

LOS CERRITOS WETLANDS RESTORATION PLAN

Draft Program Environmental Impact Report
State Clearinghouse Number: 2019039050

Prepared for
Los Cerritos Wetlands Authority

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EXECUTIVE SUMMARY

Los Cerritos Wetlands Restoration Plan Draft Program Environmental Impact Report

ES.1 Introduction

In accordance with California Environmental Quality Act Guidelines (*CEQA Guidelines*) Section 15123, this section of this Program Environmental Impact Report (PEIR) contains a summary of the Los Cerritos Wetlands Restoration Plan (proposed program) and its environmental effects. More detailed information regarding the proposed program and its potential environmental effects is provided in Chapter 2, *Project Description*, Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, Chapter 4, *Other CEQA Considerations*, and Chapter 5, *Alternatives*, of this PEIR. This PEIR has been prepared by the Los Cerritos Wetlands Authority (LCWA) as the Lead Agency in conformance with the provisions of the *CEQA Guidelines*. Included in this summary is an overview of the purpose and organization of the EIR, a summary of the proposed program and its location, a description of the program objectives and characteristics, an overview of alternatives, a general description of the terminology used in the PEIR, a summary of the proposed program's impacts and proposed mitigation measures.

ES.1.1 Purpose of the Draft PEIR and Environmental Review Process

In accordance with Public Resources Code (PRC) Section 21002.1, the purpose of this PEIR is to identify the significant environmental impacts of the proposed program, to identify alternatives to the proposed program, and to indicate the manner in which those significant effects could be mitigated or avoided. The Draft PEIR is being provided to the public for review and comment. After public review and comment, a Final PEIR will be prepared that would include responses to comments on the Draft PEIR received from agencies, organizations, and individuals. The Final PEIR would then provide the basis for decision-making by the Lead Agency and other agencies. Other agencies (state, regional, and local), as described in Chapter 1, *Introduction*, that have jurisdiction over an element of the proposed program or a resource area affected by the proposed program are expected to use this Draft PEIR as part of their approval or permitting process. This Draft PEIR would support permit applications, construction contracts, and other actions required to implement the proposed program and to adopt mitigation measures that are intended to reduce or eliminate significant environmental impacts.

This PEIR serves as a first-tier environmental document that focuses on the overall effects of implementing the activities that make up the proposed program. As a first-tier environmental

document, this PEIR will serve as the foundation for subsequent CEQA analysis (e.g., Project-level EIRs, addendums) which may be conducted for project-specific restoration designs.

ES.2 Draft PEIR Organization

The PEIR is organized into chapters as identified and briefly described below. The chapters are further divided into sections (e.g., Section 3.2, *Air Quality*):

- **Executive Summary:** This chapter presents a summary of the proposed program and the identified environmental impacts. It describes mitigation measures that would be implemented and the level of significance both before and after mitigation (as fully analyzed in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*). It also provides a summary of alternatives to the proposed program.
- **Chapter 1, *Introduction*:** This chapter presents a program overview; a discussion of the purpose and use of this PEIR; a discussion of the environmental process; and the organization of this PEIR. It also provides a summary of known controversial issues and a summary of issues to be resolved.
- **Chapter 2, *Project Description*:** This chapter provides a detailed description of the proposed program and its location. It also identifies the existing land management and site conditions, background, goals and objectives of the proposed program, land use and zoning designations, program characteristics for each program area, the proposed construction schedule for the proposed program, and the intended uses of the PEIR, including permits and approvals that would be required to implement the proposed program.
- **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*:** For each environmental issue, this chapter describes the existing environmental and regulatory settings, evaluates and reaches significance conclusions for program-level and cumulative impacts associated with the proposed program, identifies mitigation for impacts determined to be significant, and discusses the level of significance after implementation of those mitigation measures.
- **Chapter 4, *Other CEQA Considerations*:** This chapter identifies impacts considered to be significant and unavoidable. In addition, the growth-inducing effects and significant irreversible environmental changes associated with construction or operations of the proposed program are also identified.
- **Chapter 5, *Alternatives*:** This chapter provides information regarding alternatives to be considered by decision makers in compliance with *CEQA Guidelines* Section 15126.6. The alternatives analysis evaluates a range of reasonable alternatives to the proposed program or to the location of the proposed program that would feasibly attain most of the basic objectives of the proposed program but would avoid or substantially lessen any of the significant effects of the proposed program. In addition, this chapter summarizes the alternatives that were considered and withdrawn from consideration because they did not meet program objectives, were determined to be infeasible, or did not avoid or substantially lessen any of the significant effects of the proposed program.
- **Chapter 6, *Report Preparers*:** This chapter lists the individuals, firms, and lead agency that were involved in preparing this PEIR.
- **Appendices:** This PEIR includes appendices that provide either background information or additional technical support for the analysis.

ES.3 Project Summary

The Los Cerritos Wetlands Authority (LCWA), as the Lead Agency pursuant to CEQA, is proposing to implement a restoration program for the Los Cerritos Wetlands Complex. The proposed program identifies conceptual restoration designs for approximately 503 acres of land located on the border of Orange County and Los Angeles County in the cities of Seal Beach and Long Beach. The program area consists of the South, Isthmus, Central and North areas. The proposed program would restore wetland, transition, and upland habitats throughout the program area. This would involve remediation of contaminated soil and groundwater, grading, revegetation, construction of new public access opportunities (including trails, visitor center, parking lots, and viewpoints), construction of flood management facilities (including earthen levees and berms, and walls), and modification of existing infrastructure and utilities.

ES.4 Project Location

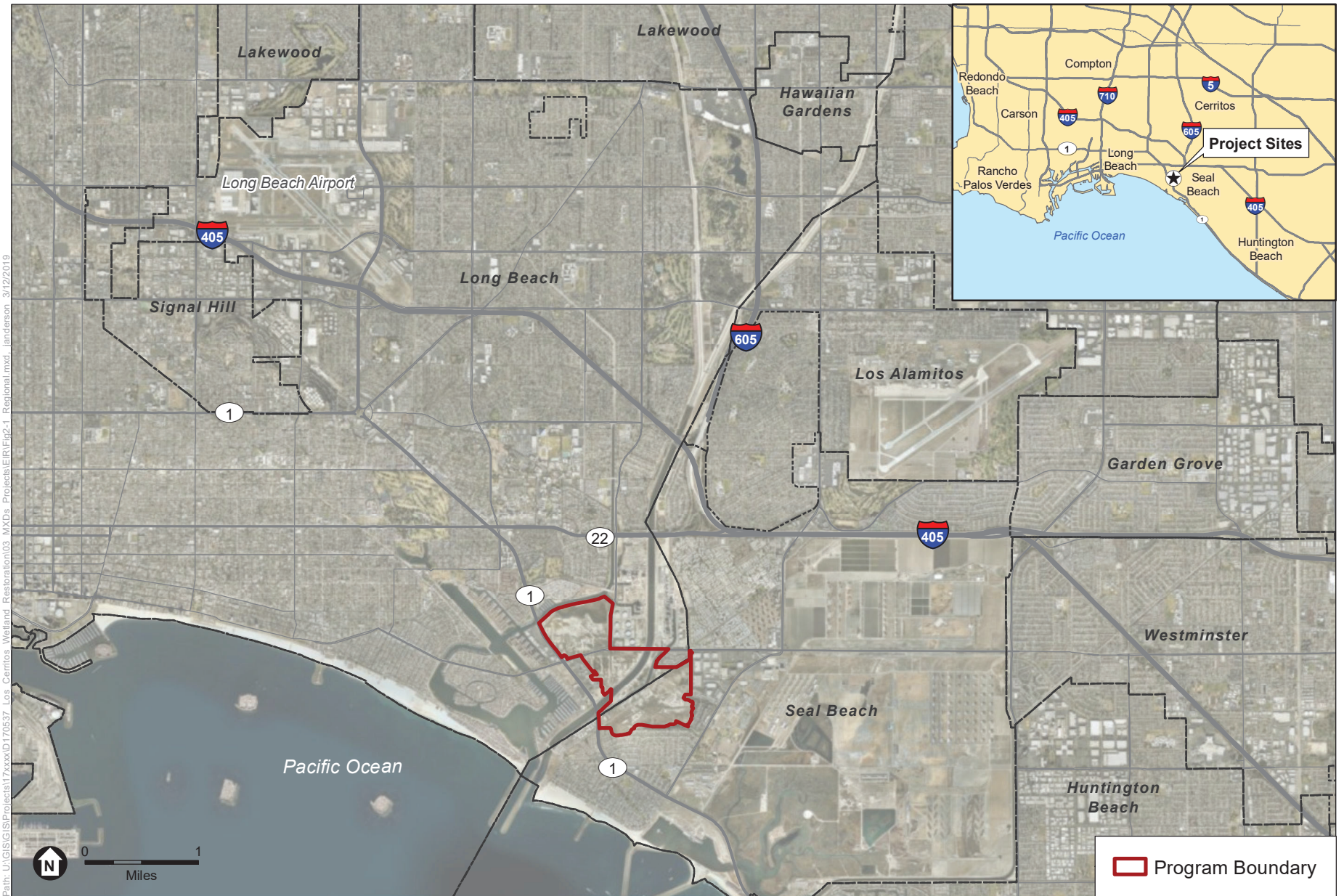
The proposed program is located within the cities of Seal Beach and Long Beach. The City of Seal Beach is within the northwestern portion of Orange County, California. The City of Long Beach is within the southeastern portion of Los Angeles County, California.

The City of Seal Beach is bounded by the City of Long Beach to the west; the City of Los Alamitos and the neighborhood of Rossmoor to the north; and the cities of Huntington Beach, Westminster, and Garden Grove to the east. The Pacific Ocean borders the City of Seal Beach to the south. The U.S. Navy Naval Weapons Station Seal Beach is located within Seal Beach city boundaries to the southeast of the program area.

The City of Long Beach is bounded by the cities of Carson and Los Angeles, the neighborhood of Wilmington, and the Port of Los Angeles to the west; the cities of Compton, Paramount, and Lakewood to the north; and the cities of Hawaiian Gardens, Cypress, Los Alamitos, and Seal Beach to the east. The Pacific Ocean borders the City of Long Beach to the south.

Figure ES-1, *Regional Location*, shows the regional location of the proposed program.

The program area is located in the West Seal Beach and East Long Beach, straddling the border of Orange County and Los Angeles County in southern California. **Figure ES-2**, *Project Site and Local Vicinity*, illustrates the program area relative to its immediate surroundings. Three major channels are present in the program area: Los Cerritos Channel, San Gabriel River, and the Haynes Cooling Channel. A remnant historic tidal channel, called Steamshovel Slough, is also present, and drains to the Los Cerritos Channel. For purposes of organizing the environmental analysis and discussion, the proposed program has been separated into 4 areas (South, Isthmus, Central, and North) and 17 individual sites.



SOURCE: ESRI

Los Cerritos Wetlands Restoration Plan Draft Program EIR

Figure ES-1
Regional Location



SOURCE: Mapbox, LCWA

Los Cerritos Wetlands Restoration Plan Draft Program EIR

Figure ES-2
Project Site and Local Vicinity

ES.5 Background

ES.5.1 History of the Los Cerritos Wetlands Complex

Until the late 1800s, the wetlands within and beyond the program area, collectively known as the Los Cerritos Wetlands Complex, spanned approximately 2,400 acres and consisted of a network of tidal channels, vegetated wetlands, and upland areas. The Los Cerritos Wetlands Complex was almost entirely tidal wetland, with a few natural streams and intertidal flat channels.

Beginning in the late 1800s, the Los Cerritos Wetlands Complex began to undergo significant alterations due to cattle and beet farming, the demands of a growing population, and oil extraction. Oil was first discovered at the Seal Beach Oil Field in 1926. The development of oil production operations, paired with channelization of the San Gabriel River, resulted in substantial dredge and fill of the Los Cerritos Wetlands Complex. Today, nearly all of the program area has been converted from its historic wetland habitat, though a few remnant and degraded historic habitats remain. The most notable example of remaining historic habitat within the program area is the Steamshovel Slough, a fully tidal marsh connected to the Los Cerritos Channel that maintains high plant diversity and estuarine ecological communities.

ES.5.2 Cultural History of the Los Cerritos Wetlands Complex

Archaeological evidence from the Channel Islands indicates that the first people migrated down the California Coast as early as 12,000 years ago (Cassidy et al. 2004; Erlandson et al. 2007), with permanent settlements established between 8,000 and 3,000 years ago (Douglass et al. 2015; Glassow et al. 1988; Grenda and Altschul 2002; Koerper et al. 2002; Macko 1998). From 1,000 years before present to approximately 1542 C.E., Los Angeles County and Northern Orange County were occupied by the Gabrielino people (named after the Spanish Mission where many of them were baptized). Approximately 50 major villages were located along the coast and inland prairies. The Gabrielino used the local wetlands, rivers, and streams to hunt and fish, to gather reeds and willows to build homes, and as a reliable water source (McCawley, 1996). Nearby Native American sites are known to be located at California State University Long Beach, Rancho Los Alamitos Historic Ranch, and Heron Point (California Coastal Commission, 2018).

The Los Cerritos Wetlands Complex has been identified by California Native American tribal members as a Tribal Cultural Landscape as part of government-to-government consultation with LCWA regarding the proposed program and as part of consultations related to the Los Cerritos Wetland Oil Consolidation and Restoration Project. Tribal members consulted believe the Tribal Cultural Landscape is eligible for listing in the National Register of Historic Places as a Tribal (or Traditional) Cultural Property (or TCP) – a type of significance that is often related to religious or ceremonial values because of unique landscape features, such as a mountain or bluff top, places with significant or special natural views, rivers and estuaries, or vegetation and wildlife, or areas with burials or religious artifacts/monuments. The wetlands are within walking distance to both *Puvungna* and *Motuucheyngna* village sites and served as an important resource to native peoples and was used both historically and in current times by native peoples. The California Coastal Commission has acknowledged the significance of this area as part of the Los Cerritos Wetland

Oil Consolidation and Restoration Project (State Clearinghouse Number 2016041083) (California Coastal Commission, 2018).

ES.5.3 Los Cerritos Wetlands Stewardship Program

The Los Cerritos Wetlands Stewardship Program¹ was created in 2009 by the LCWA to engage the public and allow volunteers to help the LCWA with managing and enhancing habitat that exists on LCWA property. The Los Cerritos Wetlands Stewardship Program Vision Plan prepared by the LCWA in 2018 identifies future restoration projects, including opportunities for improved public access.

ES.5.4 Los Cerritos Wetlands Oil Consolidation and Restoration Project

A project-level EIR was prepared for the City of Long Beach to evaluate the environmental effects associated with the Los Cerritos Wetlands Oil Consolidation and Restoration Project (State Clearinghouse Number 2016041083). The project applicant, Beach Oil Minerals Partners (BOMP), proposes to consolidate existing oil operations and implement a wetlands habitat restoration project in portions of the North and Central Areas within the program area and on property that fall completely outside the program area. The EIR was certified by the City of Long Beach City Council on January 16, 2018. The Local Coastal Program Amendment associated with the Los Cerritos Wetlands Oil Consolidation and Restoration Project was approved by the California Coastal Commission (CCC) on August 8, 2018, with modifications to the amendment approved on October 2, 2018. The Coastal Development Permit was conditionally approved by the CCC on December 13, 2018. This PEIR relies on the technical analysis, impact discussion, and mitigation measures documented in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083) for a portion of the program area. No new information of substantial importance or change in circumstance with the Los Cerritos Wetlands Oil Consolidation and Restoration Project requires re-evaluation of the analysis in that EIR.

The Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083) contains more detailed and quantitative analysis than this program-level EIR because this EIR is evaluating the impacts associated with implementing the Los Cerritos Wetlands Restoration Plan, not a specifically designed project as is the case for the Los Cerritos Wetlands Oil Consolidation and Restoration Project. The Los Cerritos Wetlands Oil Consolidation and Restoration Project was designed to be consistent with the goals and objectives of the Los Cerritos Wetlands Final Conceptual Restoration Plan.

ES.5.4.1 Project Characteristics Not Evaluated in this PEIR

The environmental effects associated with the following project characteristics of the Los Cerritos Wetlands Oil Consolidation and Restoration Project are evaluated in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083) and will not be further evaluated in this PEIR.

