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Appendices

Appendix A. Malibu Lagoon Restoration and Enhancement Plan

Appendix B. Notice of Preparation (NOP) and Comment Letters Received

Appendix C. Construction Air Quality and Noise Worksheets

Other documents and technical studies referenced in this report are incorporated as appendices to the EIR as well but are too voluminous to include in hard copy. All documents listed in Chapter 12 are available for public review either online or in hard copy. Please contact Damon Wing at the Resource Conservation District of the Santa Monica Mountains if you would like to view any of the documents listed: (310) 455-1030 x213.
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Chapter 1

Introduction

Purpose of the EIR

The purpose of this Environmental Impact Report (EIR) is to inform agency decision makers and the public about the anticipated significant environmental effects of the proposed project, potential measures to mitigate these significant effects, and reasonable alternatives that could reduce the significant environmental impacts of the proposed project to less-than-significant levels.

This chapter describes the proposed project, the Malibu Lagoon Restoration and Enhancement Plan (plan or project). Provided below is an overview of the proposed plan, plan background, the California Environmental Quality Act (CEQA), and the scope and framework of the EIR.

The Proposed Plan

The California Department of Parks and Recreation (DPR), the Resource Conservation District of the Santa Monica Mountains (RCDSMM), and California State Coastal Conservancy (Coastal Conservancy), with input from the Lagoon Restoration Working Group (LRWG) and the Lagoon Technical Advisory Committee (LTAC), are proposing a restoration and enhancement plan for the Malibu Lagoon (lagoon) at Malibu Lagoon State Beach in the City of Malibu (City). The intent of the proposed plan is to restore and enhance the natural structure and function of the lagoon ecosystem, including water quality, circulation, habitat, and biodiversity, and to enhance public access and education opportunities.

The proposed plan proposes to decrease polluted runoff and increase circulation within the lagoon, thereby improving the quality of water and minimizing the effects of eutrophication. To enhance lagoon habitat, the plan would change the lagoon configuration and improve slopes and drainages, replant native species, and remove non-native species. The plan proposes to relocate and renovate the parking lot, enhance public access, and erect educational displays to better the visitors’ experience. An ongoing monitoring plan will be implemented to evaluate, record, and analyze existing and changing ecological conditions of the lagoon using physical, chemical, and biological parameters. The records would
allow DPR, the RCDSMM, the Coastal Conservancy, the LTAC, and other agencies and stakeholders to assess the progress toward restoration goals, and to adaptively manage lagoon function and health.

Background

The 31-acre lagoon is located at the mouth of the Malibu Creek Watershed at Surfrider Beach along the northern shore of Santa Monica Bay within Malibu Lagoon State Beach. Its ecological significance as one of the last remaining coastal wetlands within Santa Monica Bay adds to the interest in developing a restoration and enhancement plan to improve the lagoon’s conditions. The lagoon represents an important coastal wetland resource hosting both avian and aquatic species of important statewide and regional ecological significance.

The lagoon has experienced major changes in recent history due to nearby development and other human activities. Currently a fraction of its historical size, the lagoon is experiencing degraded conditions due to inflow of nutrient and pollutant rich water from urban runoff and storm drainage, urban encroachment, limited circulation, effluent from wastewater treatment, and invasion by non-native plant species.

Since 1929, when Caltrans used the site as a dump during the construction of the Pacific Coast Highway (PCH), continual urban development surrounding the Malibu Lagoon has reduced its size and degraded the quality of its water and habitats. The construction of Rindge Railroad line, Pacific Coast Highway Bridge, commercial and residential development, parking lots, and a baseball field decreased the area of the lagoon. Urban runoff, increased sedimentation, increased freshwater flows, and invasion of non-native species have degraded the conditions of the lagoon as well.

A previous effort to restore the lagoon was initiated by the DPR in 1983. The 1983 restoration included the creation and revegetation of three channels with native salt marsh plants and the construction of boardwalks to allow public access. Another restoration effort occurred in 1996 when the California Department of Transportation adopted a restoration plan to mitigate the Malibu Lagoon/PCH bridge replacement. The plan included a goby habitat enhancement plan, revegetation of native species (to restore impacts from the bridge construction), and removal of non-native species.

By the 1980s, the ecological functioning and health of the lagoon had declined. Since the late 1980s, an ongoing community effort has been organized to assess lagoon health and develop restoration plans. In the late 1990s, the Coastal Conservancy funded a study by UCLA, which identified restoration goals for the Malibu Lagoon Task Force. This led

---

to the preparation of the Malibu Lagoon Restoration Feasibility Study and Final Alternatives Analysis, prepared under a grant from the Coastal Conservancy. After a year of facilitated discussion and consideration among the LRWG, the LTAC, DPR, and the Coastal Conservancy, the resulting recommendation was Alternative 1.5, the Modified Restore and Enhance Alternative for the restoration design, which embodied the restoration goals with the least amount of impacts to the existing lagoon ecosystem (refer to Figure 3-3 in Chapter 3).

The Plan proposed by DPR, RCDSMM, the Coastal Conservancy, and along with the LRWG and the LTAC, seeks to design and implement a restoration and enhancement program, including long-term monitoring and adaptive management for the lagoon.

Overview of CEQA

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on them. The purpose of this focused EIR is to inform agencies and the public of significant environmental effects associated with the proposed project, describe and evaluate reasonable alternatives to the project, and propose mitigation measures that would avoid or reduce the project’s significant effects.

In accordance with Section 15121(a) of the State CEQA Guidelines (California Administrative Code, Title 14, Division 6, Chapter 3), the purpose of an EIR is to serve as an informational document that will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This EIR evaluates the direct, indirect, and cumulative impacts of the proposed project and alternatives in accordance with the provisions set forth in CEQA and the State CEQA Guidelines. It will be used to address potentially significant environmental issues and recommend adequate and feasible mitigation measures, where possible, that could reduce or eliminate potentially significant environmental impacts.

Lead Agency

Per CEQA, DPR is the Lead Agency in association with the Coastal Conservancy and RCDSMM. This EIR reflects the independent judgment of DPR and is intended to comply with CEQA and the State CEQA Guidelines (see Public Resources Code, §21100; State CEQA Guidelines, §§15120-15132).
**Lead Agency** – the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment.

**Contacts:**

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Angeles District Headquarters  
Suzanne Goode, District Environmental Coordinator  
1925 Las Virgenes Road  
Calabasas, CA 91302

Resource Conservation District of the Santa Monica Mountains  
Damon Wing, Project Manager  
122 N. Topanga Canyon Boulevard  
Topanga, CA 90290

**Responsible Agencies**

**Responsible Agency** – public agency, other than the lead agency, that has the responsibility of carrying out or approving a project.

The following agencies have been identified as potential Responsible Agencies under CEQA:

- U.S. Army Corps of Engineers (lagoon restoration work within the Corps wetland delineation only – does not include Phase I Parking Lot Development)
- California Regional Water Quality Control Board (RWQCB) – LA Region
- California State Coastal Conservancy
- California Coastal Commission
- U.S. Fish and Wildlife Service (USFWS)
- National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service (NMFS)
- City of Malibu - (Phase I Parking Lot Development Component Only)
- Caltrans District 7 - (Potential permitting agency for any work or staging that may take place within the Right-of-Way of Pacific Coast Highway)

**Trustee Agencies**

**Trustee Agency** – a state agency that has jurisdiction by law over natural resources affected by a project, that are held in trust for the people of the State of California.
The following agencies have been identified as potential Trustee Agencies under CEQA:

- California Department of Fish and Game (CDFG) – South Coast Region
- California Department of Parks and Recreation (DPR)
- U.S. Fish and Wildlife Service (USFWS)
- California Coastal Commission (CCC)
- Native American Heritage Commission (NAHC)
- State Historic Preservation Office (SHPO)

**Scope of the EIR**

In accordance with the State CEQA Guidelines, this document describes the potential environmental effects caused by construction, operation, and long-term monitoring activities related to restoring and enhancing the lagoon. The intent of this EIR is to disclose the environmental concerns and impacts associated with this restoration and enhancement plan. The document presents any potentially adverse impacts and their analysis, as well as identification of any feasible mitigation measures.

An Initial Study Checklist was not prepared prior to issuance of the Notice of Preparation (NOP) of an Environmental Impact Report. Therefore, each of the environmental topic areas listed in the CEQA Checklist is evaluated in this EIR. Specifically, the following issues are addressed in this document:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Construction Effects
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Health (Vector Control)
- Public Services
- Recreation
- Transportation and Circulation
- Utilities and Service Systems

The Lead Agency (DPR) has not adopted its own CEQA thresholds for determining the significance of impacts in environmental analysis and documentation. As a state agency with trustee responsibility for widely divergent habitat types and settings, the application of a static set of...
thresholds is not practical, nor would it allow the flexibility to determine site-specific context and intensity of project proposals and impacts.

DPR incorporates 278 units with jurisdiction over 1.5 million acres of land and major units within all of the state’s ecoregions and geomorphic provinces. The Park system includes recreation areas, historic parks, and cultural sites that preserves and supports the most diverse assemblage of natural resource values of any land management agency in California.

For the reasons and circumstances detailed above, and to afford the most conservative scope of environmental review compliant with CEQA, the thresholds listed in Appendix G of the State CEQA Guidelines were applied in evaluating significance of impacts in this EIR.

On October 28, 2005, the DPR submitted a NOP for a 30-day review to the State Clearinghouse, responsible agencies, and interested parties. The NOP was also published in the Malibu Times and Malibu Surfside News on October 27, 2005. The NOP presented a description of the proposed project, potential environmental effects, instructions on how to provide comments, and the date, time, and location of the public scoping meeting that was held at Malibu City Hall the evening of November 16, 2005. The NOP and copies of all letters received in response to the NOP are included in Appendix B.

Approximately 15 persons attended the scoping meeting. An overview and history of the lagoon, the proposed Plan, and CEQA requirements were presented. The presentation included a chronology of preceding lagoon restoration actions that ultimately led to the development the proposed Plan. During the public comment portion of the meeting, questions were raised concerning construction phase beach access, biological impacts, and the methodology used to determine impacts. All questions and concerns raised at the scoping meeting have been addressed in this EIR.

**Required Approvals**

Required and discretionary and ministerial approvals from the State of California and other agencies may include, but are not limited to:

- The U.S. Army Corps of Engineers (Corps) would issue permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors.
- The CDFG would issue a Streambed Alteration Agreement pursuant to Section 1601 of the California Fish and Game Code.
- The CCC would issue a Coastal Development Permit pursuant to the California Coastal Act of 1976.
- The RWQCB would issue a Water Quality Certification pursuant to Section 401 of the Clean Water Act.
- The South Coast Air Quality Management District (SCAQMD) would issue a permit for stationary sources.
- The City of Malibu would issue a Coastal Development Permit for development of the parking lot component of the project only.
- A permit to work within California Department of Transportation Right-of-Way (ROW) may also be required.
- Section 7 consultation with NOAA/NMFS and USFWS

Preparers of This EIR

This EIR was prepared by Jones & Stokes Associates in association with Terry A. Hayes Associates (contact information below). Staff from the California Department of Parks and Recreation, the Coastal Conservancy, and the Resource Conservation District of the Santa Monica Mountains also assisted in the preparation of this document.

Funding for the preparation of this document as well as preparation and implementation of the Restoration Plan is provided by the Coastal Conservancy and the State Water Resources Control Board.

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Introduction and Background

The California Department of Parks and Recreation (DPR), the Resource Conservation District of the Santa Monica Mountains (RCDSMM), and the California State Coastal Conservancy (Coastal Conservancy), with input from the Lagoon Restoration Working Group (LRWG) and the Lagoon Technical Advisory Committee (LTAC), are proposing a restoration and enhancement plan for Malibu Lagoon (lagoon) within Malibu Lagoon State Park. The intent of the proposed plan is to restore and improve the natural structure and function of the lagoon ecosystem, including water quality, circulation, habitat, and biodiversity, and to enhance public access and education opportunities.

The 31-acre lagoon is located at the mouth of the Malibu Creek Watershed at Surfrider Beach along the northern shore of Santa Monica Bay within Malibu Lagoon State Beach. Its ecological significance as one of the last remaining coastal wetlands within Santa Monica Bay adds to the interest in developing a restoration and enhancement plan to improve the lagoon’s conditions. The lagoon represents an important coastal wetland resource hosting both avian and aquatic species of important statewide and regional ecological significance.

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The proposed plan proposes to decrease polluted runoff and increase circulation within the lagoon, thereby improving the quality of water and minimizing the effects of eutrophication. To enhance lagoon habitat, the plan would change lagoon configuration and improve slopes and drainages, replant native species, and remove non-native species. The plan proposes to relocate and renovate the parking lot, enhance public access, and erect educational displays to better the visitors’ experience. An ongoing monitoring plan will be implemented to evaluate, record, and analyze existing and changing ecological conditions of the lagoon.
using physical, chemical, and biological parameters. The records would allow DPR, the Coastal Conservancy, the LTAC, and other agencies and stakeholders to assess the progress toward restoration goals.

**Goals and Objectives**

The Lead Agency has identified the following major objectives for the proposed project:

- Decrease urban runoff from surrounding sources into the lagoon to improve its water quality and decrease eutrophication.
- Increase circulation of water during open and closed conditions.
- Restore habitat by re-establishing suitable soil conditions and native plant species and removing non-native species.
- Relocate existing parking lot to increase habitat size and eliminate polluted runoff to the lagoon.
- Evaluate, record, and analyze existing and changing ecological conditions of the lagoon using physical, chemical, and biological parameters to allow agencies, organizations, and stakeholders to monitor progress towards restoration goals.

**Project Location and Setting**

Malibu Lagoon is a 31-acre shallow water embayment occurring at the terminus of the Malibu Creek Watershed, the second largest watershed draining into Santa Monica Bay. Malibu Lagoon empties into the Pacific Ocean at Malibu Surfrider Beach and is generally located south of the intersection of PCH and Cross Creek Road at Malibu Lagoon State Beach in the City of Malibu. Please refer to Chapter 3 for project location maps.

**Project Description**

The purpose of the plan is to restore and enhance the ecological conditions of the lagoon and improve public access and education about the lagoon. The plan presents information regarding the current condition of the lagoon, goals and strategies for the restoration, and implementation of a monitoring plan. Essentially, the plan offers strategies to protect the lagoon as one of the remaining southern California coastal wetlands, prevent further deterioration of the lagoon, improve visitors’ experience, and educate the public about the lagoon’s ecosystem processes.
Based on the findings of the *Malibu Lagoon Restoration Feasibility Study Final Alternatives Analysis*,¹ DPR, the Coastal Conservancy, and the LTAC, with substantial input from the LRWG, recommended Alternative 1.5 as the preferred restoration design for the lagoon. Major components of the preferred plan alternative² are explained below.

The existing parking lot would be relocated to the north and west to be adjacent to the PCH. The new parking lot and staging areas would be created with runoff treatment controls, including permeable pavement or other similar substances, appropriate native vegetation, and would include a staging area to enhance existing educational and recreational uses of the site. The current number of parking spaces would remain and new interpretive displays and panels would be installed.

The main lagoon channel would remain substantially “as is.” The western edge of the main lagoon at the interface with the western arms complex would be reconfigured in the form of a naturalized slope to provide a degree of separation between main lagoon and west channel system.

The existing boat house channel would be deepened and recontoured to create a new avian island along the bank of the Adamson House grounds. This would create additional mudflat habitat and promote additional water circulation around the new island.

The project employs a holistic approach to habitat restoration. The overall restoration plan has individual elements such as the Water Management Plan, Habitat Plan, Access, Education, and Interpretation Plan, and Monitoring Plan. Please refer to Chapter 3, Project Description, for more detail, plans, and maps of the proposed project.

### Alternatives to the Proposed Project

CEQA requires that an EIR describe a range of reasonable alternatives to the proposed project or to the location of the restoration plan that could feasibly avoid or lessen any significant environmental impacts while substantially attaining the basic objectives of the restoration plan. The alternatives described below (with the exception of the No-Project Alternative) were carried forward from the *Malibu Lagoon Restoration Feasibility Study Final Alternatives Analysis*. Please refer to Chapter 11 and Table 11-1 for a complete discussion of project alternatives and their comparative environmental impacts.

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No Project

Under the No Project Alternative, implementation of the Restoration and Enhancement Plan would not occur. The parking lot and lagoon would remain and continue to be used by the public in its existing state. As a consequence, the No Project Alternative would not result in any of the beneficial effects of the proposed project. Biological restoration goals would not be achieved and habitat conditions would likely continue to degrade.

Moreover, water quality would continue to degrade as sediment carried from storm flows is deposited in the lagoon area, thus contributing to aggradation and formation of eutrophic conditions. The No Project Alternative would not contribute to compliance with TMDL targets for nutrients and bacteria, thus, water quality would remain impaired and likely worsen over time.

Alternative 1: Enhancement Alternative

The Enhancement Alternative was designed with the intent to improve existing conditions in the western lagoon arms with the least cost and least degree of disturbance to the existing lagoon habitat. The elevations of the channels in the western portion of the lagoon are too high to allow for inundation at ocean tidal elevations below mean sea level when the barrier beach berm is open. In addition the western channels are too narrow, constricted, and isolated from one another to allow for adequate circulation of lagoon water. The existing topography has resulted in an overabundance of upland habitat.

The enhancement alternative would lower the existing channels elevations, thus allowing for an increase tide inundation during open conditions. Topography of the channels and islands in the western lagoon would be lowered to accommodate vegetation types typically associated with coastal estuaries. Channel widths and depths would be increased and channels would be connected to remove existing dead ends.

Alternative 1 does not include improvements to the parking lot area or educational components.

Further discussion of Alternative 1 can be found in the Malibu Lagoon Restoration Feasibility Study Final Alternatives Analysis on pages 44 and 45.

This Alternative intends to:

- Improve circulation by expanding and deepening of existing channels in the western arms;
- Remove dead ends by connecting the A (north) channel to the C (south) Channel;
- Establish more appropriate marsh vegetation by lowering the elevation of western channels and islands to minimize upland habitat;
- Increase lagoon holding capacity during closed conditions;
- Provide additional bird habitat and minimize the need to export soils offsite by expansion of the mid-stream bar in the main lagoon body (no structural engineering is proposed to protect this bar).
- Provide unvegetated avian areas through the creation of a salt panne. The salt panne is intended to create an unvegetated area that uses a depression to capture water that will subsequently evaporate leaving behind higher salts in the soils that will minimize vegetative growth; and
- Minimize cost and disruption to existing lagoon habitats.

In comparison to the proposed project, Alternative 1 would result in lesser beneficial effects to biological resources; similar cultural resources effects; similar consistency with local and regional plans; and a lesser degree of temporary construction impacts. However, this alternative could result in adverse impacts to hydrology and water quality, whereas the proposed project would be beneficial in this regard.

**Alternative 1.75 Restore/Enhance Modify with the North Channel**

The Restore/Enhance Modify with the North Channel is a variation of the proposed project that includes the North Channel connection as an adaptive management tool. The North Channel may further improve flushing through the upper western arms and circulation during closed conditions. Further discussion of Alternative 1.75 can be found in the *Alternatives Analysis* on page 52.

Alternative 1.75 was intended to achieve:

- Tidal influence created by a single main channel with a naturalized dendritic planform more indicative of natural systems;
- Increased tidal flushing during open conditions by deepening of the west lagoon (no work is proposed in the main lagoon). This will also increase holding capacity (storage volume);
- Enhanced and increased salt marsh environment during open conditions and maximized wind fetch to enhance wind-driven circulation during closed conditions;
- Permanent avian islands. These islands will be designed to afford better protection from predators and will be optimized to suit avian enhancement goals;
- Expanded wetland and marsh acreage by relocating the existing parking lot into degraded upland habitat. The new parking lot will be designed to be permeable to maximize water quality enhancements through naturalized filtration/infiltration;
- Increased flushing of sediments through the connection of the new North Channel;
- Opportunities for new visitor facilities and educational resources.

In comparison to the proposed project, Alternative 1.75 would result in similar beneficial effects to biological resources; similar cultural resources effects; similar consistency with local and regional plans; and a similar degree of temporary construction impacts. This alternative would result in greater beneficial effects with regard to hydrology and water quality however.

**Alternative 2.0: Restore and Enhance Alternative**

The Restore and Enhance Alternative intends to restore and enhance those areas that have diminished in functions or are in a currently degraded state.

The proposed new North Channel connection is meant to convey an appropriate source of drainage from upstream that could include the Cross Creek storm drain, the main creek, or both. The North Channel would act as a connection between the upper end of the western arm to the Cross Creek storm drain, the main creek or both under a western bent on the PCH Bridge. The purpose is to convey a limited stormflow discharge into the upstream end of the western arms to flush fine sediment from the western lagoon. Further discussion of Alternative 2 can be found in the *Alternatives Analysis* on pages 48 and 49.

Alternative 2.0 was intended to achieve:

- Tidal influence created by a single sinuous main channel;
- Increased tidal flushing during open conditions by deepening of the west lagoon (no work is proposed in the main lagoon). This would also increase holding capacity (storage volume);
- Enhanced and increased salt marsh environment during open conditions and maximized wind fetch to enhance wind-driven circulation during closed conditions; and
- Unvegetated avian areas through the creation of a salt panne. The salt panne is intended to create an unvegetated area that uses a depression to capture water that would subsequently evaporate.
leaving behind higher salts in the soils that would minimize vegetative growth.

In comparison to the proposed project, Alternative 2 would result in similar beneficial effects to biological resources; similar cultural resources effects; similar consistency with local and regional plans; and a similar degree of temporary construction impacts. This alternative would also result in similar beneficial impacts to hydrology and water quality.

Areas of Controversy

The scoping process did not reveal any areas of controversy surrounding the project.

Issues to Be Resolved

There are no outstanding issues to be resolved.

Summary of Impacts and Mitigation Measures

Table 2-1 presents a summary of impacts under each resource area, recommended mitigation measures, and the level of significance of impacts before and after implementation of mitigation measures.
Table 2-1. Summary of Environmental Effects

<table>
<thead>
<tr>
<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEIR Chapter 4 – Consistency with Local and Regional Plans</strong></td>
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<tr>
<td>The use and designation of the project site would not change as a result of the restoration and enhancement project and would be compatible with the surrounding land uses, which include single-family residential, public open-space, and visitor-serving commercial.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td>The restoration and enhancement plan would be consistent with the relevant policies and objectives in the Malibu General Plan, Malibu Lagoon State Beach Resource Management Plan &amp; Development Plan, California Coastal Act, and the Malibu Local Coastal Program.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td>The restoration and enhancement plan does not conflict with any plans, policies, goals, objectives, or zoning designations.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>DEIR Chapter 5 – Hydrology and Water Quality</strong></td>
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<tr>
<td>The project would result in improved water quality due to increased circulation within the lagoon system.</td>
<td>Beneficial</td>
<td>No mitigation is required.</td>
<td>Beneficial</td>
</tr>
<tr>
<td>The relocation and reconfiguration of the parking lot would result in altered surface drainage and associated flood flow patterns. Permeable paving materials and drainage swales would reduce the quantity and improve the quality of surface runoff. Maintenance of the storm water runoff components is critical to maintaining benefits long-term and thus mitigation measure HYDRO-1 is required.</td>
<td>Beneficial</td>
<td>HYDRO-1: Maintenance of stormwater system. Permeable tiles, drainage swales, pumps, pipelines, and any associated equipment must be maintained on a regular basis to ensure full functioning. Maintenance may include removal of fine sediments from tile gaps for proper infiltration and periodic sediment removal from drainage swales for capacity maintenance. The project manager will ensure that all components of the storm drainage system are maintained to design and manufacturer specifications on a regular basis.</td>
<td>Beneficial</td>
</tr>
<tr>
<td>Potential Environmental Impacts</td>
<td>Significance Determination</td>
<td>Mitigation Measures</td>
<td>Level of Significance after Mitigation</td>
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<tr>
<td>Effects to sediment delivery patterns as a result of the project could affect beach replenishment and nearshore coastal habitat. Under the proposed project, the inlet channel to the western arms of the lagoon would be relocated southward and positioned to reduce the western arms exposure to sedimentation during and following storms. It is anticipated that more storm delivered sediments would be transported directly to the main lagoon, and subsequently be available to the coastal zone for beach nourishment or down-coast transport. The project is not likely to significantly alter sand related depositional processes.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>The project could affect natural tidal lagoon opening and closure patterns. While the proposed lagoon restoration project will alter the geometry, volume, and orientation of the lagoon, it will not significantly affect the mass water balance of the watershed that is the principal influence behind the lagoon being either open or closed. The proposed project is not anticipated to alter the seasonal patterns or processes driving lagoon opening and closure.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>The project would reduce the potential to expose people or structures to risk of flooding or impede 100-yr flood flows. The holding capacity of the lagoon would increase and the storm water components of the parking area would reduce and redirect storm flows.</td>
<td>Beneficial</td>
<td>No mitigation is required (see Mitigation Measure HYDRO-1).</td>
<td>Beneficial</td>
</tr>
<tr>
<td>Groundwater supply and recharge would be immeasurably affected by reconfiguration of surface water runoff and lagoon morphology.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>The proposed project would not alter the existing potential for the area to be inundated by a seiche, tsunami, or hillslope related mudflow processes.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Potential Environmental Impacts</td>
<td>Significance Determination</td>
<td>Mitigation Measures</td>
<td>Level of Significance after Mitigation</td>
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<tr>
<td><strong>DEIR Section 6 – Biological Resources</strong></td>
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<tr>
<td>Construction of the project could result in some loss of, or temporary disturbance to, the following vegetation communities and habitats: southern willow scrub; atriplex scrub; baccharis scrub; mule fat scrub; Venturan coastal sage; mixed scrub; coastal salt marsh; brackish marsh; coastal and valley freshwater marsh; southern sycamore-alder riparian woodland; non-native grassland; mudflats; beach/sand bar; and open water. Any removal or damage to these resources could have a temporary, short-term adverse effect on sensitive natural communities or federally protected wetlands; however, this and other restoration activities (such as replanting of native species, removal of non-native species, ongoing monitoring, wetland expansion, etc) would result in a long-term benefits to the lagoon. Overall wetland habitat would increase by 6.5%, or roughly 2 acres. The functions and values of the biological resources within the lagoon would be improved as a result of implementation of the project.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Construction activities could affect common wildlife species that occur in the project area. Any disturbance to wildlife and/or habitat during construction would be adverse, but less than significant given the temporary and intermittent nature of effects.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Construction activities could result in direct or indirect impacts on California black walnut. The individual black walnuts observed in the southern sycamore-alder riparian woodland during the 2004 vegetation mapping do not represent a significant population of this CNPS list 4 species. Thus, less-than-significant impacts would result from potential disturbance to black walnut.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Potential Environmental Impacts</td>
<td>Significance Determination</td>
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<tr>
<td>Construction activities could result in temporary disturbance to the wandering (salt marsh) skipper. However, pre- and post-project acreages of suitable habitat for wandering (salt marsh) skipper would be similar if not identical. Any potential impacts during construction would be less than significant.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Construction activities could result in impacts to southern steelhead trout.</td>
<td>Significant</td>
<td>BIO-1: Southern Steelhead Trout. Construction and lagoon excavation may occur during steelhead migration. In order to avoid direct impacts to steelhead, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of similar tools. In the event that water must be pumped from these areas during construction, it shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. Fish salvage efforts shall be conducted for any surface water that must be separated from the main lagoon. After construction the area shall be re-flooded in a manner that minimizes disturbance of the lagoon salinity stratification and substrate, and the release of sediment. Re-inundation of the western lagoon may provide refuge areas for fish during construction activities in the main lagoon. Block netting and barriers shall be used to</td>
<td>Less than Significant</td>
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</table>
### Potential Environmental Impacts

<table>
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<tr>
<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
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</thead>
<tbody>
<tr>
<td>Construction activities could result in impacts to the tidewater goby.</td>
<td>Significant</td>
<td>BIO-2: Tidewater Goby.</td>
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<td></td>
<td>Construction of the restoration project shall be timed to minimize disturbance of the western shoreline of the main lagoon when larval tidewater gobies are using the near-shore habitat. In order to avoid direct impacts to gobies, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts to gobies shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of similar tools. In the event that water must be removed from these areas during construction, it shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. Fish salvage efforts shall be conducted for any surface water that must be separated from the main lagoon. After construction the area shall be re-flooded in a manner that minimizes disturbance of the lagoon salinity stratification and substrate, and the release of sediment.</td>
<td>Less than Significant</td>
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</table>

Freeze adult gobies, migratory steelhead, and other fish from the work areas. On-site monitoring by a USFWS approved fisheries biologist would be conducted during any channel or bank disturbance. Pages 100-101 of the Final Alternatives Analysis prepared by Moffatt and Nichol (March 2005) outlines a possible construction sequence in more detail that incorporates several of these ideas.
<table>
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<tr>
<th>Potential Environmental Impacts</th>
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<th>Level of Significance after Mitigation</th>
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</thead>
<tbody>
<tr>
<td>Construction activities could result in disturbance to California brown pelican.</td>
<td>Significant</td>
<td>BIO-3: California Brown Pelican. On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Construction activities could result in disturbance to western snowy plover.</td>
<td>Significant</td>
<td>BIO-4: Western Snowy Plover. Schedule construction activities and ground disturbance in suitable/occupied habitat to avoid the western snowy plover breeding season from mid-March to August 30. On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Construction activities could result in disturbance to Heermann’s Gull.</td>
<td>Significant</td>
<td>BIO-5: Heermann’s Gull. On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Less than Significant</td>
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<tr>
<td>Construction activities could result in disturbance to elegant tern.</td>
<td>Significant</td>
<td>BIO-6: Elegant Tern. On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td>Construction activities could result in disturbance to the California least tern.</td>
<td>Significant</td>
<td>BIO-7: California Least Tern. Schedule construction activities and ground disturbance to avoid the California least tern breeding season and post-</td>
<td>Less than Significant</td>
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<td>Potential Environmental Impacts</td>
<td>Significance Determination</td>
<td>Mitigation Measures</td>
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<tr>
<td>Breeding season foraging (July to August). On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.</td>
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**DEIR Chapter 7 – Cultural Resources**

Construction of the proposed project could result in impacts to Prehistoric site *Humaliwo* (CA-LAN-264).  

<table>
<thead>
<tr>
<th>Cultural Resources Testing in Area Adjacent to CA-LAN-264</th>
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</table>
| Cultural resources excavations will be undertaken prior to any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264, if any project related earthwork occurs within 100 feet of the known boundary of CA-LAN-264. Test excavations shall not take place within the known boundaries of CA-LAN-264, but adjacent to the boundaries if project construction would require any ground disturbing activities within 100 feet of the known site boundary. Because sensitivity is moderate to high for cultural resources, including human remains, to be present along this edge of the project area, a subsurface testing program should be implemented to identify if resources are present, and to evaluate potentially NRHP-eligible resources. If subsurface testing identifies intact, significant archaeological resources within the project area that cannot be avoided, the project would have an adverse effect. Development of measures to mitigate adverse effects would be necessary and a Memorandum of Agreement would be required to complete Section 106 consultation. The preconstruction testing program should include, but need not be limited to:  
  - development of a testing strategy to identify subsurface archaeological deposits, including further research on previous investigations and regarding previous lagoon excavations, in an effort to refine the scope of any field effort,  
  - evaluation of significance and integrity of exposed archaeological deposits (according to NHPA, NRHP, | Significant | CR-1: Cultural Resources Testing in Area Adjacent to CA-LAN-264 | Less than Significant |
Upon identification of any significant prehistoric or historical archaeological resources, it will be necessary to avoid these resources during project development, or to formulate a treatment plan to mitigate adverse effects. A treatment plan, adopted within a Memorandum of Agreement, to be negotiated in consultation with the SHPO, would likely include the following:

- an acceptable data recovery plan stating specific research goals and questions that are to be addressed if archaeological deposits are to be recovered;
- post-field artifact processing and analysis;
- report preparation in accordance with the guidelines of DPR; and
- permanent curation of artifacts and documents in a repository consistent with the National Park Service guidelines for the curation of archaeological collections (36CFR79).

Feature recovery should employ standard archaeological excavation techniques. The testing and evaluation plan should be designed and implemented by a qualified Prehistorical Archaeologist, and if discoveries warrant, a qualified Historical Archaeologist.

