated with a 10-year flood event. The 10-year event was chosen to be consistent with salinity criteria and analysis method developed previously to evaluate salinity impacts associated with the Bolsa Chica Lowlands Restoration Project. Under Alternative 1, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than Existing Conditions, thereby suggesting an improvement in salinity levels (i.e., more stable salinity levels). On the other hand, salinity levels in Marine Stadium would drop suggesting a degradation of salinity levels compared to Existing Conditions. Comparison of the salinity modeling results to the salinity criteria indicated that implementation of Alternative 1 would change three out of eight failures under Existing Conditions to passes within Colorado Lagoon, but a portion of Marine Stadium located closest to the new storm drain that passed both salinity criteria would not pass one of the criteria. The significance of this impact to marine species would need to be determined by biologists in the EIR. Under Alternative 2, the results of the salinity modeling showed that salinity levels within Colorado Lagoon would remain higher than Existing Conditions, thereby suggesting an improvement in salinity levels. Salinity levels in Marine Stadium would remain similar to salinity levels under Existing Conditions suggesting no substantial change to salinity levels. Comparison of the salinity modeling results to the salinity criteria indicated that implementation of Alternative 2 would not change the pass or fail of the criteria under Existing Conditions within Colorado Lagoon or Marine Stadium.

The impacts of each alternative on water quality associated with the resuspension of sediment within Colorado Lagoon and Marine Stadium were evaluated based on a sediment scour analysis. The sediment analysis was based on determining velocity changes that would exceed the critical velocities needed to resuspend sediment of various grain sizes. Under Alternative 1 the results indicated a reduction in potential scour within Colorado Lagoon and an increase in potential scour within Marine Stadium in the immediate vicinity of the new TAD Drain outfall. Under Alternative 2 the results showed an increase in potential scour within Colorado Lagoon in the immediate vicinity of the TAD Drain outfall and an increase in potential scour within Marine Stadium at the low flow drain outfall. Both alternatives would reduce the tidal velocities at the end of the tidal culvert within Marine Stadium. However, these impacts would be reduced with the proposed energy dissipater blocks and geotextile fabric that are to be placed at the outfalls as the effects of these project features was not included in the sediment scour analysis.

The impacts of each alternative on water quality constituents other than salinity and sediment were evaluated based on a pollutant loading analysis that examined the redistribution of flows between Colorado Lagoon and Marine Stadium. Under Alternative 1 the results indicated a reduction of contaminant concentration within Colorado Lagoon compared to Existing Conditions and an increase of contaminant concentration within Marine Stadium. However, Alternative 1 would result in an overall improvement in the entire hydrologic system (Colorado Lagoon and Marine Stadium). Under Alternative 2 the results showed no substantial change in contaminant concentration within Colorado Lagoon and an increase of contaminant concentration within Marine Stadium. Like Alternative 1, Alternative 2 would also result in an overall improvement in the entire hydrologic system (Colorado Lagoon and Marine Stadium).

In summary, both alternatives would improve flood conditions (i.e., lower flood water elevations) within Colorado Lagoon compared to Existing Conditions without adversely impacting flood conditions within Marine Stadium. Alternative 1 would provide the most benefit and it would reduce flood elevations to levels below the elevation of the perimeter of Colorado Lagoon, thereby containing floods within the lagoon. Both alternatives would result in higher average salinity levels during storm flows across the entire hydrologic system compared to Existing Conditions. However, under Alternative 1 a small area near the tidal culvert within Marine Stadium could result in higher short-term impacts to marine species compared to Existing Conditions and Alternative 1. While both alternatives will result in potential increases in sediment resuspension associated with localized scour in the vicinity of the new TAD drain outlets, these increases will be partially offset by the inclusion of energy dissipation structures and geotextile fabric that was not included in the analysis. In addition,

although both alternatives would result in potential increases in sediment resuspension, the impacts to water quality under Alternative 1 would most likely be less than under Alternative 2 because the sediment quality in Marine Stadium is better than the sediment quality in Colorado Lagoon. Both alternatives would improve the overall water quality within Colorado Lagoon and Marine Stadium due to the inclusion of the in-line storm drain catch basin screens and diversion of dry weather flows to Marine Stadium where mixing is much better than Colorado Lagoon.

7 REFERENCES

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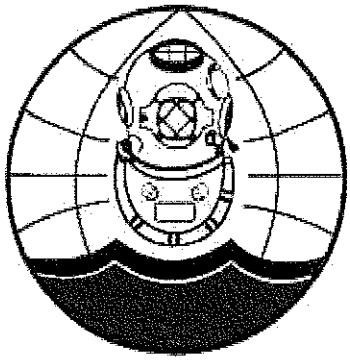


GLOBAL INSHORE

TERMINO AVENUE DRAIN EIR, 03080062.03

COLORADO LAGOON CULVERT INSPECTION

CONDUCTED APRIL 12, 2005

Submitted To:
E D.A.W., Inc.
1420 Kettner Blvd., Suite 620
San Diego, CA 92101

Submitted By:
Global Inshore Inc
3095 Cattey Lane
Rio Vista, CA 94571

April 28, 2005

E.D.A.W., INC.
1420 Kettner Blvd., Suite 620
San Diego, CA 92101

ATTN: ERIC WILSON

RE: TERMINO AVENUE DRAIN EIR

Dear Sir:

Global Inshore, Inc. was contracted to perform an underwater inspection of the tidal culvert (culvert) between Colorado Lagoon (lagoon) and Marine Stadium (marina). The inspection was to be performed along and within the entire length of the culvert (approximately 900 feet). The inspection was performed with a surface supplied diver with communications and recorded to a DVD. All audio between the diver and the surface support personnel was recorded to the DVD. The inspection was to determine the following conditions and scope.