¹ <http://intoloscerritoswetlands.org/wp-content/uploads/2015/12/LCWA-Stewardship-Program-Vision-Plan.pdf>

North Area

The Los Cerritos Wetlands Oil Consolidation and Restoration Project would involve removing the existing oil operations and associated facilities and implementing a wetlands habitat restoration project on the Northern and Southern Synergy Oil Field sites.

The first phase of the project would be focused on the 76.52-acre Northern Synergy Oil Field site, and provide the conditions necessary for the reestablishment of coastal salt marsh habitat and associated hydrologic, biogeochemical, and habitat functions, including:

- Remediating any contaminated areas identified through sampling, and as required by permit, and restoring a natural wetland area that would be operated as a wetlands mitigation bank.²
- Constructing a new barrier consisting of sheet piles and earthen berms along the southern limits of the Northern Synergy Oil Field site;
- Establishing tidal channels, by means of grading, to convey tidal water from the Los Cerritos Channel/Steamshovel Slough to areas that currently lack tidal flows; and
- Removing segments of the existing berm and roads that currently separate Steamshovel Slough from non-tidal portions of the Northern Synergy Oil Field site.

The first phase of the project would also include work on the Southern Synergy Oil Field site, including relocating the existing office building on site to house the Long Beach Visitor Center, and construction of a parking lot, trail, overlook, sidewalk enhancements, and bikeway improvements.

The first phase of the project is expected to be implemented within 4 years of obtaining construction permits.

Within 20 years after obtaining Certificate of Occupancy for the new office on the Pumpkin Patch site, in the second phase of the project, all remaining oil operations would be removed and the 73.07-acre Southern Synergy Oil Field site may be restored to tidal salt marsh by breaching or lowering the earthen berm and removing the sheet pile wall.

Central Area

An aboveground pipeline system and underground utility corridor would be constructed in the first phase of the project, along 2nd Street from Studebaker Road down to, and along, Shopkeeper Road on the Long Beach City Property site to the Pumpkin Patch site. On the Long Beach City Property, the tanks and 95 percent of all pipelines would be removed. Up to 95 percent of oil production infrastructure within the program area would be removed from the Pumpkin Patch site in the near-term to allow for restoration. Sidewalks could be constructed along all parcel frontages.

Construction on the Pumpkin Patch site is expected to take 3 to 4 years, while construction of the pipeline system on the Long Beach City Property is expected to take 2 to 3 years.

² Mitigation banking is the sale of credits for the preservation, enhancement, restoration or creation of a wetland, stream, or habitat conservation area which offsets, or compensates for, expected adverse impacts to similar nearby ecosystems. The approval and establishment of the mitigation bank, including the wetlands restoration plan that may be implemented, is subject to a separate regulatory process overseen by the interagency review team (IRT) consisting of State and federal resources agencies, and led by the U.S. Army Corps of Engineers.

Within 20 years from the New Occupancy Date, in the second phase of the project, oil operations would be removed from the Long Beach City Property site and contaminated areas would be remediated.

Outside the Program Boundary

Outside the program boundary, on LCWA-owned property on the northeast corner of Studebaker Road and 2nd Street, oil processing facilities would be constructed after the site is remediated and graded. The facilities would include an elevated pipe rack, tank storage, well cellars, and an emergency flaring system. The Pumpkin Patch site outside the program area would be graded and new oil facilities would be constructed at the site. Oil facilities would include a tank storage area, well cellars, a water treatment system, and oil separation system. Additionally, a new office building and warehouse would be constructed on the Pumpkin Patch site. A bike station would be constructed adjacent to the Pumpkin Patch site. The first phase of the project is expected to be implemented within 2 years of obtaining construction permits. Potential environmental impacts to this activity are not analyzed under this PEIR, except to the extent these activities are reasonably anticipated future activities that may have a cumulative effect on activities within the program area (see Table 3-1 in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, which includes the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse No. 2016041083), which is included as Cumulative Project No. 24).

ES.6 Los Cerritos Wetlands Restoration Plan Goals and Objectives

The goals and objectives of the proposed program are presented below and are identical to the goals and objectives identified in the CRP (Moffatt & Nichol, 2015):

1. Restore tidal wetland processes and functions to the maximum extent possible.
 - a. Increase estuarine habitat with a mix of tidal channels, mudflat, salt marsh, and brackish/freshwater marsh and ponds.
 - b. Provide adequate area for wetland-upland ecotone and upland habitat to support wetlands.
 - c. Restore and maintain habitat that supports important life history phases for species of special concern (e.g., federal and state listed species), essential fish habitat, and migratory birds as appropriate.
2. Maximize contiguous habitat areas and maximize the buffer between habitat and sources of human disturbance.
 - a. Maximize wildlife corridors within the Los Cerritos Wetlands Complex and between the Los Cerritos Wetlands Complex and adjacent natural areas within the region.
 - b. Incorporate native upland vegetation buffers between habitat areas and human development to mitigate urban impacts (e.g., noise, light, unauthorized human encroachment, domestic animals, wastewater runoff) and reduce invasion by non-native organisms.
 - c. Design the edges of the Los Cerritos Wetlands Complex to be respectful and compatible with current neighboring land uses.

3. Create a public access and interpretive program that is practical, protective of sensitive habitat and ongoing oil operations, economically feasible, and will ensure a memorable visitor experience.
 - a. Build upon existing beneficial uses.
 - b. Minimize public impacts on habitat/wildlife use of the Los Cerritos Wetlands Complex.
 - c. Design interpretive concepts that promote environmental stewardship and the connection between the wetlands and the surrounding community.
 - d. Solicit and address feedback from members of the surrounding community and other interested parties.
4. Incorporate phasing of implementation to accommodate existing and future potential changes in land ownership and usage, and as funding becomes available.
 - a. Include projects that can be implemented as industrial operations are phased out and other properties are acquired over the near-, mid- and long-term (next 10 years, 10-20 years, and 20+ years).
 - b. Investigate opportunities to restore levels of tidal influence that are compatible with current oil leases and neighboring private land holdings.
 - c. Remove/realign/consolidate existing infrastructure (roads, pipelines, etc.) and accommodate future potential changes in infrastructure, to the maximum extent feasible.
5. Strive for long-term restoration success.
 - a. Implement an adaptive management framework that is sustainable.
 - b. Restore habitats in appropriate areas to minimize the need for long-term maintenance activities that are extensive and disruptive to wildlife.
 - c. Design habitats that will accommodate climate changes, e.g., incorporate topographic and habitat diversity and natural buffers and transition zones to accommodate migration of wetlands with rising sea levels.
 - d. Provide economic benefit to the region.
6. Integrate experimental actions and research into the project, where appropriate, to inform restoration and management actions for this project.
 - a. Include opportunities for potential experiments and pilot projects to address gaps in information (e.g., effect of warm river water on salt marsh ecosystem) that are protective of sensitive habitat and wildlife and that can be used to adaptively manage the restoration project.
 - b. Include areas on the site, where appropriate, that prioritize research opportunities (such as those for adaptive management) over habitat sensitivities.

ES.7 Program Characteristics

As described above, the program area consists of the South, Isthmus, Central and North areas. The proposed program would restore wetland, transition, and upland habitats throughout the program area. This would involve remediation or containment of contaminated soil and groundwater, grading, revegetation, construction of new public access opportunities (including trails, visitor center, parking lots, and viewpoints), construction of flood management facilities (including earthen levees and berms, and walls), and modification of existing infrastructure and utilities.

ES.7.1 Overview of Common Program Features

The description of each of the program areas is broken down into the following elements: phasing, ecosystem restoration, flood risk and stormwater management, public access and visitor facilities, and infrastructure and utility modification. An overview of each of these elements is provided below.

Phasing

One of the Los Cerritos Wetlands Restoration Plan objectives (Section ES.4, Objective #4) is to incorporate phasing of implementation to accommodate existing and future potential changes in land ownership and usage, and as funding becomes available. The restoration activities would be phased over time as properties become available for acquisition by LCWA. The timing of construction at each site is dependent on multiple variables, including property transfers, removal of oil infrastructure, and related facilities, availability of funding, and permit approvals. Each phase of the proposed program will take multiple years to complete construction activities and with multiple years anticipated between each phase.

Construction on properties currently under the ownership of LCWA or in the process of being transferred to the LCWA is expected to occur in the **near term** (within approximately 10 years). Construction on properties that would be connected to or are associated with the decommissioning of the Haynes Cooling Channel or that may require more time than the near-term time frame is expected to occur in the **mid-term** (between approximately 10-20 years). The timing of the **long-term** phase depends on decommissioning of existing oil operations and could vary from around 20 years (where agreements are already in place) to much longer time frames. For oil operations that do not have agreements in place with LCWA, it is expected that overall level of oil and natural gas production would continue until oil operators decide to stop production.

What is described in this PEIR is an approximation of the sequence of restoration that could occur; however, it is possible that a property identified as available for restoration in the mid-term may not be restored until the long-term, or a property identified as available for restoration in the mid-term is available to be restored in the near-term, etc. Restoration will not begin until a variety of actions are taken, including: preparation of project level restoration designs, completion of studies and analysis in support of design and permit approvals, acquiring project-level funding, acquiring permit approvals and associated CEQA clearance documents, amendments made with easement holders, and property transfers.

Ecosystem Restoration

Ecosystem restoration includes actions that will restore more natural ecosystem processes (physical and biological) from disturbed habitats within the program area. Restoration of more natural ecosystem processes through actions like grading, altering tidal connections, and revegetation, will lead to more extensive and higher functioning wetland, transition, and upland habitats. Habitat types that would be restored or enhanced within the program area include subtidal channels, intertidal salt marsh, salt marsh-upland transition zone, brackish marsh, native grassland, coastal sage scrub, and riparian scrub. Restored habitat distribution and acreages vary by program area and are described in more detail below.

Excavation of tidal channels to enhance tidal connection would require a balancing of temporary impacts to existing resources, which in most instances are moderately to substantially degraded wetlands, with maximizing the long-term functions of the areas receiving tidal exchange. To the extent feasible, tidal channels would avoid existing areas of pickleweed mats, Parish's glasswort patches and saltgrass flats and instead would be located in unvegetated flats and low elevation areas. In some areas it would not be possible to fully avoid existing vegetation while establishing the necessary elevations for the tidal channels.

The restored salt marsh areas would be re-vegetated through a combination of seeding and installation of nursery container stock. Restoration would include soil amendments (to enhance soil texture and nutrients), irrigation, and weed control. The salt marsh would support a mix of species including Parish's glasswort, shoregrass, saltgrass, Pacific pickleweed, alkali heath, and Pacific cordgrass.

Revegetation activities in non-tidal areas would include removing or controlling invasive plant species and seeding/planting native plant species. Appropriate conditions will need to be restored in order to support target plant communities. A few important factors to consider will be hydrology, salinity, soil texture, and slope aspect.

Intertidal areas with unrestricted connections to fully tidal waters will, over time with sea-level rise, experience an upward elevation shift in vegetation communities. In the shorter term, subtidal and low salt marsh areas would expand, and mid and high salt marsh areas would shrink. In the longer term, elevations that support intertidal communities at current sea level will be converted entirely to subtidal habitats. Gently sloped transition zone and low-lying upland habitats adjacent to today's salt marsh could support intertidal communities in the longer term.

Potential disturbances to sensitive habitats and species during operation of the proposed program would be minimized through effective design of public access areas to keep people on trails and out of habitat areas. The success of restoration efforts would be measured based on established performance criteria focusing on the abundance and diversity of native vegetation and the wildlife that use the Los Cerritos Wetlands Complex.

Flood Risk and Stormwater Management

Improving connection of wetlands to tidal flows to allow for habitat restoration would require changes to existing flood risk and stormwater management elements, and construction of new flood risk and stormwater management elements.

The proposed program would include modifications to Los Angeles County Drainage Area project structures within the program area by modifying the existing levee along the San Gabriel River, constructing new flood risk management structures (e.g., earthen levees and berms, or flood walls), restoring the wetland floodplain, constructing new water-control structures that allow for increased tidal connections, and constructing new stormwater management features (e.g., bioswales). The proposed program would also include modifications to existing operations and maintenance practices for flood risk and stormwater management structures.

The existing Los Angeles County Drainage Area project structures and facilities are maintained in such a manner and operated at such times and for such periods as necessary to obtain the maximum flood protection benefits (33 C.F.R. §208.10). The implementation of the proposed program would require revisions to the U.S. Army Corps of Engineers' OMRR&R Manual to reflect changes made to the existing Los Angeles County Drainage Area project structures and facilities within the program area.

Public Access and Visitor Facilities

Potential public access improvements and visitor amenities would include construction of new pedestrian trails, elevated perimeter pedestrian walkways, educational or interpretive features, viewing areas with overlooks, new and improved parking facilities, and visitor center. These improvements would develop and enhance public access, recreation, and educational opportunities within the program area, while balancing the need for protection of sensitive habitats.

Infrastructure and Utility Modification

Infrastructure and utility modifications include oil well and associated pipeline abandonment and relocation, and electric and water line relocation. These modifications would allow for increased connectivity of habitat restoration within the program area and protection of existing utilities that are not otherwise abandoned or relocated.

ES.7.2 South Area

Ecosystem restoration in the South Area would occur in three phases based on land and oil lease ownership. The near- and mid-term phases of the program in the South Area would be mostly focused on the South LCWA and State Lands Parcel sites and would provide the conditions necessary for the expansion of coastal salt marsh habitat and associated hydrologic, biogeochemical, and habitat functions. Long-term phases of the program would be focused on the Hellman Retained site. The operations on the Los Alamitos Retarding Basin are proposed to be modified in the mid-term and no changes are proposed for the Los Alamitos Pump Station site, which was formerly restored as part of a mitigation project.

Near-term activities would include:

- Remediating soils (e.g., on-site treatment, excavation and removal, or cap in place) that have been impacted by oil operations;
- Grading the South LCWA site, including excavation to create channels and revegetation of native plants to support a diversity of marsh, transitional, and upland habitats;
- Constructing a new earthen berm or flood wall along the Hellman property boundary on the South LCWA site to protect the Hellman site from flooding;
- Raising 1st Street on the South LCWA site out of the floodplain by placing it on fill;
- Building a Seal Beach Visitor Center and associated parking on an existing raised building pad on the State Lands Parcel site;

- Removing the gate on the existing culvert connecting the South LCWA site to the San Gabriel River and removing the culverts under the former access roads. The existing culvert under 1st Street would either be improved or replaced with a bridge; and
- Restoring native grassland for raptor foraging habitat on South LCWA site.

Mid-term activities would include:

- Excavating a channel connecting the Hellman Channel directly to the Haynes Cooling Channel and lowering the berm along the Haynes Cooling Channel to increase the tidal range in the South LCWA site; and
- Modifying the Los Alamitos Retarding Basin operations to enhance the habitat value in the basin (e.g., change pumping operations to maintain ponding for shorter or longer time).

Long-term activities would include:

- Phasing out or consolidating oil operations on the Hellman Retained site to allow for restoration;
- Lowering, breaching, or removing the earthen berm or flood wall separating the South LCWA site and the Hellman Retained site;
- Removing 1st Street (through the South LCWA site) and removing, lowering, or breaching the berm under the road.

Table ES-1, *South Area Phasing*, summarizes the activities associated with each phase.

**TABLE ES-1
SOUTH AREA PHASING**

	Near Term (0–10 years)	Mid Term (10–20 years)	Long Term (20+ years)
Los Alamitos Pump Station Site	<ul style="list-style-type: none"> Previously restored 	n/a	n/a
South LCWA Site	<ul style="list-style-type: none"> Remediation of soils Grading of site to support habitat restoration Constructing an earthen berm or flood wall to protect Hellman Retained site Raising 1st Street Removing the gate on the Hellman Channel culvert to the San Gabriel River 	<ul style="list-style-type: none"> Excavating a channel to connect the Haynes Cooling Channel to the site Lower berm separating the Haynes Cooling Channel from the site 	<ul style="list-style-type: none"> Lower or breach earthen berm or remove flood wall to connect to Hellman Retained site Remove 1st Street and lower or breach berm
State Lands Parcel Site	<ul style="list-style-type: none"> Building a Seal Beach Visitor Center and associated parking facilities 	n/a	n/a
Haynes Cooling Channel	n/a	<ul style="list-style-type: none"> Channel is decommissioned 	n/a
Los Alamitos Retarding Basin Site	n/a	<ul style="list-style-type: none"> Operations of retarding basin are modified to enhance habitat 	n/a
Hellman Retained Site	n/a	n/a	<ul style="list-style-type: none"> Oil operations removed or consolidated to allow for restoration Remediation of soils Grading of site to support habitat restoration New tidal channel excavated to connect the Haynes Cooling Channel to the site

ES.7.3 Isthmus Area

In the near-term, the proposed program would extend the restoration currently present on the Zedler Marsh site north into the Isthmus Bryant site and the portion of the DWP site west of the gas access road. The Callaway Marsh site and the rest of the DWP site would be enhanced in the mid-term, once the Haynes Cooling Channel is decommissioned by LADWP and no longer in use for the Haynes Generating Station. In the long-term, the oil operations on the Isthmus LCWA site would be phased out or consolidated off site to allow for restoration once the operations are no longer active. **Table ES-2, *Isthmus Area Phasing***, summarizes the activities associated with each phase.