Both the testing and evaluation plan and the data recovery strategy shall be developed and implemented in consultation with interested local Native American groups. Plans shall state that Native American human remains will be treated in compliance with Health and Safety Code, Sections 7050.5, 8010, and 8011 and Public Resources Code, Section 5097.98.
<table>
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<tr>
<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
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<tbody>
<tr>
<td>Potential exists for ground-disturbing activities to damage previously unidentified buried cultural resources sites.</td>
<td>Potentially Significant</td>
<td>CR-2: Cultural Resources Monitoring in Area Adjacent to CA-LAN-264. Cultural resources monitoring by State Parks archaeologists or designees shall be conducted during any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264. Monitoring will be conducted if conditions allow for observation of spoils. Monitoring of dredging is probably not feasible given underwater activity would not be visible. The remainder of the project area may be monitored if notable cultural materials are discovered, or monitoring may be further limited if the monitoring area appears previously disturbed (as may be the case in areas where Caltrans has deposited fill material and rip rap). If prehistoric cultural resources are discovered in this area during monitoring or other construction, all work shall be halted in the vicinity of the archaeological discovery until a State Parks archaeologist or designee can visit the site of discovery and assess the significance of the archaeological discovery. Further treatment may be required, including modification of plans to avoid impacts to the site, site recordation, excavation, site evaluation, and data recovery. Avoidance of cultural resources shall be the top priority at all situations.</td>
<td>Less than Significant</td>
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<td>CR-3: Stop Work If Cultural Resources Are Discovered during Ground-Disturbing Activities. If buried cultural resources—such as flaked or ground stone, historic debris, building foundations, shellfish remains or non-human bone—are inadvertently discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a State Parks archaeologist or designee can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include: development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or</td>
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<td>Potential Environmental Impacts</td>
<td>Significance Determination</td>
<td>Mitigation Measures</td>
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<td>detailed documentation. Avoidance of cultural remains shall be the top priority at all times. If cultural resources are discovered during construction activities, the construction contractor will verify that work is halted until appropriate site-specific treatment measures—such as those listed above—are implemented.</td>
<td></td>
</tr>
<tr>
<td>CR-4: Comply with State Laws Pertaining to the Discovery of Human Remains. If human remains of Native American origin are discovered during ground-disturbing activities, it is necessary to comply with state laws relating to the disposition of Native American burials that fall within the jurisdiction of the California Native American Heritage Commission (Public Resources Code Section 5097). Construction work shall not continue within 100 feet of a location where human skeletal remains are found. According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission to determine the most likely living descendant(s). The most likely living descendant shall determine the most appropriate means of treating the human remains and any associated grave artifacts, and shall oversee disposition of the human remains and associated artifacts by the project archaeologists. This impact would be significant, but implementation of the mitigation measures above would reduce this impact to a less-than-significant level.</td>
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### DEIR Chapter 8 – Construction Effects

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<tr>
<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
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</table>
| **Air Quality:** Pollutant emissions during Phase I and Phase II construction. | Less than Significant | No mitigation is required. However, as best management practices consistent with SAQMD Rule 403 compliance, the following measures shall be taken during construction:  
AQ-1: Dust sweeping.  
The construction area and vicinity (driveways, access roads, and staging areas) shall be swept with water sweepers on a daily basis or as necessary to ensure there is no visible dust.  
AQ-2: Covering or watering of stockpiles.  
On-site stockpiles of debris, dirt or rusty material shall be covered or watered at least twice daily to prevent fugitive dust.  
AQ-3: Covering of haul trucks.  
All haul trucks hauling soil, sand, and other loose materials shall either be covered or maintain two feet of freeboard. | Less than Significant |
| No changes to existing land uses would occur during construction of the project and no impacts would result. Please refer to Chapter 4 for a discussion of the project’s consistency with local and regional planning documents. | No Impact | No mitigation is required. | No Impact |
| **Hydrology and Water Quality:** Release of construction-related sediment from access roads, staging areas, ground-disturbing activities and stock piling during Phase I and Phase II construction into the lagoon could affect water quality. | Potentially Significant | HYDRO-2: Implement Best Management Practices to Control Discharge of Construction-Related Pollutants to Surface Waters.  
Because project construction will cover an area greater than one acre, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared by the Lead Agency or its contractor as required by the RWQCB under the NPDES General Construction Permit. The SWPPP shall meet the requirements of the RWQCB as well as any City and County requirements.  
The SWPPP will identify BMPs to maintain water quality. The final selection and design of erosion and sediment controls shall be subject to approval by the Lead Agency. BMPs in the SWPPP may include, but is not limited to, the following elements: | Less than Significant |
<table>
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<tr>
<th>Potential Environmental Impacts</th>
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<th>Mitigation Measures</th>
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<tr>
<td>• Temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) will be employed for disturbed areas.</td>
<td>• Earth dikes, drainage swales, and ditches shall be provided to intercept, divert, and convey surface runoff and sheet flow, prevent erosion, and reduce pollutant loading. Specific areas that may need such measures shall be identified on construction drawings.</td>
<td>• Roads used during construction shall be continuously swept and cleaned of accumulated earth and debris in the construction zone during project construction, particularly before predicted rainfall events.</td>
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<tr>
<td>• Excavated materials deposited or stored onsite temporarily shall not be placed in or adjacent to open water channels and shall be wetted and covered as necessary to prevent runoff and erosion.</td>
<td>• Oils, fuels, and other toxicants spilled or deposited near the project site shall be removed and disposed of according to applicable laws and regulations.</td>
<td>• Establish grass or other vegetative cover over areas that have been disturbed by construction as soon as possible after disturbance to establish vegetative cover. This will reduce erosion by slowing runoff velocities, enhancing infiltration and transpiration, trapping sediment and other particulates, and protecting soil from raindrop impact.</td>
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The Lead Agency and/or its contractors shall implement a monitoring program to verify BMP effectiveness. The monitoring program shall begin at the outset of construction and terminate upon completion of the project.
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<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDRO-3: Implement a Hazardous Material Spill Prevention Control and Countermeasure Plan. A Hazardous Material Spill Prevention Control and Countermeasure Plan would be prepared as part of the NPDES General Construction Permit to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the project. This plan will describe storage procedures and construction site housekeeping practices, and identify the parties responsible for monitoring and spill response. Routine inspections and monitoring of best management practices would ensure minimal impacts to the environment occur. Commonly practiced best management practices include use of containment devices for hazardous materials, training of construction staff regarding safety practices to reduce the chance for spills or accidents, and use of nontoxic substances where feasible. The plan also would describe actions required if a reportable spill occurs, such as which authorities to notify and the proper clean-up procedures. The Hazardous Material Spill Control and Countermeasure Plan would contain standards considered sufficiently protective such that significant adverse impacts on surface and groundwater quality would be avoided. The plan shall be completed before any construction activities begin.</td>
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</tr>
<tr>
<td>Temporary alteration of drainage patterns would occur during Phase II construction. Construction activities in Phase II could require dewatering and discharge to adjacent surface waters, thus coverage would need to be obtained under an individual NPDES dewatering permit. The LARWQCB will be consulted by the project proponent to obtain the permit. The permit would contain standards considered sufficiently protective such that significant adverse impacts on surface water quality would be avoided.</td>
<td></td>
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</tr>
<tr>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
<td></td>
</tr>
</tbody>
</table>

**Chapter 2. Summary**

California State Parks

**Malibu Lagoon Restoration and Enhancement Plan EIR**

**January 2006**

05473.05
<table>
<thead>
<tr>
<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological Resources:</strong> (Potential construction phase impacts to biological resources are detailed under the Chapter 6 heading above.)</td>
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<tr>
<td><strong>Cultural Resources:</strong> (Potential construction phase impacts to biological resources are detailed under the Chapter 7 heading above.)</td>
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</tr>
<tr>
<td><strong>Noise:</strong> Temporary increases in noise levels during project construction.</td>
<td>Significant</td>
<td>N1: Use of mufflers. Construction contracts shall specify that all construction equipment shall be equipped with mufflers and other suitable noise attenuation devices.</td>
<td>Significant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N2: Notice of construction schedule and noise “hotline.” All residential units located within 500 feet of the construction site shall be sent a notice regarding the construction schedule of the proposed project. A clearly legible sign shall also be posted at the construction site. All notices and the signs shall indicate the expected dates and duration of construction activities, as well as provide a telephone number that residents can call to resolve any concerns about construction noise. The Lead Agency shall be responsible for responding to any local complaints about construction noise. The Lead Agency (or designee) would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would be required to implement reasonable measures such that the complaint is resolved.</td>
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<tr>
<td></td>
<td></td>
<td>N3: Limits of hours of construction. Pursuant to the Noise Control Ordinance of the City of Malibu, Section 8.24.050G, construction activities shall be prohibited during the hours between 7:00 p.m. and 7:00 a.m. during the weekdays and any time on Sundays or holidays. All construction related to the proposed project would take place between the hours defined by the Ordinance. Additionally, construction activities shall be coordinated with Adamson House staff to ensure that potentially disturbing construction activities do no occur during planned events at the Adamson House, such as Saturday weddings.</td>
<td></td>
</tr>
<tr>
<td>Potential Environmental Impacts</td>
<td>Significance Determination</td>
<td>Mitigation Measures</td>
<td>Level of Significance after Mitigation</td>
</tr>
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<tr>
<td><strong>Traffic and Circulation:</strong> Construction of the proposed project would not generate a substantial number of construction-related truck trips or construction worker trips. All heavy truck traffic will follow designated truck routes, to be coordinated with the City of Malibu and Caltrans, as required. Construction equipment staging areas and access will also be developed in consultation with the City of Malibu. Beach access will be maintained at all times during construction and alternate parking will be available during construction of the new parking lot.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td><strong>DEIR Chapter 9 – Effects not considered significant</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aesthetics:</strong> The project will not result in new sources of light or glare or otherwise result in adverse aesthetic impacts. Improvements to the lagoon, including new boardwalks improved habitat, and educational displays, would result in beneficial aesthetic effects.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Agricultural Resources:</strong> No farmland exists on, or within the vicinity of Malibu Lagoon.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Air Quality:</strong> Operation of the proposed project would not result in new vehicle trip generation. The number of parking spaces would also remain the same. The project has no other components that could reasonably be expected to result in adverse air quality effects.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
<tr>
<td><strong>Geology and Soils:</strong> As part of the restoration process, topsoil salvage and management of vegetative communities would occur. The proposed project would not result in increased exposure of people to geologic hazards.</td>
<td>Less than Significant</td>
<td>No mitigation is required.</td>
<td>Less than Significant</td>
</tr>
</tbody>
</table>
### Potential Environmental Impacts

<table>
<thead>
<tr>
<th>Potential Environmental Impacts</th>
<th>Significance Determination</th>
<th>Mitigation Measures</th>
<th>Level of Significance after Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazardous Materials and Public Health</strong> <em>(Vector Control)</em>: The proposed project would increase tidal flushing and improve water circulation, which would reduce, if not eliminate, areas of stagnant water.</td>
<td>Beneficial Impact</td>
<td>No mitigation is required.</td>
<td>Beneficial Impact</td>
</tr>
<tr>
<td><strong>Mineral Resources</strong>: The site does not lie within an area classified by the Surface mining and Reclamation Act as a production-consumption region for mineral resources. The project would not involve the extraction of mineral resources.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Noise</strong>: Post-construction there would be no increase in ambient noise levels. No new vehicle trips are anticipated as a result of the project and no other project components can reasonably be expected to result in substantial noise increases.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Population and Housing</strong>: The project would not result in a population increase or any increase in demand for housing.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Public Services</strong>: The project would not result in increase in demand for public services or facilities.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Recreation</strong>: The improvements such as interpretive displays and panels, as well as multiple interpretive nodes/loops, would serve to enhance the educational and recreational uses of the site.</td>
<td>Beneficial Impact</td>
<td>No mitigation is required.</td>
<td>Beneficial Impact</td>
</tr>
<tr>
<td><strong>Transportation/Circulation (Post-Construction)</strong>: Operation of the proposed project would not result in any new vehicle trips since the existing use of the lagoon would remain unchanged. Parking, circulation, and access improvements would have negligible effects.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
<tr>
<td><strong>Utilities and Service Systems</strong>: The project would not result in increased demand for utilities or service systems, including water supply, wastewater (septic/sewer), and solid waste.</td>
<td>No Impact</td>
<td>No mitigation is required.</td>
<td>No Impact</td>
</tr>
</tbody>
</table>
Mitigation Monitoring and Reporting

The Mitigation Monitoring and Reporting Program (MMRP) is a CEQA-mandated outcome of the EIR process undertaken for the proposed project. The results of the environmental analyses, including proposed mitigation measures, are documented in the Draft EIR for the proposed project.

CEQA requires that agencies adopting EIRs take affirmative steps to determine that approved mitigation measures are implemented subsequent to project approval.

Effective January 1, 1989, CEQA was amended to add Section 21081.6, implementing Assembly Bill (AB) 3180. As part of CEQA (state-mandated) environmental review procedures, Section 21081.6 requires a public agency to adopt a monitoring and reporting program for assessing and ensuring efficacy of any mitigation measures applied to the proposed project. Specifically, the lead or responsible agency must adopt a reporting or monitoring program for mitigation measures incorporated into a project or imposed as conditions of approval. The program must be designed to ensure compliance during project implementation. As stated in Public Resources Code, Section 21081.6 (a) (1):

“The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation. For those changes which have been required or incorporated into the project at the request of a responsible agency or a public agency having jurisdiction by law over natural resources affected by the project, that agency shall, if so requested by the lead agency or a responsible agency, prepare and submit a proposed reporting or monitoring program.”

AB 3180 provides general guidelines for implementing monitoring and reporting programs (MMRP). Specific reporting and/or monitoring requirements, to be enforced during project implementation, shall be defined prior to final approval of the proposal by the responsible decision maker(s). In response to established CEQA requirements and those of AB 3180 (Public Resources Code Section 21000 et seq.), the proposed MMRP for the Malibu Lagoon Restoration and Enhancement Plan shall be submitted for consideration by the decision makers prior to completion of the environmental review process.

Table 2-2 is the draft Mitigation Monitoring and Reporting matrix. The table lists each of the mitigation measures proposed in the EIR and specifies the following monitoring requirements for each:

- Party Responsible for Implementation of Mitigation,
- Implementation Phase,
- Party Responsible for Monitoring Activity,
- Monitoring Activity,
- Monitoring Period,
- Monitoring Frequency, and
- Outside Agency Coordination.
<table>
<thead>
<tr>
<th>MITIGATION MEASURE</th>
<th>IMPLEMENTATION</th>
<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-1 Southern Steelhead Trout.</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
<td>Potential coordination with CDFG, NOAA/NMFS, and USFWS</td>
</tr>
<tr>
<td>Construction and lagoon excavation may occur during steelhead migration. In order to avoid direct impacts to steelhead, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of similar tools. In the event that water must be pumped from these areas during construction, it shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. Fish salvage efforts shall be conducted for any surface water that must be separated from the main lagoon. After construction the area shall be re-flooded in a manner that minimizes disturbance of the lagoon salinity stratification and substrate, and the release of sediment.</td>
<td>State Parks</td>
<td>Phase 2 Construction</td>
<td>Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity</th>
<th>Monitoring Period</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</td>
<td>Phase 2 Construction</td>
<td>Once prior to initial lagoon earthwork in goby habitat area and continuing as determined necessary by biologist.</td>
</tr>
</tbody>
</table>
Re-inundation of the western lagoon may provide refuge areas for fish during construction activities in the main lagoon. Block netting and barriers shall be used to exclude adult gobies, migratory steelhead, and other fish from the work areas. On-site monitoring by a USFWS approved fisheries biologist would be conducted during any channel or bank disturbance. Pages 100-101 of the Final Alternatives Analysis prepared by Moffatt and Nichol (March 2005) outlines a possible construction sequence in more detail that incorporates several of these ideas.

**BIO-2 Tidewater Goby.** Construction of the restoration project shall be timed to minimize disturbance of the western shoreline of the main lagoon when larval tidewater gobies are using the near-shore habitat. In order to avoid direct impacts to gobies, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts to gobies shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of similar tools. In the event that water must be removed from these areas during construction, it

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<td><strong>Responsible Party(s)</strong></td>
<td><strong>State Parks</strong></td>
<td>Potential coordination with CDFG and USFWS</td>
</tr>
<tr>
<td><strong>BIO-2 Tidewater Goby.</strong> Construction of the restoration project shall be timed to minimize disturbance of the western shoreline of the main lagoon when larval tidewater gobies are using the near-shore habitat. In order to avoid direct impacts to gobies, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts to gobies shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of similar tools. In the event that water must be removed from these areas during construction, it</td>
<td><strong>Phase</strong></td>
<td><strong>State Parks</strong></td>
<td><strong>Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</strong></td>
</tr>
<tr>
<td><strong>Responsibility</strong></td>
<td><strong>Activity</strong></td>
<td><strong>Monitoring Period</strong></td>
<td><strong>Frequency</strong></td>
</tr>
<tr>
<td><strong>Phase 2 Construction</strong></td>
<td><strong>• Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</strong></td>
<td><strong>• Phase 2 Construction</strong></td>
<td><strong>• Once prior to initial lagoon earthwork in goby habitat area and continuing as determined necessary by biologist.</strong></td>
</tr>
<tr>
<td>MITIGATION MEASURE</td>
<td>IMPLEMENTATION</td>
<td>MONITORING</td>
<td>OUTSIDE AGENCY COORDINATION</td>
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<tr>
<td>shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. Fish salvage efforts shall be conducted for any surface water that must be separated from the main lagoon. After construction the area shall be re-flooded in a manner that minimizes disturbance of the lagoon salinity stratification and substrate, and the release of sediment. Construction in the main lagoon shall occur outside of the May 1st-Nov 1st breeding season for the tidewater gobies. Re-inundation of the western lagoon may provide refuge areas for fish during construction activities in the main lagoon. Block netting shall be used to exclude adult gobies, migratory steelhead, and other fish from the work areas. On-site monitoring by a USFWS approved fisheries biologist would be conducted during any channel or bank disturbance. Pages 100-101 of the Final Alternatives Analysis prepared by Moffatt and Nichol (March 2005) outlines a possible construction sequence in more detail that incorporates many of these ideas.</td>
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</tr>
<tr>
<td>BIO-3 California Brown Pelican</td>
<td>On-site monitoring by a USFWS-approved biologist would be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
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<td></td>
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<td>State Parks</td>
<td>State Parks</td>
</tr>
<tr>
<td>Phase</td>
<td>Activity</td>
<td>Monitoring Period</td>
<td></td>
</tr>
<tr>
<td>All Construction</td>
<td>Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</td>
<td>All Construction</td>
<td></td>
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<tr>
<td>MITIGATION MEASURE</td>
<td>IMPLEMENTATION</td>
<td>MONITORING</td>
<td>OUTSIDE AGENCY COORDINATION</td>
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</tbody>
</table>
| **BIO-4 Western Snowy Plover.** Schedule construction activities and ground disturbance in suitable/occupied habitat to avoid the western snowy plover breeding season from mid-March to August 30. On-site monitoring by a USFWS-approved biologist would be conducted during any disturbance within suitable/occupied habitat for this species. | Responsible Party(s)  
• State Parks  
Phase  
• All Construction | Responsible Party(s)  
• State Parks | Potential coordination with CDFG and USFWS |
| **Activity** | Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues. | | |
| **Monitoring Period** | All Construction | | |
| **Frequency** | Once during initial lagoon earthwork and continuing as determined necessary by biologist. | | |
| **BIO-5 Heermann’s Gull.** On-site monitoring by a USFWS-approved biologist would be conducted during any disturbance within suitable/occupied habitat for this species. | Responsible Party(s)  
• State Parks  
Phase  
• All Construction | Responsible Party(s)  
• State Parks | Potential coordination with CDFG and USFWS |
<p>| <strong>Activity</strong> | Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues. | | |
| <strong>Monitoring Period</strong> | All Construction | | |
| <strong>Frequency</strong> | Once during initial lagoon earthwork and continuing as determined necessary by biologist. | | |</p>
<table>
<thead>
<tr>
<th>MITIGATION MEASURE</th>
<th>IMPLEMENTATION</th>
<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-6 Elegant Tern.</td>
<td>On-site monitoring by a USFWS-approved biologist would be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
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<tr>
<td></td>
<td></td>
<td>• State Parks</td>
<td>• State Parks</td>
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<td></td>
<td>Phase</td>
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<tr>
<td></td>
<td>• All Construction</td>
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<td></td>
<td></td>
<td>Activity</td>
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<td></td>
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<td>• Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</td>
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<td></td>
<td></td>
<td>Monitoring Period</td>
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<td></td>
<td>• All Construction</td>
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<td></td>
<td></td>
<td>Frequency</td>
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<tr>
<td></td>
<td></td>
<td>• Once during initial lagoon earthwork and continuing as determined necessary by biologist.</td>
<td></td>
</tr>
<tr>
<td>BIO-7 California Least Tern.</td>
<td>Schedule construction activities and ground disturbance to avoid the California least tern breeding season and post-breeding season foraging (July to August). On-site monitoring by a USFWS-approved biologist would be conducted during any disturbance within suitable/occupied habitat for this species.</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
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<td></td>
<td>• State Parks</td>
<td>• State Parks</td>
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<td>Phase</td>
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<td></td>
<td>• All Construction</td>
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<td>Activity</td>
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<tr>
<td></td>
<td></td>
<td>• Retain USFWS-approved biologist to monitor lagoon earthwork and make determination about need for further monitoring as construction continues.</td>
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<td></td>
<td></td>
<td>Monitoring Period</td>
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<td></td>
<td></td>
<td>• All Construction</td>
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<td></td>
<td></td>
<td>Frequency</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>• Once during initial lagoon earthwork and continuing as determined necessary by biologist.</td>
<td></td>
</tr>
<tr>
<td>MITIGATION MEASURE</td>
<td>IMPLEMENTATION</td>
<td>MONITORING</td>
<td>OUTSIDE AGENCY COORDINATION</td>
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</tr>
<tr>
<td>HYDRO-1: Maintenance of Stormwater System.</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
<td>None.</td>
</tr>
<tr>
<td>Permeable tiles, drainage swales, pumps, pipelines, and any associated equipment must be maintained on a regular basis to ensure full functioning. Maintenance may include removal of fine sediments from tile gaps for proper infiltration and periodic sediment removal from drainage swales for capacity maintenance. The project manager will ensure that all components of the storm drainage system are maintained to design and manufacturer specifications on a regular basis.</td>
<td>State Parks</td>
<td>State Parks</td>
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<tr>
<td>Phase</td>
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<tr>
<td>• Post-construction</td>
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<td></td>
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<tr>
<td>Responsible Party(s)</td>
<td>State Parks</td>
<td></td>
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</tr>
<tr>
<td>Phase</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Post-construction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring Period</td>
<td>Post-construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>Monthly, with increased frequency as needed during winter months and prior to anticipated storm events.</td>
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<td></td>
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<tr>
<td>HYDRO-2: Implement Best Management Practices to Control Discharge of Construction-Related Pollutants to Surface Waters. Because project construction will cover an area greater than one acre, a Storm Water Pollution Prevention Plan (SWPPP) will be prepared by the Lead Agency or its contractor as required by the RWQCB under the NPDES General Construction Permit. The SWPPP shall meet the requirements of the RWQCB as well as any City and County requirements. The SWPPP will identify BMPs to maintain water quality. The final selection and design of erosion and sediment controls shall be subject to approval by the Lead Agency. BMPs in the SWPPP may include, but is not limited to, the following elements:</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
<td>Regional Water Quality Control Board</td>
</tr>
<tr>
<td>Responsible Party(s)</td>
<td>State Parks</td>
<td>State Parks</td>
<td></td>
</tr>
<tr>
<td>Phase</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• Pre-construction; construction</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Monitoring Period</td>
<td>Construction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>Monthly, as specified for various BMPs</td>
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</table>
Earth dikes, drainage swales, and ditches shall be provided to intercept, divert, and convey surface runoff and sheet flow, prevent erosion, and reduce pollutant loading. Specific areas that may need such measures shall be identified on the construction drawings.

Roads used during construction shall be continuously swept and cleaned of accumulated earth and debris in the construction zone during project construction, particularly before predicted rainfall events.

Excavated materials deposited or stored onsite temporarily shall not be placed in or adjacent to open water channels and shall be wetted and covered as necessary to prevent runoff and erosion.

Oils, fuels, and other toxicants spilled or deposited near the project site shall be removed and disposed of according to applicable laws and regulations.

Establish grass or other vegetative cover over areas that have been disturbed by construction as soon as possible after disturbance to establish vegetative cover. This will reduce erosion by slowing runoff velocities, enhancing infiltration and transpiration, trapping sediment and other particulates, and protecting soil from raindrop impact.

The Lead Agency and/or its contractors shall implement a monitoring program to verify BMP effectiveness. The monitoring program shall begin at the outset of construction and terminate upon completion of the project.
HYDRO-3: Implement a Hazardous Material Spill Prevention Control and Countermeasure Plan. A Hazardous Material Spill Prevention Control and Countermeasure Plan would be prepared as part of the NPDES General Construction Permit to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction of the project. This plan will describe storage procedures and construction site housekeeping practices, and identify the parties responsible for monitoring and spill response. Routine inspections and monitoring of best management practices would ensure minimal impacts to the environment occur. Commonly practiced best management practices include use of containment devices for hazardous materials, training of construction staff regarding safety practices to reduce the chance for spills or accidents, and use of nontoxic substances where feasible. The plan also would describe actions required if a reportable spill occurs, such as which authorities to notify and the proper clean-up procedures. The Hazardous Material Spill Control and Countermeasure Plan would contain standards considered sufficiently protective such that significant adverse impacts on surface and groundwater quality would be avoided. The plan shall be completed before any construction activities begin.

<table>
<thead>
<tr>
<th>MITIGATION MEASURE</th>
<th>IMPLEMENTATION</th>
<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDRO-3</td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
<td>Regional Water Quality Control Board</td>
</tr>
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<td></td>
<td>• State Parks</td>
<td>• State Parks</td>
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<tr>
<td>Phase</td>
<td>Construction</td>
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</tbody>
</table>

Responsible Party(s)
• State Parks

Activity
• Prepare and implement various components of Plan.

Monitoring Period
• Construction

Frequency
• As specified in approved plan.
<table>
<thead>
<tr>
<th>MITIGATION MEASURE</th>
<th>IMPLEMENTATION</th>
<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
</tr>
</thead>
</table>
| AQ-1: Dust sweeping. The construction area and vicinity (driveways, access roads, and staging areas) shall be swept with water sweepers on a daily basis or as necessary to ensure there is no visible dust. | Responsible Party(s)  
- State Parks  
Phase  
- All Construction | Responsible Party(s)  
- State Parks  
Activity  
- Ensure construction area is swept or watered regularly.  
Monitoring Period  
- All Construction  
Frequency | None |
| AQ-2: Covering or watering of stockpiles. On-site stockpiles of debris, dirt or rusty material shall be covered or watered at least twice daily to prevent fugitive dust. All unpaved roads, parking, and staging areas shall be watered at least once every two hours of active operations. | Responsible Party(s)  
- State Parks  
Phase  
- All Construction | Responsible Party(s)  
- State Parks  
Activity  
- Ensure all stockpiles are covered or watered regularly.  
Monitoring Period  
- All Construction  
Frequency | None |
| AQ-3: Covering of Haul Trucks. All haul trucks hauling soil, sand, and other loose materials shall either be covered or maintain two feet of freeboard. | Responsible Party(s)  
- State Parks  
Phase  
- All Construction | Responsible Party(s)  
- State Parks  
Activity  
- Monitor haul truck activity to ensure compliance.  
Monitoring Period  
- All Construction  
Frequency | None |
### MITIGATION MEASURE

| CR-1 | Cultural Resources Testing in Area Adjacent to CA-LAN-264. Cultural resources excavations will be undertaken prior to any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264, if any project related earthwork occurs within 100 feet of the known boundary of CA-LAN-264. Test excavations shall not take place within the known boundaries of CA-LAN-264, but adjacent to the boundaries if project construction would require any ground disturbing activities within 100 feet of the known site boundary. Because sensitivity is moderate to high for cultural resources, including human remains, to be present along this edge of the project area, a subsurface testing program should be implemented to identify if resources are present, and to evaluate potentially NRHP-eligible resources. If subsurface testing identifies intact, significant archaeological resources within the project area that cannot be avoided, the project would have an adverse effect. Development of measures to mitigate adverse effects would be necessary and a Memorandum of Agreement would be required to complete Section 106 consultation. The preconstruction testing program should include, but need not be limited to:

- development of a testing strategy to identify subsurface archaeological deposits, including further research on previous investigations and regarding previous lagoon excavations, in an effort to refine the scope of any field effort, |

#### IMPLEMENTATION

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<tr>
<th>Responsible Party(s)</th>
<th>Phase</th>
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<tr>
<td>State Parks</td>
<td>Phase 2 Construction</td>
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</table>

#### MONITORING

<table>
<thead>
<tr>
<th>Responsible Party(s)</th>
<th>Activity</th>
<th>Monitoring Period</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Parks</td>
<td>Archaeological monitoring of earthwork</td>
<td>Phase 2 Construction</td>
<td>Daily for any earthwork within 100 feet of known boundary of CA-LAN-264.</td>
</tr>
</tbody>
</table>

#### OUTSIDE AGENCY COORDINATION

Native American Consultation; Possible SHPO
• evaluation of significance and integrity of exposed archaeological deposits (according to NHPA, NRHP, and CRHR criteria) if present, in consultation with the SHPO; and

• consultation with local Native Americans if prehistoric or ethnohistoric resources are identified.

Upon identification of any significant prehistoric or historical archaeological resources, it will be necessary to avoid these resources during project development, or to formulate a treatment plan to mitigate adverse effects. A treatment plan, adopted within a Memorandum of Agreement, to be negotiated in consultation with the SHPO, would likely include the following:

• an acceptable data recovery plan stating specific research goals and questions that are to be addressed if archaeological deposits are to be recovered;

• post-field artifact processing and analysis;

• report preparation in accordance with the guidelines of DPR; and

• permanent curation of artifacts and documents in a repository consistent with the National Park Service guidelines for the curation of archaeological collections (36CFR79).

Feature recovery should employ standard archaeological excavation techniques. The testing and evaluation plan should be designed and implemented by a qualified Prehistorical Archaeologist, and if discoveries warrant, a qualified Historical Archaeologist.

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<tr>
<th>MITIGATION MEASURE</th>
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<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
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<tr>
<td>• evaluation of significance and integrity of exposed archaeological deposits</td>
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<tr>
<td>(according to NHPA, NRHP, and CRHR criteria) if present, in consultation with the</td>
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<td>SHPO; and</td>
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<tr>
<td>• consultation with local Native Americans if prehistoric or ethnohistoric</td>
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<td></td>
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<td>resources are identified.</td>
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California State Parks
Chapter 2. Summary

Malibu Lagoon Restoration and Enhancement Plan EIR 2-36 January 2006
05473.05
MITIGATION MEASURE | IMPLEMENTATION | MONITORING | OUTSIDE AGENCY COORDINATION
--- | --- | --- | ---
Both the testing and evaluation plan and the data recovery strategy shall be developed and implemented in consultation with interested local Native American groups. Plans shall state that Native American human remains will be treated in compliance with Health and Safety Code, Sections 7050.5, 8010, and 8011 and Public Resources Code, Section 5097.98.

CR-2 Cultural Resources Monitoring in Area Adjacent to CA-LAN-264. Cultural resources monitoring by State Parks archaeologists or designees shall be conducted during any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264. Monitoring will be conducted if conditions allow for observation of spoils. Monitoring of dredging is probably not feasible given underwater activity would not be visible. The remainder of the project area may be monitored if notable cultural materials are discovered, or monitoring may be further limited if the monitoring area appears previously disturbed (as may be the case in areas where Caltrans has deposited fill material and rip rap).

If prehistoric cultural resources are discovered in this area during monitoring or other construction, all work shall be halted in the vicinity of the archaeological discovery until a State Parks archaeologist or designee can visit the site of discovery and assess the significance of the archaeological discovery. Further treatment may be required, including modification of plans to avoid impacts to the site, site recordation, excavation, site evaluation, and data recovery. Avoidance of cultural resources shall be the top priority at all situations.

Responsible Party(s)
- State Parks

Phase
- Phase 2 Construction

Activity
- Archaeological monitoring of earthwork

Monitoring Period
- Phase 2 Construction

Frequency
- Daily for any earthwork within 100 feet of known boundary of CA-LAN-264.

Native American Consultation; Possible SHPO
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<tr>
<th>MITIGATION MEASURE</th>
<th>IMPLEMENTATION</th>
<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
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<tr>
<td>CR-3</td>
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<tr>
<td><strong>Stop Work If Cultural Resources Are Discovered during Ground-Disturbing Activities.</strong></td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
<td>Native American Consultation; Possible SHPO</td>
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<tr>
<td></td>
<td>• State Parks</td>
<td>• State Parks</td>
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<tr>
<td>Phase</td>
<td>• Phase 2 Construction</td>
<td>• Phase 2 Construction</td>
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<tr>
<td><strong>CR-4</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Comply with State Laws Pertaining to the Discovery of Human Remains.</strong></td>
<td>Responsible Party(s)</td>
<td>Responsible Party(s)</td>
<td>Native American Consultation; Possible SHPO</td>
</tr>
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<td></td>
<td>• State Parks</td>
<td>• State Parks</td>
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<tr>
<td>Phase</td>
<td>• Phase 2 Construction</td>
<td>• Phase 2 Construction</td>
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<td><strong>Monitoring</strong></td>
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<td>Frequency</td>
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<tr>
<td>Activity</td>
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<tr>
<td>Monitoring Period</td>
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<tr>
<td>Frequency</td>
<td>Daily for any earthwork within 100 feet of known boundary of CA-LAN-264.</td>
<td>Daily for any earthwork within 100 feet of known boundary of CA-LAN-264.</td>
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If cultural resources are discovered during construction activities, the construction contractor will verify that work is halted until appropriate site-specific treatment measures—such as those listed above—are implemented.

If human remains of Native American origin are discovered during ground-disturbing activities, it is necessary to comply with state laws relating to the disposition of Native American burials that fall within the jurisdiction of the California Native American Heritage Commission (Public Resources Code Section 5097). Construction work shall not continue within 100 feet of a location where human skeletal remains are found.
According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American.

If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission to determine the most likely living descendant(s). The most likely living descendant shall determine the most appropriate means of treating the human remains and any associated grave artifacts, and shall oversee disposition of the human remains and associated artifacts by the project archaeologists. This impact would be significant, but implementation of the mitigation measures above would reduce this impact to a less-than-significant level.

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<th>MITIGATION MEASURE</th>
<th>IMPLEMENTATION</th>
<th>MONITORING</th>
<th>OUTSIDE AGENCY COORDINATION</th>
</tr>
</thead>
</table>
| N-1 Use of Mufflers. Construction contracts shall specify that all construction equipment shall be equipped with mufflers and other suitable noise attenuation devices. | Responsible Party(s)  
- State Parks | Responsible Party(s)  
- State Parks | None |
| Phase  
- All Construction | Activity  
- Ensure use of mufflers and other attenuation devices. | Monitoring Period  
- All Construction | Frequency  
- Daily |
### MITIGATION MEASURE

**N-2 Notice of Construction Schedule and Noise “Hotline.”** All residential units located within 500 feet of the construction site shall be sent a notice regarding the construction schedule of the proposed project. A clearly legible sign shall also be posted at the construction site. All notices and the signs shall indicate the expected dates and duration of construction activities, as well as provide a telephone number that residents can call to resolve any concerns about construction noise.

The Lead Agency shall be responsible for responding to any local complaints about construction noise. The Lead Agency (or designee) would determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and would be required to implement reasonable measures such that the complaint is resolved.

### IMPLEMENTATION

Responsible Party(s)  
- State Parks

Phase  
- All Construction

### MONITORING

Responsible Party(s)  
- State Parks

Activity  
- Send notices, post sign, and designate a community liaison and phone number to respond to any noise concerns.

Monitoring Period  
- All Construction

Frequency  
- Daily

### OUTSIDE AGENCY COORDINATION

None

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**N-3 Limits of hours of construction.** Pursuant to the Noise Control Ordinance of the City of Malibu, Section 8.24.050G, construction activities shall be prohibited during the hours between 7:00 p.m. and 7:00 a.m. during the weekdays and any time on Sundays or holidays. All construction related to the proposed project would take place between the hours defined by the Ordinance.

Additionally, construction activities shall be coordinated with Adamson House staff to ensure that potentially disturbing construction activities do not occur during planned events at the Adamson House, such as Saturday weddings.

### IMPLEMENTATION

Responsible Party(s)  
- State Parks

Phase  
- All Construction

### MONITORING

Responsible Party(s)  
- State Parks

Activity  
- Ensure adherence to construction hours.

Monitoring Period  
- All Construction

Frequency  
- Daily

### OUTSIDE AGENCY COORDINATION

None
Introduction

This chapter describes the proposed Malibu Lagoon Restoration and Enhancement Plan (plan or project). The project description provided below highlights the key features of the plan. The plan itself, prepared by Moffatt & Nichol in association with Heal the Bay (June 2005) for California State Parks and the Coastal Conservancy, is included in its entirety in Appendix A and should be considered a companion document to this EIR as it inherently represents the most thorough description of the proposed actions.

In accordance with the requirements of CEQA (Section 15124), the project description provides information about location and boundaries of the proposed project, a statement of objectives, and a general description of the various characteristics of the project. A brief summary of the intended uses of the EIR is also provided.

Project Background

Southern California has lost approximately 95 percent of its historic coastal wetlands. As a result of urban encroachments, the lagoon as we see it today is a very small portion of its historic area. The PCH bridge has dissected and constricted the lagoon surface area, and a significant portion of the once low-lying areas near the mouth of Malibu Creek were filled in the 1940s and 1950s. By the 1970s the site was completely filled and was covered by two baseball fields.

Increased urbanization and imported water upstream in the Malibu Creek Watershed has increased the volume of water transported into the lagoon and urban pollution has greatly diminished the quality of the water through inputs of nutrients, sediments, and pollutants.

Several restoration efforts have been made in the past. In 1983, the California Department of Parks and Recreation (DPR) initiated a restoration of the lagoon, which involved the excavation of three channels, seeding with salt marsh plants, and creation of a series of boardwalks to allow for public access. In 1996, the California Department of Transportation (Caltrans) funded a restoration plan to
mitigate for impacts incurred during the Malibu Lagoon PCH Bridge Replacement Project. This restoration project was conducted by the DPR and RCDSMM and included the very successful tidewater goby habitat enhancement project and the revegetation of areas disturbed by construction activities with native species, including extensive removal of non-native species.

In the late 1990s, the Coastal Conservancy funded a study by UCLA to identify the status of the ecological health and water quality in the lower creek and the lagoon systems and to recommend best management practices and restoration options.