- Estimate vertical and horizontal dimensions at 50-foot intervals
- Determine amount and type of growth on surfaces
- Determine amount and type of material build up on invert
- Estimate floor elevation at each end of the culvert
- Verify opening dimensions at each end of the culvert
- Report any anomalies found throughout the culvert

Due to emergency work the City Surveyor was unable to provide survey services. The elevation of the invert at each end therefore could not be obtained. We did measure the distance and it can be interpolated out after survey to find the elevation. The following is a report of the findings and conditions and video captures.

MARINA SIDE

Global Inshore, Inc. began the inspection on the marina side due to tidal conditions. During set-up and testing of the equipment the City removed the trash rack covering the outlet into the marina. The diver began the inspection by measuring the opening at the marina side. The opening was measured at 12'-1" x 8'-0". Just inside of the opening the culvert is 12'-1" x 8'-6". There is an extensive amount of rock just outboard of the opening. The rock is built up so that it is 3.5' above the invert in one area.

The following is a table of the vertical and horizontal measurements obtained throughout the culvert.

MEASUREMENT OF CLEAN CULVERT

DISTANCE FROM MARINA OPENING	HORIZONTAL MEASUREMENT	VERTICAL MEASUREMENT
0'	12'-1"	8'-0"
50'	12'-1"	8'-0"
100'	12'-1"	8'-3"
150'	12'-1"	8'-1"
200'	12'-1"	8'-1"
250'	12'-1"	8'-3"
300'	12'-1"	8'-6"
350'	12'-1"	8'-5"
400'	12'-1"	8'-3"
450'	12'-1"	* 7'-4"
500'	12'-1"	8'-6"
550'	12'-1"	8'-6"
600'	12'-1"	8'-6"
650'	12'-1"	8'-6"
700'	12'-1"	8'-6"
750'	14'-4.5"	6'-3"
800'	14'-1"	6'-8"
850'	14-0"	6'-8"
900' / OPENINGS (2 EA.)	6'-6"	7'-0"

***This is probably 8'-4" and is probably a diver error.**

MEASUREMENT OF FREE FLOW IN CULVERT

The following table is the measurement from biofouling to biofouling both vertically and horizontally.

DISTANCE FROM MARINA OPENING	HORIZONTAL MEASUREMENT	VERTICAL MEASUREMENT
0'	11'-7"	8'-0"
50'	11'-7"	6'-4"
100'	11'-7"	6'-8"
150'	11'-7"	7'-3"
200'	11'-7"	7'-4"
250'	11'-7"	6'-0"
300'	11'-7"	7'-4"
350'	11'-7"	7'-1"
400'	11'-7"	6'-5"

450'	11'-7"	5'-7"
500'	11'-7"	6'-9"
550'	11'-7"	6'-6"
600'	11'-7"	6'-0"
650'	11'-7"	7'-4"
700'	11'-7"	6'-9"
750'	13'-9.5"	4'-3"
800'	13'-7"	4'-8"
850'	13'-6"	5'-2"
900' / OPENINGS (2 EA.)	6'-0"	6'-6"

DISTANCE FROM MARINA OPENING	VERTICAL MEASUREMENT DEPTH OF MATERIAL ON FLOOR
0'	0"
50'	20"
100'	17"
150'	10"
200'	9"
250'	26"
300'	14"
350'	16"
400'	22"
450'	21"
500'	16" – 22"
550'	24"
600'	30"
650'	14"
700'	19"
750'	30"
800'	16"
850'	12"
900' / OPENINGS	0"

There is some discrepancy in the vertical measurements and this is due to the fact that the material build up varies and could be in a different place from the vertical measurement. Overall Global Inshore believes the measurements of the two sections of culvert are as follows:

1. **12'-1" x 8'-6"**
2. **14'-1" x 6'-8" to 7'-0"**

The material build up on the floor was mainly clam and mussel growth. To measure the depth the diver used a probe with incremental marks. The diver found some sand mixed in with the hard growth. Thirty feet in from the lagoon side the floor was clean of material.

The sides have a soft growth and hard growth. The hard growth on the sides was again mainly mussels and barnacles.

The top of the culvert on the lagoon side was fairly sporadic with biofouling until the transition when the top of the culvert drops in elevation. At this point the material was a lot thicker as it appears to be underwater almost continually.

The following table identifies the amount of and type of growth on the walls and top of the culvert.

DISTANCE FROM MARINA OPENING	TOP OF CULVERT DEPTH OF MATERIAL/ TYPE OF MATERIAL	WALLS DEPTH OF MATERIAL/ TYPE OF MATERIAL
0'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
50'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
100'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
150'	2"-3" SOFT/ MUSSELS	½" SOFT/BARNS./MUSS.
200'	2"-3" SOFT/ MUSSELS	½" SOFT
250'	3" SOFT/ MUSSELS	½" SOFT
300'	2"-3" SOFT/ MUSSELS	SPORADIC SOFT
350'	2"-3" SOFT/ MUSSELS	½" SOFT
400'	2"-3" SOFT/ MUSSELS	½" SOFT
450'	2" SOFT/ MUSSELS	CLEAN
500'	2"-3" SOFT/ MUSSELS	CLEAN
550'	2"-3" SOFT/ MUSSELS	CLEAN
600'	2"-3" SOFT/ MUSSELS	MINIMAL BARNACLE
650'	2"-3" SOFT/ MUSSELS	MINIMAL BARNACLE
700'	2"-3" SOFT/ MUSSELS	CLEAN
750'	3"-4" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS
800'	2"-3" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS
850'	2"-3" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS
900' / OPENINGS (2 EA.)	2"-3" SOFT/ MUSSELS	2"-3" SOFT/ MUSSELS

The overall condition of the concrete surfaces is very good. No spalling and/or cracks were found throughout the interior of the culvert. The only anomalies found were to the concrete soft patches/covers at each end of the culvert. The undersides of the covers on their bottoms have missing concrete and exposed rebar. (See photo 3)