**TABLE ES-2
ISTHMUS AREA PHASING**

	Near Term (0–10 years)	Mid Term (10–20 years)	Long Term (20+ years)
Zedler Marsh Site	<ul style="list-style-type: none"> Previously restored with ongoing restoration activities per the Stewardship Vision Plan 	n/a	n/a
Isthmus Bryant Site	<ul style="list-style-type: none"> Limited grading of site to support habitat restoration and provide tidal connection to Zedler Marsh Removal of invasive species and planting of native vegetation 	n/a	<ul style="list-style-type: none"> Removal of access road and culverts to allow better tidal flow to the north
DWP Site	<ul style="list-style-type: none"> Removal of invasive species and planting of native vegetation west of the gas access road 	<ul style="list-style-type: none"> Removal of invasive species and planting of native vegetation east of the gas access road 	<ul style="list-style-type: none"> Removal of access road to reduce habitat fragmentation
Callaway Marsh Site	n/a	<ul style="list-style-type: none"> Limited grading of site to support habitat restoration Removal of flap gate on culvert connecting site to San Gabriel River Removal of invasive species and planting of native vegetation 	n/a
Isthmus LCWA Site	n/a	n/a	<ul style="list-style-type: none"> Oil operations removed or consolidated to allow for restoration Remediation of soils Limited grading of site to support habitat restoration Removal of invasive species and planting of native vegetation

ES.7.4 Central Area

Ecosystem restoration in the Central Area would occur in two phases based on land and oil lease ownership. The Central LCWA site is available for restoration immediately, and discussions between Bryant Dakin, LLC and the LCWA on acquisition of the Central Bryant site for restoration are on-going. The program assumes that both of these properties would be available for restoration in the near-term and the existing oil operations on the Central LCWA site operated by Signal Hill Petroleum, Inc. would be protected in place by proposing to raise the wells out of the floodplain. The Long Beach City Property site and the Pumpkin Patch site are part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project (State Clearinghouse Number 2016041083) and would be available for restoration in the long-term.

The near-term phase of the program would be focused on the Central LCWA and Central Bryant sites and would provide the conditions necessary for the reestablishment of coastal salt marsh habitat and associated hydrologic, biogeochemical, and habitat functions. Near-term activities would include:

- Relocating or modifying oil infrastructure and remediation of soils on the Central LCWA site;

- Grading of the sites, including channels, and revegetation of native plants to support a diversity of salt marsh species;
- Removing segments of the existing levee (e.g., breaching the levee and/or lowering a segment) that currently separates the San Gabriel River from non-tidal portions of the Central LCWA and Central Bryant sites;
- Constructing a new earthen levee (Perimeter Levee) along 2nd Street from the San Gabriel River to the intersection with Studebaker Road to protect areas to the north from flooding;
- Constructing a new interim earthen levee (Interim Levee) along the western boundary of the Central LCWA site to protect the areas to the west from flooding and to provide continued access to the wells on the Central LCWA site;
- Providing flood protection for the existing wells on the Central LCWA site by raising the well pads out of the floodplain; and
- Constructing public trails on levees, including accessible ramps, and viewpoints.

In the long-term, the Long Beach City Property site and the Pumpkin Patch site would be restored to tidal salt marsh, including:

- Grading the Long Beach City Property site, including channels, to support a diversity of salt marsh species;
- Removing the northern segment of the Interim Levee on the Central LCWA site to connect the restored habitats on the Central LCWA site to the non-tidal portions of the Long Beach City Property site;
- Constructing a new earthen levee (Perimeter Levee) along 2nd Street between the intersection with Studebaker Road to Shopkeeper Road on the Long Beach City Property site and then along Shopkeeper Road to the existing San Gabriel River levee on the Long Beach City Property and Pumpkin Patch sites to protect areas to the north and west from flooding; and
- Constructing public trails on levees, accessible ramps, stairs, and viewpoints.

Table ES-3, *Central Area Phasing*, summarizes the activities associated with each phase.

Impacts associated with habitat restoration on the Long Beach City Property and Pumpkin Patch sites will be evaluated under this PEIR. See the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083) and CCC Staff Report conditions for impacts associated with soil remediation, oil consolidation, and construction of the new pipeline system and utility corridor.

**TABLE ES-3
CENTRAL AREA PHASING**

	Near Term (0–10 ears)	Mid Term (10–20 years)	Long Term (20+ years)
Central LCWA Site and Central Bryant Site	<ul style="list-style-type: none"> • Remediation of soils and relocation or modifying oil infrastructure • Grading of site to support habitat restoration • Construction of earthen levee to protect Long Beach City Property site (Interim Levee) and 2nd Street (Perimeter Levee) • Raising existing wells to protect them • Breaching the San Gabriel River Levee and reconnecting the river to the restored marsh • Construction of public trails on levees and accessible ramps • Construction of viewpoints 	n/a	<ul style="list-style-type: none"> • Removal of the Interim Levee and excavation of a tidal channel from the Central LCWA/Central Bryant site to the Long Beach City Property site
Long Beach City Property Site	<ul style="list-style-type: none"> • Construction of an aboveground pipeline system and underground utility corridor along 2nd Street from Studebaker Road down to and along Shopkeeper Road • Removal of tank farm and 95% of pipelines 	n/a	<ul style="list-style-type: none"> • Removal of oil operations and remediation of soils to allow for restoration • Grading of site to support habitat restoration • Construction of earthen levee to protect 2nd Street and Shopkeeper Road (Perimeter Levee) • Excavation of a tidal channel from the Central LCWA/Central Bryant site to the Long Beach City Property site • Construction of public trails on levees, accessible ramps, and stairs • Construction of viewpoints
Pumpkin Patch Site	n/a	n/a	<ul style="list-style-type: none"> • Removal of oil operations, including 95% of pipelines and remediation of soils to allow for restoration of the site • Construction of earthen levee to protect the western portion of the Pumpkin Patch site (Perimeter Levee)

Grey text represents project features that interact with this program, but that are evaluated as part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR

ES.7.5 North Area

Ecosystem restoration on the Alamitos Bay Partners site and South Synergy Oil Field site would occur in the long-term phase based on land and oil lease ownership. The North Synergy Oil Field site is part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project (State Clearinghouse Number 2016041083) and would be restored in the near-term phase.

Long-term activities would include:

- Remediating soils (e.g., on-site treatment, excavation and removal, or cap in place) that have been impacted by oil operations on the Alamitos Bay Partners site;
- Grading the Alamitos Bay Partners site and the South Synergy Oil Field site, including excavation to create channels, and revegetation to support a diversity of marsh, transitional, and upland habitats;
- Constructing a new earthen levee or flood wall along the South Synergy Oil Field and Alamitos Bay Partners sites to protect 2nd Street and Pacific Coast Highway from flooding;
- Excavating a tidal channel from the North Synergy Oil Field site to the South Synergy Oil Field site to increase tidal connection in the South Synergy Oil Field site; and
- Removing the sheet pile wall along the Alamitos Bay Partners site.

Table ES-4, *North Area Phasing*, summarizes the activities associated with each phase.

**TABLE ES-4
NORTH AREA PHASING**

	Near Term (0–10 years)	Mid Term (10–20 years)	Long Term (20+ years)
Northern Synergy Oil Field Site	<ul style="list-style-type: none"> • Remediation of soils and relocation of oil infrastructure • Construction of a new berm and sheet pile wall barrier along the southern limits of the site • Grading tidal channels to support habitat restoration • Removal of segments of the existing berm separating Steamshovel Slough from the site 	n/a	n/a
Southern Synergy Oil Field Site	<ul style="list-style-type: none"> • Development of the Long Beach Visitor Center and parking lot from existing office building • Construction of trail, sidewalk enhancements, and bikeway improvements 	n/a	<ul style="list-style-type: none"> • Remediation of soils and relocation oil infrastructure • Removal of the sheet pile wall barrier constructed in the near term • Grading of site to support habitat restoration • Construction of earthen levee or flood wall to protect 2nd Street and Pacific Coast Highway • Excavation of a tidal channel from the Northern Synergy Oil Field site to the Southern Synergy Oil Field site
Alamitos Bay Partners Site	n/a	n/a	<ul style="list-style-type: none"> • Remediation of soils and relocation oil infrastructure • Grading of site to support habitat restoration










Grey text represents project features that interact with this project, but that were evaluated as part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR

ES.7.6 Construction Information

ES.7.6.1 Schedule

Table ES-5, *Restoration Schedule*, shows the proposed construction schedule for the program. Each phase of the Restoration Program will take multiple years to complete construction activities and with multiple years anticipated between each phase.

**TABLE ES-5
RESTORATION SCHEDULE**

	Near Term (0–10 years)	Mid Term (10–20 years)	Long Term (20+ years)
South Area			
Isthmus Area			
Central Area			
North Area			

ES.7.6.2 Earthwork Quantity Estimates

Table ES-6, *Approximate Earthwork Soil Volume for Near Term*, summarizes the earthwork quantity estimates for the program in the near-term. **Table ES-7, *Approximate Earthwork Soil Volume for Long Term***, summarizes the earthwork quantity estimates for the program in the long-term, by area. Levee dimensions would be refined during final design as needed to meet Corps requirements, including Section 14 of the Rivers and Harbors Act and Section 408 requirements for modifications to Corps-approved flood risk management systems. The final volume of fill placement for levee construction would depend on the final design and the actual conditions during restoration (e.g., the compatibility of excavated soils). High estimates of potential fill volumes are analyzed in this document; actual fill volumes.

**TABLE ES-6
APPROXIMATE EARTHWORK SOIL VOLUME FOR NEAR TERM**

Feature/Action	Cut Quantity (cy)	Fill Quantity (cy)
Central Area		
Central Area Perimeter Levee, near term	0	78,000–86,000
Interim Levee	0	74,000–82,000
Raising Wells and Access Roads	0	108,000
Central LCWA and Central Bryant Marsh Grading	44,000–82,000	0
Total	44,000–82,000	260,000–276,000
South LCWA Perimeter Berm	0	18,000
South LCWA Marsh Grading (avoiding high-functioning marsh habitat)	315,000–412,000	assume no fill needed
Total	358,000–494,000	278,000–294,000
Total cut/fill balance	64,000–216,000 cy excess material	

**TABLE ES-7
APPROXIMATE EARTHWORK SOIL VOLUME FOR LONG TERM**

Feature/Action	Cut Quantity (cy)	Fill Quantity (cy)
North Area		
North Area Berm	0	155,000
Southern Synergy Oil Field and Alamitos Bay Partners Sites Marsh Grading		100–135,000
Total	0	155,000–290,000
Total cut/fill balance	155,000–290,000 cy material needed	
Central Area		
Central Area Perimeter Levee, long term		190,000–216,000
Interim Levee Removal (northern portion)	17,000–19,000	
Long Beach City Property Site Marsh Grading		1,000–47,000
Total	17,000–19,000	191,000–263,000
Total cut/fill balance	172,000–246,000 cy material needed	
South Area		
Hellman Retained Site Marsh Grading	0–88,000	0–2,000
Total cut/fill balance	2,000 cy material needed–88,000 cy material cut	

This table does not include the excess fill from Table ES-6, which could be used to offset the needed material in the long term.

Excavation in the South LCWA site to lower the area to marshplain is expected to generate between 315,000 to 412,000 cubic yards of soil, depending on final marshplain grading. In the near-term, approximately 178,000 to 232,000 cubic yards of soil would be needed in the Central LCWA site, depending on final levee design, levee compaction, and final marshplain grading. The extra material generated from the South LCWA site could be stockpiled for the long-term, when the Central Area would need 172,000 to 246,000 cubic yards of material. Based on these estimate ranges, there could be 62,000 cubic yards of excess material to export or a need to import 163,000 cubic yards of material. The future design should seek to balance cut and fill as much as possible on site.

In the long-term, approximately 155,000 to 290,000 cubic yards of material would be needed to raise the Southern Synergy Oil Field and Alamitos Bay Partners sites and to construct the North Area berm. Based on the final marshplain grading design, the Hellman Retained site could generate 88,000 cubic yards of material or require 2,000 cubic yards of fill. The future designs of these sites should seek to balance cut and fill as much as possible on site.

Although quantities for cut and fill have been estimated for the conceptual design, exact calculations of how much excess fill would be generated by the excavation of wetlands areas will be determined in the final levee design process in cooperation with LACFCD and the Corps.

ES.7.7 Monitoring and Adaptive Management

The complexity of a large-scale restoration, with ecological and funding objectives, constraints, and the presence of sensitive habitats and species, necessitates careful implementation of restoration within a monitoring and adaptive management program.

Adaptive management is an iterative process of decision making in the face of uncertainty, with the aim of reducing uncertainty over time through monitoring. Since ecological restoration involves many variables, especially in systems as large and complex as the Los Cerritos Wetlands, there is uncertainty in how the project would perform. Designing and implementing this project using an adaptive management approach would lead to better outcomes and help the project meet its goals.

The adaptive management approach relies on monitoring data to regularly assess progress of the site towards achieving the project goals. If the data shows the project is off-track, certain actions are taken (e.g., tweaking techniques and/or later designs) to achieve the project goals.

Small-scale experiments and pilot projects will be implemented that seek to address gaps in scientific knowledge regarding habitat, wildlife, and restoration and enhancement activities. Results of these experiments will be used to inform adaptive management for the restoration program and potentially for other restoration sites in the region and beyond.

ES.7.7.1 Monitoring Program

The goal of monitoring is to inform the adaptive management process and assess progress toward meeting performance criteria. Careful restoration planning, including identification of important data gaps and collection of pre-project data, would help in setting appropriate performance criteria. Performance criteria for the project may be set in a variety of ways, but typically include input from regulatory and permitting agencies. Suitable reference sites, such as Seal Beach National Wildlife Refuge, may also be appropriate for informing performance criteria.

Restoration sites evolve and mature over timelines that are longer than typical monitoring periods. Monitoring of the site into the future would inform adaptive management, provide important data for informing future phases of restoration at the site, and contribute to a better understanding of restoration trajectories for practitioners throughout southern California. Furthermore, opportunities to partner with local universities and other research institutions will be identified to implement research activities in suitable areas of the program.

Monitoring would focus on the major biotic and abiotic factors that drive habitat development and ecosystem function—in particular, those factors that can be manipulated and managed or those parameters that can be used to gauge habitat development and ecosystem function (Thom et al. 2010). Protocols for collection and analyses of monitoring data would be developed for the level of accuracy necessary to assess achievement of performance criteria and inform adaptive management.

ES.7.7.2 Adaptive Management

Successful adaptive management would first require baseline monitoring in order to fill data gaps and refine the restoration design. Consistent with the U.S. Department of Interior Technical Guide for Adaptive Management (2009), an adaptive management plan would be prepared prior to program implementation to track restoration success relative to performance criteria and determine when criteria have been met, and then restoration would proceed to its next phase. Performance criteria would be set for both biotic (e.g., native and non-native plant cover, wildlife use, etc.) and abiotic (e.g., hydrology, soil conditions, etc.) factors, and monitoring data related to these factors would inform adaptive management.

Triggers for any remedial adaptive management actions would be based on significant deviation from, or a lack of progress toward, achieving the performance criteria outlined for each monitoring parameter, coupled with an evaluation of the trajectories of habitat development or directions of change. For many aspects of biotic community development, it may take several years for trends to become apparent, and changes in management should allow for sufficient time for trends to become apparent. If it is determined that progress toward performance criteria is not measurable, or that the habitat appears to be progressing toward an alternative state, the project team would evaluate the cause of the problem and the trajectory of habitat development, and determine whether intervention would be desirable.