**Project Purpose, Need, and Objectives**

Since the 1850s, 90 percent of California's original coastal wetland acreage has disappeared, and many of the remaining wetlands are in danger of being further degraded or destroyed due to landfill, diking, dredging, pollution, and other human disturbances. However, a growing awareness of the importance of this habitat has led to efforts to protect existing wetlands, and to restore those that have been degraded.\(^1\)

The purpose of the plan is to restore and enhance the ecological conditions of the lagoon and improve public access and education about the lagoon. The plan presents information regarding the current condition of the lagoon, goals and strategies for the restoration, and implementation of a monitoring plan. Essentially, the plan offers strategies to enhance the lagoon as one of the few remaining California coastal wetlands, prevent further deterioration of the lagoon, improve visitors’ experience, and educate the public about the lagoon’s ecosystem processes. The project will increase wetlands (marsh) habitat at the existing lagoon, enhance tidal influence, and improve circulation, remove exotic invasive vegetation species, and increase native vegetation while enhancing the visitor and recreational experience.

The Lead Agency has identified the following major objectives for the proposed project:

- Decrease urban runoff from surrounding sources into the lagoon to improve its water quality and decrease eutrophication.
- Increase circulation of water during open and closed conditions.
- Restore habitat by re-establishing suitable soil conditions and native plant species and removing non-native species.
- Relocate existing parking lot to increase habitat size and utilize permeable surfaces.

---

\(^1\) California's Coastal Wetlands: http://ceres.ca.gov/ceres/calweb/coastal/wetlands.html.

\(^2\) Over-enrichment of a water body with nutrients, resulting in excessive growth of organisms and depletion of dissolved oxygen concentration.
- Evaluate, record, and analyze existing and changing ecological conditions of the lagoon using physical, chemical, and biological parameters to allow agencies, organizations, and stakeholders to monitor progress towards restoration goals.

- Provide improved visitor and educational amenities.

## Project Location and Setting

### Physical Setting

Malibu Lagoon is a 31-acre shallow water embayment occurring at the terminus of the Malibu Creek Watershed, the second largest watershed draining into Santa Monica Bay and within Malibu Lagoon State Beach. The lagoon empties into the Pacific Ocean at Malibu Surfrider Beach (See Figures 3-1 and 3-2). The lagoon is located generally south of the intersection of PCH and Cross Creek Road in the City of Malibu. Existing land uses on the project site are primarily recreational and supportive of open space and habitat preservation. Onsite amenities include a surface parking lot, walking and beach access trails, a picnic area, and portable restroom facilities.

### Surrounding Land Uses

The area in the immediate vicinity of the lagoon contains a mix of land uses. Commercial uses and civic center offices are located north of the project site, across PCH. This commercial and civic area is contained within the Malibu Land Use Plan Civic Center Overlay Boundary. Malibu Creek also extends to the north of the site. Adjacent to the east of the lagoon, and within Malibu Lagoon State Beach, is the National Register-listed historic Adamson House. Immediately to the west of the site is a fenced private golf course, and bordering on the southwest is a strip of medium density single-family residences with beach frontage (Malibu Colony). Additional recreational uses are located to the south at Malibu Lagoon State Beach/Surfrider Beach and the Pacific Ocean.

---

3 City of Malibu General Plan, November 1995.
4 City of Malibu Local Coastal Program Land Use Plan, September 2002.
Figure 3-1. Regional Location Map

Sources: U.S. Census TIGER Data, 2000; Jones & Stokes, 2005.
Figure 3-2. Project Vicinity Map

Sources: Copyright 2003 GDT, Inc. and its licensors, Rel. 10/2003; U.S. Census Bureau TIGER Data, 2000; Jones & Stokes, 2005.
Proposed Project

Based on the findings of the Final Alternatives Analysis for the Malibu Lagoon Restoration Feasibility Study, and discussions amongst DPR, the Coastal Conservancy, the LRWG, and LTAC, Alternative 1.5, the Modified Restore and Enhance Alternative, was selected as the proposed project. Alternative 1.5 embodies the lagoon restoration goals with the least amount of impacts to the existing lagoon ecosystem (see Figure 3-3). Please see Chapter 11 for details of other alternatives to the project that were considered. The Final Alternatives Analysis document is available online at: http://www.healthebay.org/currentissues/mlhec/default.asp.

Major components of the design are explained below.

Parking Lot and Staging Lawn

The existing parking lot would be relocated to the north and west to be adjacent to the PCH. The new parking lot and staging areas would be created with runoff treatment controls, including permeable pavement or other similar permeable substances, appropriate native vegetation, and would include a staging area to enhance existing educational and recreational uses of the site. The current number of parking spaces would remain and new interpretive displays and panels would be installed.

Main Channel

The main channel would remain substantially “as is.” The western edge of the main lagoon at the interface with the western arms complex would be reconfigured in the form of a naturalized slope to provide a degree of separation between main lagoon and west channel system.

Eastern Channel

The existing boathouse channel would be deepened and recontoured to create a new avian island along the bank of the Adamson House grounds. This would create additional mudflat habitat and promote additional water circulation around the new island.

West Lagoon Complex

The project presents a comprehensive approach to restore and enhance the ecological structure and function of the lagoon, as well as to enhance visitors’ experience through improvements to access and interpretation.
Figure 3-3. Proposed Project Plan
Project Implementation and Management Approach

The project employs a holistic approach to habitat restoration. The overall restoration plan has individual elements such as the Water Management Plan, Habitat Plan, Access, Education, and Interpretation Plan, and Monitoring Plan. The salient features of this holistic approach are listed below:

Water Management Plan

The Water Management Plan is designed to eliminate all polluted runoff discharges to the lagoon in order to improve lagoon water quality, and to improve and maintain circulation within the lagoon under all conditions. Direct surface discharges to the lagoon can occur from storm water and from irrigation. In order to manage the storm water, several strategies may be employed including:

Permeable Pavement

The parking lot and entrance road will be constructed with permeable materials to allow water to percolate into underlying soil and eventually the groundwater zone.

Drainage Swales

Drainage swales may be installed along the perimeter of hardscape areas such as the parking lot to intercept surface runoff that is not infiltrated into the parking lot. A swale of approximate size three feet deep by nine feet wide may be constructed. The exact location of the swales is not known at this point in project development. The drainage swales are intended to be large enough to hold runoff from the 100-year storm before it begins to overflow. The habitat formed with the swales would be designed to be complementary to the wetland.

Redirection of Storm Water

In order to redirect storm water away from the lagoon and towards other appropriate drainage facilities, two options are under consideration. One option would be to downward slope the parking lot towards the north, such that the run-off flows in a direction opposite to the lagoon. Such run-off could be conveyed to a swale or other conveyance feature (trench or pipe) to move farther away from the lagoon. The other option would be to route the drainage westward toward the collection sump for the City of Malibu’s future force main line along Malibu Road. The run-off
from the future parking lot could be routed to the sump near Malibu Colony at the south end of the future force line, and then be included in water pumped upstream toward the future treatment plant near Cross Creek Road and Civic Center Way. Four drains currently exist from private homes in the Colony that shall be incorporated into the future treatment plant.

**Irrigation**

Water can be inadvertently contributed to the lagoon by temporary and permanent irrigation of plantings at landscaped areas. As the lagoon is a natural habitat area, permanent irrigation will not be implemented. Supplemental irrigation, either passive or active, may be installed. Active irrigation would include implementation of a temporary irrigation system (overhead spray, drip, tended watering, or a combination of these methods) to assist in establishment of plant materials. A passive method would involve a hydrophilic amendment to be used in the planting soils or as a binding agent for seed.

**Circulation**

Water within the lagoon needs to circulate to remain of suitable quality for use as habitat. A monitoring system would be installed to compare water quality data pre- and post-restoration.

**Habitat Plan**

The Habitat Plan addresses the initial enhancement and establishment of habitats within the restored lagoon system as well as the on-going maintenance and management activities required to ensure that restoration habitat objectives are achieved.

The habitat design would include the following features:

**Slopes and Sediment Types**

Habitat restoration within the restored lagoon is highly dependent upon development of suitable hydrologic soil conditions and the availability of desirable reproductive plant materials to colonize the restoration areas. To accomplish the desired restoration, appropriate considerations to elevations, slopes, and sediment characteristics would be made.

**Topsoil and Sediment Salvage and Management**

Development of habitat designs would necessitate stockpiling and reuse of suitable sediments to obtain the physical and chemical conditions to support the desired biological communities.
Restoration Planting and Natural Establishment

Depending on the habitat type (Marsh, Nontidal Southern Coastal Salt Marsh, Riparian, Coastal Dune/Bluff Scrub), a suitable restoration approach would be chosen (natural recruitment and salvaged plant transplants, natural recruitment, seeding and container planting). Many of the desired species that exist in lagoon habitats would be salvaged and transplants may be undertaken to minimize the need for new plantings.

Maintaining Unvegetated Habitat Areas

Undesirable vegetation would be regularly removed from the naturally open unvegetated habitat areas, such as mudflats, channels, exposed avian islands, beaches and dunes.

Minimizing Habitat Losses from Seasonal Inundation

In order to minimize habitat loss as a result of seasonal inundation, a variety of measures may be undertaken including developing an undulating topography within the seasonally inundated habitats, incorporating vegetation that tolerates prolonged exposure to anoxic soil conditions and promotes increased oxygenation of waters during inundation periods.

Long-term Habitat Maintenance

Protection against invasive exotic species would require on-going exotic plant control efforts. In addition to threats of exotic species invasion, high nutrient loading within the lagoon would need to be controlled.

Access, Education, and Interpretation Plan

This plan includes proposed relocation of the parking lot along PCH, and provision of multiple interpretive nodes and areas for educational programs. This would allow for more ground surface area for wetland habitat restoration. The existing parking capacity would remain unchanged due to relocation of the parking lot. A new bus and Park Link shuttle stop would be reconfigured based on the new location of the parking lot. In addition, the existing trail along the perimeter of the western arms complex would be improved for use as the primary beach access trail. Three primary interpretive nodes would be provided near the parking area.

Some of the additional features of the plan include provision of storage and restroom facilities near entry parking circle, enhanced access to the east lagoon over PCH Bridge with interpretive signage and graphics, and an interpretive overlook at Adamson House boat dock.
Monitoring Plan

In order to measure improvements in the lagoon system, the monitoring plan aims to standardize sampling protocols, select monitoring parameters, and acquire a reliable baseline dataset.

Construction Scenario

Construction of the project would occur in two phases. The first phase of construction involves relocation of the existing parking lot closer to the park entrance and PCH. During this phase, the existing parking lot, which is located at the northern portion of the project site, would be removed. The northwestern portion of the project site, adjacent to PCH, would be graded and paved for the new parking lot. The first phase of construction would occur between November 2006 and January 2007.

The second phase of construction would occur at the lagoon. Construction activities at the lagoon would primarily involve earthwork. The second phase of construction would begin after completion of the Phase 1 parking lot construction in 2007.

The CEQA Environmental Review Process

CEQA requires the preparation of an EIR when there is substantial evidence that a project may have a significant effect on the environment. The purpose of an EIR is to provide decision makers, public agencies, and the general public with an objective and informational document that fully discloses the potential environmental effects of the proposed project.

The EIR process is specially designed to facilitate the objective evaluation of potentially significant direct, indirect, and cumulative impacts of the proposed project and identify potentially feasible mitigation measures and alternatives that reduce or avoid the project’s significant effects. In addition, CEQA specifically requires that an EIR identify those adverse impacts determined to be significant after mitigation.

In accordance with CEQA and the State CEQA Guidelines, which are found in Title 14 of the California Code of Regulations, commencing with Section 15000, a Notice of Preparation of a Draft Environmental Impact Report (NOP) was distributed on October 28, 2005, to the State Office of Planning and Research and responsible and trustee agencies as well as private organizations and individuals that may have an interest in the proposed project. The NOP was also published in the Malibu Times and Malibu Surfside News on October 27, 2005.

The purpose of the NOP was to provide notification that DPR, as lead agency, planned to prepare an EIR for the proposed project and solicit
guidance on the scope and content of the EIR. The NOP presented a description of the proposed project, potential environmental effects, instructions on how to provide comments, and the date, time, and location of the public scoping meeting that was held at Malibu City Hall the evening of November 16, 2005. The NOP and copies of all letters received in response to the NOP are included in Appendix B.

Approximately 15 persons attended the scoping meeting. An overview and history of the lagoon, the proposed Plan, and CEQA requirements were presented. The presentation included a chronology of preceding lagoon restoration actions that ultimately led to the development of the proposed Plan. During the public comment portion of the meeting, questions were raised concerning construction phase beach access, biological impacts, and the methodology used to determine impacts. All questions and concerns raised at the scoping meeting have been addressed in this EIR.

As the lead agency under CEQA, DPR directed the preparation of this EIR through the use of professional environmental services contractors. This EIR, however, reflects the independent judgment of DPR and is intended to comply with CEQA and the State CEQA Guidelines (see Public Resources Code, §21100; State CEQA Guidelines, §§15120–15132).

This Draft EIR is now being circulated for public review and comment for a period of 45 days (January 20, 2006 through March 6, 2006). During this period, comments from the general public, organizations, and agencies regarding environmental issues raised in the Draft EIR and the Draft EIR’s accuracy and completeness may be submitted to DPR at the following address:

California Department of Parks and Recreation
Angeles District Headquarters
Attn: Suzanne Goode, District Environmental Coordinator
1925 Las Virgenes Road
Calabasas, CA 91302

Formal comments on the Draft EIR should be submitted in writing with a contact name and mailing address and delivered to the address above by the last day of the public review period identified in the notice of availability circulated with this Draft EIR. Comments may also be faxed or emailed to Suzanne Goode (fax: 818-880-6165; email: sgood@parks.ca.gov). Please indicate “Malibu Lagoon Draft EIR Comments” in the subject line of any emails. Upon completion of the public review period, a Final EIR will be prepared. The Final EIR will include the comments on the Draft EIR received during the formal public review period as well as responses to those comments.

Prior to approval of the proposed project, CEQA also requires DPR to adopt “findings” with respect to each significant environmental effect identified in the EIR (Public Resources Code, §21081; State CEQA
Guidelines, §15091). For each such significant effect, CEQA requires the approving agency to make one or more of the following findings:

- the project has been altered to avoid or substantially lessen significant impacts identified in the EIR;
- the responsibility to carry out the above is under the jurisdiction of specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

In the event that DPR, as the lead agency under CEQA, concludes that the proposed project will result in significant effects that are identified in the EIR but are not substantially lessened or avoided by feasible mitigation measures and alternatives, DPR must adopt a “statement of overriding considerations” prior to approval of the proposed project (Public Resources Code, §21081, subd. (b); State CEQA Guidelines, §15093). Such statements are intended under CEQA to provide a written means by which the lead agency balances in writing the benefits of the proposed project and the significant and unavoidable environmental impacts. Where the lead agency concludes that the economic, legal, social, technological, or other benefits outweigh the unavoidable environmental impacts, the lead agency may find such impacts “acceptable” and approve the project.

In addition, pursuant to Section 21081.6 of the Public Resources Code, public agencies, when approving a project, must also adopt a monitoring or reporting program for the changes that were incorporated into the project or made a condition of project approval in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program is adopted at the time of project approval and must be designed to ensure compliance during project implementation. If DPR, as the lead agency, approves the proposed project, DPR will implement the proposed project and mitigation monitoring program. A draft mitigation monitoring program for the project is included in Chapter 2 of this EIR (see Table 2-2).

**Intended Uses of the EIR**

According to Section 15121 of the State CEQA Guidelines, an EIR is a public document used by a public agency to analyze the potentially significant environmental effects of a proposed project, identify alternatives, and disclose possible ways to reduce or avoid possible environmental damage. As an informational document, an EIR does not recommend approval or denial of the project. The main purpose of an EIR is to inform governmental decision makers and the public about potential environmental impacts of the project.
Accordingly, this EIR will be used by DPR, as the lead agency under CEQA, in making decisions with regard to approval of the project and its implementation.

The information in this EIR may also be used by other agencies identified below in deciding whether to grant permits or approvals necessary to construct or operate the proposed project:

- The Army Corps of Engineers would issue permits pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors.
- The CDFG would issue a Streambed Alteration Agreement pursuant to Section 1601 of the California Fish and Game Code.
- The CCC would issue a Coastal Development Permit pursuant to the California Coastal Act of 1976.
- The Los Angeles RWQCB would issue a Water Quality Certification pursuant to Section 401 of the Clean Water Act.
- The City of Malibu would issue a Coastal Development Permit for construction of the Phase 1 parking lot improvements within City jurisdiction.
- An encroachment permit for work within Caltrans ROW may also be required.

**Organization of the EIR**

- Chapter 1 of this EIR provides an introduction to the project. This chapter provides an overview of the CEQA process and the agencies involved.
- Chapter 2 of this EIR is the summary chapter that provides an overview of the detailed information contained in subsequent chapters. The summary includes a table that summarizes the potential environmental impacts in each resource area, the significance determination, mitigation measures, and the level of significance after mitigation for those impacts.
- Chapter 3 of this EIR provides a detailed description of the proposed project as well as the project objectives, location, characteristics, and construction scenario. A description of the intended uses of the EIR and public agency actions, and this section describing the organization of the EIR.
- Chapter 4 of this EIR describes the project’s relationship to local and regional planning documents.
- Chapter 5 of this EIR describes the potential environmental effects to hydrology and water quality including a discussion of the environmental setting for the resource, environmental impacts as a result of the project, and required mitigation measures.
- Chapter 6 of this EIR describes the potential environmental effects to biological resources, including a discussion of the environmental setting for the resource, environmental impacts as a result of the project, and required mitigation measures.

- Chapter 7 of this EIR describes the potential environmental effects to cultural resources, including a discussion of the environmental setting for the resource, environmental impacts as a result of the project, and required mitigation measures.

- Chapter 8 of this EIR describes the project’s potential construction effects in the areas of air quality, biological resources, cultural resources, hydrology and water quality, noise, and traffic and circulation. Mitigation measures are listed as requirements to reduce temporary construction impacts.

- Chapter 9 of this EIR describes the effects considered not significant under CEQA. Because an Initial Study was not prepared prior to initiating the EIR analysis, Chapter 9 describes all the environmental topic areas that bear little relation to the project, such as agricultural resources, mineral resources, and aesthetics.

- Chapter 10 of this EIR provides an overview of the potential cumulative environmental effects of the proposed project when considered together with other development projects in the area.

- Chapter 11 of this EIR describes and analyzes the No-Project Alternative and other alternatives that were considered during the planning process. It also identifies the environmentally superior alternative.

- Chapter 12 provides sources and references used in the preparation of this EIR.

Appendices to the EIR follow Chapter 12, including the full text of the Restoration Plan, and the NOP and comment letters received in response to the NOP.
Chapter 4

Consistency with Local and Regional Plans

Setting

Existing Land Uses and Plan Designations

On-site

The project site comprises the entire 31-acre Malibu Lagoon, a shallow water embayment occurring at the terminus of the Malibu Creek watershed, emptying seaward of PCH at Malibu Surfrider Beach. The lagoon is within Malibu Lagoon State Beach, which is owned and operated by DPR, except for the sandy beach area that is operated by Los Angeles County Beaches and Harbors. Existing land uses on the project site are primarily recreational and supportive of open space and habitat preservation. Onsite amenities include a surface parking lot, walking and beach access trails, a picnic area, restroom facilities, and State Park facilitated tours and activities.¹

Adjacent

The area in the immediate vicinity of the lagoon contains a mix of land uses. Commercial uses and civic center offices are located north of the project site, across PCH. This commercial and civic area is contained within the Malibu LUP Civic Center Overlay Boundary. Malibu Creek also extends to the north of the site. Adjacent to the east of the lagoon is the National Register-listed historic Adamson House, which is located within Malibu Lagoon State Beach. Immediately to the west of the site is a fenced private golf course, and bordering on the southwest is a strip of medium density single-family residences with beach frontage (Malibu Colony). Additional recreational uses are located to the south at Malibu Lagoon State Beach/Surfrider Beach and the Pacific Ocean.

Major highways and transportation facilities in the vicinity of the site include PCH (Highway 1), the main transportation corridor serving the community, and Malibu Canyon Road (located to the west).

**Land Use Policies and Plans**

Several land use plans are applicable to the study area in which the project site lies. A brief description of the purposes, goals, and policies for each of these planning documents follows. It should be noted that, as a state agency, DPR is not subject to local zoning requirements and other plans and ordinances. However, as the applicable City of Malibu plans, policies, goals, and zoning designations are wholly consistent with the proposed project, they are included in this chapter for the benefit of the reader.

**South Coast Air Quality Management Plan**

The 1999 Air Quality Management Plan (AQMP) was prepared by SCAG and the SCAQMD to meet state and federal air quality standards for the South Coast Air Basin. The South Coast Air Basin encompasses 6,600 square miles and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Air pollution in the region has been significantly reduced as a result of pollution control measures. Future pollution emissions forecasts are based on SCAG economic growth projections and California Energy Commission forecasts. The 2010 pollution projections are all substantially less than the 1990 levels. Projected future reductions in pollutant emissions will be achieved through a series of stationary and mobile source controls.

**City of Malibu General Plan**

The Malibu General Plan (November 1995) provides an analysis of existing conditions in the City, examines trends, issues and concerns affecting the region, and provides policies to guide development. The General Plan serves as the major tool for directing the City’s growth while maintaining an attractive, viable, and safe environment. The General Plan states that the City is committed to the preservation of its natural and cultural resources. Seven state-mandated elements comprise the comprehensive general plan. Applicable elements are listed below.

**Land Use Element**

The General Plan Land Use Element serves as a guide for future development within the City. It includes a Land Use Policy Map that prescribes the location and distribution of land use types and intensities throughout the City and a statement of the City’s goals, objectives, and policies related to land use planning. The land use designations are
complementary and consistent with the City’s zoning designations and those outlined in the Malibu Local Coastal Program Land Use Plan.

Goals outlined in the Land Use element that are related to the proposed lagoon restoration include: protection and enhancement of natural and environmental resources; and recreational opportunities consistent with the protection of natural resources.

Specific policies related to the proposed project are presented in Table 4-1 at the end of this chapter.

**Open Space and Recreation Element**
The General Plan Open Space and Recreation Element contains an analysis of the open space lands and an action program for their preservation and conservation, scenic enjoyment, recreation and the use of natural resources. The overarching goals applicable to the project, as outlined in this element, include: an abundance of open space contributing to a rural and natural environment; and diverse opportunities for recreation and leisure. Table 4-1 lists the specific Open Space & Recreation policies related to the proposed project.

**Conservation Element**
The General Plan Conservation Element contains a plan for the conservation of natural resources within the City and adjacent areas. Its overarching goals are to preserve and protect natural, cultural, energy, and water resources, and to reduce solid waste. Consistent with these goals, it serves as a guide for the conservation, protection, restoration, and management of the City’s existing natural resources by establishing policies that promote intelligent resource management. Related policies are listed in Table 4-1.

**California Coastal Act**
The City of Malibu is located within the Coastal Zone as defined by the California Coastal Act of 1976. The Coastal Act requires each community within the coastal zone to prepare a Local Coastal Program (LCP), including a LUP to protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural resources (see description of the Malibu LCP below). The Coastal Act policies (Coastal Resources Planning and Management Policies as set forth in Chapter 3 of the Coastal Act) are the basis for all LCPs and are incorporated into the Malibu LCP by reference. These policies address public access, recreation, marine environment, land resources, development, and industrial development. Applicable Coastal Act policies are listed in Table 4-1.

**City of Malibu Local Coastal Program**
The Coastal Commission Certified Malibu LCP (adopted by the California Coastal Commission on September 13, 2002) consists of the LUP, Local Implementation Plan, and includes zoning ordinances, zoning district maps, and sensitive coastal resource area maps (Environmentally Sensitive Habitat Areas or ESHA’s). The overarching
goal and intent of the Land Use Plan policies is to ensure that the LCP LUP provides for protection, provision, and enhancement of public access and recreation opportunities in the City consistent with the goals, objectives, and policies of the California Coastal Act. The LCP LUP reflects the goals and preferences of the City as set forth in its General Plan. Applicable land use plan policies are shown in Table 4-1 at the end of this chapter.

**California Department of Parks & Recreation Malibu Lagoon State Beach Resource Management Plan and General Development Plan**

The Malibu Lagoon State Beach Resource Management Plan and General Development (April, 1978) aims to provide policies for preservation, interpretation, and public use of natural and cultural resource values within State Beach and Lagoon unit. The Plan includes management and development policies intended to enhance and perpetuate scenic, natural, and cultural values while providing for appropriate public use and recreation opportunities that will complement and preserve the resources present. The Plan also mentions specific improvements intended to restore and enhance the lagoon and marsh. Applicable development plans and resource policies are shown in Table 4-1 at the end of this chapter.

**Impacts and Mitigation Measures**

**Thresholds of Significance**

For the purposes of the analysis in this EIR, the proposed project would have a significant environmental impact on land use and planning if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation to 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; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

**Consistency with Existing Land Uses and Local Plans**

Land uses surrounding the proposed project area include single-family residential, public open space, and visitor-serving commercial. Restoration and enhancement projects would be compatible with these
surrounding uses, as the onsite uses would not be changed, and onsite amenities would be minimally altered.

The consistency of the project with the Malibu General Plan, California Coastal Act, Malibu Local Coastal Program, and Malibu Lagoon State Beach Resource Management & Development Plan is summarized in Table 4-1 at the end of this chapter. As shown in the table, the project would be supportive of, and consistent with, the relevant policies and objectives in the aforementioned plans.

**Consistency with Zoning Designations**

The project area falls within the OS Malibu zoning land use classifications. The OS zone allows public beaches and parks and “establishes provisions for passive recreational activity and enjoyment and preservation of the city’s natural resources…”\(^2\) The Malibu General Plan Land Use element and the Malibu LCP LUP designate the project area as OS as well. According to the General Plan Land Use Element text, “…the OS designation provides for publicly owned land which is dedicated to recreation or preservation of the City’s natural resources, including public beaches, park lands and preserves.”

Accordingly, the proposed project would not materially conflict with the Malibu General Plan, Malibu LCP LUP, and zoning land uses because (1) the lagoon (project site) is currently designated for use as a public beach, (2) the project would not require a zoning or land use change, and (3) the restoration plan does not propose expansion outside the existing Malibu Lagoon State Beach footprint. While DPR as a state agency is not subject to City zoning requirements and other local plans and ordinances, it is nevertheless consistent with these designations. No impacts would occur.

**Impacts and Mitigation Measures**

The proposed project is consistent with existing zoning and land use policies and is compatible with existing land uses; thus, no impacts would result, and no mitigation measures are required.

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### Table 4-1. Comparison of the Proposed Project with Local Plans

<table>
<thead>
<tr>
<th>Objectives and Policies</th>
<th>Finding</th>
<th>Discussion</th>
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<tbody>
<tr>
<td><strong>Malibu General Plan – Land Use Element</strong></td>
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<tr>
<td>LU Policy 3.1.2: The City shall encourage appropriate passive uses of parks and beaches such as biking, bird watching, hiking, horseback riding, kayaking, scientific study, surfing, swimming and tide pool viewing.</td>
<td>Consistent with this policy</td>
<td>Existing facilities would continue to provide appropriate passive uses. The project would not introduce new, active uses.</td>
</tr>
<tr>
<td><strong>Malibu General Plan – Conservation Element</strong></td>
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<tr>
<td>CON Policy 1.1.4: The City shall protect Environmentally Sensitive Habitat Areas (ESHA’s) as a priority over development and against any significant disruption of habitat values.</td>
<td>Consistent with this policy</td>
<td>The proposed project area is within an LCP-designated ESHA. The proposed project would directly improve the existing lagoon habitat, and would not result in development or significant habitat disruption.</td>
</tr>
<tr>
<td>CON Policy 1.1.5: The City shall protect and reclaim Malibu’s threatened natural resources such as the beaches, estuaries marine life, ocean tidepools, streams, waterfalls, wetlands, wildlife and plant life and their habitats.</td>
<td>Consistent with this policy</td>
<td>The proposed project includes activities that would directly restore, enhance and manage Malibu Lagoon and its associated habitat.</td>
</tr>
<tr>
<td>CON Policy 1.1.7: The City shall promote and maintain programs for interagency cooperation, both public and private, to accomplish comprehensive natural resource management.</td>
<td>Consistent with this policy</td>
<td>The City has and continues to be involved in the project as a Responsible Agency.</td>
</tr>
<tr>
<td>CON Implementation Measure 4: Develop and adopt a watershed-wide cooperative program committed to the protection of natural resources, with Malibu Creek as the most immediate priority. The programs shall seek the cooperation of adjacent jurisdictions in order to create uniform practices and protection measures.</td>
<td>Consistent with this policy</td>
<td>The City has and continues to be involved in the project as a Responsible Agency.</td>
</tr>
<tr>
<td>CON Policy 1.2.2: The City shall protect, preserve and reclaim very threatened plant community types that occur in Malibu, as inventoried by the Department of Fish and Game with special emphasis on these: Southern Coastal Bluff Scrub; Southern Dune Scrub; Valley Needlegrass Grassland; Southern Foredunes (Broadbeach); Venturan Coastal Sage Scrub; Coastal Brackish Marsh (Malibu Creek and Lagoon); Coastal and Valley Freshwater Marsh; Southern Willow Scrub; California Walnut Woodland and Valley Oak Woodland.</td>
<td>Consistent with this policy</td>
<td>The City has and continues to be involved in the project as a Responsible Agency.</td>
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</table>
### Objectives and Policies

<table>
<thead>
<tr>
<th>Policy</th>
<th>Finding</th>
<th>Discussion</th>
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<tbody>
<tr>
<td><strong>CON Policy 1.3.4:</strong> The City shall protect and support restoration of all kelpbeds, wetlands, creeks and estuaries of Malibu.</td>
<td>Consistent with this policy</td>
<td>The proposed project is intended to restore and protect Malibu Lagoon. The City of Malibu supports the proposed effort.</td>
</tr>
<tr>
<td><strong>CON Policy 1.3.6:</strong> The City shall take the lead to reclaim and preserve the natural state of the Malibu Lagoon.</td>
<td>Consistent with this policy</td>
<td>City has and continues to be involved in planning efforts with other agencies to restore and enhance the lagoon.</td>
</tr>
<tr>
<td><strong>CON Implementation Measure 60:</strong> Develop a plan for restoration of the Malibu Lagoon addressing the advantage of (a) constructing additional wetlands; (b) widening the existing estuary; (c) establishing receiving water standards; (d) requiring a drainage system for the Civic Center Area and other areas currently draining into the estuary and lower creek.</td>
<td>Consistent with this policy</td>
<td>City has and continues to be involved in planning efforts with other agencies to restore and enhance the lagoon.</td>
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#### Malibu General Plan – Open Space and Recreation Element

<table>
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<tr>
<th>Policy</th>
<th>Finding</th>
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<tr>
<td><strong>OS Policy 1.1.3:</strong> The City shall preserve, protect, and enhance the character and visual quality of natural open space as a scenic resource of great value and importance to the quality of life of residents and to the enhancement of the scenic experience of visitors.</td>
<td>Consistent with this policy</td>
<td>The proposed project would improve the visual quality of Malibu Lagoon. The lagoon would continue to be a scenic resource to visitors and adjacent residents.</td>
</tr>
<tr>
<td><strong>OS Policy 2.1.3:</strong> The City shall preserve, protect, and maintain parks to assure continued enjoyment for future generations.</td>
<td>Consistent with this policy</td>
<td>Restoration activities proposed under the Plan would provide needed improvements and maintenance—including habitat enhancement—to the existing state park area.</td>
</tr>
<tr>
<td><strong>OS Policy 3.3.1:</strong> The City shall work to ensure that public access is consistent with conservation.</td>
<td>Consistent with this policy</td>
<td>The proposed project would include improvements to onsite trails and walkways consistent with conservation goals. Public coastal access would not be affected.</td>
</tr>
</tbody>
</table>

#### California Coastal Act

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<tr>
<th>Policy</th>
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<tr>
<td><strong>Section 30230.</strong> Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.</td>
<td>Consistent with this policy</td>
<td>The purpose and intent of the proposed project is to maintain, enhance and restore Malibu Lagoon and its surrounding habitat.</td>
</tr>
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</table>
### Objectives and Policies

<table>
<thead>
<tr>
<th>Section</th>
<th>Finding</th>
<th>Discussion</th>
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<tr>
<td><strong>Section 30231.</strong> The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.</td>
<td>Consistent with this policy</td>
<td>The Plan includes a water management component that would manage drainage from parking lot/public use areas to restored areas. Best Management Practices would be included to enhance water quality in the lagoon. Circulation within the lagoon would be closely monitored and evaluated.</td>
</tr>
<tr>
<td><strong>Section 30240.</strong> (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.</td>
<td>Consistent with this policy</td>
<td>The project area is within an LCP-designated ESHA. The proposed project would not significantly disrupt habitat values, nor introduce unallowable uses, but is directly aimed at improving and enhancing the overall habitat area. The Plan would have a beneficial effect on existing ESHAs.</td>
</tr>
<tr>
<td><strong>Section 30251.</strong> The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.</td>
<td>Consistent with this policy</td>
<td>The scenic and visual quality of the project area would be enhanced by the proposed restoration activities. The proposed project would not alter landforms nor disrupt existing views.</td>
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</table>
## Objectives and Policies

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<tr>
<th>Malibu Local Coastal Program (LCP) Land Use Plan</th>
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<tr>
<td><strong>Chapter 2: Public Access &amp; Recreation:</strong></td>
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<tr>
<td><strong>Policy 2.17:</strong> Recreation and access opportunities at existing public beaches and parks shall be protected, and where feasible, enhanced as an important coastal resource. Public beaches and parks shall maintain lower-cost user fees and parking fees, and maximize hours of use to the extent feasible, in order to maximize public access and recreation opportunities. Limitations on time of use or increases in use fees or parking fees, which effect the intensity of use, shall be subject to a coastal development permit.</td>
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<tr>
<td><strong>Finding</strong></td>
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<td><strong>Discussion</strong></td>
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| **Chapter 3: Marine and Land Resources:** |
| **Policy 3.25:** New development, including, but not limited to, vegetation removal, vegetation thinning, or planting of non-native or invasive vegetation shall not be permitted in required ESHA or park buffer areas, except for that case addressed in Policy 3.27. Habitat restoration and invasive plant eradication may be permitted within required buffer areas if designed to protect and enhance habitat values. |
| **Finding** | Consistent with this policy |
| **Discussion** | Exotic/invasive vegetation removal would be part of the habitat restoration efforts of the proposed Plan. |

| **Policy 3.32** Channelizations or other substantial alterations of streams shall be prohibited except for: ... 3) the improvement of fish and wildlife habitat... Any channelization or stream alteration permitted...shall minimize impacts to coastal resources, including the depletion of groundwater, and shall include maximum feasible mitigation measures to mitigate unavoidable impacts. Bioengineering alternatives shall be preferred for flood protection over “hard” solutions such as concrete or riprap channels. |
| **Finding** | Consistent with this policy |
| **Discussion** | The Plan proposes to deepen an existing channel in the eastern portion of the lagoon, and create a new channel for water entry and exit in the western portion of the lagoon. These proposed channel alterations would improve water circulation and quality, thereby improving fish and wildlife habitat. |

| **Policy 3.45** All new development shall be sited and designed so as to minimize grading, alteration of physical features, and vegetation clearance in order to prevent soil erosion, stream siltation, reduced water percolation, increased runoff, and adverse impacts on plant and animal life and prevent net increases in baseline flows for any receiving waterbody. |
| **Finding** | Consistent with this policy |
| **Discussion** | The proposed project is intended to restore and improve existing natural resources, reduce polluted runoff, and provide beneficial effects to plant and animal life. |
## Objectives and Policies

<table>
<thead>
<tr>
<th>Policy 3.82 Near shore shallow fish habitats and shore fishing areas shall be preserved, and where appropriate and feasible, enhanced.</th>
<th>Finding</th>
<th>Discussion</th>
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<tbody>
<tr>
<td>Consistent with this policy</td>
<td>The proposed project is intended to restore and protect Malibu Lagoon.</td>
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<tr>
<th>Policy 3.87 The biological productivity and the quality of wetlands shall be protected and, where feasible, restored.</th>
<th>Finding</th>
<th>Discussion</th>
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<tbody>
<tr>
<td>Consistent with this policy</td>
<td>The proposed project is intended to restore and protect the Malibu Lagoon.</td>
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<td>This EIR evaluates the proposed Malibu Lagoon Restoration and Enhancement Plan.</td>
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## Objectives and Policies

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<td>Monitoring plan to monitor the management area to evaluate the health of the wetland, assess adverse impacts resulting from breaching or water level management, and to identify project corrections.</td>
<td>Consistent with this policy</td>
</tr>
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</table>

### Archaeology

**Policy 5.61** Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

The project study area is immediately adjacent to a historic site and could potentially contain archaeological or paleontological resources. All applicable mitigation and monitoring measures would be incorporated during restoration activities.