Approximately 415' – 420' in from the marina side the diver found a vertical shaft that leads to a man hole cover. The vertical shaft is in the north side of the top of the culvert. It appeared to be 24" in diameter. (See photo 4)

Approximately 725' from the marina side is the transition between the sizes. The transition is approximately 20' in length. The top of the culvert decreases in height from 8'-6" to between 6'-8" and 7'-0". (See photo 8)

Approximately 755' from the marina side there is a 30" pipe opening into the culvert. There is a second pipe of 30" diameter at approximately 815' from the marina side. Both of the pipes come in on the north side wall near the floor. (See photo 10 and 11)

At the 900' distance, are the two openings into the lagoon. They are comprised of two, 6'-6" tall by 7'-0" wide openings with a divider wall. There are two wooden gates that are in very poor condition with holes. Both gates were able to slide up and down with no difficulty in the exercising of them. The north gate had a hole that was approximately 6" diameter with that and the floor being spalled the gate has a leakage of approximately 20 %. The south gate has leakage less significant than the north I would estimate it at 5-10% leakage. The gates are approximately 7'-0" x 7'-0" x 3" and slide down through guides in the concrete. The guides are formed into the concrete and are basically cut outs in the face. There are guides in the floor as well which comprise of 4" deep channel. On the Northern gate this channel is all spalled out with dimensions of the spall being 3' x 2' x 4".

Elevation information was not gathered. To assist with getting elevation Global Inshore Inc. measured from the floor of the culvert up to the concrete above the culvert. This was accomplished at each end of the culvert. When the city or a surveyor is brought in they should be able to shoot elevation of the concrete at each end. After knowing this elevation the surveyor can subtract the measurement from the floor to the concrete above the culvert and provide a culvert floor elevation. The following are the height measurements:

- MARINA SIDE = 11'-1"
- LAGOON SIDE = 11'-0"

On the marina side we mention the rocks 6'-0" away from the opening. These rocks are above the floor by 3.5 feet and are impeding the flow out of the lagoon.

After the inspection and prior to resetting the trash racks, the area of the trash racks was cleaned of all debris and rock.

The following are video captures of typical conditions and of anomalies noted in the report.

If you have any questions concerning this report, please give me a call at (925) 439-7227.

Respectfully submitted,

GLOBAL INSHORE, INC.

Kevin J. Pehle
General Manager

PHOTO 1 - TYPICAL CLEAN TOP OF CULVERT WITH NO BIOFOULING

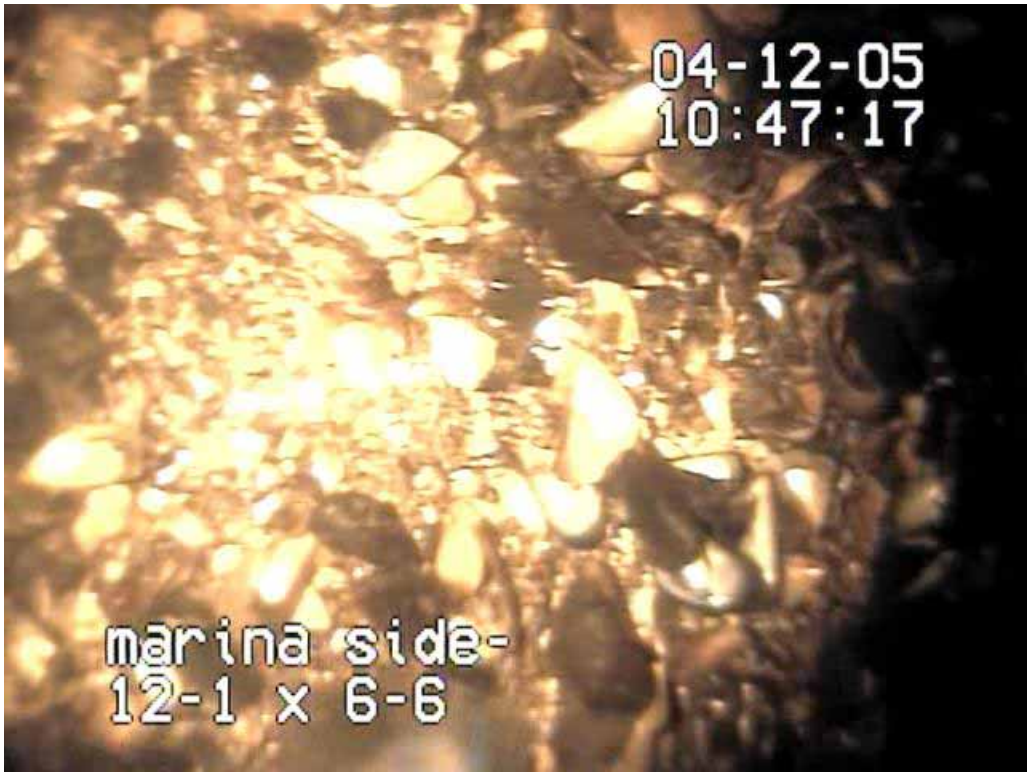


PHOTO 2 - TYPICAL MATERIAL ON BUILD UP OF CLAMS AND MUSSELS ON THE FLOOR OF THE CULVERT

PHOTO 3 - EXPOSED REBAR AND MISSING CONCRETE AT MARINA SIDE COVERS, LOOKING FORWARDS THE LAGOON

PHOTO 4 – VERTICAL SHAFT AND MANHOLE ACCESS AT 425 FT IN FROM MARINA SIDE

PHOTO 5 - ROCK BUILD UP OUTSIDE OF MARINA OPENING. THIS PILE IS IMPEDING FLOW AND IS 3.5' HIGHER THAN THE CULVERT FLOOR AND IS ABOUT 6' WIDE