In some cases, habitat development would be on track to meet long-term performance criteria and no remedial actions would be warranted. In other cases, it may be determined that additional monitoring parameters are necessary to determine the cause of poor performance. Once the causes of poor performance are identified, appropriate changes in management would be investigated and implemented. Any modifications implemented as a result of this process would be subject to quantitative monitoring and analysis specifically designed to evaluate the effectiveness of such modifications or changes in management.

ES.7.8 Operation and Maintenance Activities

ES.7.8.1 Habitats and Vegetation

The restored areas would be planted or seeded after earthmoving is completed. Vegetation maintenance, irrigation, and weeding would be required for all habitats after restoration. Removal of invasive species would occur on site in perpetuity through the combination of a volunteer program and long-term management of the site using methods similar to those used during implementation.

ES.7.8.2 Trash Removal Efforts

Trash removal would occur as needed within the restored wetlands by hand. LACFCD operates and maintains trash booms and nets in other flood control channels and a similar boom/net could be installed upstream of the Central Area across the San Gabriel River. If a trash boom/net was installed, it is anticipated that LACFCD or LCWA would inspect the trash net weekly and remove trash from the boom/net as necessary. Alternatively, a trash net could be installed across the breach into the Central Area.

ES.7.8.3 Perimeter Levees and Berms

The Perimeter Levee and berms would require limited maintenance, such as inspections annually and after significant storm events (i.e., 10-year event or greater). The levees would also require periodic repaving of the access road and trail, replacement or repair of installed fencing, replacement or repair of any overlook or educational equipment placed along the walking trail, trash collection and graffiti removal, and any other vandalism repair. Minor erosion prevention measures may be needed for both the levees and berms, periodically. It is anticipated that responsibility for operation and maintenance activities would be allocated between LACFCD and LCWA.

ES.7.8.4 Flood Walls

Operations and maintenance of flood walls would be determined along with the structure design and approval process. As part of this process, the entity responsible for the flood control facility and its function would be identified. Monitoring of the flood wall for deterioration would consist of regular and post-flood condition assessments. The condition assessments would also consider the ground in the vicinity of the flood wall, and identify any signs of instability, cracking, seepage, erosion, etc. Regular surveys could be desired to confirm that the structure settlement is within expectations and rotations and deflections are within tolerances. Exposed steel would require painting, and concrete cracks and spalls would be repaired.

Monitoring and maintenance of levees and flood walls is required, and hence access for construction equipment is an important design consideration. Also, dryside (e.g., the side of the wall closest to the roads) groundwater and drainage control are required.

Access from the dryside to the wet side (e.g., the side of the wall closest to the marsh) by vehicles including construction equipment would require gates or an embankment or bridge.

ES.7.8.5 Water-Control Structures

The existing culverts from the San Gabriel River are operated and maintained by LACFCD (USACE 1999). Operation and maintenance of the existing culverts would continue after restoration.

The existing siphon from Alamitos Bay to the Haynes Cooling Channel is owned and operated by LADWP. Once the Haynes Cooling Channel is decommissioned, it could be transferred to the LCWA, in which case, the LCWA would be responsible for operation and maintenance, which would likely include regular inspections and general maintenance. Long-term management of sediment and fouling organisms may also be required to maintain tidal flow.

For new water-control structures, annual maintenance would be needed to ensure proper operation, similar to current operation and maintenance of the existing structures. Gates and weirs may be adjusted seasonally for habitat management. Obstructions would be removed when necessary. If sedimentation in the channel limits the functionality of the water-control structures, a low ground pressure excavator would be used to remove the sediment. A temporary access route, 35-feet wide, would be created using mats to provide equipment access.

ES.7.8.6 Stormwater Management Features

Maintenance of bio-swales is expected to be limited to non-native vegetation removal. Non-native plant removal would include work with hand tools such as shovels, rakes, hatchets, wheel barrows, and small trucks for hauling of equipment and spoils. It is expected that these efforts would occur once a year for the lifespan of the program.

ES.7.8.7 Parking Lots

Hours of operation for public use of the new parking lots, trails, and visitor center would be from sunrise to sunset and may be limited in duration. Parking areas would be locked after hours.

ES.8 Alternatives Considered in the Draft EIR

The intent of the alternatives analysis in an EIR is to identify a range of reasonable alternatives to the proposed program that would feasibly attain most of the basic project objectives and would avoid or substantially lessen the significant impacts of a project. Based on the significant environmental impacts of the proposed program, the aforementioned objectives established for the proposed program, and the feasibility of the alternatives considered, the following alternatives to the proposed program are evaluated in this section. As some impacts associated with the alternatives analyzed below would be the same or similar to the proposed program (depending upon the resource area), this chapter should be read in conjunction with the impact analyses contained in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, which provides more detailed information on the individual resource areas and impacts of the proposed program. The significance thresholds and the methodology utilized in this chapter are the same as those utilized in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*. Therefore, for additional information regarding methodology, reviewers should reference the individual resource chapters for further details.

ES.8.1 Alternative 1: No Project (No Build) Alternative

CEQA Guidelines Section 15126.6(e) requires that an EIR evaluate and analyze the impacts of the “No-Project” Alternative. Under Alternative 1, none of the proposed program components would be constructed and implemented and existing conditions would remain unchanged. This alternative assumes the restoration activities and development covered by the Los Cerritos Wetlands Oil Consolidation and Restoration Project would occur. The following would occur under Alternative 1:

- The South Area, which includes the Haynes Cooling Channel site, State Lands Parcel site, South LCWA site, Hellman Retained site, Los Alamitos Pump Station site, and Los Alamitos Retarding Basin site, would continue to exist as under the existing conditions. In particular, the Haynes Cooling Channel would continue to pull water from the Alamitos Bay Marina and discharge water into the San Gabriel River until it is decommissioned as part of the Haynes Generating Station modernization project in 2029. The State Lands Parcel and South LCWA sites would remain as they currently exist. The Hellman Retained site would continue to operate as an active oil field. In addition, the Los Alamitos Retarding Basin would continue to operate as a retention basin as operated by the County of Orange Flood Control District. Furthermore, the Los Alamitos Pump station would continue to operate as a pump station to

move the stormwater runoff from the Los Alamitos Retarding Basin into the San Gabriel River. Restricted public access within the South Area would continue to be provided as under existing conditions and the gate on 1st Street would remain as well.

- The Isthmus Area, which includes the Callaway Marsh site, DWP site, Zedler Marsh site, Isthmus LCWA site, and Isthmus Bryant site, would continue to exist as under existing conditions. In particular, the Callaway Marsh site, the Isthmus Bryant site, and DWP site would remain vacant. In addition, the Zedler Marsh site would continue to be enhanced as part of the LCWA Stewardship Program. Furthermore, the Isthmus LCWA site would continue as an active oil field, which would be maintained and operated by Signal Hill Petroleum, Inc., as under existing condition. Existing public access to trails and other public amenities would be maintained as under existing conditions. In addition, the San Gabriel River Trail would be maintained on the south bank of the San Gabriel River.
- The Central Area, which includes a portion of the Pumpkin Patch site, Long Beach City Property site, Central LCWA site, Central Bryant site, and San Gabriel River, would continue to exist as under existing conditions. The Pumpkin Patch site and Long Beach City Property site, in particular, would continue as approved under the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083). This would include construction of an aboveground pipeline system from the corner of 2nd Street and Studebaker Road to the Pumpkin Patch site. The Pumpkin Patch site would be remediated and graded, and new oil facilities would be constructed at the site. After 20 years, in the second phase of the project, oil operations would be removed from the Long Beach City Property site and contaminated areas would be remediated. The Long Beach City Property site would remain vacant. The Central LCWA site would continue to operate as an active oil field and the Central Bryant site would continue to operate as a vacant site. The San Gabriel River levees along the south and north banks of the river would remain intact. Restricted access to the Central LCWA site would be maintained.
- The North Area includes the Northern Synergy Oil Field site, Southern Synergy Oil Field site, and Alamitos Bay Partners site. As part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project, existing oil operations and associated facilities would be consolidated and removed, and a wetlands habitat restoration project would be implemented on the Northern and Southern Synergy Oil Field sites. The first phase of the project would be focused on the 76.52-acres Northern Synergy Oil Field site, and will provide the conditions necessary for the reestablishment of coastal salt marsh habitat and associated hydrologic, biogeochemical, and habitat functions. The first phase of the project would also include work on the Southern Synergy Oil Field site, including relocating the existing office building on-site to house the Long Beach Visitor Center, and construction of a parking lot, trails, overlook, sidewalk enhancements, and bikeway improvements. After 20 years, in the second phase of the project, all remaining wells would be removed, and the 73.07-acres Southern Synergy Oil Field site would be restored to tidal salt marsh by breaching or lowering the earthen berm and removing the sheet pile wall. The Alamitos Bay Partners site would be maintained as an active oil field as with existing conditions.

ES.8.2 Alternative 2: Culvert Connection San Gabriel River to the Central Area Alternative

Under Alternative 2, a culvert or set of culverts would be installed within the northern San Gabriel River levee to connect the river to the Central Area rather than breaching the levee as in the proposed program. The following would occur under Alternative 2:

- The South Area, which includes the Haynes Cooling Channel site, State Lands Parcel site, South LCWA site, Hellman Retained site, Los Alamitos Pump Station site, and Los Alamitos Retarding Basin site, would be restored as described for the proposed program. Public access would be improved as described for the proposed program.
- The Isthmus Area, which includes the Callaway Marsh site, DWP site, Zedler Marsh site, Isthmus LCWA site, and Isthmus Bryant site, would be restored as described for the proposed program. Public access would be improved as described for the proposed program.
- The Central Area, which includes the Pumpkin Patch site, Long Beach City Property site, Central LCWA site, Central Bryant site, and San Gabriel River, would be restored similar to the proposed program, except instead of breaching the San Gabriel River to restore tidal connection to the site, a culvert or set of culverts would be installed in the levee to provide tidal connection to the site. The following sections describe the changes from the proposed program that would be included in this alternative.
- The North Area, which includes the Northern Synergy Oil Field site, Southern Synergy Oil Field site, and Alamitos Bay Partners site, would be restored as described for the proposed program. Public access would be improved as described for the proposed program.

ES.8.2.1 Phasing

Ecosystem restoration in the Central Area under Alternative 2 would occur in two phases based on land and oil lease ownership, similar to the proposed program.

The near-term phase of Alternative 2 would be focused on the Central LCWA and Central Bryant sites and would provide the conditions necessary for the reestablishment of coastal salt marsh habitat and associated hydrologic, biogeochemical, and habitat functions. Near-term activities that mirror those in the proposed program would include:

- Relocating or modifying some oil infrastructure and remediation of soils on the Central LCWA site;
- Grading of the sites, including channels, and revegetation of native plants to support a diversity of salt marsh species; and
- Constructing public trails on levees, accessible ramps, and viewpoints as described in the proposed program.

Near-term activities that would vary from those in the proposed program would include:

- Installing a culvert or set of culverts in the existing levee that currently separates the San Gabriel River from non-tidal portions of the Central LCWA and Central Bryant sites;

- Constructing a new earthen levee (Perimeter Levee) along 2nd Street from the San Gabriel River to the intersection with Studebaker Road to protect areas to the north from flooding, similar to the proposed program, but set to a lower elevation;
- Constructing a new interim earthen levee (Interim Levee) along the western boundary of the Central LCWA site to protect the areas to the west from flooding and to provide continued access to the wells on the Central LCWA site, similar to the proposed program, but set to a lower elevation; and
- Providing protection for the existing wells on the Central LCWA site by either raising the well pads out of the floodplain, similar to the proposed program, but set to a lower elevation, or constructing a berm or flood wall around the wells.

In the long-term, the Long Beach City Property site and the Pumpkin Patch site would be restored to tidal salt marsh as described for the proposed program, including:

- Grading the Long Beach City Property site, including channels, to support a diversity of salt marsh species;
- Removing the northern segment of the Interim Levee on the Central LCWA site to connect the restored habitats on the Central LCWA site to the non-tidal portions of the Long Beach City Property site; and
- Constructing public trails on levees, accessible ramps, stairs, and viewpoints, as described in the proposed program.

Long-term activities that would vary from those in the proposed program would include constructing a new earthen levee (Perimeter Levee) along 2nd Street between the intersection with Studebaker Road to Shopkeeper Road on the Long Beach City Property site and then along Shopkeeper Road to the existing San Gabriel River levee on the Long Beach City Property and Pumpkin Patch sites. The Perimeter Levee would be used to protect areas to the north and west from flooding, similar to the proposed program, but set to a lower elevation.

ES.8.2.2 Ecosystem Restoration

Restored Habitats

Alternative 2 would restore connectivity of the San Gabriel River with the Central LCWA, Central Bryant, and Long Beach City Property sites by installing a culvert or set of culverts in the existing levees on the north bank of the river, rather than breaching and lowering the levee as in the proposed program. Alternative 2 would include a shorter and smaller footprint Perimeter Levee when compared to the one in the proposed program, allowing for less impact on existing wetlands.

Hydrology and Grading

In Alternative 2, the new tidal channels would be excavated between the San Gabriel River culvert(s) and the Interim Levee to create a sinuous and branching network of tidal channels through the wetlands. The culvert(s) would be set at an elevation around 0 to 2 feet NAVD.

The hydrodynamic modeling (refer to Appendix H) showed that one 4-foot-diameter culvert would allow an annual tide range of 2.4 feet into the site. This is 1.6 feet less than the modeled proposed program tide range (4.0 feet). The modeling results also showed that six 4-foot-diameter

culverts would result in an annual tide range of 3.1 feet, which would only be 0.9 feet less than the proposed program.

As described under the proposed program, Alternative 2 would raise the upland perimeter around the restored wetlands to function as a flood risk management levee, but it would be set to a lower elevation, since the culverts would limit the water elevations in the site. Less fill would be needed to construct the Perimeter and Interim Levees, compared to the proposed program. This would increase the volume of excess material in the near-term (Table ES-6), which could increase the amount of fill that would need to be stockpiled until the long-term.

Alternative 2 would maintain flood protection for well pads and access roads to existing levels, as discussed in the proposed program, but set to a lower elevation.

ES.8.3 Flood Risk and Stormwater Management

In Alternative 2, the culvert(s) connecting the San Gabriel River to the Central LCWA site would restrict water levels in the Central Area during large riverine events. During the 100-year event, the hydrodynamic modeling showed water levels would reach 7.7 feet NAVD with one 4-foot-diameter culvert, compared to 14.4 feet NAVD under the proposed program (refer to Appendix H). Six 4-foot-diameter culverts would result in a 100-year water level of 11.0 feet NAVD in the site, according to the model results (refer to Appendix H). Gates could be added to the culvert(s) for maintenance purposes.

The new Perimeter Levee could be set approximately 6.7 feet lower than the proposed program under Alternative 2 with one 4-foot-diameter culvert, or 3.4 feet lower than the proposed program with six 4-foot-diameter culverts. The Perimeter Levee would have a slope of approximately 3:1 horizontal: vertical (H:V) down to restored salt marsh at approximately 6 feet MLLW and the same slope down to the road on the back, which would give it a footprint of 2.6 acres less than under the proposed program with one 4-foot-diameter culvert, or 1.3 acres less than under the proposed program with six 4-foot-diameter culverts. The culvert(s) would reduce the potential for erosion along the Perimeter and Interim Levees, so buried soil cement or rock protection of the levee core would not be included.

Well pads and access roads would be protected to match the existing level of flood risk protection provided by the San Gabriel River Levees.

ES.8.4 Public Access and Visitor Facilities

Under Alternative 2, the installation of a culvert or set of culverts rather than breaching the levee would allow for a loop trail to be constructed along the existing San Gabriel River levee and the Perimeter Levee. The trail would be open to the public from dawn to dusk. The road on top of the Interim Levee (north-south between 2nd Street and the San Gabriel River Levee) would not be open to the public due to the oil operations, but could be restricted to docent-led use only with gates on either end, as described in the proposed program.

ES.8.5 Implementation and Restoration Process

Implementation of the restoration under Alternative 2 would be similar to implementation under the proposed program. However, instead of breaching the northern San Gabriel River levee, a culvert or set of culverts would be installed through the levee. This would likely be done by, first, using steel sheet pile cofferdams in the vicinity of the culvert locations to limit tidal inundation of the construction work. Then concrete box culverts would be installed with precast reinforced concrete (or steel) foundation piles. The construction work would likely involve track-mounted excavators utilizing pile drivers. Alternatively, trenchless technology could be used to push the culvert(s) through the levee. Construction of the culvert(s) would likely take longer than construction of the levee breach in the proposed program.