**Policy 5.62** The City should coordinate with appropriate agencies, such as the UCLA Archaeological Center, to identify archaeologically sensitive areas. Such information should be kept confidential to protect archaeological resources.

The project study area is immediately adjacent to a historic site and could potentially contain archaeological or paleontological resources. All applicable mitigation and monitoring measures would be incorporated during restoration activities.

### Ch. 6. Visual /Scenic Resources

**Policy 6.5** New development shall be sited and designed to minimize adverse impacts on scenic areas visible from scenic roads or public viewing areas to the maximum feasible extent. If there is no feasible building site location on the proposed project site where development would not be visible, then the development shall be sited and designed to minimize impacts on scenic areas visible from scenic highways or public viewing areas, through measures including, but not limited to, siting development in the least visible portion of the site, breaking up the mass of new structures, designing structures to blend into the natural hillside setting, restricting the building maximum size, reducing maximum height standards, clustering development, minimizing grading, incorporating landscape elements, and where appropriate, berming.

The project area is adjacent to and visible from Pacific Coast Highway, a designated scenic highway. The proposed Plan would not include alterations that would adversely affect any visual or scenic resources.

**Policy 6.27** New development shall minimize removal of natural vegetation. Existing native trees and plants shall be preserved on the site, consistent with Policy 3.60.

Exotic/invasive vegetation removal would be part of the habitat restoration efforts of the proposed Plan. Selected native plants, such as those not belonging in lagoons, may be removed. Other native plants may be removed where necessary to accomplish successful wetland expansion and provide long-term...


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<tr>
<td><strong>Malibu Lagoon State Beach Resource Management Plan &amp; Development Plan</strong></td>
<td></td>
<td></td>
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<tr>
<td>2. <strong>Resource Management Policy – Natural Values</strong></td>
<td>Consistent with this policy</td>
<td>The proposed project would include improvements to onsite trails and walkways consistent with conservation goals. Public coastal access would not be affected.</td>
</tr>
<tr>
<td>The Saltwater marsh and lagoon shall be reserved for a wildlife sanctuary, primarily to perpetuate this disappearing habitat and the species that use this area. Visitor use within this area shall be restricted to designated locations and observation points, so the habitat will not be destroyed or the animals disturbed. Domestic animals should not be allowed in this area...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Native plants should be encouraged in natural areas, and aggressive exotic plants should be removed if they restrict the growth of native plants.</td>
<td>Consistent with this policy</td>
<td>Exotic/invasive vegetation removal would be part of the habitat restoration efforts of the proposed Plan. Selected native plants, such as those not belonging in lagoons, may be removed. Other native plants may be removed where necessary to accomplish successful wetland expansion and provide long-term habitat enhancement. Otherwise, native plants shall be protected.</td>
</tr>
<tr>
<td>4. The lagoon water level shall be controlled through adoption of a management program that will determine how and when the lagoon shall be opened to the sea. This plan shall be based on solving problems associated with the lagoon water levels, to the best interests of all people concerned.</td>
<td>Consistent with this policy</td>
<td>The Plan proposes to deepen an existing channel in the eastern portion of the lagoon, and create a new channel for water entry and exit in the western portion of the lagoon. These proposed channel alterations would improve water circulation and quality, thereby improving fish and wildlife habitat. All channel and lagoon alterations would be carefully monitored.</td>
</tr>
<tr>
<td>5. The area should be managed so that it remains a beautiful and scenic open-space unit.</td>
<td>Consistent with this policy</td>
<td>The purpose of the proposed project is to restore and protect Malibu Lagoon.</td>
</tr>
<tr>
<td><strong>Resource Management Policy – Cultural Values</strong></td>
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<td>1. Before any development that may affect cultural resources, a thorough study will be conducted. The correct construction and use period of each structure will be determined, both as an individual entity and as it relates to the total cultural environment. Research and archaeological investigation will be parts of this study.</td>
<td>Consistent with this policy</td>
<td>The project is immediately adjacent to a historic site that could contain archaeological or paleontological resources. Project-specific mitigation and monitoring measures would be incorporated during restoration activities to ensure this site is protected (see Chapter 7, Cultural Resources).</td>
</tr>
<tr>
<td>4. The prehistoric site (CA:LAN:264) and the historic site are one and the same. The prehistoric site is of vast significance, and careful study of the site may produce needed</td>
<td>Consistent with this policy.</td>
<td>The project is immediately adjacent to this historic site. Project-specific mitigation and monitoring measures would be incorporated during</td>
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## Objectives and Policies

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<td>Information in defining the lifestyles of the Chumash Indians. Proper care and sensitivity to the site must be demonstrated at all times. Any future sites which are discovered on existing State Park System property, or which are subsequently acquired, shall be carefully recorded and protected.</td>
<td>Restoration activities to ensure this site is protected (see Chapter 7, Cultural Resources).</td>
</tr>
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</table>

### Development Plan

*It has long been recognized that the lagoon systems are not functioning properly under current conditions. Human and other uses not conducive to maintenance of marsh environments have resulted in the disappearance of certain wildlife and plant species. It is for this reason that alterations to the marsh environment are proposed.*

**Drainage improvements would include restoring and enlarging the saltwater marsh. Tidal waters will be allowed to penetrate deeper into the backlands, by means of graded-out channels. Pickleweed (salicornia) is to be planted or replanted in appropriate locations a 1.2 meter (4-foot)-high restraining fence could further control human penetration through these wetlands; compatible native plantings would make its presence less obvious.**

*The department...recommends that the area be classified a natural preserve within the proposed boundaries.*

*The interpretive facility will...explain the ecosystems and functions of the lagoon.*

**Consistent with this policy**

**The Plan proposes to deepen an existing channel in the eastern portion of the lagoon, and create a new channel for water entry and exit in the western portion of the lagoon. These proposed channel alterations would improve water circulation and quality, thereby improving fish and wildlife habitat. All channel and lagoon alterations would be carefully monitored.**

*The purpose of the proposed project is to restore and protect Malibu Lagoon and would not involve any land use changes. The lagoon would continue to be a protected resource.*

**The proposed project will include improved, non-intrusive interpretive areas and observation points.**
Setting

Existing Land Uses and Plan Designations

On-site

The project site comprises the entire 31-acre Malibu Lagoon, a shallow water embayment occurring at the terminus of the Malibu Creek watershed, emptying seaward of PCH at Malibu Surfrider Beach. The lagoon is within Malibu Lagoon State Beach, which is owned and operated by DPR, except for the sandy beach area that is operated by Los Angeles County Beaches and Harbors. Existing land uses on the project site are primarily recreational and supportive of open space and habitat preservation. Onsite amenities include a surface parking lot, walking and beach access trails, a picnic area, restroom facilities, and State Park facilitated tours and activities.¹

Adjacent

The area in the immediate vicinity of the lagoon contains a mix of land uses. Commercial uses and civic center offices are located north of the project site, across PCH. This commercial and civic area is contained within the Malibu LUP Civic Center Overlay Boundary. Malibu Creek also extends to the north of the site. Adjacent to the east of the lagoon is the National Register-listed historic Adamson House, which is located within Malibu Lagoon State Beach. Immediately to the west of the site is a fenced private golf course, and bordering on the southwest is a strip of medium density single-family residences with beach frontage (Malibu Colony). Additional recreational uses are located to the south at Malibu Lagoon State Beach/Surfrider Beach and the Pacific Ocean.

Major highways and transportation facilities in the vicinity of the site include PCH (Highway 1), the main transportation corridor serving the community, and Malibu Canyon Road (located to the west).

Land Use Policies and Plans

Several land use plans are applicable to the study area in which the project site lies. A brief description of the purposes, goals, and policies for each of these planning documents follows. It should be noted that, as a state agency, DPR is not subject to local zoning requirements and other plans and ordinances. However, as the applicable City of Malibu plans, policies, goals, and zoning designations are wholly consistent with the proposed project, they are included in this chapter for the benefit of the reader.

South Coast Air Quality Management Plan

The 1999 Air Quality Management Plan (AQMP) was prepared by SCAG and the SCAQMD to meet state and federal air quality standards for the South Coast Air Basin. The South Coast Air Basin encompasses 6,600 square miles and includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Air pollution in the region has been significantly reduced as a result of pollution control measures. Future pollution emissions forecasts are based on SCAG economic growth projections and California Energy Commission forecasts. The 2010 pollution projections are all substantially less than the 1990 levels. Projected future reductions in pollutant emissions will be achieved through a series of stationary and mobile source controls.

City of Malibu General Plan

The Malibu General Plan (November 1995) provides an analysis of existing conditions in the City, examines trends, issues and concerns affecting the region, and provides policies to guide development. The General Plan serves as the major tool for directing the City’s growth while maintaining an attractive, viable, and safe environment. The General Plan states that the City is committed to the preservation of its natural and cultural resources. Seven state-mandated elements comprise the comprehensive general plan. Applicable elements are listed below.

Land Use Element

The General Plan Land Use Element serves as a guide for future development within the City. It includes a Land Use Policy Map that prescribes the location and distribution of land use types and intensities throughout the City and a statement of the City’s goals, objectives, and policies related to land use planning. The land use designations are
complementary and consistent with the City’s zoning designations and those outlined in the Malibu Local Coastal Program Land Use Plan.

Goals outlined in the Land Use element that are related to the proposed lagoon restoration include: protection and enhancement of natural and environmental resources; and recreational opportunities consistent with the protection of natural resources.

Specific policies related to the proposed project are presented in Table 4-1 at the end of this chapter.

**Open Space and Recreation Element**

The General Plan Open Space and Recreation Element contains an analysis of the open space lands and an action program for their preservation and conservation, scenic enjoyment, recreation and the use of natural resources. The overarching goals applicable to the project, as outlined in this element, include: an abundance of open space contributing to a rural and natural environment; and diverse opportunities for recreation and leisure. Table 4-1 lists the specific Open Space & Recreation policies related to the proposed project.

**Conservation Element**

The General Plan Conservation Element contains a plan for the conservation of natural resources within the City and adjacent areas. Its overarching goals are to preserve and protect natural, cultural, energy, and water resources, and to reduce solid waste. Consistent with these goals, it serves as a guide for the conservation, protection, restoration, and management of the City’s existing natural resources by establishing policies that promote intelligent resource management. Related policies are listed in Table 4-1.

**California Coastal Act**

The City of Malibu is located within the Coastal Zone as defined by the California Coastal Act of 1976. The Coastal Act requires each community within the coastal zone to prepare a Local Coastal Program (LCP), including a LUP to protect, maintain, and, where feasible, enhance and restore the overall quality of the coastal zone environment and its natural resources (see description of the Malibu LCP below). The Coastal Act policies (Coastal Resources Planning and Management Policies as set forth in Chapter 3 of the Coastal Act) are the basis for all LCPs and are incorporated into the Malibu LCP by reference. These policies address public access, recreation, marine environment, land resources, development, and industrial development. Applicable Coastal Act policies are listed in Table 4-1.

**City of Malibu Local Coastal Program**

The Coastal Commission Certified Malibu LCP (adopted by the California Coastal Commission on September 13, 2002) consists of the LUP, Local Implementation Plan, and includes zoning ordinances, zoning district maps, and sensitive coastal resource area maps (Environmentally Sensitive Habitat Areas or ESHA’s). The overarching
goal and intent of the Land Use Plan policies is to ensure that the LCP LUP provides for protection, provision, and enhancement of public access and recreation opportunities in the City consistent with the goals, objectives, and policies of the California Coastal Act. The LCP LUP reflects the goals and preferences of the City as set forth in its General Plan. Applicable land use plan policies are shown in Table 4-1 at the end of this chapter.

**California Department of Parks & Recreation Malibu Lagoon State Beach Resource Management Plan and General Development Plan**

The Malibu Lagoon State Beach Resource Management Plan and General Development (April, 1978) aims to provide policies for preservation, interpretation, and public use of natural and cultural resource values within State Beach and Lagoon unit. The Plan includes management and development policies intended to enhance and perpetuate scenic, natural, and cultural values while providing for appropriate public use and recreation opportunities that will complement and preserve the resources present. The Plan also mentions specific improvements intended to restore and enhance the lagoon and marsh. Applicable development plans and resource policies are shown in Table 4-1 at the end of this chapter.

### Impacts and Mitigation Measures

**Thresholds of Significance**

For the purposes of the analysis in this EIR, the proposed project would have a significant environmental impact on land use and planning if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation to 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; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

### Consistency with Existing Land Uses and Local Plans

Land uses surrounding the proposed project area include single-family residential, public open space, and visitor-serving commercial. Restoration and enhancement projects would be compatible with these
surrounding uses, as the onsite uses would not be changed, and onsite amenities would be minimally altered.

The consistency of the project with the Malibu General Plan, California Coastal Act, Malibu Local Coastal Program, and Malibu Lagoon State Beach Resource Management & Development Plan is summarized in Table 4-1 at the end of this chapter. As shown in the table, the project would be supportive of, and consistent with, the relevant policies and objectives in the aforementioned plans.

**Consistency with Zoning Designations**

The project area falls within the OS Malibu zoning land use classifications. The OS zone allows public beaches and parks and “establishes provisions for passive recreational activity and enjoyment and preservation of the city’s natural resources…”2 The Malibu General Plan Land Use element and the Malibu LCP LUP designate the project area as OS as well. According to the General Plan Land Use Element text, “…the OS designation provides for publicly owned land which is dedicated to recreation or preservation of the City’s natural resources, including public beaches, park lands and preserves.”

Accordingly, the proposed project would not materially conflict with the Malibu General Plan, Malibu LCP LUP, and zoning land uses because (1) the lagoon (project site) is currently designated for use as a public beach, (2) the project would not require a zoning or land use change, and (3) the restoration plan does not propose expansion outside the existing Malibu Lagoon State Beach footprint. While DPR as a state agency is not subject to City zoning requirements and other local plans and ordinances, it is nevertheless consistent with these designations. No impacts would occur.

**Impacts and Mitigation Measures**

The proposed project is consistent with existing zoning and land use policies and is compatible with existing land uses; thus, no impacts would result, and no mitigation measures are required.

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Table 4-1. Comparison of the Proposed Project with Local Plans

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<td>Consistent with this policy</td>
<td>Existing facilities would continue to provide appropriate passive uses. The project would not introduce new, active uses.</td>
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<td><strong>Malibu General Plan – Conservation Element</strong></td>
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<td>Consistent with this policy</td>
<td>The proposed project area is within an LCP-designated ESHA. The proposed project would directly improve the existing lagoon habitat, and would not result in development or significant habitat disruption.</td>
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<tr>
<td></td>
<td>Consistent with this policy</td>
<td>The proposed project includes activities that would directly restore, enhance and manage Malibu Lagoon and its associated habitat.</td>
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<td>Consistent with this policy</td>
<td>The City has and continues to be involved in the project as a Responsible Agency.</td>
</tr>
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<td><strong>CON Policy 1.2.2: The City shall protect, preserve and reclaim very threatened plant community types that occur in Malibu, as inventoried by the Department of Fish and Game with special emphasis on these:</strong></td>
<td>Consistent with this policy</td>
<td>The City has and continues to be involved in the project as a Responsible Agency.</td>
</tr>
<tr>
<td>Southern Coastal Bluff Scrub; Southern Dune Scrub; Valley Needlegrass Grassland; Southern Foredunes (Broadbeach); Venturan Coastal Sage Scrub; Coastal Brackish Marsh (Malibu Creek and Lagoon); Coastal and Valley Freshwater Marsh; Southern Willow Scrub; California Walnut Woodland and Valley Oak Woodland.</td>
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Objectives and Policies

**CON Policy 1.3.4:** The City shall protect and support restoration of all kelpbeds, wetlands, creeks and estuaries of Malibu.

Consistent with this policy

The proposed project is intended to restore and protect Malibu Lagoon. The City of Malibu supports the proposed effort.

**CON Policy 1.3.6:** The City shall take the lead to reclaim and preserve the natural state of the Malibu Lagoon.

Consistent with this policy

City has and continues to be involved in planning efforts with other agencies to restore and enhance the lagoon.

**CON Implementation Measure 60:** Develop a plan for restoration of the Malibu Lagoon addressing the advantage of (a) constructing additional wetlands; (b) widening the existing estuary; (c) establishing receiving water standards; (d) requiring a drainage system for the Civic Center Area and other areas currently draining into the estuary and lower creek.

Consistent with this policy

City has and continues to be involved in planning efforts with other agencies to restore and enhance the lagoon.

**Malibu General Plan – Open Space and Recreation Element**

**OS Policy 1.1.3:** The City shall preserve, protect, and enhance the character and visual quality of natural open space as a scenic resource of great value and importance to the quality of life of residents and to the enhancement of the scenic experience of visitors.

Consistent with this policy

The proposed project would improve the visual quality of Malibu Lagoon. The lagoon would continue to be a scenic resource to visitors and adjacent residents.

**OS Policy 2.1.3:** The City shall preserve, protect, and maintain parks to assure continued enjoyment for future generations.

Consistent with this policy

Restoration activities proposed under the Plan would provide needed improvements and maintenance—including habitat enhancement—to the existing state park area.

**OS Policy 3.3.1:** The City shall work to ensure that public access is consistent with conservation.

Consistent with this policy

The proposed project would include improvements to onsite trails and walkways consistent with conservation goals. Public coastal access would not be affected.

**California Coastal Act**

Section 30230. Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Consistent with this policy

The purpose and intent of the proposed project is to maintain, enhance and restore Malibu Lagoon and its surrounding habitat.
Objectives and Policies

Finding

Discussion

Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Consistent with this policy

The Plan includes a water management component that would manage drainage from parking lot/public use areas to restored areas. Best Management Practices would be included to enhance water quality in the lagoon. Circulation within the lagoon would be closely monitored and evaluated.

Section 30240. (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Consistent with this policy

The project area is within an LCP-designated ESHA. The proposed project would not significantly disrupt habitat values, nor introduce unallowable uses, but is directly aimed at improving and enhancing the overall habitat area. The Plan would have a beneficial effect on existing ESHAs.

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

Consistent with this policy

The scenic and visual quality of the project area would be enhanced by the proposed restoration activities. The proposed project would not alter landforms nor disrupt existing views.
## Objectives and Policies

<table>
<thead>
<tr>
<th>Malibu Local Coastal Program (LCP) Land Use Plan</th>
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<tr>
<td><strong>Chapter 2: Public Access &amp; Recreation:</strong></td>
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<tr>
<td>Policy 2.17: Recreation and access opportunities at existing public beaches and parks shall be protected, and where feasible, enhanced as an important coastal resource. Public beaches and parks shall maintain lower-cost user fees and parking fees, and maximize hours of use to the extent feasible, in order to maximize public access and recreation opportunities. Limitations on time of use or increases in use fees or parking fees, which effect the intensity of use, shall be subject to a coastal development permit.</td>
</tr>
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<tr>
<td>The proposed project would include improvements to onsite trails and walkways consistent with conservation goals. Public coastal access would not be affected. Park hours and usage fees would not be affected.</td>
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<tr>
<td><strong>Chapter 3: Marine and Land Resources:</strong></td>
</tr>
<tr>
<td>Policy 3.25: New development, including, but not limited to, vegetation removal, vegetation thinning, or planting of non-native or invasive vegetation shall not be permitted in required ESHA or park buffer areas, except for that case addressed in Policy 3.27. Habitat restoration and invasive plant eradication may be permitted within required buffer areas if designed to protect and enhance habitat values.</td>
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<td>Exotic/invasive vegetation removal would be part of the habitat restoration efforts of the proposed Plan.</td>
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<td>Policy 3.32: Channelizations or other substantial alterations of streams shall be prohibited except for: ... 3) the improvement of fish and wildlife habitat... Any channelization or stream alteration permitted...shall minimize impacts to coastal resources, including the depletion of groundwater, and shall include maximum feasible mitigation measures to mitigate unavoidable impacts. Bioengineering alternatives shall be preferred for flood protection over “hard” solutions such as concrete or riprap channels.</td>
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<td>The Plan proposes to deepen an existing channel in the eastern portion of the lagoon, and create a new channel for water entry and exit in the western portion of the lagoon. These proposed channel alterations would improve water circulation and quality, thereby improving fish and wildlife habitat.</td>
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<td>Policy 3.45: All new development shall be sited and designed so as to minimize grading, alteration of physical features, and vegetation clearance in order to prevent soil erosion, stream siltation, reduced water percolation, increased runoff, and adverse impacts on plant and animal life and prevent net increases in baseline flows for any receiving waterbody.</td>
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<td>The proposed project is intended to restore and improve existing natural resources, reduce polluted runoff, and provide beneficial effects to plant and animal life.</td>
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<td>Objectives and Policies</td>
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<tr>
<td><strong>Policy 3.82</strong> Near shore shallow fish habitats and shore fishing areas shall be preserved, and where appropriate and feasible, enhanced.</td>
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<td><strong>Policy 3.87</strong> The biological productivity and the quality of wetlands shall be protected and, where feasible, restored.</td>
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<td><strong>Policy 3.89</strong> The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes may be permitted in accordance with all policies of the LCP, where there is no feasible less environmentally damaging alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:... Other uses specified in Section 30233 of the Coastal Act may only be allowed pursuant to an LCP amendment.</td>
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</tr>
<tr>
<td>Archaeology:</td>
</tr>
<tr>
<td>Policy 5.61 Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.</td>
</tr>
<tr>
<td>Policy 5.62 The City should coordinate with appropriate agencies, such as the UCLA Archaeological Center, to identify archaeologically sensitive areas. Such information should be kept confidential to protect archaeological resources.</td>
</tr>
<tr>
<td>Ch. 6 Visual /Scenic Resources</td>
</tr>
<tr>
<td>Policy 6.5 New development shall be sited and designed to minimize adverse impacts on scenic areas visible from scenic roads or public viewing areas to the maximum feasible extent. If there is no feasible building site location on the proposed project site where development would not be visible, then the development shall be sited and designed to minimize impacts on scenic areas visible from scenic highways or public viewing areas, through measures including, but not limited to, siting development in the least visible portion of the site, breaking up the mass of new structures, designing structures to blend into the natural hillside setting, restricting the building maximum size, reducing maximum height standards, clustering development, minimizing grading, incorporating landscape elements, and where appropriate, berming.</td>
</tr>
<tr>
<td>Policy 6.27 New development shall minimize removal of natural vegetation. Existing native trees and plants shall be preserved on the site, consistent with Policy 3.60.</td>
</tr>
</tbody>
</table>
### Objectives and Policies

<table>
<thead>
<tr>
<th>Finding</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>habitat enhancement. Otherwise, native plants shall be protected.</td>
</tr>
</tbody>
</table>

#### Malibu Lagoon State Beach Resource Management Plan & Development Plan

**Resource Management Policy – Natural Values**

2. The Saltwater marsh and lagoon shall be reserved for a wildlife sanctuary, primarily to perpetuate this disappearing habitat and the species that use this area. Visitor use within this area shall be restricted to designated locations and observation points, so the habitat will not be destroyed or the animals disturbed. Domestic animals should not be allowed in this area...

3. Native plants should be encouraged in natural areas, and aggressive exotic plants should be removed if they restrict the growth of native plants.

4. The lagoon water level shall be controlled through adoption of a management program that will determine how and when the lagoon shall be opened to the sea. This plan shall be based on solving problems associated with the lagoon water levels, to the best interests of all people concerned.

5. The area should be managed so that it remains a beautiful and scenic open-space unit.

**Resource Management Policy – Cultural Values**

1. Before any development that may affect cultural resources, a thorough study will be conducted. The correct construction and use period of each structure will be determined, both as an individual entity and as it relates to the total cultural environment. Research and archaeological investigation will be parts of this study.

4. The prehistoric site (CA:LAN:264) and the historic site are one and the same. The prehistoric site is of vast significance, and careful study of the site may produce needed
**Objectives and Policies**

<table>
<thead>
<tr>
<th>Finding</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information in defining the lifestyles of the Chumash Indians. Proper care and sensitivity to the site must be demonstrated at all times. Any future sites which are discovered on existing State Park System property, or which are subsequently acquired, shall be carefully recorded and protected.</strong></td>
<td>restoration activities to ensure this site is protected (see Chapter 7, Cultural Resources).</td>
</tr>
</tbody>
</table>

**Development Plan**

It has long been recognized that the lagoon systems are not functioning properly under current conditions. Human and other uses not conducive to maintenance of marsh environments have resulted in the disappearance of certain wildlife and plant species. It is for this reason that alterations to the marsh environment are proposed.

Drainage improvements would include restoring and enlarging the saltwater marsh. Tidal waters will be allowed to penetrate deeper into the backlands, by means of graded-out channels. Pickleweed (salicornia) is to be planted or replanted in appropriate locations a 1.2 meter (4-foot)-high restraining fence could further control human penetration through these wetlands; compatible native plantings would make its presence less obvious.

The department...recommends that the area be classified a natural preserve within the proposed boundaries.

The interpretive facility will...explain the ecosystems and functions of the lagoon.

Consistent with this policy

The Plan proposes to deepen an existing channel in the eastern portion of the lagoon, and create a new channel for water entry and exit in the western portion of the lagoon. These proposed channel alterations would improve water circulation and quality, thereby improving fish and wildlife habitat. All channel and lagoon alterations would be carefully monitored.

Consistent with this policy

The purpose of the proposed project is to restore and protect Malibu Lagoon and would not involve any land use changes. The lagoon would continue to be a protected resource.

Consistent with this policy

The proposed project will include improved, non-intrusive interpretive areas and observation points.
Setting

Watershed and Lagoon Setting

Malibu Lagoon is located at the southern extent (or mouth) of the Malibu Creek watershed (Figure 5-1). The Malibu Creek watershed covers approximately 110 square miles, is the second largest watershed draining into Santa Monica Bay, and the largest draining from the Santa Monica Mountains.

As described below, the hydrology and physical processes influencing the lagoon are complex and involve several sources. The Malibu Creek watershed contributes streamflow, groundwater, sediment, nutrients, and other water constituents downstream to the lagoon. As such, any assessment of lagoon management or restoration activities should include consideration of the hydrologic contributions to the lagoon from the upstream watershed as well as discharges from the lagoon to the immediate coastal environment.

The Malibu Creek watershed can be divided into two general sub-basin areas. The upper watershed is considered as the area upstream of the Cold Creek stream confluence and Malibu Canyon. The northwestern portion of the upper watershed (north of Hwy 101) includes several north-south oriented tributary streams such as Las Virgenes Creek, Chesebro Canyon, Palo Comado Canyon, Medea Creek, and Lindero Canyon. Farther to the east, the headwaters of the main arm of Malibu Creek extend and drain the north slope of the Santa Monica Mountains. Hydrologically, these headwater tributaries are important to the overall Malibu Creek system, and do affect the flows that reach the lagoon downstream.

Vegetation in the upper watershed headwater areas typically consists of (or once consisted of) oak-grassland type landscapes in the northern tributary areas and more of a chaparral/oak woodland landscape along the north slope of the Santa Monica Mountains. The vegetative cover has several important hydrologic influences on the creek system, including rainfall interception and infiltration. Perhaps most importantly though is the fire regime that periodically burns the grassland/chaparral hillslopes.
Figure 5-1. Malibu Creek Watershed

Figure 5-1
Malibu Creek Watershed Boundary
When this occurs, erosion and runoff potential greatly increases as was recently observed in the Malibu Creek and Big Sycamore Canyon watersheds following the fires of November 1993 (Schwarz 1995). Such post-fire erosion conditions can deliver large amounts of sediment to the Lagoon in brief episodic events.

Soils in the upper watershed are variably sandy, silty, clayey, or loams depending upon the source geology. The northern watershed areas are generally underlain with sandstone and shale Tertiary (Miocene) sedimentary rocks of the Upper Topanga and Monterey Formations. Variable grazing activity has occurred there since the 19th century.

In the last 50 years, and particularly the last 25 years, many of these northern headwater areas have been developed as residential neighborhoods. This has increased the degree of impervious surface in the upper watershed, which has increased stormflow discharges downstream into the lagoon. Other hydrologic changes in the upper watershed include increased dry season flows (mostly from irrigation used from imported water sources). These increased dry season flows have resulted in generally higher streamflow input into the lagoon during the summer months.

The Las Virgenes Municipal Water District and Triunfo Sanitation District operate the Tapia Water Reclamation Facility, located just upstream of Malibu Lagoon (near the intersection of Malibu Canyon Rd. and Piuma Rd.). This plant handles about 9 million gallons of wastewater daily for 85,000 residents of western Los Angeles and eastern Ventura counties (see http://www.lvmwd.dst.ca.us/index.html). Water is treated to a “tertiary” level that is certified safe for irrigation and some indoor uses such as flushing, etc. Under permit requirements by the Los Angeles RWQCB, the Tapia plant cannot discharge into Malibu Creek between April 15 and November 15 each year.

The lower watershed includes the steep and rugged Malibu Canyon, which cuts through the central axis (strike) of the Santa Monica Mountains. Downstream of Malibu Canyon, the watershed emerges onto a coastal plain where channel slopes and flow velocities reduce and the Malibu Creek fluvial system begins to transition to a coastal estuarine lagoon system.

Historically, the Malibu estuarine-lagoon system was typically larger (in expanse) than its current relatively narrow position at the eastern extent of the Malibu plain area. This is seen through historic aerial photos since the 1920s (Ambrose and Orme 2000) as well as the record of stream and lagoonal sediments that are found in the Malibu plain area indicating the lagoon had a larger spatial range. Similar to today, the historic size of the lagoon would have been influenced by governing physical processes and would have ranged in size from small to large depending on influencing hydrologic conditions.
Hydrologic Processes

Seasonal Lagoon and Hydrologic Inputs/Outputs

As a transitional river-mouth type estuarine lagoon, the hydro-geomorphology of the lagoon can be generally described according to a two-season system, under either wetter winter conditions or drier summer conditions. More precisely, the lagoon form reflects the relative balance of three governing forces: streamflow, tides, and waves.

In the wetter winter months when streamflows in Malibu Creek are greater, moderate runoff and flows can maintain an open outlet channel to the coast. When winter runoff is punctuated by particularly large flow events, such flows can open the river-mouth by removing a portion or the entire barrier beach. This was observed in the winter of 1997–98 (Schwarz 1999) and to a lesser degree in other recent strong winter flow events.

In the days/weeks following winter storms, or between storms, streamflow hydrographs recede into lower baseflow conditions. The hydrologic result of such “lulls” is that waves and tides are able to enter the lagoon and circulate more saline ocean water back into the lagoon and its side channels. During drier winter seasons or extended years of relative aridity, such a broad lagoon opening may not occur at all.

Towards the spring months and into the drier summer months, the relative force of streamflow decreases in comparison to coastal processes (waves, tides). As a result, beach sands are deposited onto the barrier beach and ebb/flood tidal sand deltas; the barrier beach crest heightens and moves inland; and the tidal inlet channel may narrow, migrate eastward with the longshore current, and potentially close. As a result of these processes, the dry season lagoon typically experiences increasingly less circulation of coastal water. If the barrier beach entirely seals itself, pinching off the tidal inlet channel, a closed lagoon situation occurs with essentially static water behind the barrier beach.

Due to increases in dry season runoff in the Malibu Creek watershed (as well as immediately local sources in the Malibu plain area), water surface elevations in a closed lagoon condition can raise lagoon water levels to nearly overtop the barrier beach crest, and may cause local septic/sewer back up in the immediate lagoon area. When this occurs, summer breaching of the closed lagoon has occurred through various means, including:

- mechanical breaching by equipment under local DPR authority and supervision;
- informal breaching by local beach goers who can successfully breach the barrier through starting a small initial channel; or
breaching by natural processes such as strong waves hitting the closed barrier during a falling high tide when head difference between the closed lagoon and coast are greatest.

It is important to note that specific lagoon conditions in any given year reflect the overall balance of these governing forces described above (streamflow, waves, tides, local inflow from immediate lagoon surroundings, breaching activities, etc.). Lagoon hydrology and geomorphic form can thus be considered as a range between two endpoints: the fully open estuary with no barrier beach and a fully closed lagoon with no tidal inlet channel. Most often, the lagoon operates in the mid-range of such a two-season spectrum, functioning with some degree of streamflow, some degree of tidal exchange with the coast, and some degree of internal circulation.

Flooding

Flooding adjacent to the lagoon can potentially occur due to the same general governing forces described above. In the winter season, high stormflows can raise lagoon water levels to inundate surrounding areas, though typically, under very large events, the removal of a portion (or all) of the barrier beach will enable stormflows to reach (and exit at) the coast.

The timing of stormflows arriving from the creek to the coast in relation to the tide is a potentially important factor in local flooding. Stormflows reaching the lagoon during very high tides are held up (or “back-watered”) and this process can cause local flooding in the immediate lagoon surroundings. Other potential threats from flooding can occur upstream, north of the relatively new Pacific Coast Hwy bridge (re-built in the mid/late 1990s) where high stormflows on Malibu Creek have caused some local bank erosion, along the west bank near Cross Creek Shopping Center as well as on the more vegetated east bank.

As seen in historical aerial photos (such as following the large floods of March 1938), past large river flows inundated much of the current Malibu plain area. Future large flows could potentially overtop the banks of Malibu Creek upstream of the lagoon, or create a channel avulsion (cutting of new channel path) and potentially flood areas west or east of the current river/lagoon alignment.

Groundwater and Water Balance

An estimated water budget for the lagoon under closed summer conditions was provided by Stone Environmental (2004). In this accounting, 92% of the Lagoon inflow came from stream sources and 8% came from groundwater sources. In terms of outflow, 2% was evaporated while 98% was lost through beach percolation.
Water Quality

Watershed Inputs

Water quality within the lagoon is influenced by land uses both upstream and adjacent to the lagoon, including surface water runoff, discharges from Tapia Wastewater Treatment Plant, and seepage from septic systems. Additionally, because the lagoon is tidal, oceanic waters also influence water quality within the lagoon. Primary water quality constituents of concern to beneficial uses of the lagoon are sediment, nutrients, and bacteria.

Sediment

Depending upon winter storm events and flow conditions, much of the sediment that is transported from the watershed is deposited into the main body of the lagoon. If stormflows are large enough and a sizable breach in the barrier beach occurs, the sediment may be transported directly to the coastal zone. Of the sediment that is not carried into the coastal zone, much of the finer sediments are redistributed into the quieter settling areas of the three western channels.

Bed elevation monitoring has shown that the lagoon bed has accreted since the late 1990s (Moffatt & Nichol 2005). This accretion has reduced the storage volume of the lagoon by 10.6 acre-feet between 1998 and 2004 and has caused the bed to become perched above mean sea level (Moffatt & Nichol 2005). This condition interferes with tidal actions and stormflows, which would normally flush fine-grained sediments out to sea, particularly when the lagoon mouth is open.

Sedimentation is particularly evident in the western arms of the lagoon, where nitrogen and phosphorus concentrations increase within the fine-grained particles, contributing to formation of eutrophic conditions in the lagoon. Additionally, the aggraded condition of the west portion of the lagoon results in a shallower water column that in turn increases water temperature.