PHOTO 6 - TYPICAL OVERHEAD SHOT SHOWING BIOFOULING AND TYPICAL CONDITION

PHOTO 7 - LAGOON OUTLET STRUCTURE SHOWING THE WING WALL AND DIVIDER WALL

PHOTO 8 – SHOWING START OF TRANSITION. THE EDGED CONCRETE IN ON THE LEFT CENTER IS THE START OF THE TRANSITION WHERE THE TOP OF THE CULVERT LOWERS

PHOTO 9 - TYPICAL MATERIAL BUILD UP SHOWING THE SHELL MATERIAL FOUND ON THE FLOOR

PHOTO 10 - 30" DIAMETER PIPE IN NORTH WALL APPROXIMATELY 755 FEET FROM THE MARINA SIDE. THIS IS THE FIRST OF TWO PIPES

PHOTO 11 - 30” OPENING / PIPE AT 815’ FROM MARINA

APPENDIX E

ENVIRONMENTAL DATA RESOURCES REPORT CORRIDOR STUDY

EXECUTIVE SUMMARY SECTION

EDR DataMap™ Corridor Study

Termino Avenue
Long Beach, CA 90804

July 13, 2005

Inquiry number 01463598.1r

EDR™ Environmental Data Resources Inc

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06460

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR).

TARGET PROPERTY INFORMATION

ADDRESS

LONG BEACH, CA 90804
LONG BEACH, CA 90804

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records within the requested search area for the following databases:

FEDERAL ASTM STANDARD

NPL	National Priority List
Proposed NPL	Proposed National Priority List Sites
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CORRACTS	Corrective Action Report
RCRA-TSDF	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System

STATE ASTM STANDARD

AWP	Annual Workplan Sites
Cal-Sites	Calsites Database
CHMIRS	California Hazardous Material Incident Report System
Toxic Pits	Toxic Pits Cleanup Act Sites
SWF/LF	Solid Waste Information System
WMUDS/SWAT	Waste Management Unit Database
CA BOND EXP. PLAN	Bond Expenditure Plan
VCP	Voluntary Cleanup Program Properties
INDIAN UST	Underground Storage Tanks on Indian Land
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land

FEDERAL ASTM SUPPLEMENTAL

CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
Delisted NPL	National Priority List Deletions
HMIRS	Hazardous Materials Information Reporting System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
NPL Liens	Federal Superfund Liens

EXECUTIVE SUMMARY

PADS PCB Activity Database System
UMTRA Uranium Mill Tailings Sites
US ENG CONTROLS Engineering Controls Sites List
ODI Open Dump Inventory
FUDS Formerly Used Defense Sites
DOD Department of Defense Sites
INDIAN RESERV Indian Reservations
RAATS RCRA Administrative Action Tracking System
TSCA Toxic Substances Control Act
SSTS Section 7 Tracking Systems
FTTS INSP FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

STATE OR LOCAL ASTM SUPPLEMENTAL

AST Aboveground Petroleum Storage Tank Facilities
CA WDS Waste Discharge System
DEED Deed Restriction Listing
NFE Properties Needing Further Evaluation
WIP Well Investigation Program Case List
NFA No Further Action Determination

EDR PROPRIETARY HISTORICAL DATABASES

Coal Gas Former Manufactured Gas (Coal Gas) Sites

BROWNFIELDS DATABASES

US BROWNFIELDS A Listing of Brownfields Sites
US INST CONTROL Sites with Institutional Controls
VCP Voluntary Cleanup Program Properties

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

FEDERAL ASTM STANDARD

CERCLIS-NFRAP: As of February 1995. CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund Action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA

does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

A review of the CERC-NFRAP list, as provided by EDR, and dated 03/22/2005 has revealed that there are 2 CERC-NFRAP sites within the searched area.

Site	Address	Map ID	Page
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-LQG list, as provided by EDR, and dated 05/20/2005 has revealed that there are 3 RCRA-LQG sites within the searched area.

Site	Address	Map ID	Page
EXXONMOBIL OIL CORP.	3400 E ANAHEIM ST	4	17
BEST WASHINGTON UNIFORM SUPPLY	1347 REDONDO AVENUE	4	28
EXXONMOBIL OIL CORP.	4700 E 7TH ST	31	90

RCRAInfo: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System(RCRIS). The database includes selective information on sites which generate, transport, store , treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month Large quantity generators generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-SQG list, as provided by EDR, and dated 05/20/2005 has revealed that there are 28 RCRA-SQG sites within the searched area.

Site	Address	Map ID	Page
BELMONT AUTO SERVICE	***3720 EAST 14TH STREET***	***3***	***5***
ONE HOUR PHOTO	***3270 E ANAHEIM ST***	***4***	***11***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
HAMER AUTOMOTIVE	***1333 REDONDO AVE***	***4***	***27***
WOODSTOCK FURNITURE INC	1395 CORONADO ST	4	31
WOODSTOCK FUNITURE MANUFACTURI	***1395 CORONADO AVENUE***	***4***	***31***
DEWEY PEST CONTROL	***1391 REDONDO AVENUE***	***5***	***31***
JOHNIE WALKER PRINTING	***1344 NEWPORT AVE***	***8***	***39***
LONG BEACH USD-BRYANT ELEMENTA	***4101 E FOUNTAIN STREET***	***10***	***40***
EAST LONG BEACH BRAKE SVC	***4401 E ANAHEIM ST***	***11***	***42***
1 HOUR PHOTO WORK	***4339 E ANAHEIM***	***11***	***42***
NESS GARMAN AUTO	***4417 E ANAHIEM***	***11***	***43***
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
JOES AUTO REPAIR	***3909E ANAHEIM ST***	***12***	***46***
EAST ANAHEIM AUTO CLINIC	***3636 E ANAHEIM***	***14***	***50***
LONG BEACH MOPED	***4138 E ANAHEIM ST***	***15***	***51***
ONE HOUR PHOTO	***1224 OBISPO AVE***	***17***	***57***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***
JB HANOVER CO	***4116 E 10TH ST***	***24***	***75***
LONG BEACH USD-WILSON HIGH SCH	***4400 EAST 10 STREET***	***25***	***80***
TRANS PLUS AUTOMOTIVE	***793 REDONDO AVE***	***26***	***82***
LONG BEACH USD JEFFERSON JR HI	***750 EUCLID AVENUE***	***28***	***83***
MCFARLAND ENERGY INC	***5003 7TH ST***	***31***	***90***
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***
GEN TELEPHONE OF CA/ LONG BEAC	***3910 E SEVENTH ST***	***32***	***97***
LONG BEACH USD-ROGERS JUNIOR H	***365 MONROVIA AVENUE***	***42***	***113***
LONG BEACH USD-LOWELL ELEMENTA	***5201 EAST BROADWAY***	***43***	***114***