ES.8.6 Operation and Maintenance Activities

The new culvert(s) from the San Gabriel River to the Central Area would require annual maintenance to ensure proper operation, similar to current operation and maintenance of the existing structures. Gates and weirs may be adjusted seasonally for habitat management. Obstructions would be removed when necessary. If sedimentation in the channel limits the functionality of the culvert(s), a low ground pressure excavator would be used to remove the sediment. A temporary access route, 35-feet wide, would be created using mats to provide equipment access.

ES.9 Terminology Used in this Environmental Analysis

In evaluating the potential impacts of the proposed program and the alternatives, the level of significance is determined by applying the threshold of significance (significance criteria/thresholds) presented for each resource evaluation area. The following terms are used to describe each impact and, where significant impacts are determined, how mitigation measures are addressed:

- **No Impact:** A designation of no impact is given when the proposed program would not cause a physical environmental impact.
- **Less-than-Significant Impact:** A less-than-significant impact is identified when construction or operation of the proposed program would not exceed the defined significance criteria or would be eliminated or reduced to a less-than-significant level through compliance with existing federal, state, and local laws and regulations or the implementation of identified mitigation measure(s).
- **Significant Impact**—Public Resources Code Section 21068 defines a significant impact as “a substantial, or potentially substantial, adverse change in the environment.” The thresholds identified in each section of this PEIR and the CEQA definition of “significant impact” are applied to reach this conclusion. Feasible mitigation measures or alternatives to the proposed program must be identified and adopted if they would avoid or substantially reduce the significant impact.
- **Significant Unavoidable Impact:** A significant unavoidable impact is identified when the impact exceeds the defined significance criteria and cannot be eliminated or reduced to a less-

than-significant level through compliance with existing federal, state, and local laws and regulations and/or implementation of all feasible mitigation measures.

- **Mitigation Measures:** Mitigation refers to measures that have been proposed to avoid or lessen potentially significant impacts. Mitigation measures include:
 - Avoiding the impact completely by not taking a certain action or parts of an action;
 - Minimizing the impact by limiting the degree or magnitude of the action and its implementation;
 - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
 - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and/or
 - Compensating for the impact by replacing or providing substitute resources or environments.

ES.10 Scope of Analysis and Mitigation Measures

To determine the appropriate scope of analysis for this PEIR, the Lead Agency prepared and circulated a Notice of Preparation (NOP) and Initial Study (IS) from March 8, 2019, through April 8, 2019, as required by *CEQA Guidelines* Sections 15082 and 15063. The NOP was circulated to solicit input from interested public agencies (e.g., responsible and trustee agencies) and interested individuals on the scope and content of this PEIR. A copy of the letters and comments received during the NOP comment period are provided in Appendix A to this PEIR. The LCWA held a scoping meeting during the 30-day scoping period on March 21, 2019, to solicit comments and inform the public of this PEIR.

This PEIR addresses the environmental issues determined to be potentially significant as identified and disclosed in the NOP/IS and based on input from agencies and interested individuals provided during the Scoping Meetings and comment letters on the NOP.

ES.10.1 Scope of Analysis

Based on the NOP/IS, the following 17 resources areas were carried forward for further evaluation in the Draft PEIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality

- Land Use and Planning
- Mineral Resources
- Noise
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utility and Service Systems

The NOP/IS determined that the proposed program would not have potentially significant impacts associated with agriculture and forestry resources because the program area is located within a highly urbanized area primarily used as privately owned or leased oil fields, wetland habitat areas, or a stormwater basin; no farmland, forest land or timberland, agricultural uses, or related operations are present within the program area or surrounding areas; and the program area is not zoned for forest land or timberland or agricultural use, nor is it subject to a Williamson Act Contract. Thus, no impacts related to agricultural resources would occur, and this topic is not evaluated in the PEIR.

The NOP/IS also determined that the proposed program would not have potentially significant impacts associated with population and housing as jobs generated by construction of the proposed program are anticipated to be filled by residents in the local area or by commuters within the larger Los Angeles Metropolitan Area and employment opportunities during operation of the proposed program would be mainly maintenance workers and operation of the visitor center and volunteers; these employment opportunities generated during construction and operation are not anticipated to directly increase the population or housing in the area, as positions are anticipated to be filled by local residents or regional commuters.

Additionally, the NOP/IS determined that the proposed program would not have potentially significant impacts associated with wildfire. The program area is not located in a very high fire hazard severity zone. The proposed program would not expect to stage or store construction materials or construction equipment on public roadways. The proposed program would not propose any public road closures or rerouting of the existing public roadway network. Although the proposed program may generate traffic trips during construction and operation, the traffic trips would be minimal and would not interfere with an adopted emergency response plan. Therefore, the program would not substantially impair an adopted emergency response plan or emergency evacuation plan, and no impact would occur.

The full discussions for these determinations are provided in the NOP/IS in Appendix A of this PEIR.

ES.10.2 Summary of Environmental Impacts of the Proposed Program and Alternatives

Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*, analyzes 17 environmental resource areas. Note that the Energy and Greenhouse Gas Emissions topics, while separate topics under the CEQA Appendix G Checklist, are analyzed together in Section 3.8, *Greenhouse Gas Emissions and Energy*. The potential for environmental impacts of the proposed program on the environment were analyzed for each of the resource areas for both construction (e.g., short-term impacts throughout the construction period) and operation (e.g., long-term impacts) of the proposed program. Sections ES.10.3 through ES.10.5 summarize the no impacts, less-than-significant impacts, significant impacts that can be mitigated, and significant and unavoidable impacts associated with implementation of the proposed program.

ES.10.3 Summary of Less-Than-Significant Impacts

As shown below in **Table ES-8**, *Summary of Environmental Effects and Mitigation Measures/Program Requirements*, on page ES-51, the PEIR has determined that implementation of the proposed program (construction and/or operation) would result in no impact or a less-than-significant impact on the following resources:

- Aesthetics (Impact AES-1, Impact AES-2, and Impact AES-3)
- Air Quality (Impacts AQ-1b (operation), Impact AQ-2b (operation), Impact AQ-3b (operation), and Impact AQ-4)
- Biological Resources (Impact BIO-5, Impact BIO-6, and Cumulative)
- Geology and Soils (Impact GEO-1a, Impact GEO-1b, Impact GEO-1c, Impact GEO-2, Impact GEO-3, Impact GEO-4, and Impact GEO-5)
- Greenhouse Gas Emissions and Energy (Impact GHG-1, Impact GHG-2, Impact EN-1, Impact EN-2, and Cumulative)
- Hazards and Hazardous Materials (Impact HAZ-1, Impact HAZ-2, Impact HAZ-4, Impact HAZ-5, Impact HAZ-6, and Cumulative)
- Hydrology and Water Quality (Impact HYD-2, Impact HYD-3b, Impact HYD-3c, Impact HYD-3d, Impact HYD-4, Impact HYD-5, and Cumulative)
- Land Use and Planning (Impact LU-1, Impact LU-2, and Cumulative)
- Mineral Resources (Impact MIN-1 and Cumulative)
- Noise (Impact NOI-1, Impact NOI-2, Impact NOI-3, and Cumulative)
- Public Services (Impact PS-1b, Impact PS-1c, and Cumulative)
- Recreation (Impact REC-1, Impact REC-2, and Cumulative)
- Transportation (Impact TRA-2)
- Tribal Cultural Resources (Impact TRI-1)
- Utilities and Service Systems (Impact UTL-4, Impact UTL-5, and Cumulative).

ES.10.4 Summary of Significant Impacts That Can Be Mitigated

As shown in Table ES-8, the PEIR has determined that implementation of the proposed program (construction and/or operation) would result in a less-than-significant impact for the following nine resources areas with the implementation of mitigation measures:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Public Services
- Transportation
- Utilities and Service Systems

The following is a list of impacts that have been determined to be less than significant with mitigation under the proposed program.

- **Impact AES-4:** The proposed program would not create a new source of substantial light or glare that would adversely affect day or night views in the area or that would adversely affect daytime or nighttime views in the area.
- **Cumulative Aesthetic Impacts:** The proposed program would not result in cumulative impacts to aesthetics.
- **Impact AQ-2a (construction):** The proposed program would not violate the air quality standard and contribute substantially to an existing or projected air quality violation for construction-related NO_x emissions.
- **Impact BIO-1:** The proposed program would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- **Impact BIO-2:** The proposed program would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- **Impact BIO-3:** The proposed program would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means.

- **Impact BIO-4:** The proposed program would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- **Impact CUL-3:** The proposed program would not disturb any human remains, including those interred outside of formal cemeteries.
- **Impact GEO-6:** The proposed program would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- **Cumulative Geology and Soils Impacts:** The proposed program would not result in cumulative impacts to geology, soils, and paleontological resources.
- **Impact HAZ-3:** The proposed program would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.
- **Impact HYD-1:** The proposed program would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- **Impact HYD-3a:** The proposed program would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on site or off site.
- **Impact PS-1a:** The proposed program would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection.
- **Impact TRA-1:** The proposed program would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- **Impact TRA-3:** The proposed program would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- **Cumulative Transportation Impacts:** The proposed program would not result in cumulative impacts to transportation.
- **Cumulative Tribal Cultural Resources Impacts:** The proposed program would not result in cumulative impacts to tribal cultural resources.
- **Impact UTL-1:** The proposed program would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- **Impact UTL-2:** The proposed program would have sufficient water supplies available to serve the proposed program and reasonably foreseeable future development during normal, dry and multiple dry years.
- **Impact UTL-3:** The proposed program would have adequate capacity to serve the proposed program's projected demand in addition to the provider's existing commitments.

ES.10.5 Significant and Unavoidable Impacts

The proposed program would result in program-level and cumulative significant impacts that cannot be reduced to a less-than-significant level, even with implementation of feasible mitigation measures to the following resource areas.

- **Impact AQ-1a (construction), Impact AQ-3a (construction), Cumulative:** If all subphases of construction associated with the near-term phase were to occur concurrently (which was conservatively analyzed in the earliest possible year, maximum daily emissions from construction activities would exceed the SCAQMD regional threshold for NO_x. With implementation of mitigation measures, regional impacts would be mitigated to a less than significant level. However, localized impacts to sensitive receptors at the program-level would be considered potentially significant even after incorporation of mitigation. Therefore, localized impacts from program construction pertaining to NO_x emissions would be significant and unavoidable, if all subphases of construction associated with the near-term phase were to occur concurrently (which was conservatively analyzed in the earliest possible year). In addition, as the proposed program would have a localized impact from NO_x emissions, the proposed program would also conflict with Criterion 1 for determining the proposed program's consistency with the AQMP.
- **Impact CUL-1, Impact CUL-2, and Cumulative:** There are 22 potential historical resources within or immediately adjacent to the program area, including 14 archaeological resources and 8 historical architectural resources. In addition, the Los Cerritos Wetlands is part of a tribal cultural landscape identified by some tribal representatives during consultation with the CCC. Furthermore, given that the entire program area was not systematically surveyed as part of this assessment, there could be additional as-yet unidentified archaeological and historical architectural resources within the program area. As such, the proposed program would implement Mitigation Measure CUL-1 through CUL-16 to reduce impacts to historical resources by requiring qualified cultural resources personnel to conduct future project-specific studies; development of appropriate treatment for significant resources; and archaeological and Native American monitoring of ground disturbance (see Section 3.4, *Cultural Resources*, of this PEIR). The proposed program also includes several mitigation measures (see Mitigation Measures BIO-1 through BIO-11 in Section 3.3, *Biological Resources*, of this PEIR) that would lessen potential construction-related impacts to plants and animals that are considered part of the tribal cultural landscape. However, even with implementation of these mitigation measures, impacts to historical resources and archaeological resources would be significant and unavoidable at the program level during construction of the proposed program. Once specific projects are designed, additional cultural resources studies would be completed as necessary and impacts resulting from specific projects would be considered. It is possible that project-level impacts to historical and archaeological resources may be mitigated to a less than significant level. Project-level impacts would be analyzed as part of future CEQA analysis.
- **Impact TRI-2:** While no tribal cultural resources were identified in the program area by Public Resources Code Section 21074, the program area was identified as a tribal cultural landscape by some tribal representatives during consultation with the CCC that occurred in connection with the Los Cerritos Wetlands Oil Consolidation and Restoration Project. Implementation of Mitigation Measures CUL-1 and CUL-4 through CUL-15, as provided in Section 3.4, *Cultural Resources*, of this PEIR, would lessen the impact to archaeological resources that contribute to the significance of the tribal cultural landscape. The proposed program also includes several mitigation measures (see Mitigation Measures BIO-1 through BIO-11 in Section 3.3, *Biological Resources*, of this PEIR) that would lessen potential

construction-related impacts to plants and animals that are considered part of the tribal cultural landscape. Even with implementation of these measures, the destruction or material alteration of an archaeological resource that contributes to the landscape's significance would constitute a substantial adverse change since it would no longer be present on the landscape. Since avoidance and preservation in place of such resources cannot be guaranteed, impacts to Native American or prehistoric archaeological resources that convey the significance of the tribal cultural landscape are considered significant and unavoidable at the program level. Once specific projects are designed, additional tribal consultation would be conducted as necessary and impacts resulting from specific projects would be considered. It is possible that project-level impacts to Native American or prehistoric archaeological resources that convey the significance of the tribal cultural landscape may be mitigated to a less than significant level. Project-level impacts would be analyzed as part of future CEQA analysis.

ES.10.6 Environmental Impacts of the Proposed Program and Alternatives

Table ES-8, *Summary of Environmental Effects and Mitigation Measures*, summarizes the (1) potential environmental impacts that would occur as a result of the proposed program, provided in the form of an "impact statement;" (2) the recommended mitigation measures that avoid or reduce significant environmental impacts; and (3) the level of significance after mitigation measures are implemented. The impact statement reflects the condition that would result after the implementation of all of the identified mitigation measures.