Nutrients

Malibu Lagoon is included on the federal 303(d) list of impaired water bodies due to excessive nutrients from surrounding land uses, which causes eutrophication and subsequent impairment of beneficial uses. According to Sutula et al. and Ambrose and Orme, the sources of nitrogen to the lagoon are:

- septic systems, upland systems, and surface runoff (77%);
- sediment release (17%); and
- other sources (6%).
Sources of phosphorus to the lagoon are:

- septic systems, upland systems, and surface runoff (95%); and
- sediment release (5%)

Seasonal changes in circulation and sedimentation affect the concentration of nitrogen and phosphorus in the lagoon. For example, nitrogen and phosphorus loading and concentrations in the winter are double that in the summer (Moffatt & Nichol 2005). Increased water temperatures and light availability during summer months promote an exponential increase in photosynthetic rates within the lagoon.

During the summer months, when the mouth of the lagoon typically closes, water quality in the lagoon worsens due to reduced circulation, warmer temperatures, and reduced dilution in the more stagnant closed lagoon setting. Stored nitrogen and phosphorus from the winter, combined with these summer conditions, results in nuisance algal blooms, low dissolved oxygen levels, odors, and fish kills; ultimately resulting in impairment of beneficial uses.

**Bacteria**

The lagoon is included on the federal 303(d) list of impaired water bodies due to excessive coliform bacteria, which affects recreational beneficial uses. The bacteria TMDL for the Malibu Creek Watershed estimates that 158,000 billion counts of fecal coliform are annually present in the lagoon, which are transported from surrounding sources including wastewater treatment discharge and septic systems. By reducing the fecal coliform concentrations in septic systems and leach fields, an 86% loading reduction to 21,800 billion counts per year in the lagoon can be achieved (USEPA 2003b).

**Regulatory Setting**

The following sections briefly describe federal and state water quality control programs, plans, and policies that are applicable to the project site and environs.

**Clean Water Act**

There are several sections of the federal Clean Water Act (CWA) that pertain to regulating impacts on waters of the United States. Section 101 specifies the objectives of CWA implemented largely through Title III (Standards and Enforcement) and Section 301 (Prohibitions). The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of CWA and specifically under Section 404 of the act (Discharges of Dredge or Fill Material). Section 401 (Certification) specifies additional requirements for permit review, particularly at the state level.
Section 303—TMDL Program

The State of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the state’s Porter–Cologne Water Quality Control Act of 1969. Section 303(d) of CWA established the total maximum daily load (TMDL) process to guide the application of state water quality standards (see discussion of state water quality standards below).

To identify candidate water bodies for TMDL analysis, a list of water quality-limited segments is generated. These segments are impaired by the presence of pollutants, including sediment, and have no additional assimilative capacity for these pollutants. Malibu Beach, Malibu Creek, and Malibu Lagoon are listed as impaired water bodies under Section 303(d) of CWA. Malibu Lagoon is listed as impaired by enteric viruses, eutrophication, high coliform counts, pH, and also includes a shellfish harvesting advisory and swimming restrictions. Malibu Beach is listed as impaired by DDT and PCBs (fish consumption advisories), high coliform counts, and beach closures; Malibu Creek is listed as impaired by high coliform counts, nutrients (algae), scum/unnatural foam, and is also a fish barrier.

TMDLs to address nutrients and bacteria impairment within the Malibu Creek watershed, including the lagoon, were adopted in 2003 (EPA 2003a and b respectively). TMDLs to address other impairments in the watershed and surrounding beaches are currently under development.

TMDL for Nutrients in the Malibu Creek Watershed

The numeric targets established in US EPA (2003a) consider seasonal variations in nutrient concentrations, as well as waterbody types. The numeric targets for nitrogen and phosphorus in the Malibu Creek watershed, shown below, were established to prevent and reduce the nutrient impairment.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Summer (April 15 to November 15)</th>
<th>Winter (November 16 to April 14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrogen (mg/L)</td>
<td>1.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Phosphorus (mg/L)</td>
<td>0.1</td>
<td></td>
</tr>
</tbody>
</table>

TMDL for Bacteria in the Malibu Creek Watershed

Bacteriological numeric targets to protect water contact recreational use in the lagoon, as established in US EPA (2003b), are as follows:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Geometric Mean</th>
<th>Single Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,000</td>
<td>10,000 or 1,000 if FC/TC &gt;1.0</td>
</tr>
<tr>
<td>Fecal</td>
<td>200</td>
<td>400</td>
</tr>
<tr>
<td>Enterococcus</td>
<td>35</td>
<td>104</td>
</tr>
</tbody>
</table>
Section 401—Water Quality Certification
Section 401 of CWA requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant obtain a Water Quality Certification (or waiver). Water Quality Certifications are issued by Regional Water Quality Control Boards in California. The Los Angeles RWQCB has jurisdiction over the project area. Under the CWA, the state (as implemented by the relevant board) must issue or waive Section 401 Water Quality Certification for the project to be permitted under Section 404.

Water Quality Certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States. Construction of the proposed project would require 401 certification for the project if Section 404 is triggered.

Section 402—NPDES Program
The 1972 amendments to the Federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402[p]).

The U.S. Environmental Protection Agency (EPA) has granted the State of California primacy in administering and enforcing the provisions of the CWA and the NPDES Permit Program. The NPDES Permit Program is the primary federal program that regulates point-source and nonpoint-source discharges to waters of the United States.

The State Water Resources Control Board (SWRCB) issues both general and individual permits for certain activities. Relevant general and individual NPDES permits are discussed below.

Construction Activities
Construction activities are regulated under the NPDES General Permit for Discharges of Storm Water Runoff associated with Construction Activity (General Construction Permit), provided that the total amount of ground disturbance during construction exceeds one acre.

The appropriate Regional Water Quality Control Board enforces the General Construction Permit. Coverage under a General Construction Permit requires the preparation of a stormwater pollution prevention plan (SWPPP) and submittal of a notice of intent (NOI). The SWPPP includes pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a best management practices monitoring and maintenance schedule. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit.
Dewatering Activities
Small amounts of construction-related dewatering are covered under the General Construction Permit. However, the RWQCB may require that an individual NPDES permit and Waste Discharge Requirement (WDR) be obtained for dewatering activities.

Section 404
Section 404 of the CWA regulates the discharge of dredged and fill materials into waters of the United States, which include oceans, bays, rivers, streams, lakes, ponds, and wetlands. Project proponents must obtain a permit from the U.S. Army Corps of Engineers for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity.

Before any actions that may impact surface waters are carried out, a delineation of jurisdictional waters of the United States must be completed following U.S. Army Corps of Engineers protocols (Environmental Laboratory 1987) to determine whether the project area encompasses wetlands or other waters of the United States that qualify for CWA protection. These include any or all of the following:

- areas within the ordinary high water mark of a stream, including nonperennial streams with a defined bed and bank, and any stream channel that conveys natural runoff, even if it has been realigned; or
- seasonal and perennial wetlands, including coastal wetlands.

Wetlands are defined for regulatory purposes as areas “inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3, 40 CFR 230.3).

Under the Section 404 permit program, general permits (known as nationwide permits) have been adopted, and coverage under nationwide permits is possible when the amount of fill is relatively small (usually less than 0.5 acre). Projects that do not qualify for a nationwide permit must obtain an individual permit, which has a longer and more involved permitting process.

Regulations Covering Development on Floodplains

Federal Flood Insurance Program
Alarmed by increasing costs of disaster relief, Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. The intent of these acts was to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains.

FEMA (Federal Emergency Management Agency) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA
issues Flood Insurance Rate Maps (FIRM) for communities participating in the National Flood Insurance Program. These maps delineate flood hazard zones in the community. The locations of FEMA-designated floodplains in the proposed project area are included in the discussion of physical setting below.

**Porter-Cologne Water Quality Control Act of 1969**

The Porter-Cologne Water Quality Control Act established SWRCB and divided the state into nine regional basins, each with a regional water quality control board. SWRCB is the primary state agency responsible for protecting the quality of the state’s surface and groundwater supplies, while the regional boards are responsible for developing and enforcing water quality objectives and implementation plans. The project area is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB).

The Act authorizes SWRCB to enact state policies regarding water quality in accordance with Section 303 of CWA. In addition, the act authorizes SWRCB to issue WDRs for projects that would discharge to state waters. The Porter-Cologne Water Quality Control Act requires that SWRCB or the regional water quality control board adopt water quality control plans (basin plans) for the protection of water quality. A basin plan must:

- identify beneficial uses of water to be protected;
- establish water quality objectives for the reasonable protection of the beneficial uses; and
- establish a program of implementation for achieving the water quality objectives.

Basin plans also provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. Basin plans are updated and reviewed every three years in accordance with Article 3 of Porter-Cologne Water Quality Control Act and Section 303(c) of CWA. The Los Angeles RWQCB adopted a revised basin plan on June 13, 1994. The basin plan designates beneficial uses and establishes water quality objectives for groundwater and surface water within the Los Angeles region, including the coastal watersheds of Los Angeles and Ventura Counties.

**Streambed Alteration Agreement**

The CDFG regulates streambed alterations in accordance with Fish and Game Code Sections 1601–1616: Streambed Alterations. Whenever a project proposes to alter a streambed, channel, or bank, an agreement with the CDFG is required.

The agreement is a legally binding document that describes measures agreed to by both parties to reduce risks to fish and wildlife in the stream system during the project. This is a separate process from CEQA approval but is usually coordinated with CEQA compliance. Agreements typically have less procedural and legal requirements than CEQA in order to work with small-scale projects that are important to fish. Time frames for agreements are 30 days for the CDFG to
determine the completeness of an application and an additional 60 days to provide a draft agreement to the applicant.

**City of Malibu and Coastal Act Policies**

The City of Malibu General Plan (City of Malibu 1995) includes goals and policies related to water quality and surface runoff. It should be noted that, as a state agency, DPR is not subject to local plans and policies. However, as the relevant City of Malibu plans, policies, and goals are wholly consistent with the proposed project, they are included in this chapter for the benefit of the reader.

The following goals, policies, and implementation measures from both the Conservation Element and the Land Use Element are relevant to the proposed project.

Conservation Policy 1.3.11 (also Land Use Policy 1.1.3): The City shall control surface runoff and associated pollutant loads into coastal waters, wetlands, and riparian areas.

Land Use Goal 1: The natural and environmental resources of Malibu are protected and enhanced.

Land Use Implementation Measure 4: Regulate grading and excavation to minimize impacts of construction on water quality and natural resources. These regulations shall require the use of best management practices (BMPs) to control erosion and manage stormwater. These BMPs may include the use of seasonal and mandatory year round control measures such as tarps, sandbag dams, onsite retention of first flush rain, temporary drainage courses and erosion control measures, de-silting ponds, sediment traps, filter fencing, straw bales, and catch basin filtration.

Land Use Implementation Measure 6: Evaluate any increase in peak flow rate from surface runoff for proposed development and mitigate any adverse impacts to property or the environment. Require a drainage control system, including onsite retention or detention where appropriate for all new development. Storm runoff control systems shall be designed to ensure that the maximum rate of stormwater runoff does not exceed peak level that existed prior to development.

Land Use Implementation Measure 7: Prohibit grading during the rainy season (from November 1 to March 31) in areas which might affect Resource Protection Areas (RPAs) unless a delay in grading until after the rainy season is determined to be more environmentally damaging. Where grading is permitted during the rainy season, sediment basins (including debris basins, desilting basins, or silt traps) shall be required on the project site prior to or concurrent with the initial grading operations and maintained through the development process.

The project area is located within the California Coastal Zone, as defined by the California Coastal Act. The Coastal Act requires that its goals and policies be implemented by local government through the LCP process. The City of Malibu
LCP is discussed in detail in Chapter 4, Consistency with Local and Regional Plans. Water quality goals and policies that are relevant to the proposed project are as follows:

Policy 3.95: New development shall be sited and designed to protect water quality and minimize impacts to coastal waters by incorporating measures designed to ensure the following:

- Protecting areas that provide important water quality benefits, areas necessary to maintain riparian and aquatic biota and/or that are susceptible to erosion and sediment loss.

- Limiting increases of impervious surfaces.

- Limiting land disturbance activities such as clearing and grading, and cut-and-fill to reduce erosion and sediment loss.

- Limiting disturbance of natural drainage features and vegetation.

Policy 3.120: New development shall protect the absorption, purifying, and retentive functions of natural functions that exist on the site. Where feasible, drainage plans shall be designed to complement and utilize existing drainage patterns and systems, conveying drainage from the developed area of the site in a non-erosive manner. Disturbed or degraded natural drainage systems shall be restored, where feasible, except where there are geologic or public safety concerns.

**Impacts and Mitigation Measures**

**Thresholds of Significance**

Based on Appendix G of the State CEQA Guidelines and professional judgment, the proposed project would result in a significant impact on hydrology or water quality if it would:

- violate any water quality standards or waste discharge requirements;

- otherwise substantially degrade water quality;

- substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level;

- 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 that would result in substantial erosion or siltation on or off site;

- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner that causes flooding on or off
site, creating or contributing to an existing local or regional flooding problem;

- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;

- 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;

- place within a 100-year flood hazard area structures that would impede or redirect floodflows; or

- contribute to inundation by seiche, tsunami, or mudflow.

**Impacts and Mitigation Measures**

Construction phase hydrology and water quality impacts (Impacts HYDRO-8 through HYDRO-10) and associated mitigation measures are discussed separately in Chapter 8, Construction Effects.

**Impact HYDRO-1: Improved water quality due to increased circulation within the lagoon system.**

Lagoon waters do not effectively circulate when the mouth is closed, occurring roughly from May to October each year (Sutula et al. 2004). Low dry season flows entering from upstream are unable to promote any perceptible lagoon circulation because the lagoon is configured with the main body as a broad basin that receives and dissipates any imparted current, by which circulation into the existing western lagoon arms is diminished. Also, vegetative growth within the lagoon reduces potential circulation.

Observations during closed conditions show no effective surface water movement other than minor surface movement across the lagoon from west to east in the afternoon from the prevailing breeze (Moffat & Nichol 2005). Poor circulation contributes to formation of eutrophic conditions in the lagoon, which in turn degrades water quality and aquatic habitat. Because the lagoon has aggraded with sediment and the water contains high concentrations of nutrients from upstream sources, reduced flow circulation results in increased water temperatures which, when combined with high nutrient concentrations, creates growth of aquatic vegetation that fosters coliform bacteria.

Eutrophic conditions are not aesthetically pleasing, produce undesirable odors, and result in beach closures, all of which negatively affect recreational use of the lagoon. Poor lagoon circulation and resulting reduced water quality conditions thus negatively affect biological and recreational beneficial uses of the lagoon.
As part of the proposed project, a new, deepened channel would be created along the southern edge of the west lagoon and the existing boat channel on the eastern edge of the lagoon would be deepened and recontoured. The new channel in the west lagoon would serve as a single main entrance and exit for water conveyed into and out of the west lagoon. Under open conditions, the proposed project would significantly improve tidal circulation into and out of the western arms, as the feeder channel is sized appropriately to convey tidal discharge constantly throughout its reach.

Storm flow circulation would also be improved under the proposed project because it would allow storm flows into and out of the western arms as needed, without severely high flow velocities to cause damage. Under closed conditions, the new channel in the western portion of the lagoon would allow for increased wind wave generation and probable wind-generated return currents that would result in improved circulation within the system.

Although the restoration plan would improve lagoon geometry and orientation to create more favorable circulation conditions, upstream sources of high nitrogen and phosphorus concentrations would potentially continue to be delivered to the lagoon. As such, control of the sources of such pollutants is beyond the scope of the current restoration project. However, the proposed project would reduce the conditions for eutrophic conditions to develop in the lagoon itself and is therefore considered beneficial.

Consequently, biological and recreational beneficial uses of the lagoon would potentially improve to a level that would meet water quality standards, including the TMDL targets for bacteria. However, due to upstream sources of nitrogen and phosphorus, the proposed project would potentially not improve or contribute to the concentration of nutrients in the lagoon to a level such that the TMDL targets for nitrogen and phosphorus would be met.

Overall, the proposed project would result in beneficial impacts to water quality within the lagoon system. No mitigation is required.

**Impact HYDRO-2: Altered surface drainage and associated flood flow patterns from proposed parking lot.**

Presently, storm water runoff originates from the impervious surfaces of PCH and the visitor parking area and flows to the lagoon. The existing quantity of impervious surfaces at the project site encompasses 1.73 acres (Moffatt & Nichol 2005).

The proposed parking area would be approximately the same size; thus, a similar quantity of storm runoff would be expected. However, the proposed parking area would be constructed of pervious materials, which would only allow surface runoff during 50-year or larger storm events. Consequently, for the majority of
storm events at the site, runoff would be retained and absorbed within the pervious tiles instead of flowing directly to the lagoon.

Additionally, vegetated drainage swales would be installed along the perimeter of the parking lot area. These swales would be designed to capture runoff from the 100-year storm event. All potential runoff would be redirected away from the lagoon.

The proposed parking lot would reduce the potential for localized flooding, improve the quality of surface runoff, and benefit water quality within the lagoon. While the project would thus result in beneficial impacts, the following mitigation measure is required to ensure long-term proper functioning of the various storm water management components.

Mitigation Measure HYDRO-1: Maintenance of stormwater system.

Permeable tiles, drainage swales, pumps, pipelines, and any associated equipment must be maintained on a regular basis to ensure full functioning. Maintenance may include removal of fine sediments from tile gaps for proper infiltration and periodic sediment removal from drainage swales for capacity maintenance. The project manager will ensure that all components of the storm drainage system are maintained to design and manufacturer specifications on a regular basis.

Impact HYDRO-3: Effects of sediment delivery on beach replenishment and nearshore coastal habitat.

No significant changes to beach formation processes or the nearshore coastal environment are anticipated because of changes in sediment discharge.

The planned restoration involves reconfiguring and reorientation of the western lagoon arm. Currently, the mouths of the western arm are situated to receive sediment-laden storm flows, but are mostly sheltered from scouring by tides or stormflows due to their lack of hydraulic connectivity. As such, deposited sediment is not readily scoured and removed.

Under the proposed project, the inlet channel to the western arm would be relocated southward and positioned to reduce the western arm exposure to sedimentation during and following storms. As such, it is anticipated that more storm delivered sediments would be transported directly to the main lagoon, and subsequently be available to the coastal zone for either beach nourishment or subsequent down-coast transport.

In considering potential impacts to the barrier beach, it is useful to recognize that the beach is a depositional feature comprised of sands (ranging in size from finer
sands [0.1 mm] to coarser sands [2 mm]) where geomorphic processes selectively sort these beach sands from finer and coarser materials. Typically, the finer silts and muds are either temporarily stored/deposited in the lagoon or carried out to sea. Coarser gravels and boulders may likewise be stored in the main lagoon in bar forms (Schwarz 1999); or under large stormflow conditions may be delivered directly through a large breach in the barrier beach to the coastal zone.

The proposed project is not likely to significantly alter sand related depositional processes and therefore it is not considered to cause a significant impact to the barrier beach. Changes to the proposed inlet of the western arm may concentrate flows and possibly increase local scour and delivery of sands to/from the flood tide and ebb tide deltaic sand lobes associated with the barrier beach.

As the Malibu watershed system is highly variable annually, outcomes of individual storm events are difficult to predict or determine. However, the general form of the estuarine lagoon suggests that even following such large geomorphic events, natural feedback processes occur, which return the lagoon to its general form as a water feature that is transitional between the upstream river and downstream coast. Potential impacts would be less than significant and no mitigation measures are necessary.

**Impact HYDRO-4: Effects on tidal lagoon opening and closure.**

The sandbar at the mouth of the lagoon typically forms in May or June and may proceed through a series of natural closures and breaches until a sustained closure is endured through the summer and early fall (Moffat & Nichol 2005). The timing and duration of summer closures is dependent upon a number of factors including previous winter rainfall (streamflow magnitude and duration), Malibu Creek water table base flows, longshore sand transport, and tidal and swell dynamics of the Pacific Ocean.

In late fall, once flows in Malibu Creek become high enough to fill the lagoon and overtop the beach berm, flows once again reach the ocean and open the lagoon, quickly scouring a channel through the sand. The exact dates associated with lagoon openings and closures vary due to the variability in annual flow conditions into (and out of) Malibu Creek.

While the proposed project will alter the geometry, volume, and orientation of the lagoon, it will not significantly affect the mass water balance of the watershed that is the principal influence behind the lagoon being either open or closed. The proposed project is not anticipated to alter these seasonal patterns or the processes driving lagoon opening and closure, and hence no significant changes to this process are anticipated. However, once in a closed lagoon situation, the proposed project would provide a larger lagoon geometry to contain summer dry season flows. Thus the project is expected to result in a beneficial impact and no mitigation measures are required.
Impact HYDRO-5: Potential to expose people or structures to risk of flooding or impede 100-yr floodflows.

Presently, there is no significant risk of loss, injury, or death from flood flows in the immediate project area, except when large storm events occur during very high tides. The proposed project would result in reduced flood hazard risk to people and structures surrounding the lagoon through increased lagoon capacity from the reconfigured channels. The storm water system implemented for the realigned parking area would reduce and redirect stormflows in an improved manner compared to existing conditions. Consequently, a beneficial impact would result from the proposed project.

Impact HYDRO-6: Potential to alter groundwater functioning.

The proposed project would involve reconfiguration of surface water runoff and lagoon morphology. The existing groundwater supply, recharge, and groundwater table would be potentially affected at a minor level due to altered circulation and surface drainage. However, a significant change to groundwater would be immeasurable. Consequently, the proposed project would have a less-than-significant impact on groundwater in the project area. No mitigation is necessary.

Impact HYDRO-7: Potential to contribute to inundation by seiche, tsunami, or mudflow.

Based on the project’s location and extent, with its focus on the peripheral areas of the lagoon (either on the western arm or eastern boat-house channel), the proposed project would not alter the existing potential for the area to be inundated by coastal processes of seiche or tsunami, or more hillslope related mudflow processes. Consequently, potential impacts would be less than significant. No mitigation is necessary.
Chapter 6
Biological Resources

Setting

Malibu Lagoon is a 31-acre shallow water embayment occurring at the terminus of the Malibu Creek Watershed, the second largest watershed draining into Santa Monica Bay. Malibu Creek runs north-to-south through Malibu Canyon and then empties into the lagoon, contributing freshwater, sediment, nutrients, and urban runoff into the lagoon. Malibu Lagoon empties into the Pacific Ocean at the world famous Surfrider Beach, located along the 23000 block of PCH in the City of Malibu, California.

Historically, the lagoon extended beyond its current boundaries. While urban development has reduced the size of the lagoon, recent restoration projects have been implemented to restore some of these areas. The lagoon is primarily surrounded by development, with Malibu Creek and PCH to the north and Surfrider Beach and the Pacific Ocean to the south.

Soils occurring within and surrounding the lagoon are typical of a coastal valley floor alluvial landform and include Elder sandy loam, Sorrento loam, riverwash, and coastal beach. Imported fill material, including chunks of asphalt also exist within the lagoon structure.

Biological Communities

Vegetation Communities

The habitat conditions within the lagoon are primarily dictated by elevation and hydrology. A field survey was conducted in 2004 to map the existing vegetation communities within the lagoon (Merkel 2004; Figure 6-1 and Table 6-1). Increasing human population and urban development have subjected the lagoon and the surrounding wetlands to considerable disturbance. While this has generally resulted in ecological degradation of the wetland, previous restoration efforts have successfully restored some of the habitat.
Figure 6-1. Malibu Lagoon Vegetation Communities
In addition to expanding the functional area of the lagoon, past restoration efforts have included several revegetation efforts. While the success of many restoration efforts at the lagoon is evidenced by their continued persistence, the resulting mosaic of vegetation communities is often difficult to describe using common habitat classification systems (such as Holland or Sawyer and Keeler-Wolf).

Seventeen vegetation communities and habitats were mapped at the lagoon including: southern willow scrub; atriplex scrub; baccharis scrub; mule fat scrub; Venturan coastal sage scrub; mixed scrub; southern coastal salt marsh; coastal and valley freshwater marsh; brackish marsh; southern sycamore alder riparian woodland (planted as landscaping); disturbed coastal dunes; non-native grassland; disturbed habitat; mud flat; sand beach/sand bar; open water; and urban/developed land (Merkel 2004; Figure 6-1 and Table 6-1).

Table 6-1. Existing Vegetation Communities at Malibu Lagoon

<table>
<thead>
<tr>
<th>Vegetation Type</th>
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<tr>
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<td>0.52</td>
</tr>
<tr>
<td>Atriplex scrub</td>
<td>1.54</td>
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<tr>
<td>Baccharis scrub</td>
<td>0.54</td>
</tr>
<tr>
<td>Mule fat scrub</td>
<td>1.40</td>
</tr>
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<td>Brackish marsh</td>
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</tr>
<tr>
<td>Coastal and valley freshwater marsh</td>
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</tr>
<tr>
<td>Southern sycamore-alder riparian woodland</td>
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<td>Disturbed habitat</td>
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<td>Mud flat</td>
<td>3.96</td>
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<tr>
<td>Sand beach/sand bar</td>
<td>7.27</td>
</tr>
<tr>
<td>Open water</td>
<td>11.65</td>
</tr>
<tr>
<td>Urban/developed land</td>
<td>2.49</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>36.37</strong></td>
</tr>
</tbody>
</table>

**Southern Willow Scrub**

Southern willow scrub is located in the northwestern portion of the project area, near the State Beach parking lot. This habitat generally consists of mature arroyo willow (*Salix lasiolepis*), with occasional mule fat (*Baccharis salicifolia*) and quail saltbush (*Atriplex lentiformis* ssp. *lentiformis*). The southern willow scrub immediately adjacent to the parking lot entrance may have been planted and sustained by irrigation or runoff from PCH, rather than by Malibu Lagoon.
Atriplex Scrub

This habitat is found primarily along the trails leading from the parking lot to the beach and is composed predominantly of saltbush (Atriplex sp.), with occasional coyote brush (Baccharis pilularis), mule fat, toyon (Heteromeles arbutifolia), California sagebrush (Artemisia californica), and elderberry (Sambucus mexicana).

Also occurring within this vegetation community are giant coreopsis (Coreopsis gigantea) and showy island snapdragon (Galvesia speciosa), non-native species naturally occurring on the Channel Islands, but frequently included in revegetation programs. Other non-native elements include Myoporum (Myoporum laetum), black mustard (Brassica nigra), and hottentot fig (Carpobrotus edulis).

The quail saltbush generally forms dense shrubs, several meters in height and width, and occurs in drier, high areas fringing the marsh and access trails. The large area of atriplex scrub occurs in sandy soils immediately north of the beach, on the south side of the lagoon. The quail saltbush is very tall and occasionally interspersed by California sagebrush and coyote brush.

Baccharis Scrub

This upland vegetation community is located along the western edge of the project area, to the east of the access road that skirts the lagoon. The habitat is dominated by coyote brush, and also includes mule fat, quail saltbush, and St. Catherine’s lace (Eriogonum giganteum). St. Catherine’s lace is native to the Channel Islands and was likely planted at the lagoon as part of previous revegetation efforts.

Mule Fat Scrub

Areas dominated by mule fat scrub occur on the margins of the lagoon in between areas of southern willow scrub, baccharis scrub, and atriplex scrub. The mule fat is interspersed with quail saltbush and coyote brush. There is also a large area of mule fat scrub along the trail leading from the parking lot to the beach, which may have been part of earlier revegetation efforts. The mule fat scrub located north of the parking lot entrance may have been planted and may be sustained by irrigation or runoff from PCH, rather than by the lagoon.

Venturan Coastal Sage Scrub

This vegetation type occurs only in very small amounts, primarily along the trail leading to the beach. These areas were likely planted as part of past restoration efforts. Dominant species include California sagebrush and St. Catherine’s lace, with giant coreopsis and showy island snapdragon also present. North of the parking lot is another small area of coastal sage scrub composed nearly entirely of laurel sumac (Malosma laurina).
Mixed Scrub

This vegetation type has been used to map slightly atypical areas north of the access road on the southwest side of the lagoon. This area contains a variable mix of predominantly native species, with elements of at least four of the vegetation communities described above. The two dominant species within this vegetation community are coyote brush and mule fat, with quail saltbush being the next most abundant shrub.

Other species located within this vegetation community include St. Catherine’s lace, lemonadeberry (Rhus integrifolia), western ragweed (Ambrosia psilostachya) and California sagebrush. This variety of co-occurring species (such as mule fat, which is a wetland indicator species, and coastal sage scrub elements, an upland habitat) again suggests that this may be the site of past restoration efforts. Degraded fencing and irrigation materials are also evident in these areas.

Southern Coastal Salt Marsh

Southern coastal salt marsh is the most abundant, vegetated habitat within Malibu Lagoon. This habitat is dominated by salt grass (Distichlis spicata), pickleweed (Salicornia virginica,) and marsh jaumea (Jaumea carnosa). Other common species include salt marsh dodder (Cuscuta californica) and alkali heath (Frankenia salina).

This vegetation type occurs at the lowest elevations, generally fringing the mudflat. This habitat likely expands and contracts over time with seasonal inundation and dewatering of the lagoon. Slightly higher portions of the coastal salt marsh that would less frequently experience inundation also support areas of quail saltbush shrubs.

In many places the coastal salt marsh is infested by invasive exotics, primarily perennial pepperweed (Lepidium latifolium). The marsh also supports occasional patches of the invasive exotic hottentot fig (Carpobrotus edulis), black mustard (Brassica nigra), and giant reed (Arundo donax).

Coastal and Valley Freshwater Marsh

Coastal and valley freshwater marsh occurs primarily in a large area south of the parking lot, fringing pools of open freshwater. This vegetation type is predominantly composed of two species of bulrush (Scirpus californicus and Scirpus acutus) and forms tall dense stands of vegetation. A few additional small areas of freshwater marsh are also located near freshwater sources, such as the drain outlet in the southwest corner of the lagoon.
Brackish Marsh

Brackish marsh is located on the east shore of the lagoon, immediately above the mudflat. The mixture of salt marsh and freshwater marsh species reflects the variable salinities that occur in the lagoon as a result of variable hydrological conditions. This area is dominated by salt grass, regularly interspersed with bulrush.

Other species noted within this vegetation community include jaumea, pickleweed, salt marsh dodder, and mule fat. A patch of salt cedar (Monanthochloe littoralis), an invasive exotic, was found adjacent to the fence bordering the lagoon. Perennial pepperweed (an invasive species) also occurs in the brackish marsh.

Southern Sycamore-Alder Riparian Woodland

This vegetation type is located immediately south of the parking lot and makes up a very small portion of the project area. This area features large, mature trees, primarily sycamore (Platanus racemosa) and occasional California black walnut (Juglans californica; a California Native Plant Society [CNPS] List 4 species) and white alder (Alnus rhombifolia). This area was likely planted using species found in the riparian forest upstream, and may receive supplemental water from irrigation or parking lot runoff.

Disturbed Coastal Dunes

A small area of disturbed coastal sand dune is located at the far eastern edge of the survey site, above the exposed mud flat. Species occurring within this vegetation community include pink sand verbena (Abronia umbellata), silver beach bur (Ambrosia chamiissonis), hottentot fig, and Bermuda grass (Cynodon dactylon).

Non-native Grassland

Non-native grassland is located in a very small area near the edge of the trail south of the parking lot. This is a highly disturbed area vegetated predominantly by weedy bromes (Bromus madritensis L. ssp. rubens, B. diandrus, and B. hordeaceus), as well as wild oat (Avena fatua). A small number of western ragweed are also mixed with the grasses.

Disturbed Habitat

Disturbed habitat has been used to characterize a small patch of bare ground immediately south of the parking lot entrance road. It is predominantly bare ground supporting no distinct vegetation community.
Mud Flat

Due to the recent breach of the sand berm at the mouth of Malibu Lagoon, the majority of the areas previously inundated were exposed mud flat at the time of the 2004 surveys. Areas mapped as mud flat were unvegetated. While mud flats are typically characterized by finer grained, less mobile sediment particles, in this instance the exact location where mud flat transitioned into sand bar and sand beach was difficult to pinpoint. Therefore, in general, all areas that had been previously inundated and were unvegetated are classified as mudflat, regardless of their constituent grain size.

Sand Beach/Sand Bar

Areas clearly composed of coarser grained particles, resulting from higher energy transport of sand near the mouth of the Lagoon, are classified as sand bar. Large, unvegetated areas of open beach are classified as sand beach.

Open Water

All unvegetated areas that had not been de-watered by the breach of the sand berm are classified as open water. Open water is generally very shallow and persists only in the deeper channels of the lagoon basins. Although this habitat accounts for the largest acreage in the survey area, this area will fluctuate significantly based on hydrological conditions (See Chapter 5, Hydrology and Water Quality). Loss of open water through drainage will be balanced by an increase in mud flat.

Urban/Developed

The areas designated as Urban/Developed comprise the paved parking lot, access roads, access trails, and the grassy park area off the parking lot.

Wetlands and Jurisdictional Non-wetland Waters

Waters under the regulatory authority of the Corps, CCC, CDFG, and RWQCB have been delineated within the lagoon. While much of the lagoon is highly degraded, a significant portion of the project area supports jurisdictional wetlands and other waters (Merkel 2004).

The Corps, through the authority Section 404 of the CWA, is the primary agency involved in wetland regulation. The EPA has the authority to veto any decision by the Corps on 404-permit issuance, as the EPA has the ultimate authority over enforcement of wetland regulations. Prior to the issuance of a Section 404 permit by the Corps, the RWQCB must issue a Section 401 water quality certification or waiver. In this way, the RWQCB regulates actions permitted by the Corps under Section 404 of the CWA. In
addition, the USFWS must be consulted and may also take jurisdiction if any wetland impacts could affect federally endangered species.

The Corps has jurisdiction over “waters of the U.S.,” including wetlands as defined by Section 404 of the CWA. Not all waters of the U.S. are wetlands and not all wetlands are under Corps jurisdiction. The term “waters of the U.S.” covers many types of waters, including: waters currently or historically used in interstate or foreign commerce, including all waters subject to the ebb and flow of tides; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, etc., the use, degradation, or destruction of which could affect interstate or foreign commerce; all impoundments of waters otherwise defined as waters of the U.S.; tributaries of waters of the U.S.; territorial seas; and wetlands adjacent to waters of the U.S. (USACE 1987). Regulated waters of the U.S. do not include isolated waters. However, isolated waters may be regulated by the RWQCB and the CDFG under the Porter-Cologne Act and the California Fish and Game Code, respectively.

The CDFG has jurisdiction covering lakes, rivers, and streams. Jurisdiction extends across the bed, banks, and channel of these features and includes areas beneath a riparian canopy, even if the canopy areas are well away from the stream channel (such as in oak riparian areas). More typically, the jurisdiction over streambeds is applied from the top of one channel bank to the top of the opposite bank.

The CCC regulates wetlands occurring throughout the California coastal zone, which includes Malibu Lagoon through the Coastal Development Permit (CDP) Process. The California Coastal Act defines “wetland” in Section 30121 of the California Coastal Act as follows: Wetland means lands within the coastal zone that may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats and fens.

The CCC uses the same three-criteria system for defining wetlands as the Corps, and like the CDFG, only one of the three criteria needs to be present for an area to be classified as a wetland. Unlike the CDFG, the CCC’s jurisdiction extends beyond streambeds to include all tidal areas; however, jurisdiction is limited to areas within the coastal zone.

**Hydrophytic Vegetation**

Vegetation communities which meet the criteria of wetland-associated vegetation are dominated by a preponderance (>50%) of species classified as obligate wetland plants (OBL), facultative wetland plants (FACW), or facultative plants (FAC) based on the *National List of Plant Species that Occur in Wetlands* (U.S. Fish & Wildlife Service 1988). Obligate wetland plants are defined as occurring almost always in
wetlands (estimated probability >99%) under natural conditions. Facultative wetland plants are defined as occurring usually in wetlands (estimated probability 67% to 99%). Facultative plants are defined as having a similar likelihood of occurring in both wetlands and nonwetlands (estimated probability 33% to 67%).