STATE ASTM STANDARD

CORTESE: This database identifies public drinking water wells with detectable levels of contamination, hazardous substance sites selected for remedial action, sites with known toxic material identified through the abandoned site assessment program, sites with USTs having a reportable release and all solid waste disposal facilities from which there is known migration. The source is the California Environmental Protection Agency/Office of Emergency Information.

A review of the Cortese list, as provided by EDR, has revealed that there are 16 Cortese sites within the searched area.

Site	Address	Map ID	Page
TEXACO (FORMER)	***4545 PACIFIC COAST HWY***	***2***	***3***
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
MOBIL #11-M10	***3400 ANAHEIM ST E***	***4***	***17***
DAVIS-LEGRAND SITE	***1365 OBISPO AVE***	***6***	***33***
SUNSET AUTO BODY & PAINT	***1381 OBISPO***	***6***	***37***
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
T & T ARCO	***4235 ANAHEIM ST E***	***16***	***53***
ARAM'S INTERNATIONAL CAR & TIR	***3940 E 10TH ST***	***22***	***69***
WILSON HIGH SCHOOL	***4400 010TH ST E***	***25***	***78***
CHEVRON #9-0817	***700 REDONDO BLVD***	***29***	***84***
ARCO	***3201 007TH ST E***	***30***	***86***
UNOCAL #5820 (FORMER)	***676 TERMINO AVE***	***32***	***93***
SOUTHLAND CORP #25800	***4400 007TH ST E***	***34***	***99***

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
LONG BEACH UNIFIED SCHOOL	***4345 007TH***	***34***	***102***
TEXACO SERVICE (FORMER)	***404 REDONDO AVE***	***35***	***104***
GAS S/S #5814	***4404 004TH ST***	***37***	***109***

NOTIFY 65: Notify 65 records contain facility notifications about any release that could impact drinking water and thereby expose the public to a potential health risk. The data come from the State Water Resources Control Board's Proposition 65 database.

A review of the Notify 65 list, as provided by EDR, has revealed that there are 2 Notify 65 sites within the searched area.

Site	Address	Map ID	Page
APARTMENT/RESIDENCE	770 ST. LOUIS	27	83
SVC STA #1883	4725 E. 2ND	44	114

LUST: The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System.

A review of the LUST list, as provided by EDR, and dated 05/12/2005 has revealed that there are 18 LUST sites within the searched area.

Site	Address	Map ID	Page
TEXACO (FORMER)	***4545 PACIFIC COAST HWY***	***2***	***3***
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
MOBIL #11-M10	***3400 ANAHEIM ST E***	***4***	***17***
DAVIS-LEGRAND SITE	***1365 OBISPO AVE***	***6***	***33***
SUNSET AUTO BODY & PAINT, INC.	1381 OBISPO AVE	6	35
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
T & T ARCO	***4235 ANAHEIM ST E***	***16***	***53***
ARAM'S INTERNATIONAL CAR & TIR	***3940 E 10TH ST***	***22***	***69***
WILSON HIGH SCHOOL	***4400 010TH ST E***	***25***	***78***
CHEVRON #9-0817	***700 REDONDO BLVD***	***29***	***84***
ARCO	***3201 007TH ST E***	***30***	***86***
MOBIL #18-M1A	4770 7TH ST. E.	31	91
UNOCAL #5820 (FORMER)	***676 TERMINO AVE***	***32***	***93***
SOUTHLAND CORP #25800	***4400 007TH ST E***	***34***	***99***
LONG BEACH UNIFIED SCHOOL	***4345 007TH***	***34***	***102***
TEXACO SERVICE (FORMER)	***404 REDONDO AVE***	***35***	***104***
SCOTTY'S	3601 4TH ST E	36	106
GAS S/S #5814	***4404 004TH ST***	***37***	***109***

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, and dated 04/12/2005 has revealed that there are 65 UST

sites within the searched area.