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
3.1 Aesthetics		
Impact AES-1: The proposed program would not have a substantial adverse effect on a scenic vista	No mitigation is required.	Less than Significant
Impact AES-2: The proposed program would not substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.	No mitigation is required.	Less than Significant
Impact AES-3: The proposed program would not conflict with applicable zoning and other regulations governing scenic quality in an urbanized area.	No mitigation is required.	Less than Significant
Impact AES-4: The proposed program would not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.	Mitigation Measure AES-1: Lighting Plan. Prior to issuance of a grading permit for each individual site that requires construction, a Lighting Plan for the individual site shall be developed and implemented that requires all exterior lighting to be directed downward and focused away from adjacent sensitive uses and habitats to encourage wayfinding and provide security and safety for individuals walking to and from parking areas.	Less than Significant
Cumulative	Mitigation Measure AES-1.	Less than Significant
3.2 Air Quality		
Impact AQ-1a: The proposed program would conflict with or obstruct implementation of the applicable air quality plan during construction of the proposed program.	Mitigation Measure AQ-1 (see Impact AQ-2a, below).	Significant and Unavoidable
Impact AQ-1b: The proposed program would not conflict with or obstruct implementation of the applicable air quality plan during operation of the proposed program.		Less than Significant
Impact AQ-2a: The proposed program would not result in a cumulatively considerable net increase of NO _x during construction of the proposed program.	<p>Mitigation Measure AQ-1: Construction NO_x Reduction Measures. The Applicant for the proposed program shall be responsible for the implementation of the following construction-related NO_x reduction measures:</p> <ul style="list-style-type: none"> Require all off-road diesel-powered construction equipment greater than 50 hp (e.g., excavators, graders, dozers, scrapers, tractors, loaders, etc.) to comply with EPA-Certified Tier IV emission controls where commercially available. Documentation of all off-road diesel equipment used for this proposed program including Tier IV certification, or lack of commercial availability if applicable, shall be maintained and made available by the contractor to the local permitting agency (City of Seal Beach and City of Long Beach) for inspection upon request. In addition, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB such as certified Level 3 	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>Diesel Particulate Filter or equivalent. A copy of each unit's certified tier specification, BACT documentation, and CARB or SCAQMD operating permit shall be provided at the time of mobilization of each applicable unit of equipment. If Tier IV construction equipment is not available, LCWA shall require the contractor to implement other feasible alternative measures, such as reducing the number and/or hp rating of construction equipment, and/or limiting the number of individual construction subphases occurring simultaneously. The determination of commercial availability of Tier IV construction equipment shall be made by the City prior to issuance of grading or building permits based on applicant-provided evidence of the availability or unavailability of Tier IV equipment and/or evidence obtained by the City from expert sources such as construction contractors in the region.</p> <ul style="list-style-type: none"> • Require all main engines for tugboats to comply with EPA-Certified Tier IV emission controls. • Eliminate the use of all portable generators. Require the use of electricity from power poles rather than temporary diesel or gasoline power generators. • Provide temporary traffic controls such as a flag person, during all phases of construction to maintain smooth traffic flow, including during the transportation of oversized equipment and vehicles. • Provide dedicated turn lanes for movement of construction trucks and equipment on site and off site. The location of these dedicated lanes shall be addressed in the Construction Trip Management Plan. • Reroute construction trucks away from congested streets or sensitive receptor areas. • Prohibit the idling of on-road trucks and off-road equipment in excess of 5 continuous minutes, except for trucks and equipment where idling is a necessary function of the activity, such as concrete pour trucks. The Applicant or construction contractor(s) shall post signs at the entry/exit gate(s), storage/lay down areas, and at highly visible areas throughout the active portions of the construction site of the idling limit. • On-road heavy-duty diesel haul trucks with a gross vehicle weight rating of 19,500 pounds or greater used to transport construction materials and soil to and from the program area shall be engine model year 2010 or later or shall comply with the USEPA 2007 on-road emissions standards. 	
Impact AQ-2b: The proposed program would not result in a cumulatively considerable net increase of criteria pollutants during operation of the proposed program.	No mitigation is required.	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
Impact AQ-3a: The proposed program would expose sensitive receptors to substantial pollutant concentrations during construction of the proposed program.	Mitigation Measures AQ-1.	Significant and Unavoidable
Impact AQ-3b: The proposed program would not expose sensitive receptors to substantial pollutant concentrations during operation of the proposed program.	No mitigation is required.	Less than Significant
Impact AQ-4: The proposed program would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	No mitigation is required.	Less than Significant
Cumulative	Mitigation Measure AQ-1 (construction).	Significant and Unavoidable (construction). Less than Significant (operation).
3.3 Biological Resources		
Impact BIO-1: The proposed program would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	<p>Mitigation Measure BIO-1: Avoidance of Special-Status Plants. Prior to ground-disturbing activities (e.g., vegetation removal and grading), a qualified botanist/biologist shall conduct a habitat assessment to determine the presence or absence of suitable habitat for special-status plant species. If suitable habitat is determined to be present, focused plant surveys should be conducted in accordance with Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW, March 20, 2018). The locations of any special-status plants within 25 feet of proposed disturbance areas shall be identified and mapped. Individual plants shall be flagged for avoidance and an avoidance buffer of at least 10 feet shall be established around the plant(s).</p> <p>If special-status plants cannot be avoided, they shall be incorporated into the proposed program's restoration design at a minimum ratio of 1:1 (one plant planted for every one plant removed, or 1 square foot of absolute cover planted for every 1 square foot of absolute cover removed). Special-status plants that cannot be avoided shall be salvaged prior to impacts using species-specific propagation methods, such as transplanting, seed and cuttings. Seed collection shall occur during the appropriate time of year for each species. Seeds shall be propagated by a qualified horticulturalist or in a local nursery, and shall be incorporated into habitat-specific seed mixes that will be used for revegetation of the restoration areas.</p> <p>Mitigation Measure BIO-2: Environmental Awareness Training and Biological Monitoring. Prior to commencement of activities within the program area, a qualified biologist shall prepare a Worker Environmental Awareness Program (WEAP) that provides a description of potentially</p>	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>occurring special-status species and methods for avoiding inadvertent impacts. The WEAP training shall be provided to all construction personnel. Attendees shall be documented on a WEAP training sign-in sheet.</p> <p>Initial grading and vegetation removal activities shall be supervised by a qualified monitoring biologist. The biologist shall ensure that impacts to special-status plants and wildlife, including wetland vegetation, are minimized to the greatest extent feasible during implementation of program activities on the South, Isthmus, Central and North Areas. If any special-status wildlife species are encountered during construction and cannot be avoided, the monitoring biologist shall have the authority to temporarily halt construction activities until a plan for avoidance has been prepared and approved by CDFW, and implemented by the monitoring biologist. Relocation of a federal- or state-listed species shall not be allowed without first obtaining take authorization from USFWS and/or CDFW.</p> <p>Mitigation Measure BIO-3: Belding's Savannah Sparrow Breeding Habitat. Prior to the commencement of activities within the program area, a qualified biologist shall map suitable Belding's savannah sparrow habitat as the location and amount of suitable habitat is anticipated to change over time. Project activities shall be limited to July 16 through February 14 within suitable costal marsh habitat to avoid impacts to breeding Belding's savannah sparrow. Suitable Belding's savannah sparrow breeding habitat that will be impacted by the proposed program shall be created within the program area at a minimum ratio of 1:1 (area created:area impacted). Restored breeding habitat shall consist of a minimum 60 percent absolute cover of salt marsh vegetation, and shall consist of a hydrologic regime similar to that currently present in the North Area or South Area, respectively. Other unique conditions within coastal salt marsh communities shall exist as well, such as, similar slope, aspect, elevation, soil, and salinity. A Mitigation, Maintenance and Monitoring Program shall be prepared and approved by CDFW prior to implementation. The proposed program shall be implemented by a qualified restoration ecologist, and at a minimum, shall include success criteria and performance standards for measuring the establishment of Belding's savannah sparrow breeding habitat, responsible parties, maintenance techniques and schedule, 5-year monitoring and reporting schedule, adaptive management strategies, and contingencies.</p> <p>Mitigation Measure BIO-4: Nesting Bird and Raptor Avoidance. A qualified biologist shall identify areas where nesting habitat for birds and raptors is present prior to the commencement of activities within the program area. To ensure the avoidance of impacts to nesting avian species, the following measures shall be implemented:</p> <ul style="list-style-type: none"> • Construction and maintenance activities shall be limited to the non-breeding season (September 1 through December 31) to the extent feasible. If construction or maintenance activities will occur during the 	

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>avian nesting season (January 1 through August 31), a qualified biologist shall conduct pre-construction nesting avian surveys within no more than 5 days prior to the initiation of construction activities to identify any active nests. If a lapse in work of 5 days or longer occurs, another survey shall be conducted to verify if any new nests have been constructed prior to work being reinitiated.</p> <ul style="list-style-type: none"> If active nests are observed, an avoidance buffer shall be demarcated by a qualified biologist with exclusion fencing and shall be maintained until the biologist determines that the young have fledged and the nest is no longer active. <p>Mitigation Measure BIO-5: Habitat Assessment and Pre-Construction Surveys for Burrowing Owl. A qualified biologist shall conduct a pre-construction burrowing owl survey of the program area within suitable habitat prior to construction activities. If burrowing owls are detected, a Burrowing Owl Management Plan shall be prepared and approved by CDFW, and implemented, prior to commencement of construction. The Burrowing Owl Management Plan shall be prepared in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation and shall address specific minimization and avoidance measures for burrowing owls, such as avoidance of occupied habitat, translocation of individuals, and on site revegetation.</p> <p>Mitigation Measure BIO-6: Minimization of Light Spillage. A Program Lighting Plan shall be designed to minimize light trespass and glare into adjacent habitat areas prior to the commencement of activities within the program area. Nighttime lighting associated with the visitor center, parking lot, and trails shall be shielded downward and/or directed away from habitat areas to minimize impacts to nocturnal species, including breeding birds.</p> <p>Mitigation Measure BIO-7: Pre-Construction Bat Surveys. A qualified biologist shall conduct a pre-construction bat survey of the program area prior to construction activities. Prior to commencement of construction activities, a qualified biologist shall conduct a preconstruction clearance survey of suitable bat roosting habitat, such as mature palm trees. If bats are determined to be roosting, the biologist will determine whether it is a day roost (non-breeding) or maternity roost (lactating females and dependent young). If a day roost is determined, the biologist shall ensure that direct mortality to roosting individuals will not occur by requiring that trees with roosts are not directly impacted (e.g., removed) until after the roosting period.</p> <p>If a maternity roost is determined to be present, the biologist shall determine a suitable buffer distance between construction activities and the roosting site. If direct disturbance to the maternity roost could occur, a Bat Exclusion Plan shall be prepared and approved by CDFW, and implemented, prior to impacting the roost. At a minimum, the Plan shall include avoidance and minimization measures to reduce potential impacts to breeding bats during</p>	

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>construction activities and prescribed methods to safely and humanely evict bats from the roost to avoid mortality.</p> <p>Mitigation Measure BIO-8: Focused Surveys for Special-Status Wildlife Species. Should suitable habitat occur, a qualified biologist shall conduct focused habitat assessments and focused surveys for special-status wildlife species listed in Table 3.3-4. Both habitat assessments and focused surveys shall occur prior to LCWA's approval of the project plans or the publication of subsequent CEQA documents for any project site that potentially contains special-status species. Agency-approved protocols shall be used for specific species where appropriate during the required or recommended time of year. For all other target (special-status) species, prior to initiating surveys, survey methods shall be verified and approved in writing by CDFW and USFWS for all state- and/or federally-protected species, respectively. If special-status species are detected, a Wildlife Avoidance Plan shall be prepared and approved by CDFW and USFWS prior to commencement of construction. The Wildlife Avoidance Plan shall include specific species minimization and avoidance measures, measures to minimize impacts to occupied habitat, such as avoidance and revegetation, as well as relocation/translocation protocols.</p> <p>If special-status species cannot be avoided, Incidental Take Permits from the United States Fish and Wildlife Service and California Department of Fish and Wildlife will be required. If an incidental take permit is being obtained, compensatory mitigation for the loss of occupied habitat shall be provided through purchase of credit from an existing mitigation bank, private purchase of mitigation lands, or on-site preservation, as approved by the resource agencies. Compensatory mitigation shall be provided at a 1:1 ratio to reduce potential effects to less-than-significant levels.</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
<p>Impact BIO-2: The proposed program would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.</p>	<p>Mitigation Measure BIO-9: Revegetation of Sensitive Natural Communities. Sensitive natural communities located on the program area include: <i>Anemopsis californica</i> – <i>Helianthus nuttallii</i> – <i>Solidago spectabilis</i> Herbaceous Alliance, <i>Arthrocnemum subterminale</i> Herbaceous Alliance, <i>Baccharis salicina</i> Provisional Shrubland Alliance, <i>Cressa truxillensis</i> – <i>Distichlis spicata</i> Herbaceous Alliance, <i>Frankenia salina</i> Herbaceous Alliance, <i>Isocoma menziesii</i> Shrubland Alliance, <i>Leymus cinereus</i> – <i>Leymus triticoides</i> Herbaceous Alliance, <i>Salicornia pacifica</i> Herbaceous Alliance, <i>Salix gooddingii</i> Woodland Alliance, <i>Schoenoplectus californicus</i> – <i>Typha (angustifolia, domingensis, latifolia)</i> Herbaceous Alliance and <i>Spartina foliosa</i> Herbaceous Alliance.</p> <p>Prior to impacts to Sensitive Natural Communities, the area(s) that will be impacted shall be delineated and quantified using current Global Information System (ArcGIS) mapping software. Sensitive Natural Communities that will be impacted by the proposed program shall be created within the program area at a minimum ratio of 1:1 (area created:area impacted). Restored Sensitive Natural Communities shall consist of a minimum 60 percent absolute vegetation cover and shall include community-specific growing conditions, such as, similar slope, aspect, elevation, soil, and salinity. A Mitigation, Maintenance and Monitoring Program shall be prepared and approved by CDFW prior to implementation. The Program shall be implemented by a qualified restoration ecologist, and at a minimum, shall include success criteria and performance standards for measuring the establishment of Sensitive Natural Communities, responsible parties, maintenance techniques and schedule, 5-year monitoring and reporting schedule, adaptive management strategies, and contingencies.</p>	Less than Significant
<p>Impact BIO-3: The proposed program would not have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, and coastal wetlands) through direct removal, filling, hydrological interruption, or other means.</p>	<p>Mitigation Measure BIO-10: Jurisdictional Resources Permitting. Prior to project construction, a jurisdictional delineation report shall be prepared that describes these jurisdictional resources and the extent of jurisdiction under the USACE, RWQCB, CDFW, and CCC. If it is determined during final siting that jurisdictional resources cannot be avoided, the project applicant shall be subject to provisions as identified below:</p> <ol style="list-style-type: none"> 1. If avoidance is not feasible, prior to ground disturbance activities that could impact these aquatic features, the project applicant shall file the required documentation and receive the following. <ol style="list-style-type: none"> a. Nationwide Permit or equivalent permit issued from USACE; b. Water Quality Certification issued from the Los Angeles RWQCB; c. Streambed Alteration Agreement issued from CDFW; and d. Coastal Development Permit issued from CCC. 	Less than Significant

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>2. Compensatory mitigation for impacts to jurisdictional resources is not anticipated as the proposed program's goal is the restoration and expansion of coastal salt marsh within the proposed program.</p> <p>3. The project proponent shall comply with the mitigation measures detailed in permits issued from the USACE, RWQCB, CDFW, and CCC.</p> <p>Mitigation Measure BIO-11: Monitoring and Adaptive Management Plan. In conjunction with Section 3.8, <i>Hydrology and Water Quality</i>, a Monitoring and Adaptive Management Plan (MAMP) shall be prepared and implemented prior to commencement of construction or restoration activities. The MAMP shall provide a framework for monitoring site conditions in response to the proposed program implementation. The MAMP shall include provisions for conducting a pre-construction survey to collect baseline data for existing wetland function. The MAMP shall require that monitoring focus on the functional wetland values as well as sediment quality in areas subject to the greatest deposition from storm events and that are also not subject to regular tidal flushing, (e.g., the southwestern corner of the Long Beach Property site). The MAMP shall identify habitat functions, such as biotic structure and hydrology, that shall be monitored as part of the proposed program's monitoring and reporting requirements. The MAMP shall identify sediment quality monitoring requirements that shall be performed at a frequency that would capture the potential build-up of contaminants in the deposited sediment before concentration are reached that would impact benthic macro-invertebrates and other sensitive species. The MAMP shall require that the findings of the monitoring efforts be used to identify any source of functional loss of wetlands and water quality impairment, and if discovered, provide measures to improve wetland function and for remediation of the sediment source area(s). Upon completion of restoration activities, the proposed program shall demonstrate a no net loss of aquatic resource functions and demonstrate an increase in wetland functions and values throughout the entire site.</p> <p>The MAMP shall be submitted for review and approval to responsible permitting agencies prior to commencement of construction or restoration activities.</p>	
Impact BIO-4: The proposed program would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.	Mitigation Measure BIO-8.	Less than Significant
Impact BIO-5: The proposed program would not have a substantial adverse effect and conflict with biological resources protected by local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	No mitigation is required.	Less than Significant

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Impacts	Mitigation Measures	Significance after Mitigation
Impact BIO-6: The proposed program would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.	No mitigation is required.	No Impact
Cumulative	No mitigation is required.	Less than Significant
3.4 Cultural Resources		
Impact CUL-1: The proposed program would cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.	<p>Mitigation Measures BIO-1 through BIO-11, as provided in Section 3.3, <i>Biological Resources</i>.</p> <p>Mitigation Measure CUL-1: Cultural Resources Personnel Professional Qualifications Standards. Cultural resources consulting staff shall meet, or be under the direct supervision of an individual meeting, the minimum professional qualifications standards (PQS) set forth by the Secretary of the Interior (SOI) (codified in 36 Code of Federal Regulations [CFR] Part 61; 48 FR 44738-44739).</p> <p>Mitigation Measure CUL-2: Historic Resources Assessment. For each near-term, mid-term, and long-term project, LCWA shall retain an SOI-qualified architectural historian (Qualified Architectural Historian) to conduct a historic resources assessment including: a records search at the South Central Coastal Information Center; a review of pertinent archives and sources; a pedestrian field survey; recordation of all identified historic resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the assessment. The report(s) shall be submitted to LCWA for review and approval prior to LCWA's approval of project plans or publication of subsequent CEQA documents. The Qualified Architectural Historian shall file a copy of the final report(s) with the South Central Coastal Information Center within 30 days of its completion. A Historic Resources Assessment shall not be required for any project site that has already undergone the same or similar assessment as part of the program as long as the assessment is deemed adequate by the Qualified Architectural Historian for the purposes of the project currently under consideration.</p> <p>Mitigation Measure CUL-3: Historic Resources Evaluation. Prior to LCWA's approval of project plans or the publication of subsequent CEQA documents for any project site containing unevaluated historic resources, a Qualified Architectural Historian shall determine if the project has the potential to result in adverse impacts to identified historic resources. For any historic resource that may be adversely impacted, the Qualified Architectural Historian shall evaluate the resource for listing in the California Register under Criteria 1-4 in order to determine if the resource qualifies as a historical resource. If a historic resource is found eligible, the Qualified Architectural Historian shall determine if the project would cause a substantial adverse</p>	Significant and Unavoidable