**Hydrology**

Wetland hydrology was indicated by the presence of surficial characteristics or sub-surficial hydric characteristics. Surficial hydrology was determined through visual observation of surface flow, drainage patterns, watermarks, and/or drift lines. Sub-surficial characteristics included saturated soils or presence of free water in the test pit.

Although non-wetland waters of the U.S/streambeds lack wetland vegetation, they do exhibit wetland hydrologic characteristics.

**Hydric Soils**

To confirm the presence of hydric soils, samples taken from various depths were examined for physical and chemical evidence of hydric conditions. The color of excavated soils was evaluated using the chroma index from the Munsell Soil Color Charts (Munsell Color 2000). Low-chroma color or gleyed soils are indicators of hydric soils under normal conditions. Additional indicators of hydric soils such as vertical streaking, high organic matter content in the surface horizon, mottling, and sulfidic odor were also evaluated during the delineation.

In general the jurisdictional wetlands include all areas mapped as southern willow scrub, mule fat scrub, southern coastal salt marsh, coastal and valley freshwater marsh, and brackish marsh, with the exceptions noted below (Merkel 2004; Figure 6-1; Table 6-2).

CCC and CDFG jurisdictional boundaries have the most overlap, with deviations only at the mouth of the lagoon and near the State Park parking lot. Although CCC follows the same requirement as CDFG, needing only one of the three criteria for an area to be classified as a wetland, the CCC’s jurisdiction extends beyond streambed to include areas of wetland vegetation that are not necessarily dependent on the streambed or adjacent riparian area. Therefore the areas vegetated by mule fat scrub and southern willow scrub north of the parking lot (likely supported by runoff or irrigation rather than Malibu Lagoon) are within CCC jurisdiction only. The other variation in jurisdiction between CDFG and CCC is at the mouth of the lagoon, where CCC continues seaward while CDFG is limited to non-tidal waters.
Table 6-2. Jurisdictional Wetlands and Non-wetland Waters/Streambeds within the Project Area

<table>
<thead>
<tr>
<th>Wetland Habitat Type</th>
<th>USACE Jurisdiction (acre)</th>
<th>CDFG Jurisdiction (acre)</th>
<th>CCC Jurisdiction (acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern willow scrub</td>
<td>0.42</td>
<td>0.42</td>
<td>0.52</td>
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<tr>
<td>Atriplex scrub</td>
<td>0.20</td>
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<td>Baccharis scrub</td>
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<tr>
<td>Mule fat scrub</td>
<td>0.98</td>
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<tr>
<td>Venturan coastal sage scrub</td>
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<tr>
<td>Mixed scrub</td>
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<td>Southern coastal salt marsh</td>
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<td>Brackish marsh</td>
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<td>Coastal and valley freshwater marsh</td>
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<tr>
<td>Southern sycamore-alder riparian woodland</td>
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<tr>
<td>Disturbed coastal dunes</td>
<td>0.00</td>
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<tr>
<td>Non-native grassland</td>
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<td>0.00</td>
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<td>Disturbed habitat</td>
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<td>0.00</td>
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<tr>
<td>Mud flat</td>
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<td>Sand beach/sand bar</td>
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<tr>
<td><strong>Total Jurisdictional Waters/Streambed</strong></td>
<td><strong>30.48</strong></td>
<td><strong>25.70</strong></td>
<td><strong>31.19</strong></td>
</tr>
</tbody>
</table>

The Corps jurisdiction deviates from the CDFG and CCC boundary in areas where all three criteria were not met. In the western portion of the lagoon there were areas dominated by wetland indicator species such as mule fat or western sycamores; however, they did not meet the hydric soils criterion.
Common Wildlife Species

Past studies of Malibu Lagoon have identified 200 species of birds (Cooper 2005), 33 species of fish (Dagit & Swift 2005), 1 species of mammal (Natural Resources Assessment, Inc. 2005), 4 species of reptiles and amphibians (Hovore & Associates 2005), and 97 species of invertebrates in the project area (Hovore & Associates 2005). For more detail, existing habitat types, wetland delineation, and alternatives considered, please see the Alternatives Analysis and its appendices.

Several species of aquatic birds have been observed in the lagoon including gadwall (*Anas strepera*), mallard (*Anas platyrhynchos*), common yellowthroat (*Geothlypis trichas*), song sparrow (*Passerella melodia*), black phoebe (*Sayornis nigricans*), pied-billed grebe (*Podilymbus podiceps*), black-necked stilt (*Himantopus mexicanus*), black-crowned night heron (*Nycticorax nycticorax*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and green heron (*Butorides virescens*).

Upland bird species including California towhee (*Pipilo crissalis*), Anna’s hummingbird (*Calypte anna*), bushtit (*Psaltriparus minimus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), western scrub-jay (*Aphelocoma californica*), and house finch (*Carpodacus mexicanus*) have been observed in the upland habitats surrounding the lagoon, which consists predominantly of Venturan coastal sage scrub and mixed scrub habitats.

Lagoon habitats do not support many mammal or reptile species. Most of the available scrub habitat is very dense at ground level as well as higher up, and the southern coastal salt marsh is almost entirely covered by jaumea with very little bare ground exposed. Small mammals generally prefer more open scrub habitats with low openings and sparse ground cover. In addition, the lagoon is almost entirely surrounded by either water (open ocean) or development (housing and commercial).

Some common mammals that are known to occur at the lagoon include mule deer (*Odocoileus hemionus californicus*), Audubon’s rabbit (*Sylvilagus auduboni*), and coyote (*Canis latrans*). One mammal was caught during the 2005 mammal trapping effort: black rat (*Rattus rattus*). It is possible that other species, such as the deer mouse (*Peromyscus maniculatus*) and the meadow mouse (*Microtus californica*), are present in the lagoon, but are at such low numbers that capture is difficult.

The surrounding vegetation supports a few common species of reptiles, such as western fence lizard (*Sceloporus occidentalis*) and side-blotched lizard (*Uta stansburiana*).

The project area provides habitat for a variety of invertebrates (e.g., earwigs, grasshoppers, butterflies, ants, spiders, etc.) including but not...
limited to ring-legged earwig (*Euborellia annulipes*), field cricket (*Gryllus* sp.), green stinkbug (*Chlorochroa* sp.), western tiger swallowtail (*Papilio rutulus*), common sand beetle (*Coelus ciliatus*), Argentine ant (*Linepithema humile*), and black widow (*Latrodectus hesperus*).

Several fish species are resident within the lagoon and vary depending on the season and status of the lagoon entrance condition. Common species captured during the 2005 surveys include topsmelt (*Atherinops* sp.), carp (*Cyprinus carpio*), California killifish (*Fundulus parvipinnis*), mosquito fish (*Gambusia affinis*), longjaw (*Gillichthys mirabilis*), and opaleye (*Girella nigricans*).

## Special-Status Species

### Sensitive Plant Species

No federally or state listed plant species were observed within the project area during any of the biological surveys (Wishner 2005). One CNPS List 4 species, California black walnut, was observed during the 2004 vegetation mapping effort (Merkel 2004). Special status plant species with potential to occur in the project area were identified through a search of the California Natural Diversity Data Base (CNDDB) and include Braunton’s milk vetch (*Astragalus brauntonii*) and Lyon’s pentachaeta (*Pentachaeta lyonii*) (CNDDB 2004). These species and their potential to occur within the project area are discussed below.

### California Black Walnut

California black walnut, a CNPS List 4 species, is typically associated with chaparral, coastal scrub, and cismontane woodland habitats on slopes and in canyons. This species was observed within the southern sycamore-alder riparian woodland during the 2004 vegetation mapping effort (Merkel 2004).

### Braunton’s Milk Vetch

This federally endangered and CNPS List 1B species is associated with closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grasslands (CNDDB 2004). While this species was observed in Malibu Lagoon in 1984, it has not been reported since and is assumed to have been extirpated from the area. Therefore, this species is not expected to occur within the project area. As part of the restoration, Braunton’s Milk Vetch will be re-established in the appropriate habitat area of the restoration project.

### Lyon’s Pentachaeta

This federally endangered, state endangered, and CNPS List 1B species is associated with chaparral and valley and foothill grasslands, usually along the edges of firebreaks. This species was observed along Malibu Creek in 1979 but is now presumed missing from the area. Therefore,
this species is not anticipated to occur in the project area and would be highly unlikely to occur in seasonal lagoon habitats.

**Santa Monica Mountains Dudleya**
This federally threatened and CNPS List 1B species is associated with chaparral and coastal scrub habitats. This species was observed in Malibu Canyon in 1980 but is now presumed missing from the area. Therefore, this species is not expected to occur within the project area and would be highly unlikely to occur in seasonal lagoon habitats.

**Marcescent Dudleya**
This federally threatened, state rare, and CNPS List 1B species is typically found in chaparral on sheer rock surfaces and rocky volcanic cliffs. This species was observed along Malibu Creek in 1979 but is now presumed missing from the area. Therefore, this species is not expected to occur within the project area and would be highly unlikely to occur in seasonal lagoon habitats.

**Sensitive Wildlife Species**

**Arthropod Species**
While not observed within the project area during the field surveys, a number of agency-listed sensitive arthropod species occur within the coastal portion of the Santa Monica Mountains, including: Trask’s shoulderband snail (Helminthoglypta traskii), wandering (salt marsh) skipper butterfly (*Panoquina errans*; The Nature Conservancy G2\(^1\) listed species; IUCN Red List near threatened), Busck’s gallmoth (*Carolella busckana*; DFG special animal list), Belkin’s dune tabanid (*Brennania belkini*; IUCN Red List vulnerable), globose dune beetle (*Coelus globosus*; IUCN Red List vulnerable), Santa Monica Mountains shieldback katydid (*Neduba longipennis*; IUCN Red List critically endangered, proposed federally endangered), and sandy beach tiger beetle (*Cicindela hirticollis gravida*; DFG special animal list, proposed federally endangered) (Hovore & Associates 2005).

Huffman (2002, *Santa Monica Bay Audubon Soc. newsletter*, Vol. 26(1)), reports seeing wandering (salt marsh) skipper at Malibu Lagoon, and while this record remains to be verified, the species may occasionally wander into the project area; its host plant (*Distichlis spicata* and other grasses) is present.

The other species likely would not occur within the project area, primarily because the natural, native habitat values are either lacking or retorted and degraded, or their specific host plants or substrate associations are lacking.

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\(^1\) Imperiled globally because of rarity (6 to 20 occurrences), or because of other factors demonstrably making it very vulnerable to extinction throughout its range. (Endangered throughout its range).
Fish
Several sensitive fish species are known from Malibu Lagoon, either historically or presently. These include Pacific Lamprey (*Lampetra tridentata*), southern steelhead trout (*Oncorhynchus mykiss*), arroyo chub (*Gila orcutti*) and Coho salmon (*Oncorhynchus kisutch*). In addition, the tidewater goby (*Eucyclogobius newberryi*) was historically present and re-introduced to the lagoon in 1991. These species and their potential to occur in the project area are discussed below.

**Pacific Lamprey.** Pacific lampreys are anadromous. The adults enter streams to spawn in November to March, dying shortly after they lay eggs in gravelly areas of the stream. The young, known as ammocoetes, hatch out within two to three weeks and remain in fresh water for an unknown time period, perhaps as long as four to six years. They burrow in soft substrates in well-oxygenated areas, and filter feed on detritus. Pacific lamprey eventually migrate to the ocean and eventually return as adults to spawn.

Populations of Pacific lampreys have declined due to a combination of habitat loss, restricted migratory opportunities, changes in sedimentation and water quality and competition or predation by introduced species. Lampreys, including *L. tridentata*, the species found locally, have been petitioned for listing through the U.S. Fish and Wildlife Service (USFWS).

While much of Malibu Creek historically contained suitable habitat and lampreys were present, adults have not been found during any of the surveys since the 1980s (Dagit and Swift 2005).

**Southern Steelhead Trout.** Estuaries are known to be important transitional habitats for steelhead smolts leaving their natal stream and heading out to sea, as well as critical migratory passageways for adults coming in to spawn during storm events (Swift 1975). In Santa Monica Bay, steelhead typically enter the creeks during winter storms, spawn and either return to the sea while flows are still high, or remain in the creek during the subsequent summer and fall. Patterns of steelhead presence and reproduction in Malibu Creek have been sporadically studied since the 1980s, and monthly snorkel surveys are planned through June 2007.

No steelhead adults or smolts have been documented by any of the fish surveys in the lagoon. During the 2005 surveys, both surface and bottom water temperatures were between 21° and 34.7° C. Although able to tolerate temperature spikes into the mid-20s, steelhead prefer to inhabit cooler waters. The temperature limitations of the lagoon could be a major reason for their absence this season (Dagit and Swift 2005). While not observed within the project area during any of the surveys, steelhead are known to occur upstream within Malibu Creek (Dagit et. al. 2005) and could occur within the project area due to the presence of suitable habitat.
Arroyo Chub. This CDFG Species of Special Concern is associated with slow-moving stream sections with mud or sand bottoms and feeds on aquatic vegetation and associated invertebrates. While potentially suitable habitat for this species occurs within the vicinity of the project area, the arroyo chub was not observed during any of the surveys conducted.

Coho Salmon. This federally threatened and state endangered species requires beds of loose, silt-free, coarse gravel for spawning. Habitat requirements also include cover, cool water and sufficient dissolved oxygen. While potentially suitable habitat for this species occurs within the vicinity of the project area, the Coho salmon was not observed during any of the surveys conducted.

Tidewater Goby. This federally endangered species and CDFG Species of Special Concern was historically known to occur within the lagoon. However, studies conducted between the late 1960s and the early 1990s indicated that this species had been extirpated from the area since at least 1970. Current studies have documented the recovery of this species since its re-introduction in 1991, and indicate that the area on the west side of the lagoon both up and downstream of the PCH bridge consistently hosts gobies year round, with size classes and densities varying seasonally (Dagit and Swift 2005).

Amphibians and Reptiles
Sensitive amphibians and reptiles were not observed within the project area during any of the biological surveys (Hovore & Associates 2005). Sensitive amphibians and reptiles known to occur in the vicinity of the project area and their potential to occur within the project area are discussed below.

Coast Range Newt (Taricha t. torosa). This species persists in scattered metapopulations within the upper portions of several drainages on the coastal slope of the Santa Monica Mountains, but has suffered declines due to a variety of anthropogenic effects, including introduced predators (crayfish), changes to creek morphology, roadkill mortality, and post-fire creekbed siltation. It occurred historically within lower Malibu Creek (Hovore 2005) and persists within the canyon within Malibu Creek State Park. However, physical and chemical characteristics of the creek channels within the project area are wholly unsuited to use by coast range newt, which would be highly unlikely to occur in seasonal lagoon habitats.

Silvery Legless Lizard. Legless lizards, a CDFG Species of Special Concern, are much more common than historic accounts would indicate (Hovore 2005), but their fossorial, secretive behavior makes them difficult to census. Although not observed within the project area, this species has potential to occur as areas of loamy soils with dense cover (such as the southern willow scrub near the bridge) and vegetated areas of remnant dune sand provide suitable habitat.
Two-striped Garter Snake. The two-striped garter snake is a CDFG Species of Special Concern known to occur from Coastal California from the vicinity of Salinas to Northwest Baja. Highly aquatic, this species is most commonly found in or near permanent water. It can occasionally be found in small and intermittent streams with rocky beds. Although not observed within the project area, this species has potential to occur.

Birds
Five bird species recorded during the 2005 breeding surveys are considered “sensitive,” in that they are protected by state and/or federal endangered species acts; because they are recognized as threatened or near-threatened by the International Union for Conservation of Nature and Natural Resources (IUCN); or because they are being considered for listing as California Bird Species of Special Concern (Cooper Ecological Monitoring, Inc. 2005).

None nest at the site or in the area, although two have done so in recent history and could conceivably do so again with improved habitat management. One sensitive bird species was also recorded during the 2005 mammal surveys. Sensitive wildlife species observed or detected within the project area include: savannah sparrow (*Passerculus sandwichensis*), California brown pelican (*Pelecanus occidentalis californicus*), western snowy plover (*Charadrius alexandrinus nivosus*), Heermann’s gull (*Larus heermanni*), elegant tern (*Sterna elegans*), and California least tern (*Sterna antillarum browni*).

California Brown Pelican. This federal and state endangered species is a post-breeding dispersant from large breeding colonies in western Mexico, particularly on desert islands in the Sea of Cortez. Rather than flying south for the winter after nesting like most temperate-zone migrants, this species actually flies north, up the coast of California. Their nesting season extends from early winter into spring, so numbers in southern California peak in mid-summer. Up to 210 California brown pelicans were observed at Malibu Lagoon during surveys conducted in 2005, generally roosting along the sand spit separating the lagoon from the sea or on the island in the middle of the lagoon exposed by low tide (until flushed by people); this species does not nest within the project area.

Western Snowy Plover. Two hatch-year (born this spring) western snowy plovers were present briefly along the southern edge of Malibu Lagoon on June 14, 2005, but were soon flushed by people and did not return during the survey. This CDFG Species of Special Concern and federally threatened species was formerly a common nester and winterer along the coast of southern California, and still uses Malibu Lagoon as a major local wintering site. However, due to beach-grooming and disturbance by dogs and people, this species no longer nests in Los Angeles County.
Heermann’s Gull. This species, listed on the IUCN Red List as Near Threatened, is a post-breeding dispersant from large breeding colonies in western Mexico, particularly on desert islands in the Sea of Cortez. Rather than flying south for the winter after nesting like most temperate-zone migrants, this species actually flies north, up the coast of California. Their nesting season extends from early winter into spring, so numbers of this species in southern California peak in mid-summer. Heermann’s Gulls were invariably found roosting on the sand spit or the beach—this strictly coastal bird is rarely found more than a few meters inland. Up to 70 individuals were tallied during the 2005 surveys, almost all adults (juveniles arrive somewhat later in the summer); this species does not nest within the project area.

Elegant Tern. This CDFG Species of Special Concern is a post-breeding dispersant from large breeding colonies in western Mexico, particularly on desert islands in the Sea of Cortez. Rather than flying south for the winter after nesting like most temperate-zone migrants, this species actually flies north, up the coast of California. Their nesting season extends from early winter into spring, so numbers of this species in southern California peak in mid-summer. The elegant tern can be numerous at Malibu Lagoon, but during the 2005 surveys, only a handful were observed (except for 30 birds early morning on June 3, 2005); this species does not nest within the project area. This tern has recently colonized Los Angeles County as a breeder (Terminal Island; Cooper 2004), and it is possible that some of the birds observed are from these colonies.

California Least Tern. This federal and state endangered species was formerly a common nester on local beaches and is now confined to a handful of protected sites, mainly islands of dirt fill in harbors and bays. The California least tern winters at sea off the west coast of Mexico and Central America. On July 13–14, 2005, a large concentration (up to 42 birds) was present at Malibu Lagoon, roosting along the southern shore and foraging in the main body of the lagoon, with smaller numbers feeding in the west basin. On both days, a total of 14 hatch-year birds were present with adults, many of which were banded. It is likely these were birds from a colony near Terminal Island, Los Angeles Harbor, where several hundred birds were monitored and banded this year (Cooper 2005).

Impacts and Mitigation Measures

Thresholds of Significance

Criteria or thresholds for determining the significance of an impact are presented in the following sections to clarify and quantify, to the extent feasible, at what point an impact to a biological resource is considered significant.
The significance of impacts to flora and fauna observed or expected at the site was determined based on the sensitivity of the resource and the extent of the impact. Sensitive species are defined by State CEQA Guidelines § 15380 as species that are listed by either the state or federal government as endangered, rare, or threatened. This section goes on to state that species need not be officially listed by the state or federal government to be considered sensitive. This is an ecological restoration where resource protection is the highest priority. Therefore, for the purposes of this analysis, sensitive species are those that are recognized by a government agency or conservation or scientific group as being depleted, potentially depleted, declining, rare, locally endemic, endangered, or threatened.

Also included are any species nominated for, or placed on a state or federal rare, endangered, or threatened species list. Habitats supporting species listed as rare, endangered, or threatened by the agencies that enforce the California Endangered Species Act (CESA) or Federal Endangered Species Act (FESA) are also regarded as sensitive resources.

According to Appendix G of the State CEQA Guidelines, a project would normally have a significant effect on a biological resource if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFG or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to marsh, riparian scrub, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.
Impacts and Mitigation Measures

Potential impacts to the various biological resources described in the previous pages are discussed below. For those resources that could potentially be significantly impacted, mitigation measures are identified that will result in avoidance of the impact, or reduction of the impact to a less-than-significant level.

As final construction-level plans have not yet been completed, quantifying effects to individual vegetation communities and species is not feasible. For purposes of this EIR, worst-case scenario estimates are being used to assess potential impacts. However, by combining the existing mapped vegetative communities into fewer more general modeled habitat classes, an accurate estimate of changes in wetland habitat area is possible.

Tables 6-3 and 6-4 indicate changes in acreages for each modeled habitat class under both open (Table 6-3) and closed (Table 6-4) lagoon conditions. As shown, total wetland habitat will increase from approximately 28 acres to approximately 30 acres (6.54% actual increase). Thus, while it is not known with certainty the extent that individual vegetation species may be temporarily disturbed, reduced in population, or increased in population, the overall wetland habitat will be increased and long-term beneficial impacts will result.

A detailed planting plan will be developed during the final design stage of the project. This plan will estimate how much of each species will be planted. However, as natural processes are favored, natural recruitment of vegetation and subsequent succession will play a large part in the eventual species composition in the wetland habitat.
Table 6-3. Entire Lagoon: Open Conditions at Water Level of 1 Foot below MSL

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Existing (acres)</th>
<th>With Project (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtidal Gravel/Sand Bar</td>
<td>0.13</td>
<td>0.00</td>
</tr>
<tr>
<td>Intertidal Gravel/Sand Bar</td>
<td>12.55</td>
<td>10.25</td>
</tr>
<tr>
<td>Sand Beach</td>
<td>1.95</td>
<td>4.45</td>
</tr>
<tr>
<td>Subtidal Softbottom</td>
<td>0.51</td>
<td>0.29</td>
</tr>
<tr>
<td>Mudflat*</td>
<td>4.77</td>
<td>5.59</td>
</tr>
<tr>
<td>Marsh*</td>
<td>0.98</td>
<td>5.08</td>
</tr>
<tr>
<td>Alkali Meadow</td>
<td>4.95</td>
<td>3.28</td>
</tr>
<tr>
<td>Riparian</td>
<td>1.97</td>
<td>0.41</td>
</tr>
<tr>
<td>Impounded Brackish Pond**</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Wetland Habitat</strong></td>
<td><strong>27.81</strong></td>
<td><strong>29.63</strong></td>
</tr>
<tr>
<td>Coastal Dune/Bluff Scrub</td>
<td>1.32</td>
<td>1.22</td>
</tr>
<tr>
<td>Uplands/Non-Native Grassland</td>
<td>0.54</td>
<td>1.09</td>
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<tr>
<td>Roads/Parking/Disturbed/Trails</td>
<td>2.03</td>
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<td>Turf &amp; Ornamental</td>
<td>0.89</td>
<td>0.54</td>
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<tr>
<td><strong>Non-wetland habitat</strong></td>
<td><strong>4.78</strong></td>
<td><strong>3.25</strong></td>
</tr>
<tr>
<td><strong>Total Area</strong></td>
<td><strong>32.59</strong></td>
<td><strong>32.59</strong></td>
</tr>
<tr>
<td><strong>Wetland change from existing</strong></td>
<td><strong>0.00%</strong></td>
<td><strong>6.54%</strong></td>
</tr>
</tbody>
</table>

* Acreage values should be viewed as a total habitat estimate for a complex of mudflat/marsh.

** Impounded brackish pond is the closed lagoon alternate state for habitats below the 5-foot MSL elevation.

Table 6-4. Entire Lagoon: Closed Conditions at Water Level of 5 Feet above MSL

<table>
<thead>
<tr>
<th>Habitat Type</th>
<th>Existing (acres)</th>
<th>With Project (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtidal Gravel/Sand Bar</td>
<td>Submerged</td>
<td>Submerged</td>
</tr>
<tr>
<td>Intertidal Gravel/Sand Bar</td>
<td>Submerged</td>
<td>Submerged</td>
</tr>
<tr>
<td>Sand Beach</td>
<td>Submerged</td>
<td>Submerged</td>
</tr>
<tr>
<td>Subtidal Softbottom</td>
<td>Submerged</td>
<td>Submerged</td>
</tr>
<tr>
<td>Mudflat</td>
<td>Submerged</td>
<td>Submerged</td>
</tr>
<tr>
<td>Marsh</td>
<td>Submerged</td>
<td>Submerged</td>
</tr>
<tr>
<td>Alkali Meadow</td>
<td>4.95</td>
<td>3.28</td>
</tr>
<tr>
<td>Riparian</td>
<td>1.97</td>
<td>0.41</td>
</tr>
<tr>
<td>Impounded Brackish Pond*</td>
<td>20.89</td>
<td>25.95</td>
</tr>
<tr>
<td>Wetland Habitat</td>
<td><strong>27.81</strong></td>
<td><strong>29.63</strong></td>
</tr>
<tr>
<td>Coastal Dune/Bluff Scrub</td>
<td>1.32</td>
<td>1.25</td>
</tr>
<tr>
<td>Uplands/Non-Native Grassland</td>
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<td>0.58</td>
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<td>Roads/Parking/Disturbed/Trails</td>
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<tr>
<td>Turf &amp; Ornamental</td>
<td>0.89</td>
<td>0.00</td>
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<tr>
<td>Non-wetland habitat</td>
<td><strong>4.78</strong></td>
<td><strong>3.25</strong></td>
</tr>
<tr>
<td>Total Area</td>
<td><strong>32.59</strong></td>
<td><strong>32.59</strong></td>
</tr>
<tr>
<td>Wetland change from existing</td>
<td>0.00%</td>
<td><strong>6.54%</strong></td>
</tr>
</tbody>
</table>

* Impounded brackish pond is the closed lagoon alternate state for habitats below the 5-foot MSL elevation.

Impact BIO-1: Implementation of the project (i.e., changes to the lagoon configuration, improvements to slopes, etc.) would remove southern willow scrub vegetation.

The project would result in impacts to southern willow scrub. Impacts to this riparian habitat, which falls under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, at least a portion of this plant community is being sustained by artificial freshwater inputs such as supplemental irrigation associated with plantings from past restoration efforts and surface runoff from the parking lot and PCH. Furthermore, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated riparian vegetation.

While post-project acreages of southern willow scrub may be reduced from identified pre-project acreages, post-project acreages of wetland habitat would be increased and the functions and values of the biological resources within the lagoon, including riparian vegetation and USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to southern willow scrub are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

Impact BIO-2: Implementation of the project would remove atriplex scrub vegetation.

The project would result in impacts to atriplex scrub. Impacts to this riparian habitat, which falls under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, this plant community contains Swamp saltbush (Atriplex amnicola) which is native to Australia and is known to be invasive in wetlands once it is established. It is not known for sure whether or not this species was mistakenly included into restoration plantings as an
endemic, or if it subsequentialy colonized the area after restoration plantings were installed. Either way, its presence is undesirable. Furthermore, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated riparian vegetation.

While post-project acreages of atriplex scrub may be reduced from identified pre-project acreages, post-project acreages of wetland habitat would be increased and the functions and values of the biological resources within the lagoon, including riparian vegetation and USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to atriplex scrub are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

**Impact BIO-3: Implementation of the project would remove baccharis scrub.**

The project would result in impacts to baccharis scrub. Impacts to this upland habitat may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and surrounding upland vegetation.

While post-project acreages of baccharis scrub may be reduced from identified pre-project acreages, this outcome is consistent with project goals. Much of the upland vegetation in the lagoon is supported now by artificially raised elevations in the lagoon area from a previous land use as a fill disposal site by Cal Trans. Although some of this fill was removed during a previous restoration effort, much still remains. It is anticipated that when these elevations are lowered to a more historically accurate level by removing additional fill, much of the area currently supporting upland vegetation will revert to wetland species more suited to lower elevations typical in an undisturbed lagoon system. Therefore, impacts to baccharis scrub are considered less than significant. No mitigation is required.

**Impact BIO-4: Implementation of the project would remove mule fat scrub.**

The project would result in impacts to mule fat scrub. Impacts to this riparian habitat, which falls under the jurisdiction of the
USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, at least a portion of this plant community is being sustained by artificial freshwater inputs such as supplemental irrigation associated with plantings from past restoration efforts and surface runoff from the parking lot and PCH. Furthermore, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated wetland habitat.

While post-project acreages of mule fat scrub may be reduced from identified pre-project acreages, post-project acreages of wetland habitat would be increased and the functions and values of the biological resources within the lagoon, including USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to mule fat scrub are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

**Impact BIO-5: Implementation of the project would remove Venturan coastal sage scrub.**

The project would result in impacts to Venturan coastal sage scrub. Impacts to this upland habitat may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its wetland habitat.

While post-project acreages of Venturan coastal sage scrub may be reduced from identified pre-project acreages, this outcome is consistent with project goals. Much of the upland vegetation in the lagoon is supported now by artificially raised elevations in the lagoon area from a previous land use as a fill disposal site by Cal Trans. Although some of this fill was removed during a previous restoration effort, much still remains. It is anticipated that when these elevations are lowered to a more historically accurate level by removing additional fill, much of the area currently supporting upland vegetation will revert to wetland species more suited to lower elevations typical in an undisturbed lagoon system. Therefore, impacts to Venturan coastal sage scrub are considered less than significant. No mitigation is required.
Impact BIO-6: Implementation of the project would remove mixed scrub.

The project would result in impacts to mixed scrub. Areas that were classified as mixed scrub did not show any one dominant habitat type. Rather they consisted of a mosaic of opportunistic plant species from several different habitat types. Impacts to mixed scrub are considered less than significant since it is not well defined as an intact plant community. No mitigation is required.

Impact BIO-7: Implementation of the project would remove southern coastal salt marsh.

The project would result in impacts to southern coastal salt marsh. Impacts to this riparian habitat, which falls under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated wetland habitat.

While post-project acreages of southern coastal salt marsh may be reduced from identified pre-project acreages, post-project acreages of wetland habitat would be increased and the functions and values of the biological resources within the lagoon, including USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to southern coastal salt marsh are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

Impact BIO-8: Implementation of the project would remove brackish marsh.

The project would result in impacts to brackish marsh. Impacts to this riparian habitat, which falls under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.
However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated wetland habitat.

While post-project acreages of brackish marsh may be reduced from identified pre-project acreages, total post-project acreages of wetland habitats would be increased and the functions and values of the biological resources within the lagoon, including USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to brackish marsh are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

Impact BIO-9: Implementation of the project would remove coastal and valley freshwater marsh.

The project would result in impacts to coastal and valley freshwater marsh. Impacts to this riparian habitat, which falls under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, at least a portion of this plant community is being sustained by artificial freshwater inputs such as supplemental irrigation associated with plantings from past restoration efforts and surface runoff from the parking lot and PCH. Furthermore, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated wetland habitat.

While post-project acreages of coastal and valley freshwater marsh may be reduced from identified pre-project acreages, total post-project acreages of wetland habitat would be increased and the functions and values of the biological resources within the lagoon, including USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to coastal and valley freshwater marsh are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.
Impact BIO-10: Implementation of the project would remove southern sycamore-alder riparian woodland.

The project would result in impacts to southern sycamore-alder riparian woodland. Impacts to this riparian habitat, which falls under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, this plant community was installed as a landscape element for the parking lot and interpretive lawn area in the 1980’s and is supported by fresh water irrigation as well as surface runoff from the existing parking lot. This landscape element lacks herbaceous riparian under story that one might expect in a more natural southern sycamore-alder riparian woodland and it is unlikely that it would persist in a more natural water regime that is driven by natural lagoon processes rather than by artificial freshwater inputs such as supplemental irrigation and surface runoff.

In addition, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated riparian vegetation. While post-project acreages of southern sycamore-alder riparian woodland may be reduced from identified pre-project acreages, post-project acreages of wetland habitat would be increased and the functions and values of the biological resources within the lagoon, including riparian vegetation and USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project.

Therefore, impacts to southern sycamore-alder riparian woodland are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

Impact BIO-11: Implementation of the project would remove non-native grassland.

The project would result in impacts to non-native grassland. This vegetation community is comprised of undesirable non-native plant species that are considered invasive. It is anticipated that post-project acreages of non-native grassland would be decreased from identified pre-project acreages. This outcome is consistent with project goals to improve the integrity of appropriate native plant communities and to eliminate non-native vegetation within the lagoon area. Therefore,
impacts to non-native grassland are considered less than significant. No mitigation is required.

**Impact BIO-12: Post-construction acreage of marsh and mudflat would increase.**

The project would result in an increase in marsh and mudflat acreage (see Table 6-3) and thus a beneficial impact. These increases are the most substantial component of the overall increase in wetland habitat. Beneficial impacts would result and no mitigation is necessary.

**Impact BIO-13: Implementation of the project would impact sand beach/sand bar.**

The project would result in impacts to sand beach/sand bar. Impacts to areas classified as sand beach/sand bar, which fall under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated riparian vegetation. It is anticipated that post-project acreages of sand beach/sand bar would be increased from identified pre-project acreages. In addition, the functions and values of the biological resources within the Lagoon would be improved as a result of implementation of the project.

Therefore, impacts to sand beach/sand bar are considered less than significant. No mitigation is required. However, permits and/or approvals from the USACE/RWQCB, CDFG, and the CCC would be required for impacts to resources under their jurisdiction.

**Impact BIO-14: Implementation of the project would impact open water.**

The project would result in impacts to open water. Impacts to areas classified as open water, which fall under the jurisdiction of the USACE/RWQCB, CDFG, and CCC, may have a short-term adverse effect on a sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or the USFWS. These impacts may have a short-term adverse effect on federally protected wetlands as defined by Section 404 of the CWA.
However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated riparian vegetation. Post-project acreages of open water would likely be increased from identified pre-project acreages. In addition, the functions and values of the biological resources within the lagoon, including riparian vegetation and USACE/RWQCB, CDFG, and CCC jurisdictional resources, would be improved as a result of implementation of the project. Therefore, impacts to open water are considered less than significant. No mitigation is required.

**Impact BIO-15: Implementation of the project could result in impacts to common wildlife species found to occur in the project area.**

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to common wildlife species (i.e., birds, fish, mammals, reptiles, amphibians, and invertebrates) found to occur in the project area. Temporary disturbances to wildlife species and habitat due to construction would be adverse, but are less than significant given the temporary and intermittent nature of the impact. No mitigation is required.

**Impact BIO-16: Implementation of the project could result in impacts to California black walnut.**

The project, through direct or indirect impacts, could result in the loss of California black walnut trees. Impacts to this species could have an adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS. However, impacts to this species would not be considered significant as the individual black walnuts observed in the southern sycamore-alder riparian woodland during the 2004 vegetation mapping (Merkel 2004) do not represent a significant population of this CNPS List 4 species.

**Impact BIO-17: Implementation of the project could result in impacts to the wandering (salt marsh) skipper.**

The project, through direct impacts and/or temporary loss of habitat (and host plants), could result in impacts to the wandering (salt marsh) skipper. Impacts to this species would have a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS. However, impacts to this species would not be considered
significant as direct impacts are anticipated to be minimal and as pre-and post-project acreages of suitable habitat for this species would be similar if not identical.

Impact BIO-18: Implementation of the project could result in impacts to southern steelhead trout.

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to southern steelhead trout. Impacts to this species would have a short-term adverse effect on a species identified as a candidate, sensitive, or special status species on local or regional plans, policies or regulations, or by the CDFG, USFWS, or NOAA/NMFS. Impacts to this species may temporarily interfere with the movement of a native resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors.