Site	Address	Map ID	Page
DENO'S	1100 REDONDO AVE	4	6
WILLIAM COWAN ROOFING	1144 REDONDO AVE	4	8
CONTINENTAL BAKING COMPANY	1208 REDONDO AVE	4	8
CHURCH OF GOD - CLEVELAND TENN	1216 REDONDO AVE	4	8
VACANT/DEMO (FORMERLY CITY RAD	3543 E ANAHEIM ST	4	9
KING TEXTILE	3530 E ANAHEIM ST	4	9
BELMONT AUTO SPA	3525 E ANAHEIM ST	4	9
PARKS & REC/SPEC SERVICES (OLD	3500 E ANAHEIM ST	4	12
TANK UNDER PAVED STREET (SLURR	3342 E ANAHEIM ST	4	12
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
Not reported	3339 E ANAHEIM ST	4	16
Not reported	3327 E ANAHEIM ST	4	16
Not reported	3321 E ANAHEIM ST	4	16
MCDONALDS RESTAURANT	3302 E ANAHEIM ST	4	16
MOBIL SS#18-M10	3400 E ANAHEIM STREET	4	17
MOBIL OIL #18-M10 (4 D/W O-C)	3400 E ANAHEIM ST	4	17
Not reported	3441 E ANAHEIM ST	4	22
EL POLLO LOCO (FORMERLY ACME M	3425 E ANAHEIM ST	4	25
TIDY DIDY SERVICE	***1330 REDONDO AVE***	***4***	***26***
BEST WASHINGTON UNIFORM SUPPLY	1342 CORONADO AVE	4	28
Not reported	1356 CORONADO AVE	4	30
Not reported	1326 OBISPO AVE	6	32
Not reported	1340 OBISPO AVE	6	32
Not reported	1354 OBISPO AVE	6	33
Not reported	1347 LOMA AVE	7	38
Not reported	1353 LOMA AVE	7	39
Not reported	1360 NEWPORT AVE	8	39
Not reported	3710 FOUNTAIN ST	9	40
PRO-TIRE & WHEEL INC	4390 E ANAHEIM ST	11	41
Not reported	4343 E ANAHEIM ST	11	41
Not reported	4340 E ANAHEIM ST	11	41
Not reported	3927 E ANAHEIM ST	12	43
Not reported	4005 E ANAHEIM ST	12	44
Not reported	1212 EUCLID AVE	14	49
Not reported	3715 E ANAHEIM ST	14	50
Not reported	4135 E ANAHEIM ST	15	52
COASTAL PAINT & DECORATINC INC	4127 E ANAHEIM ST	15	52
T & T MINI MART/GAS STATION (4	4235 E ANAHEIM ST	16	52
T & T GAS & AUTO SERVICE	4235 E ANAHEIM ST	16	55
Not reported	1200 OBISPO AVE	17	56
Not reported	1203 LOMA AVE	18	62
JIM BLAND MASONRY INC	1228 LOMA AVE	18	63
Not reported	1145 NEWPORT AVE	19	63
BELMONT AUTO BODY & PAINT	1101 OBISPO AVE	20	67
Not reported	1111 OBISPO AVE	20	67
BEACH CITIES SUNROOFS	***3640 E 10TH ST***	***21***	***68***
Not reported	3500 E 10TH ST	21	69
ARAM'S INTERNATIONAL CAR & TIR	***3940 E 10TH ST***	***22***	***69***
ARMSTRONG GARDEN CENTER	3842 E 10TH ST	22	72
G.H.A. INC (ARCO AM-PM) 3 D/W	1001 REDONDO AVE	23	75
LBUSD-WILSON HIGH SCHOOL	***4400 E 10TH ST***	***25***	***81***
TRANS PLUS AUTOMOTIVE	***793 REDONDO AVE***	***26***	***82***
ANTHONY'S STUDIO 7	4640 E 07TH ST	31	90
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***
VACANT (FORMERLY UNOCAL)	0676 TERMINO AVE	32	96

EXECUTIVE SUMMARY

Site	Address	Map ID	Page
SEE 3910 & 3980 E. 07TH ST	3940 E 07TH ST	32	98
LEE'S AUTO REPAIR	4001 E 07TH ST	32	98
GTE CALIFORNIA INC	3980 E 7TH ST	32	99
LOMA OIL	3605 E 7TH ST	33	99
STARR DRY CLEANING (MR ARIS GO	4400 E 07TH ST	34	104
UNOCAL #5814 (DEMO)	4404 E 04TH ST	37	111
Not reported	5150 E COLORADO ST	39	112
FIRE STATION 14 (12 D/W JOOR G	5200 ELIOT ST	40	113
ELLIOTT TENEYCK LTD	5491 MARINA WAY	41	113
Not reported	5232 E BROADWAY	43	113

CA FID: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, has revealed that there are 13 CA FID UST sites within the searched area.

Site	Address	Map ID	Page
BIG EFF'S CAR WASH	3525 E ANAHEIM ST	4	9
ELIAS F. BATSHON	***3400 E ANAHEIM ST***	***4***	***21***
TIDY DIDY DIAPER SERVICE	1330 REDONDO AVE	4	26
WAREHOUSE	1326 OBISPO AVE	6	32
ADVANCE METALS	3710 FOUNTAIN ST	9	39
T&T MINIMART & GAS	4235 E ANAHEIM	16	52
BEACH CITIES ENT.	3640 E 010TH ST	21	67
THE GAS STATION	3940 E 010TH ST	22	69
G.H.A.S. INC.	1001 REDONDO AVE	23	74
NABIL BATSHOUN	4770 007TH ST	31	88
SERVICE STATION 5820	676 TERMINO AVE	32	92
ALLIANCE	4001 E 007TH ST	32	97
SERVICE STATION 5814	4404 E 004TH ST	38	112

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 17 HIST UST sites within the searched area.

Site	Address	Map ID	Page
BIG EFF'S CAR WASH	3525 E ANAHEIM ST	4	10
ELIAS F. BATSHON	3400 E ANAHEIM ST	4	20
TIDY DIDY DIAPER SERVICE	1330 REDONDO AVE	4	25
WAREHOUSE	1326 OBISPO AVE	6	32
ADVANCE METALS	3710 E FOUNTAIN ST	9	40
OCEAN OIL #2	4235 E ANAHEIM ST	16	56
BEACH CITIES ENT.	3640 E 10TH ST	21	68
HUFFMAN TRUCKING	3866 E 9TH ST	22	69
THE GAS STATION	3940 E 10TH ST	22	72
AUTOMAT #6	1001 REDONDO AVE	23	74
TRANS-PLUS AUTOMOTIVE	793 REDONDO AVE	26	83
NABIL BATSHOUN	4770-7TH ST.	31	89

Site	Address	Map ID	Page
SERVICE STATION 5820	676 TERMINO AVE	32	96
UNION OIL SERVICE STATION LEAS	676 TERMINO AVE	32	97
ALLIANCE	4001 E 7TH ST	32	98
UNION OIL SERVICE STATION LEAS	4404 E 4TH ST	37	109
SERVICE STATION 5814	4404 E 4TH ST	37	111

FEDERAL ASTM SUPPLEMENTAL

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 04/11/2005 has revealed that there are 27 FINDS sites within the searched area.