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>change in the significance of the resource. If a substantial adverse change would occur (i.e., the project would demolish the resource or materially alter it in an adverse manner), the Qualified Architectural Historian shall develop appropriate mitigation measures to be incorporated into subsequent CEQA documents. These measures may include, but would not be limited to, relocation, HABS/HAER/HALS documentation, development and implementation of an interpretative and commemorative program, or development and implementation of a salvage plan. All evaluations and resulting technical reports shall be completed and approved by LWCA prior to LCWA's approval of project plans or publication of subsequent CEQA documents. The Qualified Architectural Historian shall file a copy of the final report(s) with the South Central Coastal Information Center within 30 days of its acceptance by LCWA.</p> <p>Mitigation Measure CUL-4: Archaeological Resources Assessment. For each near-term, mid-term, and long-term project that involves ground disturbance, LCWA shall retain an SOI-qualified archaeologist (Qualified Archaeologist) to conduct an archaeological resources assessment including: a records search at the South Central Coastal Information Center; a Sacred Lands File search at the Native American Heritage Commission; updated geoarchaeological review incorporating previously unavailable data (such as geotechnical studies); a pedestrian field survey; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report. The technical report shall: document the methods and results of the study; provide an assessment of the project's potential to encounter subsurface archaeological resources and human remains based on a review of the project plans, depth of proposed ground disturbance, and available project-specific geotechnical reports; and provide recommendations as to whether additional studies are warranted (i.e., Extended Phase I presence/absence testing or resource boundary delineation, Phase II testing and evaluation). The report(s) shall be submitted to LCWA for review and approval prior to approval of project plans or publication of subsequent CEQA documents. The Qualified Archaeologist shall file a copy of the final report(s) with the South Central Coastal Information Center within 30 days of its completion. An Archaeological Resources Assessment shall not be required for any project site that has already undergone the same or similar assessment as part of the program as long as the assessment is deemed adequate by the Qualified Archaeologist for the purposes of the project currently under consideration.</p> <p>Mitigation Measure CUL-5: Extended Phase I Archaeological Investigation. Prior to LCWA's approval of project plans or the publication of subsequent CEQA documents for any project with a high potential to encounter subsurface archaeological resources as determined by the project-specific archaeological resources assessment conducted under Mitigation Measure CUL-4: Archaeological Resources Assessment, a Qualified</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>Archaeologist shall conduct an Extended Phase I investigation to identify the presence/absence of subsurface archaeological resources. Prior to the initiation of field work for any Extended Phase I investigation, the Qualified Archaeologist shall prepare a work plan outlining the investigation's objectives, goals, and methodology (e.g., field and lab procedures, collection protocols, curation and reporting requirements, Native American input/monitoring, schedule, security measures). For investigations related to Native American archaeological resources, monitoring shall be required in accordance with Mitigation Measures CUL-13: Native American Monitoring. All work plans shall outline the protocols and procedures to be followed in the event that human remains and associated funerary objects or grave goods (i.e., artifacts associated with human remains) are encountered in accordance with Mitigation Measure CUL-17: Human Remains Discoveries. Disposition of archaeological materials recovered during Extended Phase I investigations shall be in accordance with Mitigation Measure CUL-15: Curation and Disposition of Cultural Materials. Disposition of human remains and any associated funerary objects or grave goods shall be in accordance with Mitigation Measure CUL-17: Human Remains Discoveries. Projects occurring within the same timeframe may be covered by one overarching work plan. All investigations and resulting technical reports shall be completed and approved by LCWA prior to LCWA's approval of project plans or publication of subsequent CEQA documents. The Qualified Archaeologist shall file a copy of the final report(s) with the South Central Coastal Information Center within 30 days of its acceptance by LCWA. An Extended Phase I investigation shall not be required for any project site or resource that has already undergone the same or similar investigation as part of the program as long as the investigation is deemed adequate by the Qualified Archaeologist for the purposes of the project currently under consideration.</p> <p>Mitigation Measure CUL-6: Phase II Archaeological Investigation. Prior to LCWA's approval of project plans or the publication of subsequent CEQA documents for any project site containing known unevaluated archaeological resources as identified by the project-specific archaeological resources assessment conducted under Mitigation Measure CUL-4: Archaeological Resources Assessment, a Qualified Archaeologist shall determine if the project has the potential to result in adverse impacts to identified archaeological resources (this may include initial Extended Phase I testing to identify the boundaries of resources, if necessary to properly assess potential impacts, following the procedures outlined under Mitigation Measure CUL-5: Extended Phase I Archaeological Investigation). For any archaeological resource that may be adversely impacted, the Qualified Archaeologist shall conduct Phase II testing and shall evaluate the resource for listing in the California Register under Criteria 1-4 in order to determine if the resource qualifies as a historical resource. If the resource does not</p>	

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Impacts	Mitigation Measures	Significance after Mitigation
	<p>qualify as a historical resource, it shall then be considered for qualification as a unique archaeological resource. Native American or prehistoric archaeological resources shall also be considered as contributors to the tribal landscape to determine if they contribute to the significance of the landscape. Prior to the initiation of field work for any Phase II investigation, the Qualified Archaeologist shall prepare a work plan outlining the investigation's objectives, goals, and methodology (e.g., research design, field and lab procedures, collection protocols, data requirements/thresholds, evaluation criteria, curation and reporting requirements, Native American input/monitoring, schedule, security measures). The Qualified Archaeologist and LCWA shall coordinate with participating Native American Tribes during preparation of Phase II work plans related to Native American archaeological resources to ensure cultural values ascribed to the resources, beyond those that are scientifically important, are considered in the evaluation, including those related to the tribal cultural landscape. For investigations related to Native American archaeological resources, Native American Tribal coordination and monitoring shall be required in accordance with Mitigation Measures CUL-12: Native American Coordination and CUL-13: Native American Monitoring. All work plans shall outline the protocols and procedures to be followed in the event that human remains and associated funerary objects or grave goods (i.e., artifacts associated with human remains) are encountered in accordance with Mitigation Measure CUL-17: Human Remains Discoveries. Disposition of archaeological materials recovered during Extended Phase I or Phase II investigations shall be in accordance with Mitigation Measure CUL-15: Curation and Disposition of Cultural Materials. Disposition of human remains and any associated funerary objects or grave goods shall be in accordance with Mitigation Measure CUL-17: Human Remains Discoveries. Projects occurring within the same timeframe may be covered by one overarching work plan. All investigations and resulting technical reports shall be completed and approved by LWCA prior to LCWA's approval of project plans or publication of subsequent CEQA documents. The Qualified Archaeologist shall file a copy of the final report(s) with the South Central Coastal Information Center within 30 days of its acceptance by LCWA.</p> <p>Mitigation Measure CUL-7: Avoidance and Preservation in Place of Archaeological Resources. In the event historical resources or unique archaeological resources or resources that contribute to the significance of the tribal cultural landscape are identified, avoidance and preservation in place shall be the preferred manner of mitigating impacts to such resources. Preservation in place maintains the important relationship between artifacts and their archaeological context and also serves to avoid conflict with traditional and religious values of groups who may ascribe meaning to the resource. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding</p>	

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Impacts	Mitigation Measures	Significance after Mitigation
	<p>the site into a permanent conservation easement. If avoidance is determined by the LCWA to be infeasible in light of factors such as the nature of the find, proposed project design, costs, and other considerations, then that resource shall be subject to Mitigation Measure CUL-8: Phase III Archaeological Resources Data Recovery and Treatment Plan. If avoidance and preservation in place of a resource is determined by LCWA to be feasible, then that resource shall be subject to Mitigation Measure CUL-9: Archaeological Resources Monitoring and Mitigation Plan.</p> <p>Mitigation Measure CUL-8: Phase III Archaeological Resources Data Recovery and Treatment Plan. A Qualified Archaeologist shall prepare a Phase III Archaeological Resources Data Recovery and Treatment Plan for significant archaeological resources (i.e., resources that qualify as historical resources or unique archaeological resources or that contribute to the significance of the tribal cultural landscape) that will be adversely impacted by a project. Consistent with <i>CEQA Guidelines</i> Section 15126.4, data recovery shall not be required for a historical resource if LCWA determines that testing or studies already completed have adequately recovered the scientifically consequential information for resources eligible under California Register Criterion 4. The Qualified Archaeologist and LCWA shall consult with interested Native American Tribes for recovery/treatment of Native American archaeological resources during preparation of the plan(s) to ensure cultural values ascribed to the resources, beyond those that are scientifically important, are considered in assessing treatment, including those related to the tribal cultural landscape. Projects occurring within the same timeframe may be covered by one overarching plan. The plan(s) shall be submitted to LCWA for review and approval prior to the start of field work for data recovery efforts for resources that are eligible under California Register Criterion 4 (data potential). Data recovery field work shall be completed prior to the start of any project-related ground disturbance. Treatment for archaeological resources that are eligible under California Register Criterion 1 (events), Criterion 2 (persons), or Criterion 3 (design/workmanship) shall be completed within 3 years of completion of the project. Each plan shall include:</p> <p>a. <i>Research Design.</i> The plan shall outline the applicable cultural context(s) for the region, identify research goals and questions that are applicable to each resource or class of resources, and list the data needs (types, quantities, quality) required to answer each research question. The research design shall address all four California Register Criteria (1–4) and identify the methods that will be required to inform treatment, such as subsurface investigation, documentary/archival research, and/or oral history, depending on the nature of the resource. The research design shall also include consideration of Native American or prehistoric archaeological resources as contributors to the tribal cultural landscape.</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>b. <i>Data Recovery for Resources Eligible under Criterion 4.</i> The plan shall outline the field and laboratory methods to be employed, and any specialized studies that will be conducted, as part of the data recovery effort for resources that are eligible under California Register Criterion 4 (data potential). If a resource is eligible under additional criteria, treatment beyond data recovery shall be implemented (see CUL-6c).</p> <p>c. <i>Treatment for Resources Eligible under Criteria 1, 2, or 3.</i> In the event a resource is eligible under California Register Criterion 1 (events), Criterion 2 (persons), or Criterion 3 (design/workmanship), then resource-specific treatment shall be developed to mitigate project-related impacts to the degree feasible. This could include forms of documentation, interpretation, public outreach, ethnographic and language studies, publications, and educational programs, depending on the nature of the resource, and may require the retention of additional technical specialists. Treatment measures shall be generally outlined in the plan based on existing information on the resource. Once data recovery is completed and the results are available to better inform resource-specific treatment, the treatment measures shall be formalized and implemented. Treatment shall be developed by the Qualified Archaeologist in consultation with LCWA and Native American Tribal representatives for resources that are Native American in origin, including those related to the tribal cultural landscape.</p> <p>d. <i>Security Measures.</i> The plan shall include recommended security measures to protect archaeological resources from vandalism, looting, and non-intentionally damaging activities during field work.</p> <p>e. <i>Procedures for Discovery of Human Remains and Associated Funerary Objects or Grave Goods.</i> The plan shall outline the protocols and procedures to be followed in the event <i>that</i> human remains and associated funerary objects or grave goods are uncovered. Protocols and procedures shall be in accordance with Mitigation Measure CUL-17: Human Remains Discoveries.</p> <p>f. <i>Reporting Requirements.</i> Upon completion of data recovery for resources eligible under Criterion 4, the Qualified Archaeologist shall document the findings in an Archaeological Data Recovery Report. The draft Archaeological Data Recovery Report shall be submitted to the LCWA within 360 days after completion of data recovery, and the final Archaeological Data Recovery Report shall be submitted to LCWA within 60 days after the receipt of LCWA comments. The Qualified Archaeologist shall submit the final Archaeological Data Recovery Report to the South Central Coastal Information Center within 30 days of its acceptance by LCWA.</p> <p>Upon completion of all other treatment for resources eligible under Criteria 1, 2, or 3, the Qualified Archaeologist shall document the resource-</p>	

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Impacts	Mitigation Measures	Significance after Mitigation
	<p>specific treatment that was implemented for each resource and verification that treatment has been completed in a technical document (report or memorandum). The document shall be provided to LCWA within 30 days after completion of treatment.</p> <p>g. <i>Curation or Disposition of Cultural Materials</i>. The plan shall outline the requirements for final <i>disposition</i> of all cultural materials collected during data recovery. Disposition of all archaeological materials shall be in accordance with Mitigation Measure CUL-15: Curation and Disposition of Cultural Materials. Disposition of human remains and any associated funerary objects or grave goods shall be in accordance with Mitigation Measure CUL-17: Human Remains Discoveries.</p> <p>h. <i>Protocols for Native American Coordination and Monitoring</i>. The plan shall outline the role and responsibilities of Native American Tribal representatives in <i>accordance</i> with Mitigation Measure CUL-12: Native American Coordination. It shall outline communication protocols, timelines for review of archaeological resources documents, and provisions for Native American monitoring. The plan shall include provisions for full-time Native American monitoring of all data recovery field work for resources that are Native American in origin, including those related to the tribal cultural landscape, in accordance with Mitigation Measure CUL-13: Native American Monitoring.</p> <p>Mitigation Measure CUL-9: Archaeological Resources Monitoring and Mitigation Plan. For each near-term, mid-term, and long-term project that involves ground disturbance, a Qualified Archaeologist shall prepare an Archaeological Resources Mitigation and Monitoring Plan taking into account the final LCWA-approved project design plans, depths/locations of ground disturbance, proximity to known archaeological resources, and potential to encounter subsurface archaeological resources. Projects occurring within the same timeframe may be covered by one overarching plan. Each plan shall include:</p> <p>a. <i>Establishment of Environmentally Sensitive Areas</i>. The plan shall outline areas that will be designated Environmentally Sensitive Areas (including maps), if needed. Significant or unevaluated <i>archaeological</i> resources that are being avoided and are within 50 feet of the construction zone shall be designated as Environmentally Sensitive Areas. The resources shall be <i>delineated</i> with exclusion markers to ensure avoidance. These areas shall not be marked as archaeological resources, but shall be designated as “exclusion zones” on project plans and protective fencing in order to discourage unauthorized disturbance or collection of artifacts.</p> <p>b. <i>Provisions for Archaeological Monitoring</i>. The plan shall outline requirements for archaeological monitoring and the archaeological monitor(s) role and responsibilities in accordance with Mitigation Measure CUL-11: Archaeological Resources Monitoring. Ground</p>	