The project has been designed to ensure that seasonal lagoon openings be maintained to allow interchange of steelhead with coastal waters. Therefore, the project would not effect a detectible change on the suitability of the lagoon to support steelhead migration. Improvements to lagoon water quality, particularly improved dissolved oxygen levels may provide some increased availability of habitat for steelhead juveniles; however, it is not anticipated that lower portions of the lagoon would be used differently by steelhead following enhancement. Therefore, impacts are not significant and mitigation is not required. However, potential direct impacts to this species may be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-1: Southern Steelhead Trout.

- Construction and lagoon excavation may occur during steelhead migration. In order to avoid direct impacts to steelhead, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature.

- In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of
similar tools. In the event that water must be pumped from these areas during construction, it shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. Fish salvage efforts shall be conducted for any surface water that must be separated from the main lagoon. After construction the area shall be re-flooded in a manner that minimizes disturbance of the lagoon salinity stratification and substrate, and the release of sediment.

- Re-inundation of the western lagoon may provide refuge areas for fish during construction activities in the main lagoon. Block netting and barriers shall be used to exclude adult gobies, migratory steelhead, and other fish from the work areas. On-site monitoring by a USFWS approved fisheries biologist would be conducted during any channel or bank disturbance. Pages 100-101 of the Final Alternatives Analysis prepared by Moffatt and Nichol (March 2005) outlines a possible construction sequence in more detail that incorporates several of these ideas.

**Impact BIO-19: Implementation of the project would result in impacts to the tidewater goby.**

The project, through direct impacts and/or temporary loss of habitat, would result in impacts to the tidewater goby. Impacts to this species would have a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS. Impacts to this species may temporarily interfere with the movement of a native resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors.

The project, while not specifically designed to improve tidewater goby habitat, was designed to ensure that no significant impact would occur to the main lagoon goby habitat due to implementation of the project and was designed to benefit gobies within the more protected refugia habitats away from the main lagoon.

Therefore, temporary loss of suitable habitat for this species is not considered significant and no mitigation is required. However, potential direct impacts to this species may be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-2: Tidewater Goby.**

- Construction of the restoration project shall be timed to minimize disturbance of the western shoreline of the main lagoon when larval tidewater gobies are using the near-shore
habitat. In order to avoid direct impacts to gobies, wetland excavation shall occur such that grading activity and equipment are separated from surface connections to the existing lagoon by earthen berms. Groundwater that may accumulate in these excavated areas shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature.

- In certain circumstances, physical or biological constraints may make it infeasible for excavations to be separated by earthen berms from the main body of the existing lagoon. In these situations, impacts to gobies shall be avoided by separating construction activity from the main lagoon by the temporary placement of a cofferdam wall, silt curtains and block nets, or a combination of similar tools. In the event that water must be removed from these areas during construction, it shall be returned to the lagoon, via pump, in a manner that eliminates sediment and the potential to disturb lagoon salinity stratification, substrate, and temperature. Fish salvage efforts shall be conducted for any surface water that must be separated from the main lagoon. After construction the area shall be re-flooded in a manner that minimizes disturbance of the lagoon salinity stratification and substrate, and the release of sediment.

- Construction in the main lagoon shall occur outside of the May 1st-Nov 1st breeding season for the tidewater gobies. Re-inundation of the western lagoon may provide refuge areas for fish during construction activities in the main lagoon. Block netting shall be used to exclude adult gobies, migratory steelhead, and other fish from the work areas. On-site monitoring by a USFWS approved fisheries biologist would be conducted during any channel or bank disturbance. Pages 100-101 of the Final Alternatives Analysis prepared by Moffatt and Nichol (March 2005) outlines a possible construction sequence in more detail that incorporates many of these ideas.

Impact BIO-20: Implementation of the project could result in impacts to the California brown pelican.

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to the California Brown Pelican. Impacts to this species may result in a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the
lagoon and its associated vegetation communities. Moreover, no work will be done in the main lagoon channel that the Brown Pelican uses for roosting habitat - specifically the snags and high sand bar. Post-project acreages of suitable habitat for the California brown pelican would likely be similar, if not identical, to pre-project acreages.

Therefore, temporary loss of suitable habitat for this species is not considered significant and no mitigation is required. However, potential direct impacts to this species would be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-2: California Brown Pelican.**

On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.

**Impact BIO-21: Implementation of the project could result in impacts to the western snowy plover.**

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to the western snowy plover. Impacts to this species may result in a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated vegetation communities. Post-project acreages of suitable habitat for the western snowy plover would likely be similar, if not identical, to pre-project acreages.

Therefore, temporary loss of suitable habitat for this species is not considered significant and no mitigation is required. However, potential direct impacts to this species would be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-3: Western Snowy Plover.**

Schedule construction activities and ground disturbance in suitable/occupied habitat to avoid the western snowy plover breeding season from mid-March to August 30. On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.
Impact BIO-22: Implementation of the project could result in impacts to Heermann’s Gull.

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to Heermann’s gull. Impacts to this species may result in a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated vegetation communities. Moreover, no work will be done in the main lagoon channel that the Heermann’s Gull uses for roosting habitat - specifically the snags and high sand bar. The project will also create protected islands, providing additional habitat for this species. Post-project acreages of suitable habitat for Heermann’s gull would likely be similar, if not identical, to pre-project acreages.

Therefore, temporary loss of suitable habitat for this species is not considered significant and no mitigation is required. However, potential direct impacts to this species would be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

Mitigation Measure BIO-4: Heermann’s Gull.

On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.

Impact BIO-23: Implementation of the project could result in impacts to the elegant tern.

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to the elegant tern. Impacts to this species may result in a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated vegetation communities. Moreover, no work will be done in the main lagoon channel that the elegant tern uses for roosting habitat - specifically the snags and high sand bar. The project will also create protected islands, providing additional habitat for this species. Post-project acreages of suitable habitat for the elegant tern would likely be similar, if not identical, to pre-project acreages.
Therefore, temporary loss of suitable habitat for this species is not considered significant and no mitigation is required. However, potential direct impacts to this species would be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-5: Elegant Tern.**

On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.

**Impact BIO-24: Implementation of the project could result in impacts to the California least tern.**

The project, through direct impacts and/or temporary loss of habitat, could result in impacts to the California least tern. Impacts to this species may result in a short-term adverse effect on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFG or the USFWS.

However, the project involves the restoration of the lagoon, which would include replanting of native species, removal of non-native species, and ongoing monitoring, and as such would result in long-term benefits to the lagoon and its associated vegetation communities. Moreover, no work will be done in the main lagoon channel that the least tern uses for roosting habitat - specifically the snags and high sand bar. The project will also create protected islands, providing additional habitat for this species. Post-project acreages of suitable habitat for the California least tern would likely be similar, if not identical, to pre-project acreages.

Therefore, temporary loss of suitable habitat for this species is not considered significant and no mitigation is required. However, potential direct impacts to this species would be significant. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level.

**Mitigation Measure BIO-6: California Least Tern.**

Schedule construction activities and ground disturbance to avoid the California least tern breeding season and post-breeding season foraging (July to August). On-site monitoring by a USFWS-approved biologist shall be conducted during any disturbance within suitable/occupied habitat for this species.
Post-construction Impacts and Mitigation Measures

Long-term components of the proposed project include the following:

1. Water Management Plan
   a. A water management plan is incorporated into the project to manage drainage from the parking lot and public use areas to restored habitat areas. It includes Best Management Practices (BMPs) to enhance water quality in the lagoon.
   b. Circulation of water within the lagoon will be closely monitored and evaluated. The Water Management Plan includes performance criteria and adaptive management options so the plan can be revised if needed to ensure long-term restoration integrity and success.

2. Habitat Plan
   a. A detailed habitat enhancement and management plan has been incorporated into the project to specify implementation practices and maintenance requirements. The Habitat Plan defines vegetative communities that will be established or enhanced as part of the restoration process. This plan addresses the establishment or enhancement of rare, endangered and regionally uncommon plants and animals that are appropriate for this site and uses an adaptive management framework to ensure long-term restoration integrity and success.

   a. A detailed monitoring plan has been incorporated into the project to set out a project of field observations and monitoring to be undertaken prior to, during and following implementation. Specific monitoring tasks and decision-points are specified to feed into an adaptive management framework to ensure long-term restoration integrity and success. The Monitoring Plan includes habitat (flora and fauna), water quality (both open and closed conditions), sediment quality (sampling of grain size), and bathymetry (lagoon topography).

These plans would ensure that significant post-construction impacts do not occur as a result of implementation of the project. Therefore, additional mitigation is not required.
Chapter 7

Cultural Resources

Setting

Environmental Setting

Malibu Lagoon is located at the mouth of Malibu Creek, with the majority of the project area consisting of low-lying islands and tidal marsh surrounded by waters of the lagoon and creek. The Pacific lies to the south. Broad low lying delta sediments lie to the west of the project area, and it is probable that the lagoon has migrated within this delta setting over time. Elevation in the project area ranges from sea level to just above 25 feet above mean sea level. Slightly elevated beach front land exists along the eastern and western edges of the lagoon, and these areas have been available for human occupation and use—such as the Adamson House, situated at a little over 25 feet AMSL on the east side of the lagoon.

Historically, the lagoon extended beyond its current boundaries, but a significant portion of the once low-lying areas near the mouth of Malibu Creek were filled in the 1940s and 1950s. As a result of urban encroachments, the lagoon as we see it today is a very small portion of its historic area. The PCH Bridge has dissected and constricted the lagoon surface area. By the 1970s the project site was completely filled and was covered by two baseball fields. Soils occurring within and surrounding the lagoon are typical of a coastal valley floor alluvial landform and include Elder sandy loam, Sorrento loam, riverwash, and coastal beach.

Vegetation within the project area consists of various types of coastal scrub, and salt, brackish and freshwater marsh habitats, with many non-native and ruderal species. Malibu Lagoon supports numerous bird and invertebrate species. Lagoon habitats do not support many mammal or reptile species; however, fish are resident within the lagoon, and sea mammals also may have been present prior to extensive development (Merkel & Associates 2004).
In the past, several restoration efforts have been made. In 1983, the DPR initiated a restoration of the lagoon, which involved the excavation of three channels seeded with salt marsh plants. A series of boardwalks were created to allow for public access. In 1996, Caltrans funded a restoration plan to mitigate for impacts incurred during the Malibu Lagoon/PCH Bridge Replacement Project.

Cultural Setting

The following sections provide a context for human occupation and use of Malibu Lagoon. Discussion of the historic period occupation of Rancho Malibu and parts of the Chumash ethnography presented here are summarized from that presented in “The History of Malibu” (Malibu Lagoon Museum 2005).

Prehistoric Setting

California was first occupied prehistorically about 12,000 years (Moratto 1984). Archaeological research indicates that human populations extensively occupied the coastal regions of California more than 9,000 years ago (Padre Associates 2002). Research in the region occupied by the Chumash has produced a generally agreed on chronology (King 1990). This chronology is described briefly below.

Early Period (ca 8000 to 3350 B.P. [6000 to 1150 B.C.])

The Early Period has been divided into three phases, X, Y, and Z, with a gap between the X and Y phases. Early Period settlements appear to be residential base camps, and are usually located on hilltops or knolls.

The X Phase extends from 8000 B.P. to 7000 B.P. This phase is characterized by the use of large flake and core tools, millingstones and manos, combined with a lack of bone and shell tools, and ornamentation. Millingstones indicate grinding of hard seeds, probably gathered from sage plants.

Between 7000 B. P. and 5500 B.P., little is known about the region due to a lack of sites dating to this time period. This corresponds in time to the peak of the Xerothermic, a warm, dry climatic episode in the western United States (Axelrod 1981).

During the subsequent Y and Z phases, sites are once again present in the area. Mortars and pestles, appear at the beginning of Phase Y, indicating the addition of acorn processing to the subsistence base.
Middle Period (3350 to 800 B.P. [1150 B.C. to A.D. 1200])

The Middle Period is characterized by a shift in subsistence practices, with a more generalized hunting-maritime-gathering adaptation replacing a focus on plant gathering and the use of hard seeds. The predominance of the mortar and pestle among milling tools indicates increased exploitation and dependence on acorns (Glassow and Wilcoxon 1988). Social aspects that develop during this period, as evidenced by mortuary data, include inherited leadership, status differentiation, and religious specialization.

Villages of this period were permanently occupied and some satellite sites became differentiated in size and purpose. Middle Period sites are distinguishable into sub-phases by different types of bead and projectile points along with other diagnostic artifacts. Middle Period sites tend to be small and often contain artifacts that are lighter and more portable than those from earlier sites (Padre Associates 2002).

Late Period (850 to 150 B.P. [AD 1200 to AD 1800])

The full development of Chumash culture, one of the most socially and economically complex hunting and gathering groups in North America, occurred during the Late Period (Arnold 1987). This period is marked by a dramatic increase in population along the southern California coast. The development of a highly effective maritime subsistence pattern utilizing exploitation of fish, shellfish, sea mammals, and waterfowl enabled villages of nearly 1,000 individuals to develop. These were the most populous aboriginal settlements west of the Mississippi River (Morrato 1984). These Chumash villages, also known as rancherias, were usually situated near the confluence of several watercourses or at ecotones. Permanent inland settlements subsisted on variety of resources including acorns, seed plants, rabbits, and deer. The smaller inland villages were economically allied with the larger coastal villages (Padre Associates 2002).

Ethnographic Setting

Malibu Lagoon is situated within the territory of the Chumash Native American group. The Chumash occupied the region from San Luis Obispo to Malibu Canyon on the coast, the four northern Channel Islands, and inland as far as the western edge of the San Joaquin Valley (Grant 1978). The Chumash are subdivided into subgroups based on six distinct language dialects: Barbareno, Ventureno, Purisimeno, Ynezeno, Obispeno, and Island. The project area is situated within the territory of the Ventureno, a Coastal Chumash group (Grant 1978). The name is derived from the nearest mission, San Buenaventura. A Chumash village, Humaliwo, was located beyond the northeastern side of the lagoon on a small rise overlooking the lagoon and the ocean. This is now the site of the Adamson House.
The Chumash were very advanced in their culture, social organization, religious beliefs, and art and material object production (Morrato 1984). Class differentiation, inherited chieftainship, and intervillage alliances were all components of Chumash society. They were excellent craftsmen, and were known for well-made tools, bowls, and baskets. Of note are bowls and carvings of killer whales and other forms of sea life and effigies made from steatite. Sometimes the bowls were inlaid with colorful abalone shells. Other implements were made of sandstone, including large bowls. Flint, chert, and obsidian were used to make projectile points, drills, scrapers, choppers, and knives.

Baskets made by the Chumash were outstanding in workmanship and design. Baskets were used for gathering of seeds, bulbs, and roots. Water was stored and carried in baskets waterproofed on the inside with naturally occurring tar, called asphaltum. Asphaltum was extensively used by the Chumash to caulk canoes, seal water baskets, attach shell inlay to bowls, and fasten arrow and spear points to shafts.

Fish hooks were made of abalone shell. The major use for the shell, however, was for decoration. It was lavishly inlaid on stone, bone, and wood. The surface to be decorated received a coating of asphalt onto which was pressed the shell inlay. Giant Pismo clams were used for beads and money. Many tiny drilled shell beads were manufactured, for use as decoration and a means of exchange.

Bone was used by the Chumash for many artifacts. It was extensively used for necklaces, especially as long tubular beads. Flutes and whistles were also made of bone, usually of deer tibia. Whalebone was used for many tasks including wedges to split wooden planks, and bars to pry abalone loose from coastal rocks. A notable technological achievement of the Chumash was the planked canoe. These were made of several planks sewn together at the seams with very strong twine and the joints sealed with asphaltum.

*Humaliwo* village was one of the most important Chumash villages along the coast. Extensive cultural remains are present at this site, as well as numerous human burials. The archaeological site CA-LAN-264 encompasses the village of *Humaliwo* as well as prehistoric components that date back at least 3000 years. Portions of the site may date as far back as 7000 years B.P. (Gamble et al 1995, 1996).

The site was originally recorded in 1959, and several excavations took place at the site in the 1960s and 1970s. The site consists of five components: an Early/Middle Period deposit, a Middle Period deposit, a Middle Period cemetery, a Late Period deposit, and an historic era cemetery. Numerous artifacts and other cultural materials have been collected from the site, which consists of an extensive shell midden. The site includes more than 200 burials, some with canoes. Some burials include numerous shell and glass beads, fish and whale effigies (Gamble et al 1995, 1996).
Historic Setting

The first recorded European activity at Malibu Lagoon occurred in 1542, when Spanish sailor Juan Cabrillo anchored there to obtain fresh water. Sailing northward up the California coast, he anchored on October 10th in the small bay at Malibu Lagoon, and claimed this landfall for the King of Spain. He stayed until October 13th, filling his water casks and naming this tranquil lagoon and beach in his log the "Pueblo de las Canoas" (Town of the Canoes), because of the many canoes which came to visit his ships from the adjacent village.

The first Franciscan mission in Chumash territory was built at San Luis Obispo in 1772. Four additional missions were built in this cultural area at San Buenaventura (1782), Santa Barbara (1786), La Purisima Concepcion (1787), and Santa Ynez (1804). Inhabitants of Humaliwo were recruited into these missions. By 1805, all native inhabitants of the village had been pressed into the Mission system, either at Mission San Fernando or Mission San Buenaventura, and Humaliwo was abandoned (Gamble et al 1995, 1996).

An expedition led by Spanish explorer Juan Bautista de Anza camped at Malibu Creek on February 22, 1776. One member of this expedition, Jose Bartolome Tapia, rode down the canyon to the beach, to explore the area. The Tapia family eventually settled in Northern California, where Jose Tapia became mayordomo of San Luis Obispo Mission Rancho. In 1800, Jose Tapia and his family returned to southern California and began farming near San Gabriel. Tapia then applied for a grant of the land he had seen in 1776, and due to his previous service in the army, was awarded an area of about 13,330 acres, named Rancho Topanga Malibu Sequit. Tapia lived with his wife and family on Vaquero Flats in Rancho Malibu raising cattle until his death on April 18, 1824. The widow of Jose Tapia owned the Rancho until 1848, when it was sold to Leon Victor Prudhomme, who had married her granddaughter Maria Tapia.

Prudhomme had acquired the property during the transition period between Mexican rule and United States administration of California. When the U.S. Land Commission began hearings in 1852, Prudhomme put in his claim for the Rancho Malibu. No documents could be produced actually proving the early-day grant of Malibu to Jose Tapia. A search of the Surveyor General's office in San Francisco proved futile, and in 1854 the Commissioners turned down Prudhomme's claim.

Prudhomme remained on the land although he did not have clear title. This was the era of the California gold rush, and the rancho's cattle brought high prices when driven north to the mining camps. By 1857, however, a panic and financial depression had hit California. Prudhomme was discouraged and sought a buyer for his rancho.

In 1857 Don Mateo Keller, born Matthew Keller in Ireland in 1811, paid the Prudhommes $1,400, or about 10 cents an acre, for the entire rancho.
With new evidence and better lawyers, Keller's claim to Rancho Malibu was confirmed on October 24, 1864. Matthew Keller died in 1881 and his son, Henry Keller, succeeded his father as owner of the Rancho.

In 1892 Frederick Hastings Rindge, a Harvard graduate who inherited two million dollars on his 29th birthday, bought the Rancho Topanga Malibu Sequit from Henry Keller. Rindge, a poet as well as a businessman, was drawn to the extraordinary setting of the rancho, which he described in his self-published book, *Happy Days in Southern California*. Rindge, his wife, May, and their three children resided in Santa Monica; Rindge became a prominent local businessman, as the founder of the Conservative Life Insurance Company (later Pacific Mutual), and the Los Angeles Edison Electric Company.

In 1903 Frederick Rindge began plans to construct a railroad on the Rancho Malibu, to be called the Hueneme, Malibu and Port Los Angeles Railway, in order to deter threats he believed stemmed from the Southern Pacific Railroad’s presence in Southern California. Before the work began, Rindge died suddenly in 1905. After his death, his widow May Rindge spent the next twenty-odd years building the railway and fighting the Southern Pacific. Although Mrs. Rindge prevented the railroad from crossing her ranch, she was unable to stop the State of California from constructing and opening the State Highway (now Pacific Coast Highway) in 1928.

Residential and commercial development in Malibu began in 1929, after the establishment of the State Highway. May Rindge, and later her daughter Rhoda Rindge Adamson, through their Marblehead Land Company gradually sold off parcels of the property that reduced the family’s land holdings to 4,000 acres by 1962. Four years later, the family’s holding company, the Adamson Companies, donated 138 acres to Pepperdine University.

The Adamsons built a beach house in 1929 on land given to them by May Rindge. The site, on the south side of the lagoon within the project area, was called Vaquero Hill because a cowboy shack once stood there. They used the home as a beach house maintaining their permanent home in the Hancock Park area of Los Angeles from 1924 to 1936. In 1936 the beach home became their permanent residence.

After the death of Rhoda Rindge Adamson in 1962, State Parks worked with the Adamson descendents to acquire the property due to their ownership of the popular Surfrider Beach located just to the north. State Parks acquired the Adamson House in 1968. State Parks staff recognized the unique architectural and archaeological significance of the property as well as the challenges for long-term maintenance of the house, buildings, and grounds. With support from the newly formed Malibu Historical Society, the historical significance of the house and grounds were recognized. In 1977 the Society’s efforts got the property successfully placed on the National Register of Historic Places. The house, boat house, landscape features, and manicured grounds
surrounding the property are all considered contributing elements of the historic property. The House is also listed as California Historical Landmark No. 966. The Adamson House currently is home to the Malibu Lagoon Museum.

**Regulatory Framework**

**California Environmental Quality Act**

According to CEQA (Public Resources Code [PRC], Section 21084.1), historical resources include any resource listed, or determined to be eligible for listing, in the California Register of Historical Resources (California Register). Properties listed in or determined eligible for listing in the National Register, such as those identified in the Section 106 process, are automatically listed in the California Register. Therefore, all “historic properties” under federal preservation law are automatically “historical resources” under state preservation law (see PRC 5024 below). Historical resources are also presumed to be significant if they are included in a local register of historical resources or identified as significant in a qualified historical resource survey.

As defined under state law in Title 14 CCR §4850, the term “historical resource” means “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or which is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural history of California.” Architectural resources generally include man-made features that compose the recognizable, built environment. This category typically includes extant, aboveground buildings and structures that date from the earliest European colonial settlements until the present day.

For the purposes of CEQA, “historical resource” is further defined under PRC §15064.5 as a “resource listed in, or determined eligible for listing in the California Register.” Section 15064.5 of the State CEQA Guidelines sets forth the criteria and procedures for determining significant historical resources and the potential effects of a project on such resources.

Generally, a cultural resource shall be considered by the lead state agency to be “historically significant” if the resource meets any of the criteria for listing on the California Register, including the following:

- the resource is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- the resource is associated with the lives of persons important in our past;
the resource embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values; or

- the resource has yielded, or may be likely to yield, information important in prehistory or history.

The cited statutes and guidelines specify how cultural resources are to be managed in the context of projects such as the proposed Project. Briefly, archival research and field surveys must be conducted, and identified cultural resources must be inventoried and evaluated in prescribed ways.

**California Health and Safety Code**

Human remains are sometimes found in isolation or associated with archaeological sites. According to CEQA, “archaeological sites known to contain human remains shall be treated in accordance with the provisions of State Health and Safety Code Section 7050.5.” The protection of human remains is also ensured by California Public Resources Codes, Section 5097.94, 5097.98, and 5097.99.

If human remains are exposed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code 5097.98. Construction must halt in the area of the discovery of human remains, the project proponent must assure that the area is protected, and consultation and treatment shall occur as prescribed by law.

**California State Parks Policy Under PRC 5024**

PRC 5024(a) requires each state agency “to formulate policies to preserve and maintain, when prudent and feasible, all state-owned historical resources under its jurisdiction.” PRC 5024.5 mandates that each state agency assure that its actions do not adversely impact significant resources without consultation with the SHPO.

DPR’s obligation to “administer the cultural and historic properties under its control in a spirit of stewardship and trusteeship for future generations” is also set out in Executive Order W-26-92, issued by the Governor on April 8, 1992. The Executive Order mandates that all state agencies establish policies, plans and programs in such a way that historical resources are protected, that they ensure that such resources are given full consideration in planning decisions, and that they institute procedures to these ends in consultation with the SHPO.

The Department’s procedures and policies are established to meet DPR’s responsibilities under the above mentioned laws. They are implemented through a Memorandum of Understanding (MOU) with the SHPO. The MOU delegates to DPR for the SHPO’s regular oversight responsibilities.
for projects that might affect historical resources under State Parks ownership and purview. These procedures define that internal review process, its limitations, and its articulation with other laws and standards. Practical and effective performance under the procedures is the mandated prerequisite for this delegation to DPR.

Study Methods

Record Search and Literature Review

Lists from various national, state, and local agencies were consulted for identification of resources of known architectural or historical importance within the study area. These lists included the National Register, California Historical Landmarks, California Points of Historic Interest, State Office of Historic Preservation Historic Resources Inventory, and the City of Los Angeles List of Historic-Cultural Monuments, and a review of Gebhard and Winter’s Los Angeles: An Architectural Guide.

Additional information was obtained as a result of the records search performed on November 10, 2005, by the South Central Coastal Information Center at California State University, Fullerton. The results indicated that 16 archaeological sites, 15 prehistoric and one historic, have been recorded within a mile of the project area. One of these, the Humaliwo village site, CA-LAN-264, is partially within the project area, on the northeast side of the lagoon. This Chumash village site is listed on the National Register of Historic Places. Ninety-three previous archaeological investigations have taken place within a mile of the project area; of these 20 are located within the project area.

A copy of the 1903 15-minute Calabasas topographic map, as well as depicting a larger extent of the lagoon to the west, also shows four structures on the northeastern edge of the lagoon, in the area that would become the Adamson estate. These are presumably the “cowboy shacks” and associated buildings that stood at the edge of the sea prior to the construction of the Adamson House.

Native American Consultation

It is the policy of DPR to maintain open communication and ongoing consultation with Native American groups in California. DPR recognizes its special responsibility as the steward of many sites of cultural significance to living Native peoples in California. Therefore, in promulgating its policies and implementing projects that may have significant impacts to Native American sites within the State Park System, DPR actively consults with Native American groups.

The Native American Heritage Commission (NAHC) was contacted regarding the project in October and November 2005. A reply from the
NAHC on November 10, 2005 indicated that no sacred lands are recorded in the Sacred Lands files. The NAHC also provided a list of Native American groups and individuals who might have knowledge of cultural resources in the project area. Twelve of these groups and individuals were contacted by letter on November 22, 2005. Two replies were received, both by telephone. Both Native American individuals indicated that CA-LAN-264 was a very sensitive resource, and requested continued contact regarding the project, and Native American monitoring at the site area during project construction. One Native American individual indicated they may have re-buried human remains at the Humaliwo, and requested a walkover tour of the project area to ascertain if this memory is correct. This individual indicated that forms that should have been filed with the NAHC regarding reburial may not have been files, thus the negative results of the NAHC review of the Sacred Lands file.

Efforts will continue to contact the remaining 10 individuals on the list provided by the NAHC. Follow-up calls will be conducted by a State Parks archaeologist or designee, and consultation will continue as long as designated Native American individuals or groups request it.

Field Surveys

A field survey to identify historical and architectural resources that may be affected by the proposed project was undertaken by professionals meeting the Secretary of the Interior’s Professional Qualifications Standards (48 FR 44738-9). The survey applied National and California Register criteria to previously documented historic and architectural resources and to all newly identified buildings more than 50 years of age within the study area. It must be noted that the project area extends only to the edge of Malibu Lagoon, and thus CA-LAN-264 as mapped (Dillon 1987) and the Adamson House and grounds are not within the project site. Final construction plans will be designed to avoid effects to landscape features of the Adamson House and grounds, and to avoid the known area of CA-LAN-264.

A reconnaissance survey—an unsystematic walkover of the project area based on surface visibility—was used in an attempt to identify prehistoric and historical archaeological resources. The vast majority of the project site is under water, and the muddy lagoon edges were surveyed only as feasible. This walkover was conducted on November 5, 2005. Because of dense vegetation in the project area, surface visibility was very limited. Modern development in the project area, e.g., roads, parking lots, lawns, also obscured visibility, and due to these factors a systematic survey was not conducted.

Flower beds, eroded areas, and other open areas west of the Adamson House, which are outside of the project site, were also examined. Black, sandy soil was observed in these areas, which are mapped as part of the midden deposits for Humaliwo. No evidence was observed of the
remains of the structures present in the area prior to construction of the Adamson House.

Study Findings

Archaeological Resources Identified

No prehistoric or historical archaeological resources were observed during a pedestrian walk over of the project area. One National Register listed site, CA-LAN-264, Humaliwo, is located adjacent to the project area at the site of the Adamson House. The Malibu site has been excavated several times in the past, particularly by UCLA teams in the 1960s and 1970s. The site lies on the east side of Malibu Lagoon, encompassing the Adamson House location, part of the Surfrider Beach parking lot, and an area north of PCH.

Within the grounds of the Adamson House, archaeological deposits are over 15 feet thick and consist primarily of shell midden, as was observed in the open areas of the Adamson grounds. Within the parking lot area of Surfrider Beach and the south shoulder of PCH, a prehistoric cemetery has been found; north of PCH a proto-historic cemetery was located. More than 200 burials have been removed from the site (Dillon 1987:44). Much of this work was poorly reported in the past, and details on archaeological work undertaken, if any, adjacent to the project area, were not available for this project at the Archaeological Information Center. However, State Parks has prepared a series of summary documents for this site, which can be accessed at State Parks. These records and reports are located in State Parks’ Southern Service Center office in San Diego.

The project area was mapped in relation to the known boundaries of CA-LAN-264, and the site lies immediately east of the main lagoon channel, adjacent to the Adamson House boat house. This part of the site has been disturbed by landscaping and grading for the Adamson House grounds, but it is possible that prehistoric deposits remain intact.

Architectural Resources Identified

Results of the identification effort indicate there is one historic architectural resource that may be affected by the project. The Adamson House was listed on the National Register of Historic Places [period of significance 1929–1949] on October 10, 1977. It is California Historical Landmark No. 966. No other architectural resources would be affected by the proposed project.

The Adamson House is renowned for its display of Malibu tiles, which came from the Rindge/Adamson family’s Malibu Pottery, originally located nearby. May Rindge commissioned the house in 1929 as a gift to her daughter, Rhoda, who had married Merritt Adamson in 1915. She
hired architect Stiles O. Clements, renown for his commercial work with the firm Morgan, Walls and Clements, to construct the Mediterranean Revival-style residence, with its Moorish and Spanish details such as red tile roofs, white stucco walls, iron grilles, balconies and patios.

The historical property also includes several outbuildings including a guest house, boat house, pool house, lath house, shop and kennels. Contributing historic landscape features include the surrounding earthwork topography, numerous examples of exotic vegetation, pathways, motor drive, exterior property wall (which extends down coast to the historic Malibu Pier) and numerous pieces of decorative landscape furniture and objects. Almost all of which Stiles O. Clements designed as one with the Adamson House.

The Adamson family inhabited the house from 1936 until 1962. In 1968 the State of California acquired the Adamson House property for $2.7 million. The house was successfully placed on the National Register of Historic Places in 1977.

**Impacts and Mitigation Measures**

**Thresholds of Significance**

Section 15064.5(b) of the State CEQA Guidelines, entitled “Determining the Significance of Impacts on Historical and Unique Archaeological Resources,” would apply to historical resources that are found eligible for the California Register or meet the other significance criteria in Section 15064.5(a) of the guidelines. Section 15064.5(b) of the guidelines is as follows:

A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

1. Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

2. The significance of an historical resource is materially impaired when a project:
   a. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or
   b. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources
pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

c. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

3. Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on historical architectural resources.

Construction Impacts and Mitigation Measures

The existing boat house channel would be deepened and recontoured to create a new avian inland along the western bank of the Adamson House grounds. The proposed work would not cause any alteration or destruction of the boat house building, nor would any historic landscape features of the Adamson House grounds be directly affected by the proposed project.

While the “immediate surroundings” of the Adamson House would be altered, the overall restoration plan would not materially impair the significance of the property and grounds. The existing setting of the Adamson House is contextually related to the lagoon, and the proposed restoration is compatible in use and association.

The parking lot and staging lawn would be relocated to the north and west and be adjacent to PCH. As a result of the application of the State CEQA Guidelines criteria for determining impacts on historical resources, the proposed project would alter the “immediate surroundings” of the Adamson House and its contributing buildings, but this would not change or materially impair its significance or the significance of any of its contributing architectural or historic landscape features.

As regards the Adamson House and its associated historic landscape, the proposed project would not “cause a substantial adverse change in the significance of an historical resource … [meaning] physical demolition,
destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” The Adamson House would remain on the National Register after implementation of the proposed project; therefore, its significance would not be changed or materially impaired.

No significant adverse impacts were identified to historical architectural resources, including the Adamson House and its contributing buildings and landscape features; therefore, no mitigation measures are required or proposed to reduce significant impacts.

Although one known prehistoric archaeological site, CA-LAN-264, has been recorded within the vicinity of the project site, no evidence of this site was observed during surveys within and immediately adjacent to the project site. However, portions of this site or of other unknown archaeological resources, including human remains, could be buried within main channel lagoon sediment adjacent to the site. As such, unknown cultural materials could be exposed or damaged by project-related earth moving. This potential damage or destruction to a significant historical resources, if not mitigated, could result in a substantial adverse change in the significance of an historical archaeological resource and thus may have a significant effect on the environment.

Therefore, the following mitigation measures are required to account for three circumstances: 1) the potential to impact CA-LAN-264; 2) unanticipated discoveries of cultural resources; and 3) unanticipated discoveries of human remains.

Impact CR-1: Potential for Impacts to CA-LAN-264

Prehistoric site Humaliwo, CA-LAN-264, is listed on the National Register of Historic Places, which makes it eligible for listing on the CRHR. As noted above, the proposed project does not include any earthwork or disturbance within the mapped boundaries of CA-LAN-264. However, disturbances to as yet unknown buried resources immediately outside the mapped boundaries would have an adverse effect and would be considered a significant impact. Implementation of the mitigation measure below will reduce potential impacts to less-than-significant levels.

Mitigation Measure CR-1: Cultural Resources
Testing in area adjacent to CA-LAN-264

Cultural resources excavations will be undertaken prior to any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264, if any project related earthwork occurs within 100 feet of the known boundary of CA-LAN-264. Test excavations shall not take place within the known boundaries of CA-LAN-264, but adjacent to the boundaries if project construction would require any ground disturbing activities within 100 feet of the known site boundary.
Because sensitivity is moderate to high for cultural resources, including human remains, to be present along this edge of the project area, a subsurface testing program should be implemented to identify if resources are present, and to evaluate potentially NRHP-eligible resources.

If subsurface testing identifies intact, significant archaeological resources within the project area that cannot be avoided, the project would have an adverse effect. Development of measures to mitigate adverse effects would be necessary and a Memorandum of Agreement would be required to complete Section 106 consultation, reduction of significant adverse impacts under CEQA and compliance with PRC 5024.5.

The preconstruction testing program should include, but need not be limited to:

- development of a testing strategy to identify subsurface archaeological deposits, including further research on previous investigations and regarding previous lagoon excavations, in an effort to refine the scope of any field effort,
- evaluation of significance and integrity of exposed archaeological deposits (according to NHPA, NRHP, and CRHR criteria) if present, in consultation with the SHPO; and
- consultation with local Native Americans if prehistoric or ethnohistoric resources are identified.