Site	Address	Map ID	Page
BELMONT AUTO SERVICE	***3720 EAST 14TH STREET***	***3***	***5***
ONE HOUR PHOTO	***3270 E ANAHEIM ST***	***4***	***11***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***
HAMER AUTOMOTIVE	***1333 REDONDO AVE***	***4***	***27***
WOODSTOCK FUNITURE MANUFACTURI	***1395 CORONADO AVENUE***	***4***	***31***
DEWEY PEST CONTROL	***1391 REDONDO AVENUE***	***5***	***31***
JOHNIE WALKER PRINTING	***1344 NEWPORT AVE***	***8***	***39***
LONG BEACH USD-BRYANT ELEMENTA	***4101 E FOUNTAIN STREET***	***10***	***40***
EAST LONG BEACH BRAKE SVC	***4401 E ANAHEIM ST***	***11***	***42***
1 HOUR PHOTO WORK	***4339 E ANAHEIM***	***11***	***42***
NESS GARMAN AUTO	***4417 E ANAHIEM***	***11***	***43***
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
JOES AUTO REPAIR	***3909E ANAHEIM ST***	***12***	***46***
EAST ANAHEIM AUTO CLINIC	***3636 E ANAHEIM***	***14***	***50***
LONG BEACH MOPED	***4138 E ANAHEIM ST***	***15***	***51***
ONE HOUR PHOTO	***1224 OBISPO AVE***	***17***	***57***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
ART DECAL CORP.	1145 LOMA AVE.	18	62
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***
JB HANOVER CO	***4116 E 10TH ST***	***24***	***75***
LONG BEACH USD-WILSON HIGH SCH	***4400 EAST 10 STREET***	***25***	***80***
TRANS PLUS AUTOMOTIVE	***793 REDONDO AVE***	***26***	***82***
LONG BEACH USD JEFFERSON JR HI	***750 EUCLID AVENUE***	***28***	***83***
MCFARLAND ENERGY INC	***5003 7TH ST***	***31***	***90***
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***
LONG BEACH USD-ROGERS JUNIOR H	***365 MONROVIA AVENUE***	***42***	***113***
LONG BEACH USD-LOWELL ELEMENTA	***5201 EAST BROADWAY***	***43***	***114***

EXECUTIVE SUMMARY

TRIS: The Toxic Chemical Release Inventory System identifies facilities that release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III, Section 313. The source of this database is the U.S. EPA.

A review of the TRIS list, as provided by EDR, and dated 12/31/2002 has revealed that there is 1 TRIS site within the searched area.

Site	Address	Map ID	Page
ART DECAL CORP.	1145 LOMA AVE.	18	62

STATE OR LOCAL ASTM SUPPLEMENTAL

DRYCLEANERS:A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaners' agents; linen supply; coin-operated laundries and cleaning; drycleaning plants except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

A review of the CLEANERS list, as provided by EDR, has revealed that there are 6 CLEANERS sites within the searched area.

Site	Address	Map ID	Page
MURRE CLEANERS, T.K KIM DBA	***1100 REDONDO AVE***	***4***	***6***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***
BEST WASHINGTON UNIFORM SUPPLY	***1347 REDONDO AVE***	***4***	***29***
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
CRYSTAL CLEANERS	1232 OBISPO AVE	17	60

SCH: This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category. depending on the level of threat to public health and safety or the. environment they pose.

A review of the SCH list, as provided by EDR, and dated 05/04/2005 has revealed that there is 1 SCH site within the searched area.

Site	Address	Map ID	Page
WOODROW WILSON HIGH SCHOOL	4400 EAST TENTH STREET	25	76

Emissions Inventory Data: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the EMI list, as provided by EDR, and dated 12/31/2002 has revealed that there are 2 EMI sites within the searched area.

Site	Address	Map ID	Page
MURRE CLEANERS, T.K KIM DBA	***1100 REDONDO AVE***	***4***	***6***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***

REF: This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another tate or local regulatory agency.

A review of the REF list, as provided by EDR, and dated 05/04/2005 has revealed that there are 2 REF sites within the searched area.

Site	Address	Map ID	Page
AKIN INVESTMENT CO INC	***4029 E ANAHEIM ST***	***12***	***44***
CARL'S AUTO BODY, INC.	1101 OBISPO AVENUE	20	65

CA SLIC: SLIC Region comes from the California Regional Water Quality Control Board.

A review of the SLIC list, as provided by EDR, and dated 04/12/2005 has revealed that there are 2 SLIC sites within the searched area.

Site	Address	Map ID	Page
R.W. SELBY & COMPANY	3600 EAST PACIFIC COAST	1	3
R.W. SELBY & COMPANY	3600 PACIFIC COAST	1	3

HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency

A review of the HAZNET list, as provided by EDR, and dated 12/31/2002 has revealed that there are 23 HAZNET sites within the searched area.

Site	Address	Map ID	Page
ONE HOUR PHOTO	***3270 E ANAHEIM ST***	***4***	***11***
DISCOUNT TIRE CENTER	***3340 E ANAHEIM ST***	***4***	***12***
ELIAS F. BATSHON	***3400 E ANAHEIM ST***	***4***	***21***
DRY CLEANERS THE	***3427 E ANAHEIM ST***	***4***	***22***
TIDY DIDY SERVICE	***1330 REDONDO AVE***	***4***	***26***
HAMER AUTOMOTIVE	***1333 REDONDO AVE***	***4***	***27***
BEST WASHINGTON UNIFORM SUPPLY	***1347 REDONDO AVE***	***4***	***29***
SUNSET AUTO BODY & PAINT	***1381 OBISPO***	***6***	***37***
EAST LONG BEACH BRAKE SVC	***4401 E ANAHEIM ST***	***11***	***42***
UNITOG CO (FORMER UNWAY L	***3001 ANAHEIM***	***13***	***46***
EAST ANAHEIM AUTO CLINIC	***3636 E ANAHEIM***	***14***	***50***
GAYLORD CLEANERS	***1232 OBISPO AVE***	***17***	***57***
ART DECAL CO	1145 LOMA AVE	18	61
CALIFORNIA CARS	1202 LOMA AVE	18	62
1X IM BLAND MASONRY, INC	1228 LOMA AVENUE	18	63
CARLS AUTO BODY INC	***1101 OBISPO AVE***	***20***	***63***
BEACH CITIES SUNROOFS	***3640 E 10TH ST***	***21***	***68***
JB HANOVER CO	***4116 E 10TH ST***	***24***	***75***
LBUSD-WILSON HIGH SCHOOL	***4400 E 10TH ST***	***25***	***81***
BATSHON SVC CTR #3	***4770 E 7TH ST***	***31***	***92***

EXECUTIVE SUMMARY

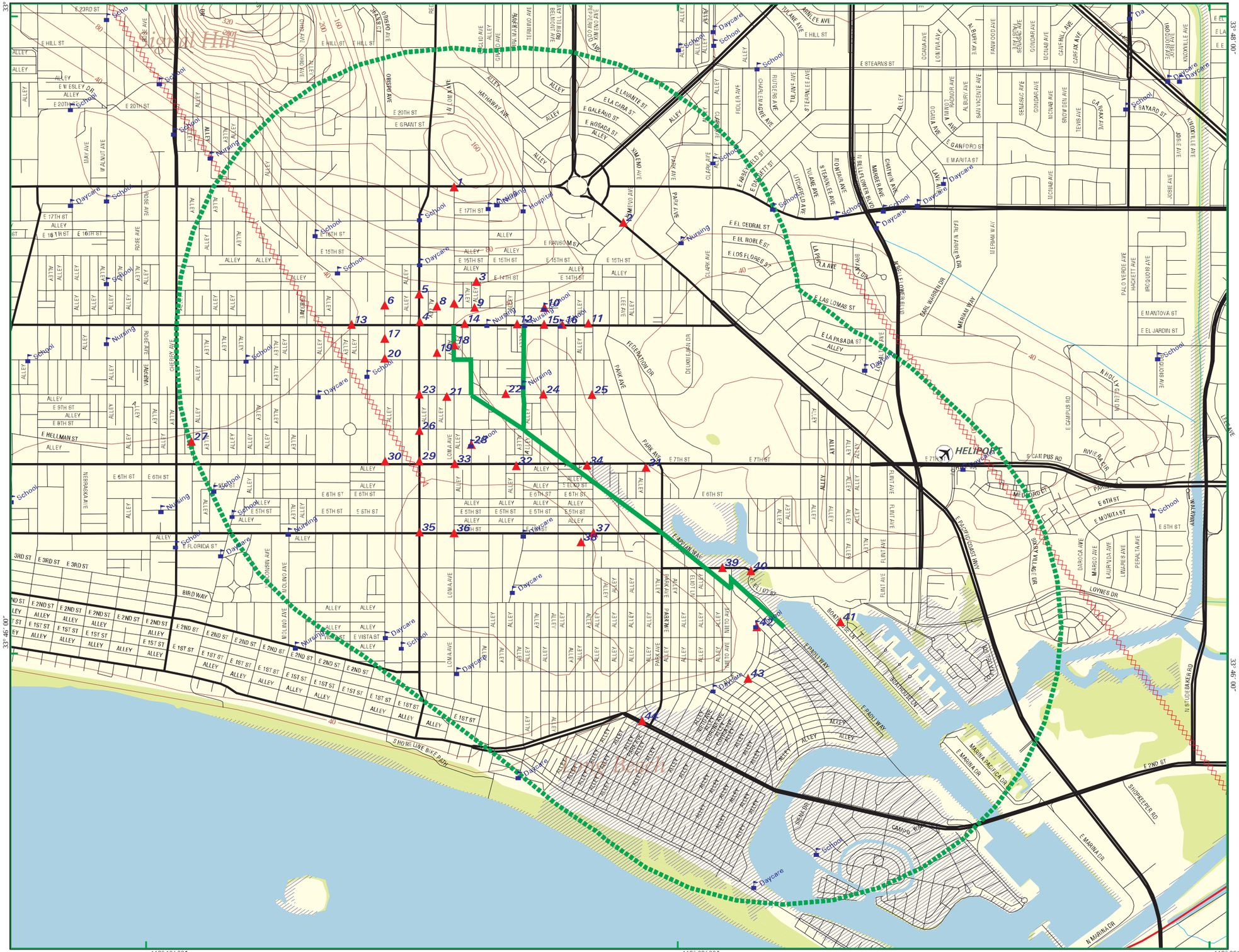
Site	Address	Map ID	Page
UNOCAL #5820 (FORMER)	*676 TERMINO AVE*	*32*	*93*
GEN TELEPHONE OF CA/ LONG BEAC	*3910 E SEVENTH ST*	*32*	*97*
TEXACO SERVICE (FORMER)	*404 REDONDO AVE*	*35*	*104*

HMS: Los Angeles County Industrial Waste and Underground Storage Tank Sites.

A review of the LOS ANGELES CO. HMS list, as provided by EDR, has revealed that there is 1 LOS ANGELES CO. HMS site within the searched area.

Site	Address	Map ID	Page
WILSON HIGH SCHOOL	*4400 010TH ST E*	*25*	*78*

Termino Avenue



- Listed Sites
- Earthquake Epicenters (Richter 5 or greater)
- Search Boundary
- Roads
- Major Roads
- Waterways
- Railroads
- Contour Lines
- Pipelines
- Powerlines
- Fault Lines
- Water
- Superfund Sites
- Federal DOD Sites
- Indian Reservations BIA
- 100-Yr Flood Zones
- Wetlands

Long Beach, CA

0 1/4 1/2

Scale in Miles

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