Upon identification of any significant prehistoric or historical archaeological resources, it will be necessary to avoid these resources during project development, or to formulate a treatment plan to mitigate adverse effects. A treatment plan, adopted within a Memorandum of Agreement, to be negotiated in consultation with the SHPO, would likely include the following:

- an acceptable data recovery plan stating specific research goals and questions that are to be addressed if archaeological deposits are to be recovered;
- post-field artifact processing and analysis;
- report preparation in accordance with the guidelines of DPR; and
- permanent curation of artifacts and documents in a repository consistent with the National Park Service guidelines for the curation of archaeological collections (36CFR79).

Feature recovery should employ standard archaeological excavation techniques. The testing and evaluation plan should be designed and implemented by a qualified Prehistorical Archaeologist, and if discoveries warrant, a qualified Historical Archaeologist.
Both the testing and evaluation plan and the data recovery strategy shall be developed and implemented in consultation with interested local Native American groups. Plans shall state that Native American human remains will be treated in compliance with Health and Safety Code, Sections 7050.5, 8010, and 8011 and Public Resources Code, Section 5097.98.

**Mitigation Measure CR-2: Cultural Resources Monitoring in area adjacent to CA-LAN-264**

Cultural resources monitoring by State Parks archaeologists or designees shall be conducted during any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264. Monitoring will be conducted if conditions allow for observation of spoils. Monitoring of dredging is probably not feasible given underwater activity would not be visible. The remainder of the project area may be monitored if notable cultural materials are discovered, or monitoring may be further limited if the monitoring area appears previously disturbed (as may be the case in areas where Caltrans has deposited fill material and rip rap).

If prehistoric cultural resources are discovered in this area during monitoring or other construction, all work shall be halted in the vicinity of the archaeological discovery until a State Parks archaeologist or designee can visit the site of discovery and assess the significance of the archaeological discovery. Further treatment may be required, including modification of plans to avoid impacts to the site, site recordation, excavation, site evaluation, and data recovery. Avoidance of cultural resources shall be the top priority at all situations.

**Impact CR-2: Potential for Ground-Disturbing Activities to Damage Previously Unidentified Buried Cultural Resource Sites**

Buried cultural resources that were not identified during field surveys could be inadvertently unearthed during ground-disturbing activities that could result in the demolition or substantial damage to significant cultural resources. Avoidance or reduction of this potentially significant impact on buried or otherwise unidentified cultural resources would be achieved by implementing the following mitigation measure.

**Mitigation Measure CR-3: Stop Work if Cultural Resources Are Discovered during Ground-Disturbing Activities.**

If buried cultural resources—such as flaked or ground stone, historic debris, building foundations, shellfish remains or non-human bone—are inadvertently discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a State Parks
archaeologist or designee can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include: development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. Avoidance of cultural remains shall be the top priority at all times.

If cultural resources are discovered during construction activities, the construction contractor will verify that work is halted until appropriate site-specific treatment measures—such as those listed above—are implemented.

Impact CR-3: Potential to Damage Previously Unidentified Human Remains

No human remains are known to exist within the project site. Further, archaeological testing would occur prior to construction activities to ensure avoidance of any remains or other significant cultural resources (see Mitigation Measure CR-1 above). However, due to the location of the project site in proximity to the Humaliwo village site (CA-LAN-264), potential will remain, however slight, that buried human remains that were not previously identified could be discovered. The following mitigation measure is required to ensure proper adherence to state laws regarding accidental discovery of human remains. Implementation would ensure that any potential impacts are reduced to less-than-significant levels.

Mitigation Measure CR-4: Comply with State Laws Pertaining to the Discovery of Human Remains.

If human remains of Native American origin are discovered during ground-disturbing activities, it is necessary to comply with state laws relating to the disposition of Native American burials that fall within the jurisdiction of the California Native American Heritage Commission (Public Resources Code Section 5097). Construction work shall not continue within 100 feet of a location where human skeletal remains are found.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American.

If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission to determine the most likely living descendant(s). The most likely living descendant shall determine the most appropriate means of treating the
human remains and any associated grave artifacts, and shall oversee
disposition of the human remains and associated artifacts by the project
archaeologists. This impact would be significant, but implementation of
the mitigation measures above would reduce this impact to a less-than-
significant level.

Post-construction Impacts and Mitigation Measures

Once completed, the proposed project would have no operational
components that could result in impacts to cultural resources. No
impacts would occur and no mitigation measures are required.
Chapter 7
Cultural Resources

Setting

Environmental Setting

Malibu Lagoon is located at the mouth of Malibu Creek, with the majority of the project area consisting of low-lying islands and tidal marsh surrounded by waters of the lagoon and creek. The Pacific lies to the south. Broad low lying delta sediments lie to the west of the project area, and it is probable that the lagoon has migrated within this delta setting over time. Elevation in the project area ranges from sea level to just above 25 feet above mean sea level. Slightly elevated beach front land exists along the eastern and western edges of the lagoon, and these areas have been available for human occupation and use—such as the Adamson House, situated at a little over 25 feet AMSL on the east side of the lagoon.

Historically, the lagoon extended beyond its current boundaries, but a significant portion of the once low-lying areas near the mouth of Malibu Creek were filled in the 1940s and 1950s. As a result of urban encroachments, the lagoon as we see it today is a very small portion of its historic area. The PCH Bridge has dissected and constricted the lagoon surface area. By the 1970s the project site was completely filled and was covered by two baseball fields. Soils occurring within and surrounding the lagoon are typical of a coastal valley floor alluvial landform and include Elder sandy loam, Sorrento loam, riverwash, and coastal beach.

Vegetation within the project area consists of various types of coastal scrub, and salt, brackish and freshwater marsh habitats, with many non-native and ruderal species. Malibu Lagoon supports numerous bird and invertebrate species. Lagoon habitats do not support many mammal or reptile species; however, fish are resident within the lagoon, and sea mammals also may have been present prior to extensive development (Merkel & Associates 2004).
In the past, several restoration efforts have been made. In 1983, the DPR initiated a restoration of the lagoon, which involved the excavation of three channels seeded with salt marsh plants. A series of boardwalks were created to allow for public access. In 1996, Caltrans funded a restoration plan to mitigate for impacts incurred during the Malibu Lagoon/PCH Bridge Replacement Project.

**Cultural Setting**

The following sections provide a context for human occupation and use of Malibu Lagoon. Discussion of the historic period occupation of Rancho Malibu and parts of the Chumash ethnography presented here are summarized from that presented in “The History of Malibu” (Malibu Lagoon Museum 2005).

**Prehistoric Setting**

California was first occupied prehistorically about 12,000 years (Moratto 1984). Archaeological research indicates that human populations extensively occupied the coastal regions of California more than 9,000 years ago (Padre Associates 2002). Research in the region occupied by the Chumash has produced a generally agreed on chronology (King 1990). This chronology is described briefly below.

**Early Period (ca 8000 to 3350 B.P. [6000 to 1150 B.C.])**

The Early Period has been divided into three phases, X, Y, and Z, with a gap between the X and Y phases. Early Period settlements appear to be residential base camps, and are usually located on hilltops or knolls.

The X Phase extends from 8000 B.P. to 7000 B.P. This phase is characterized by the use of large flake and core tools, millingstones and manos, combined with a lack of bone and shell tools, and ornamentation. Millingstones indicate grinding of hard seeds, probably gathered from sage plants.

Between 7000 B.P. and 5500 B.P., little is known about the region due to a lack of sites dating to this time period. This corresponds in time to the peak of the Xerothermic, a warm, dry climatic episode in the western United States (Axelrod 1981).

During the subsequent Y and Z phases, sites are once again present in the area. Mortars and pestles, appear at the beginning of Phase Y, indicating the addition of acorn processing to the subsistence base.
Middle Period (3350 to 800 B.P. [1150 B.C. to A.D. 1200])

The Middle Period is characterized by a shift in subsistence practices, with a more generalized hunting-maritime-gathering adaptation replacing a focus on plant gathering and the use of hard seeds. The predominance of the mortar and pestle among milling tools indicates increased exploitation and dependence on acorns (Glassow and Wilcoxon 1988). Social aspects that develop during this period, as evidenced by mortuary data, include inherited leadership, status differentiation, and religious specialization.

Villages of this period were permanently occupied and some satellite sites became differentiated in size and purpose. Middle Period sites are distinguishable into sub-phases by different types of bead and projectile points along with other diagnostic artifacts. Middle Period sites tend to be small and often contain artifacts that are lighter and more portable than those from earlier sites (Padre Associates 2002).

Late Period (850 to 150 B.P. [AD 1200 to AD 1800])

The full development of Chumash culture, one of the most socially and economically complex hunting and gathering groups in North America, occurred during the Late Period (Arnold 1987). This period is marked by a dramatic increase in population along the southern California coast. The development of a highly effective maritime subsistence pattern utilizing exploitation of fish, shellfish, sea mammals, and waterfowl enabled villages of nearly 1,000 individuals to develop. These were the most populous aboriginal settlements west of the Mississippi River (Morrato 1984). These Chumash villages, also known as rancherias, were usually situated near the confluence of several watercourses or at ecotones. Permanent inland settlements subsisted on variety of resources including acorns, seed plants, rabbits, and deer. The smaller inland villages were economically allied with the larger coastal villages (Padre Associates 2002)

Ethnographic Setting

Malibu Lagoon is situated within the territory of the Chumash Native American group. The Chumash occupied the region from San Luis Obispo to Malibu Canyon on the coast, the four northern Channel Islands, and inland as far as the western edge of the San Joaquin Valley (Grant 1978). The Chumash are subdivided into subgroups based on six distinct language dialects: Barbareno, Ventureno, Purisimeno, Ynezeno, Obispeno, and Island. The project area is situated within the territory of the Ventureno, a Coastal Chumash group (Grant 1978). The name is derived from the nearest mission, San Buenaventura. A Chumash village, Humaliwo, was located beyond the northeastern side of the lagoon on a small rise overlooking the lagoon and the ocean. This is now the site of the Adamson House.
The Chumash were very advanced in their culture, social organization, religious beliefs, and art and material object production (Morrato 1984). Class differentiation, inherited chieftainship, and intervillage alliances were all components of Chumash society. They were excellent craftsmen, and were known for well-made tools, bowls, and baskets. Of note are bowls and carvings of killer whales and other forms of sea life and effigies made from steatite. Sometimes the bowls were inlaid with colorful abalone shells. Other implements were made of sandstone, including large bowls. Flint, chert, and obsidian were used to make projectile points, drills, scrapers, choppers, and knives.

Baskets made by the Chumash were outstanding in workmanship and design. Baskets were used for gathering of seeds, bulbs, and roots. Water was stored and carried in baskets waterproofed on the inside with naturally occurring tar, called asphaltum. Asphaltum was extensively used by the Chumash to caulk canoes, seal water baskets, attach shell inlay to bowls, and fasten arrow and spear points to shafts.

Fish hooks were made of abalone shell. The major use for the shell, however, was for decoration. It was lavishly inlaid on stone, bone, and wood. The surface to be decorated received a coating of asphalt onto which was pressed the shell inlay. Giant Pismo clams were used for beads and money. Many tiny drilled shell beads were manufactured, for use as decoration and a means of exchange.

Bone was used by the Chumash for many artifacts. It was extensively used for necklaces, especially as long tubular beads. Flutes and whistles were also made of bone, usually of deer tibia. Whalebone was used for many tasks including wedges to split wooden planks, and bars to pry abalone loose from coastal rocks. A notable technological achievement of the Chumash was the planked canoe. These were made of several planks sewn together at the seams with very strong twine and the joints sealed with asphaltum.

_Humaliwo_ village was one of the most important Chumash villages along the coast. Extensive cultural remains are present at this site, as well as numerous human burials. The archaeological site CA-LAN-264 encompasses the village of _Humaliwo_ as well as prehistoric components that date back at least 3000 years. Portions of the site may date as far back as 7000 years B.P. (Gamble et al 1995, 1996).

The site was originally recorded in 1959, and several excavations took place at the site in the 1960s and 1970s. The site consists of five components: an Early/Middle Period deposit, a Middle Period deposit, a Middle Period cemetery, a Late Period deposit, and an historic era cemetery. Numerous artifacts and other cultural materials have been collected from the site, which consists of an extensive shell midden. The site includes more than 200 burials, some with canoes. Some burials include numerous shell and glass beads, fish and whale effigies (Gamble et al 1995, 1996).
Historic Setting

The first recorded European activity at Malibu Lagoon occurred in 1542, when Spanish sailor Juan Cabrillo anchored there to obtain fresh water. Sailing northward up the California coast, he anchored on October 10th in the small bay at Malibu Lagoon, and claimed this landfall for the King of Spain. He stayed until October 13th, filling his water casks and naming this tranquil lagoon and beach in his log the "Pueblo de las Canoas" (Town of the Canoes), because of the many canoes which came to visit his ships from the adjacent village.

The first Franciscan mission in Chumash territory was built at San Luis Obispo in 1772. Four additional missions were built in this cultural area at San Buenaventura (1782), Santa Barbara (1786), La Purisima Concepcion (1787), and Santa Ynez (1804). Inhabitants of Humaliwo were recruited into these missions. By 1805, all native inhabitants of the village had been pressed into the Mission system, either at Mission San Fernando or Mission San Buenaventura, and Humaliwo was abandoned (Gamble et al 1995, 1996).

An expedition led by Spanish explorer Juan Bautista de Anza camped at Malibu Creek on February 22, 1776. One member of this expedition, Jose Bartolome Tapia, rode down the canyon to the beach, to explore the area. The Tapia family ultimately settled in Northern California, where Jose Tapia became mayordomo of San Luis Obispo Mission Rancho. In 1800, Jose Tapia and his family returned to southern California and began farming near San Gabriel. Tapia then applied for a grant of the land he had seen in 1776, and due to his previous service in the army, was awarded an area of about 13,330 acres, named Rancho Topanga Malibu Sequit. Tapia lived with his wife and family on Vaquero Flats in Rancho Malibu raising cattle until his death on April 18, 1824. The widow of Jose Tapia owned the Rancho until 1848, when it was sold to Leon Victor Prudhomme, who had married her granddaughter Maria Tapia.

Prudhomme had acquired the property during the transition period between Mexican rule and United States administration of California. When the U.S. Land Commission began hearings in 1852, Prudhomme put in his claim for the Rancho Malibu. No documents could be produced actually proving the early-day grant of Malibu to Jose Tapia. A search of the Surveyor General's office in San Francisco proved futile, and in 1854 the Commissioners turned down Prudhomme's claim.

Prudhomme remained on the land although he did not have clear title. This was the era of the California gold rush, and the rancho's cattle brought high prices when driven north to the mining camps. By 1857, however, a panic and financial depression had hit California. Prudhomme was discouraged and sought a buyer for his rancho.

In 1857 Don Mateo Keller, born Matthew Keller in Ireland in 1811, paid the Prudhommes $1,400, or about 10 cents an acre, for the entire rancho.
With new evidence and better lawyers, Keller's claim to Rancho Malibu was confirmed on October 24, 1864. Matthew Keller died in 1881 and his son, Henry Keller, succeeded his father as owner of the Rancho.

In 1892 Frederick Hastings Rindge, a Harvard graduate who inherited two million dollars on his 29th birthday, bought the Rancho Topanga Malibu Sequit from Henry Keller. Rindge, a poet as well as a businessman, was drawn to the extraordinary setting of the rancho, which he described in his self-published book, *Happy Days in Southern California*. Rindge, his wife, May, and their three children resided in Santa Monica; Rindge became a prominent local businessman, as the founder of the Conservative Life Insurance Company (later Pacific Mutual), and the Los Angeles Edison Electric Company.

In 1903 Frederick Rindge began plans to construct a railroad on the Rancho Malibu, to be called the Hueneme, Malibu and Port Los Angeles Railway, in order to deter threats he believed stemmed from the Southern Pacific Railroad’s presence in Southern California. Before the work began, Rindge died suddenly in 1905. After his death, his widow May Rindge spent the next twenty-odd years building the railway and fighting the Southern Pacific. Although Mrs. Rindge prevented the railroad from crossing her ranch, she was unable to stop the State of California from constructing and opening the State Highway (now Pacific Coast Highway) in 1928.

Residential and commercial development in Malibu began in 1929, after the establishment of the State Highway. May Rindge, and later her daughter Rhoda Rindge Adamson, through their Marblehead Land Company gradually sold off parcels of the property that reduced the family’s land holdings to 4,000 acres by 1962. Four years later, the family’s holding company, the Adamson Companies, donated 138 acres to Pepperdine University.

The Adamsons built a beach house in 1929 on land given to them by May Rindge. The site, on the south side of the lagoon within the project area, was called Vaquero Hill because a cowboy shack once stood there. They used the home as a beach house maintaining their permanent home in the Hancock Park area of Los Angeles from 1924 to 1936. In 1936 the beach home became their permanent residence.

After the death of Rhoda Rindge Adamson in 1962, State Parks worked with the Adamson descendents to acquire the property due to their ownership of the popular Surfrider Beach located just to the north. State Parks acquired the Adamson House in 1968. State Parks staff recognized the unique architectural and archaeological significance of the property as well as the challenges for long-term maintenance of the house, buildings, and grounds. With support from the newly formed Malibu Historical Society, the historical significance of the house and grounds were recognized. In 1977 the Society’s efforts got the property successfully placed on the National Register of Historic Places. The house, boat house, landscape features, and manicured grounds...
surrounding the property are all considered contributing elements of the historic property. The House is also listed as California Historical Landmark No. 966. The Adamson House currently is home to the Malibu Lagoon Museum.

Regulatory Framework

California Environmental Quality Act

According to CEQA (Public Resources Code [PRC], Section 21084.1), historical resources include any resource listed, or determined to be eligible for listing, in the California Register of Historical Resources (California Register). Properties listed in or determined eligible for listing in the National Register, such as those identified in the Section 106 process, are automatically listed in the California Register. Therefore, all “historic properties” under federal preservation law are automatically “historical resources” under state preservation law (see PRC 5024 below). Historical resources are also presumed to be significant if they are included in a local register of historical resources or identified as significant in a qualified historical resource survey.

As defined under state law in Title 14 CCR §4850, the term “historical resource” means “any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or which is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural history of California.” Architectural resources generally include man-made features that compose the recognizable, built environment. This category typically includes extant, aboveground buildings and structures that date from the earliest European colonial settlements until the present day.

For the purposes of CEQA, “historical resource” is further defined under PRC §15064.5 as a “resource listed in, or determined eligible for listing in the California Register.” Section 15064.5 of the State CEQA Guidelines sets forth the criteria and procedures for determining significant historical resources and the potential effects of a project on such resources.

Generally, a cultural resource shall be considered by the lead state agency to be “historically significant” if the resource meets any of the criteria for listing on the California Register, including the following:

- the resource is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- the resource is associated with the lives of persons important in our past;
- the resource embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values; or
- the resource has yielded, or may be likely to yield, information important in prehistory or history.

The cited statutes and guidelines specify how cultural resources are to be managed in the context of projects such as the proposed Project. Briefly, archival research and field surveys must be conducted, and identified cultural resources must be inventoried and evaluated in prescribed ways.

**California Health and Safety Code**

Human remains are sometimes found in isolation or associated with archaeological sites. According to CEQA, “archaeological sites known to contain human remains shall be treated in accordance with the provisions of State Health and Safety Code Section 7050.5.” The protection of human remains is also ensured by California Public Resources Codes, Section 5097.94, 5097.98, and 5097.99.

If human remains are exposed during construction, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code 5097.98. Construction must halt in the area of the discovery of human remains, the project proponent must assure that the area is protected, and consultation and treatment shall occur as prescribed by law.

**California State Parks Policy Under PRC 5024**

PRC 5024(a) requires each state agency “to formulate policies to preserve and maintain, when prudent and feasible, all state-owned historical resources under its jurisdiction.” PRC 5024.5 mandates that each state agency assure that its actions do not adversely impact significant resources without consultation with the SHPO.

DPR’s obligation to “administer the cultural and historic properties under its control in a spirit of stewardship and trusteeship for future generations” is also set out in Executive Order W-26-92, issued by the Governor on April 8, 1992. The Executive Order mandates that all state agencies establish policies, plans and programs in such a way that historical resources are protected, that they ensure that such resources are given full consideration in planning decisions, and that they institute procedures to these ends in consultation with the SHPO.

The Department’s procedures and policies are established to meet DPR’s responsibilities under the above mentioned laws. They are implemented through a Memorandum of Understanding (MOU) with the SHPO. The MOU delegates to DPR for the SHPO’s regular oversight responsibilities.
for projects that might affect historical resources under State Parks ownership and purview. These procedures define that internal review process, its limitations, and its articulation with other laws and standards. Practical and effective performance under the procedures is the mandated prerequisite for this delegation to DPR.

### Study Methods

#### Record Search and Literature Review

Lists from various national, state, and local agencies were consulted for identification of resources of known architectural or historical importance within the study area. These lists included the National Register, California Historical Landmarks, California Points of Historic Interest, State Office of Historic Preservation Historic Resources Inventory, and the City of Los Angeles List of Historic-Cultural Monuments, and a review of Gebhard and Winter’s *Los Angeles: An Architectural Guide*.

Additional information was obtained as a result of the records search performed on November 10, 2005, by the South Central Coastal Information Center at California State University, Fullerton. The results indicated that 16 archaeological sites, 15 prehistoric and one historic, have been recorded within a mile of the project area. One of these, the *Humaliwo* village site, CA-LAN-264, is partially within the project area, on the northeast side of the lagoon. This Chumash village site is listed on the National Register of Historic Places. Ninety-three previous archaeological investigations have taken place within a mile of the project area; of these 20 are located within the project area.

A copy of the 1903 15-minute Calabasas topographic map, as well as depicting a larger extent of the lagoon to the west, also shows four structures on the northeastern edge of the lagoon, in the area that would become the Adamson estate. These are presumably the “cowboy shacks” and associated buildings that stood at the edge of the sea prior to the construction of the Adamson House.

#### Native American Consultation

It is the policy of DPR to maintain open communication and ongoing consultation with Native American groups in California. DPR recognizes its special responsibility as the steward of many sites of cultural significance to living Native peoples in California. Therefore, in promulgating its policies and implementing projects that may have significant impacts to Native American sites within the State Park System, DPR actively consults with Native American groups.

The Native American Heritage Commission (NAHC) was contacted regarding the project in October and November 2005. A reply from the
NAHC on November 10, 2005 indicated that no sacred lands are recorded in the Sacred Lands files. The NAHC also provided a list of Native American groups and individuals who might have knowledge of cultural resources in the project area. Twelve of these groups and individuals were contacted by letter on November 22, 2005.

Two replies were received, both by telephone. Both Native American individuals indicated that CA-LAN-264 was a very sensitive resource, and requested continued contact regarding the project, and Native American monitoring at the site area during project construction. One Native American individual indicated they may have re-buried human remains at the Humaliwo, and requested a walkover tour of the project area to ascertain if this memory is correct. This individual indicated that forms that should have been filed with the NAHC regarding reburial may not have been files, thus the negative results of the NAHC review of the Sacred Lands file.

Efforts will continue to contact the remaining 10 individuals on the list provided by the NAHC. Follow-up calls will be conducted by a State Parks archaeologist or designee, and consultation will continue as long as designated Native American individuals or groups request it.

**Field Surveys**

A field survey to identify historical and architectural resources that may be affected by the proposed project was undertaken by professionals meeting the Secretary of the Interior’s Professional Qualifications Standards (48 FR 44738-9). The survey applied National and California Register criteria to previously documented historic and architectural resources and to all newly identified buildings more than 50 years of age within the study area. It must be noted that the project area extends only to the edge of Malibu Lagoon, and thus CA-LAN-264 as mapped (Dillon 1987) and the Adamson House and grounds are not within the project site. Final construction plans will be designed to avoid effects to landscape features of the Adamson House and grounds, and to avoid the known area of CA-LAN-264.

A reconnaissance survey—an unsystematic walkover of the project area based on surface visibility—was used in an attempt to identify prehistoric and historical archaeological resources. The vast majority of the project site is under water, and the muddy lagoon edges were surveyed only as feasible. This walkover was conducted on November 5, 2005. Because of dense vegetation in the project area, surface visibility was very limited. Modern development in the project area, e.g., roads, parking lots, lawns, also obscured visibility, and due to these factors a systematic survey was not conducted.

Flower beds, eroded areas, and other open areas west of the Adamson House, which are outside of the project site, were also examined. Black, sandy soil was observed in these areas, which are mapped as part of the midden deposits for Humaliwo. No evidence was observed of the
remains of the structures present in the area prior to construction of the Adamson House.

Study Findings

Archaeological Resources Identified

No prehistoric or historical archaeological resources were observed during a pedestrian walk over of the project area. One National Register listed site, CA-LAN-264, Humaliwo, is located adjacent to the project area at the site of the Adamson House. The Malibu site has been excavated several times in the past, particularly by UCLA teams in the 1960s and 1970s. The site lies on the east side of Malibu Lagoon, encompassing the Adamson House location, part of the Surfrider Beach parking lot, and an area north of PCH.

Within the grounds of the Adamson House, archaeological deposits are over 15 feet thick and consist primarily of shell midden, as was observed in the open areas of the Adamson grounds. Within the parking lot area of Surfrider Beach and the south shoulder of PCH, a prehistoric cemetery has been found; north of PCH a proto-historic cemetery was located. More than 200 burials have been removed from the site (Dillon 1987:44). Much of this work was poorly reported in the past, and details on archaeological work undertaken, if any, adjacent to the project area, were not available for this project at the Archaeological Information Center. However, State Parks has prepared a series of summary documents for this site, which can be accessed at State Parks. These records and reports are located in State Parks’ Southern Service Center office in San Diego.

The project area was mapped in relation to the known boundaries of CA-LAN-264, and the site lies immediately east of the main lagoon channel, adjacent to the Adamson House boat house. This part of the site has been disturbed by landscaping and grading for the Adamson House grounds, but it is possible that prehistoric deposits remain intact.

Architectural Resources Identified

Results of the identification effort indicate there is one historic architectural resource that may be affected by the project. The Adamson House was listed on the National Register of Historic Places [period of significance 1929–1949] on October 10, 1977. It is California Historical Landmark No. 966. No other architectural resources would be affected by the proposed project.

The Adamson House is renowned for its display of Malibu tiles, which came from the Rindge/Adamson family’s Malibu Pottery, originally located nearby. May Rindge commissioned the house in 1929 as a gift to her daughter, Rhoda, who had married Merritt Adamson in 1915. She
hired architect Stiles O. Clements, renown for his commercial work with the firm Morgan, Walls and Clements, to construct the Mediterranean Revival-style residence, with its Moorish and Spanish details such as red tile roofs, white stucco walls, iron grilles, balconies and patios.

The historical property also includes several outbuildings including a guest house, boat house, pool house, lath house, shop and kennels. Contributing historic landscape features include the surrounding earthwork topography, numerous examples of exotic vegetation, pathways, motor drive, exterior property wall (which extends down coast to the historic Malibu Pier) and numerous pieces of decorative landscape furniture and objects. Almost all of which Stiles O. Clements designed as one with the Adamson House.

The Adamson family inhabited the house from 1936 until 1962. In 1968 the State of California acquired the Adamson House property for $2.7 million. The house was successfully placed on the National Register of Historic Places in 1977.

Impacts and Mitigation Measures

Thresholds of Significance

Section 15064.5(b) of the State CEQA Guidelines, entitled “Determining the Significance of Impacts on Historical and Unique Archaeological Resources,” would apply to historical resources that are found eligible for the California Register or meet the other significance criteria in Section 15064.5(a) of the guidelines. Section 15064.5(b) of the guidelines is as follows:

A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

1. Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

2. The significance of an historical resource is materially impaired when a project:

   a. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

   b. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources.
pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

c. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

3. Generally, a project that follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), Weeks and Grimmer, shall be considered as mitigated to a level of less than a significant impact on historical architectural resources.

Construction Impacts and Mitigation Measures

The existing boat house channel would be deepened and recontoured to create a new avian inland along the western bank of the Adamson House grounds. The proposed work would not cause any alteration or destruction of the boat house building, nor would any historic landscape features of the Adamson House grounds be directly affected by the proposed project.

While the “immediate surroundings” of the Adamson House would be altered, the overall restoration plan would not materially impair the significance of the property and grounds. The existing setting of the Adamson House is contextually related to the lagoon, and the proposed restoration is compatible in use and association.

The parking lot and staging lawn would be relocated to the north and west and be adjacent to PCH. As a result of the application of the State CEQA Guidelines criteria for determining impacts on historical resources, the proposed project would alter the “immediate surroundings” of the Adamson House and its contributing buildings, but this would not change or materially impair its significance or the significance of any of its contributing architectural or historic landscape features.

As regards the Adamson House and its associated historic landscape, the proposed project would not “cause a substantial adverse change in the significance of an historical resource … [meaning] physical demolition,
destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.” The Adamson House would remain on the National Register after implementation of the proposed project; therefore, its significance would not be changed or materially impaired.

No significant adverse impacts were identified to historical architectural resources, including the Adamson House and its contributing buildings and landscape features; therefore, no mitigation measures are required or proposed to reduce significant impacts.

Although one known prehistoric archaeological site, CA-LAN-264, has been recorded within the vicinity of the project site, no evidence of this site was observed during surveys within and immediately adjacent to the project site. However, portions of this site or of other unknown archaeological resources, including human remains, could be buried within main channel lagoon sediment adjacent to the site. As such, unknown cultural materials could be exposed or damaged by project-related earth moving. This potential damage or destruction to a significant historical resources, if not mitigated, could result in a substantial adverse change in the significance of an historical archaeological resource and thus may have a significant effect on the environment.

Therefore, the following mitigation measures are required to account for three circumstances: 1) the potential to impact CA-LAN-264; 2) unanticipated discoveries of cultural resources; and 3) unanticipated discoveries of human remains.

**Impact CR-1: Potential for Impacts to CA-LAN-264**

Prehistoric site *Humaliwo*, CA-LAN-264, is listed on the National Register of Historic Places, which makes it eligible for listing on the CRHR. As noted above, the proposed project does not include any earthwork or disturbance within the mapped boundaries of CA-LAN-264. However, disturbances to as yet unknown buried resources immediately outside the mapped boundaries would have an adverse effect and would be considered a significant impact. Implementation of the mitigation measure below will reduce potential impacts to less-than-significant levels.

**Mitigation Measure CR-1: Cultural Resources Testing in area adjacent to CA-LAN-264**

Cultural resources excavations will be undertaken prior to any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264, if any project related earthwork occurs within 100 feet of the known boundary of CA-LAN-264. Test excavations shall not take place within the known boundaries of CA-LAN-264, but adjacent to the boundaries if project construction would require any ground disturbing activities within 100 feet of the known site boundary.
Because sensitivity is moderate to high for cultural resources, including human remains, to be present along this edge of the project area, a subsurface testing program should be implemented to identify if resources are present, and to evaluate potentially NRHP-eligible resources.

If subsurface testing identifies intact, significant archaeological resources within the project area that cannot be avoided, the project would have an adverse effect. Development of measures to mitigate adverse effects would be necessary and a Memorandum of Agreement would be required to complete Section 106 consultation, reduction of significant adverse impacts under CEQA and compliance with PRC 5024.5.

The preconstruction testing program should include, but need not be limited to:

- development of a testing strategy to identify subsurface archaeological deposits, including further research on previous investigations and regarding previous lagoon excavations, in an effort to refine the scope of any field effort,

- evaluation of significance and integrity of exposed archaeological deposits (according to NHPA, NRHP, and CRHR criteria) if present, in consultation with the SHPO; and

- consultation with local Native Americans if prehistoric or ethnohistoric resources are identified.

Upon identification of any significant prehistoric or historical archaeological resources, it will be necessary to avoid these resources during project development, or to formulate a treatment plan to mitigate adverse effects. A treatment plan, adopted within a Memorandum of Agreement, to be negotiated in consultation with the SHPO, would likely include the following:

- an acceptable data recovery plan stating specific research goals and questions that are to be addressed if archaeological deposits are to be recovered;

- post-field artifact processing and analysis;

- report preparation in accordance with the guidelines of DPR; and

- permanent curation of artifacts and documents in a repository consistent with the National Park Service guidelines for the curation of archaeological collections (36CFR79).

Feature recovery should employ standard archaeological excavation techniques. The testing and evaluation plan should be designed and implemented by a qualified Prehistorical Archaeologist, and if discoveries warrant, a qualified Historical Archaeologist.
Both the testing and evaluation plan and the data recovery strategy shall be developed and implemented in consultation with interested local Native American groups. Plans shall state that Native American human remains will be treated in compliance with Health and Safety Code, Sections 7050.5, 8010, and 8011 and Public Resources Code, Section 5097.98.

**Mitigation Measure CR-2: Cultural Resources Monitoring in area adjacent to CA-LAN-264**

Cultural resources monitoring by State Parks archaeologists or designees shall be conducted during any ground disturbing activities along the eastern bank of the main lagoon channel adjacent to CA-LAN-264. Monitoring will be conducted if conditions allow for observation of spoils. Monitoring of dredging is probably not feasible given underwater activity would not be visible. The remainder of the project area may be monitored if notable cultural materials are discovered, or monitoring may be further limited if the monitoring area appears previously disturbed (as may be the case in areas where Caltrans has deposited fill material and rip rap).

If prehistoric cultural resources are discovered in this area during monitoring or other construction, all work shall be halted in the vicinity of the archaeological discovery until a State Parks archaeologist or designee can visit the site of discovery and assess the significance of the archaeological discovery. Further treatment may be required, including modification of plans to avoid impacts to the site, site recordation, excavation, site evaluation, and data recovery. Avoidance of cultural resources shall be the top priority at all situations.

**Impact CR-2: Potential for Ground-Disturbing Activities to Damage Previously Unidentified Buried Cultural Resource Sites**

Buried cultural resources that were not identified during field surveys could be inadvertently unearthed during ground-disturbing activities that could result in the demolition or substantial damage to significant cultural resources. Avoidance or reduction of this potentially significant impact on buried or otherwise unidentified cultural resources would be achieved by implementing the following mitigation measure.

**Mitigation Measure CR-3: Stop Work if Cultural Resources Are Discovered during Ground-Disturbing Activities.**

If buried cultural resources—such as flaked or ground stone, historic debris, building foundations, shellfish remains or non-human bone—are inadvertently discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a State Parks
archaeologist or designee can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include: development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. Avoidance of cultural remains shall be the top priority at all times.

If cultural resources are discovered during construction activities, the construction contractor will verify that work is halted until appropriate site-specific treatment measures—such as those listed above—are implemented.

**Impact CR-3: Potential to Damage Previously Unidentified Human Remains**

No human remains are known to exist within the project site. Further, archaeological testing would occur prior to construction activities to ensure avoidance of any remains or other significant cultural resources (see Mitigation Measure CR-1 above). However, due to the location of the project site in proximity to the Humaliwo village site (CA-LAN-264), potential will remain, however slight, that buried human remains that were not previously identified could be discovered. The following mitigation measure is required to ensure proper adherence to state laws regarding accidental discovery of human remains. Implementation would ensure that any potential impacts are reduced to less-than-significant levels.

**Mitigation Measure CR-4: Comply with State Laws Pertaining to the Discovery of Human Remains.**

If human remains of Native American origin are discovered during ground-disturbing activities, it is necessary to comply with state laws relating to the disposition of Native American burials that fall within the jurisdiction of the California Native American Heritage Commission (Public Resources Code Section 5097). Construction work shall not continue within 100 feet of a location where human skeletal remains are found.

According to California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American.

If the remains are determined to be Native American, the coroner must contact the California Native American Heritage Commission to determine the most likely living descendant(s). The most likely living descendant shall determine the most appropriate means of treating the
human remains and any associated grave artifacts, and shall oversee disposition of the human remains and associated artifacts by the project archaeologists. This impact would be significant, but implementation of the mitigation measures above would reduce this impact to a less-than-significant level.

**Post-construction Impacts and Mitigation Measures**

Once completed, the proposed project would have no operational components that could result in impacts to cultural resources. No impacts would occur and no mitigation measures are required.