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Impacts	Mitigation Measures	Significance after Mitigation
	<p>disturbance in locations/depths that have been previously monitored as part of the program shall not be subject to additional monitoring.</p> <p>c. <i>Procedures for Discovery of Archaeological Resources.</i> Procedures to be implemented in the event of an archaeological discovery shall be fully defined in the plan and shall be in accordance with Mitigation Measure CUL-14: Archaeological Resources Discoveries. Procedures outlined shall include stop-work and protective measures, notification protocols, procedures for significance assessments, and appropriate treatment measures. The plan shall state avoidance or preservation in place is the preferred manner of mitigating impacts to historical resources, unique archaeological resources, and contributors to the significance of the tribal cultural landscape, but shall provide procedures to follow should avoidance be infeasible in light of factors such as the nature of the find, project design, costs, and other considerations.</p> <p>If, based on the recommendation of a Qualified Archaeologist, it is determined that a discovered archaeological resource constitutes a historical resource or unique archaeological resource or is a contributor to the significance of the tribal cultural <i>landscape</i>, then <i>avoidance</i> and preservation in place shall be the preferred manner of mitigating impacts to such a resource in accordance with Mitigation Measure CUL-7: Avoidance and Preservation in Place of Archaeological Resources. In the event that preservation in place is determined to be infeasible and data recovery through excavation is the only feasible mitigation available, an Archaeological Resources Data Recovery and Treatment Plan shall be prepared and implemented following the procedures outlined in Mitigation Measure CUL-8: Phase III Archaeological Resources Data Recovery and Treatment Plan. LCWA shall consult with appropriate Native American representatives in determining treatment of resources that are Native American in origin to ensure cultural values ascribed to the resources, beyond those that are scientifically important, are considered, including those related to the tribal cultural landscape.</p> <p>d. <i>Procedures for Discovery of Human Remains and Associated Funerary Objects or Grave Goods.</i> The plan shall outline the protocols and procedures to be followed in the event that <i>human</i> remains and associated funerary objects or grave goods are uncovered. Protocols and procedures shall be in accordance with Mitigation Measure CUL-17: Human Remains Discoveries.</p> <p>e. <i>Reporting Requirements.</i> The plan shall outline provisions for weekly and final reporting. The Qualified Archaeologist shall prepare weekly status reports detailing activities and locations observed (including maps) and summarizing any discoveries for the duration of monitoring to be submitted to LCWA via email for each week in which monitoring activities occur. The Qualified Archaeologist shall prepare a draft Archaeological</p>	

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Impacts	Mitigation Measures	Significance after Mitigation
	<p>Resources Monitoring Report and submit it to LCWA within 180 days after completion of the monitoring program or treatment for significant discoveries should treatment extend <i>beyond</i> the cessation of monitoring. The final Archaeological Resources Monitoring Report shall be submitted to LCWA within 60 days after receipt of LCWA comments. The Qualified Archaeologist shall also submit the final Archaeological Resources Monitoring Report to the South Central Coastal Information Center.</p> <p>f. <i>Curation or Disposition of Cultural Materials.</i> The plan shall outline the requirements for final disposition of all cultural materials collected during data recovery. Disposition of all archaeological materials shall be in accordance with Mitigation Measure CUL-15: Curation and Disposition of Cultural Materials. Disposition of human remains and any associated funerary objects or grave goods shall be in accordance with Mitigation Measure CUL-17: Human Remains Discoveries.</p> <p>g. <i>Protocols for Native American Coordination and Monitoring.</i> The plan shall outline requirements for Native American coordination and monitoring, and the Native American monitor(s) role and responsibilities in accordance with Mitigation Measures CUL-12: Native American Coordination and CUL-13: Native American Monitoring.</p> <p>Mitigation Measure CUL-10: Construction Worker Cultural Resources Sensitivity Training. For each near-term, mid-term, and long-term project that involves ground disturbance, LCWA shall retain a Qualified Archaeologist to implement a cultural resources sensitivity training program. The Qualified Archaeologist, or their designee, and a Native American representative shall instruct all construction personnel of the importance and significance of the area as a tribal cultural landscape, the types of archaeological resources that may be encountered, the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains, confidentiality of discoveries, and safety precautions to be taken when working with cultural resources monitors. In the event that construction crews are phased, additional trainings shall be conducted for new construction personnel. LCWA or their contractors shall ensure construction personnel are made available for and attend the training. LCWA shall retain documentation demonstrating attendance.</p> <p>Mitigation Measure CUL-11: Archaeological Resources Monitoring. For each near-term, mid-term, and long-term project, full-time archaeological monitoring of ground disturbance (i.e., demolition, pavement removal, pot-holing or auguring, boring, drilling, grubbing, vegetation removal, brush clearance, weed abatement, grading, excavation, trenching, or any other activity that has potential to disturb soil) shall be conducted in areas and at depths where there is a potential to encounter archaeological materials or human remains, including excavations into existing artificial fill and native soils, based on the project-specific archaeological resources assessment</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>prepared under Mitigation Measure CUL-4: Archaeological Resources Assessment. Ground disturbance in locations/depths that have been previously monitored as part of the program shall not be subject to additional monitoring. The archaeological monitor(s) shall be familiar with the types of resources that could be encountered and shall work under the direct supervision of a Qualified Archaeologist. The number of archaeological monitors required to be on site during ground-disturbing activities is dependent on the construction scenario, specifically the number of pieces of equipment operating at the same time, the distance between these pieces of equipment, and the pace at which equipment is working, with the goal of monitors being able to effectively observe soils as they are exposed. Generally, work areas more than 500 feet from one another will require additional monitors. The archaeological monitor(s) shall keep daily logs detailing the types of activities and soils observed, and any discoveries. Archaeological monitor(s) shall have the authority to halt and re-direct ground disturbing activities in the event of a discovery until it has been assessed for significance and treatment implemented, if necessary, based on the recommendations of the Qualified Archaeologist in coordination with LCWA, and the Native American representatives in the event the resource is Native American in origin, and in accordance with the protocols and procedures outlined in Mitigation Measure CUL-8: Phase III Archaeological Resources Data Recovery and Treatment Plan. Reporting of archaeological monitoring shall be conducted in accordance with the provisions outlined in Mitigation Measure CUL-9: Archaeological Resources Monitoring and Mitigation Plan.</p> <p>Mitigation Measure CUL-12: Native American Coordination. LCWA shall seek input from participating Native American Tribes during the preparation of documents required under Mitigation Measures CUL-5: Extended Phase I Archaeological Investigation, CUL-6: Phase II Archaeological Investigation, CUL-8: Phase III Archaeological Resources Data Recovery and Treatment Plan, and CUL-14: Archaeological Resources Discoveries, including but not limited to work plans, research designs, treatment plans, and associated technical reports. LCWA shall provide participating Native American Tribes with electronic copies of draft documents and afford them 30 days from receipt of a document to review and comment on the document. Native American comments will be provided in writing for consideration by LCWA. LCWA shall document comments and how the comments were/were not addressed in a tracking log.</p> <p>Mitigation Measure CUL-13: Native American Monitoring. For each near-term, mid-term, and long-term project, full-time Native American monitoring of ground disturbance (i.e., demolition, pavement removal, pot-holing or auguring, boring, drilling, grubbing, vegetation removal, brush clearance, weed abatement, grading, excavation, trenching, or any other activity that has potential to disturb soil) shall be conducted in areas and at depths where</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>there is a potential to encounter archaeological materials or human remains, including excavations into existing artificial fill and native soils, based on the project-specific study prepared under Mitigation Measure CUL-4: Archaeological Resources Assessment. LCWA shall retain a Native American monitor(s) from a California Native American Tribe that is culturally and geographically affiliated with the program area (according to the California Native American Heritage Commission) to conduct the monitoring. If more than one Tribe is interested in monitoring, LCWA shall contract with each Tribe that expresses interest and prepare a monitoring rotation schedule. LCWA shall rotate monitors on an equal and regular basis to ensure that each Tribal group has the same opportunity to participate in the monitoring program. If a Tribe cannot participate when their rotation comes up, they shall forfeit that rotation unless LCWA can make other arrangements to accommodate their schedule. The number of Native American monitors required to be on site during ground disturbing activities is dependent on the construction scenario, specifically the number of pieces of equipment operating at the same time, the distance between these pieces of equipment, and the pace at which equipment is working, with the goal of monitors being able to effectively observe soils as they are exposed. Generally, work areas more than 500 feet from one another require additional monitors. Native American monitors shall have the authority to halt and re-direct ground disturbing activities in the event of a discovery until it has been assessed for significance.</p> <p>The Native American monitor(s) shall also monitor all ground disturbance related to subsurface investigations and data recovery efforts conducted under Mitigation Measures CUL-5: Extended Phase I Archaeological Investigation, CUL-6: Phase II Archaeological Investigation, and CUL-8: Phase III Archaeological Resources Data Recovery and Treatment Plan for any resources that are Native American in origin, according to the rotation schedule, including those related to the tribal cultural landscape.</p> <p>Mitigation Measure CUL-14: Archaeological Resources Discoveries. In the event archaeological resources are encountered during construction of the proposed program, all activity in the vicinity of the find shall cease (within 100 feet), and the protocols and procedures for discoveries outlined in Mitigation Measure CUL-9: Archaeological Resources Monitoring and Mitigation Plan shall be implemented. The discovery shall be evaluated for potential significance by the Qualified Archaeologist. If the Qualified Archaeologist determines that the resource may be significant (i.e., meets the definition for historical resource in <i>CEQA Guidelines</i> subdivision 15064.5(a) or for unique archaeological resource in PRC subdivision 21083.2(g) or is a contributor to the tribal cultural landscape), the Qualified Archaeologist shall develop an Archaeological Resources Data Recovery and Treatment Plan for the resource following the procedures outlined in Mitigation Measure CUL-8: Phase III Archaeological Resources Data Recovery and Treatment</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>Plan. When assessing significance and developing treatment for resources that are Native American in origin, including those related to the tribal cultural landscape, the Qualified Archaeologist and LCWA shall consult with the appropriate Native American representatives. The Qualified Archaeologist shall also determine if work may proceed in other parts of the project site while data recovery and treatment is being carried out.</p> <p>Mitigation Measure CUL-15: Curation and Disposition of Cultural Materials. LCWA shall curate all Native American archaeological materials, with the exception of funerary objects or grave goods (i.e., artifacts associated with Native American human remains) at a repository accredited by the American Association of Museums that meets the standards outlined in 36 CFR 79.9. If no accredited repository accepts the collection, then LCWA may curate it at a non-accredited repository as long as it meets the minimum standards set forth by 36 CFR 79.9. If neither an accredited nor a non-accredited repository accepts the collection, then LCWA shall offer the collection to a public, non-profit institution with a research interest in the materials, or donate it to a local California Native American Tribe(s) (Gabrielino or Juaheno) for educational purposes. Disposition of Native American human remains and associated funerary objects or grave goods shall be determined by the landowner in consultation with LCWA and the Most Likely Descendant in accordance with Mitigation Measure CUL-17: Human Remains Discoveries.</p> <p>LCWA shall curate all historic-period archaeological materials that are not Native American in origin at a repository accredited by the American Association of Museums that meets the standards outlined in 36 CFR 79.9. If no accredited repository accepts the collection, then LCWA may curate it at a non-accredited repository as long as it meets the minimum standards set forth by 36 CFR 79.9. If neither an accredited nor a non-accredited repository accepts the collection, then LCWA shall offer the collection to a public, non-profit institution with a research interest in the materials, or to a local school or historical society in the area for educational purposes. If no institution, school, or historical society accepts the collection, LCWA may retain it for on-site display as part of its interpretation and educational elements.</p> <p>Prior to start of each project, LCWA shall obtain a curation agreement and shall be responsible for payment of fees associated with curation for the duration of the program.</p> <p>Mitigation Measure CUL-16: Future Native American Input. LCWA shall consult with participating California Native American Tribes, to the extent that they wish to participate, during future design of project-level components, plant and native plant selections or palettes, and development of content for educational and interpretative signage.</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
Impact CUL-2: The proposed program would cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.	Mitigation Measures CUL-1, and CUL-4 through CUL-15.	Significant and Unavoidable
Impact CUL-3: The proposed program would not disturb any human remains, including those interred outside of formal cemeteries.	<p>Mitigation Measure CUL-17: Human Remains Discoveries: If human remains are encountered, then LCWA or its contractor shall halt work in the vicinity (within 100 feet) of the discovery and contact the appropriate County Coroner in accordance with Public Resources Code Section 5097.98 and Health and Safety Code Section 7050.5, which requires 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 Section 5097.98. If the County Coroner determines the remains are Native American, then the Coroner will notify the California Native American Heritage Commission (NAHC) within 24 hours in accordance with Health and Safety Code subdivision 7050.5(c), and Public Resources Code Section 5097.98. The California Native American Heritage Commission shall then identify the person(s) thought to be the Most Likely Descendant (MLD). The MLD may, with the permission of the land owner, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The MLD shall complete their inspection and make their recommendation within 48 hours of being granted access by the landowner to inspect the discovery. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials. LCWA and the landowner shall discuss and confer with the MLD on all reasonable options regarding the MLD's preferences for treatment.</p> <p>Until LCWA and the landowner have conferred with the MLD, the contractor shall ensure that the immediate vicinity where the discovery occurred is not disturbed by further activity and is adequately protected according to generally accepted cultural or archaeological standards or practices, and that further activities take into account the possibility of multiple burials.</p> <p>If the NAHC is unable to identify an MLD, or the MLD identified fails to make a recommendation, or the landowner rejects the recommendation of the MLD and the mediation provided for in Subdivision (k) of Section 5097.94, if invoked, fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall inter the human remains and items associated with Native American human remains with appropriate dignity on the facility property in a location not subject to further and future subsurface disturbance.</p>	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
Cumulative	Mitigation Measures BIO-1 through BIO-9, as provided in Section 3.3, <i>Biological Resources</i> , and CUL-1 through CUL-17 (construction). Mitigation Measures BIO-1, BIO-6, and BIO-8 through BIO-11, as provided in Section 3.3, <i>Biological Resources</i> (operation).	Significant and Unavoidable (construction). Less than Significant (operation).
3.5 Geology, Soils, and Paleontological Resources		
Impact GEO-1a: The proposed program would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.	No mitigation is required.	Less than Significant
Impact GEO-1b: The proposed program would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	No mitigation is required.	Less than Significant
Impact GEO-1c: The proposed program would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction, lateral spreading, and landslides.	No mitigation is required.	Less than Significant
Impact GEO-2: The proposed program would not result in a significant impact if the proposed program would result in substantial soil erosion or the loss of topsoil.	No mitigation is required.	Less than Significant
Impact GEO-3: The proposed program would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the proposed program, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.	No mitigation is required.	No Impact
Impact GEO-4: The proposed program would not be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.	No mitigation is required.	Less than Significant
Impact GEO-5: The proposed program would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.	No mitigation is required.	No Impact

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
<p>Impact GEO-6: The proposed program would not would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.</p>	<p>Mitigation Measure GEO-1: Retention of a Qualified Professional Paleontologist. Prior to the start of construction of any near-term, mid-term, or long-term project, LCWA shall retain a Qualified Professional Paleontologist as defined by the Society of Vertebrate Paleontology to carry out all mitigation related to paleontological resources including: project-level review (Mitigation Measure GEO-2); paleontological resources sensitivity training (GEO-3); oversight of paleontological resources monitoring (Mitigation Measure GEO-4); and recovery, treatment, analysis, curation, and reporting (Mitigation Measures GEO-5, GEO-6, and GEO-7).</p> <p>Mitigation Measure GEO-2: Project-Level Paleontological Resources Review and Monitoring Recommendations. Prior to LCWA approval of any near-term, mid-term, and long-term project, the Qualified Professional Paleontologist shall review the <i>Los Cerritos Wetlands Program Paleontological Resources Assessment</i> (ESA, 2019), grading plans, and any available geotechnical reports/data to determine the potential for ground disturbance to occur within older alluvium and old shallow marine deposits. If available data is sufficient to accurately determine the depth of older alluvium and old shallow marine deposits within a project site, monitoring shall be required beginning at or just above that depth. If available data is insufficient to determine the depth of older alluvium and old shallow marine deposits, monitoring shall be required beginning at 5 feet below surface (consistent with the accepted depth at which high sensitivity sediments could occur based on regional evidence). The results of the reviews shall be documented in technical memoranda to be submitted to LCWA prior to the start of ground disturbance, along with recommendations specifying the locations, depths, duration, and timing of any required monitoring. The technical memoranda shall include map figures that outline where monitoring is required and at what depths, and shall stipulate whether screen washing is necessary to recover small specimens. Any required screen washing shall follow SVP Guidelines.</p> <p>Mitigation Measure GEO-3: Paleontological Resources Sensitivity Training. Prior to the start of ground disturbance for any near-term, mid-term, or long-term project, the Qualified Professional Paleontologist shall conduct paleontological resources sensitivity training. The training shall focus on the recognition of the types of paleontological resources that could be encountered within the program area, the procedures to be followed if they are found, confidentiality of discoveries, and safety precautions to be taken when working with paleontological monitors. LCWA shall ensure that construction personnel are made available for and attend the training, and retain documentation demonstrating attendance. The training should be repeated as necessary for incoming construction personnel.</p> <p>Mitigation Measure GEO-4: Paleontological Resources Monitoring. A qualified paleontological monitor, as defined by the Society of Vertebrate</p>	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	<p>Paleontology, shall monitor all ground-disturbing activities occurring in the older alluvium and old shallow marine deposits for each near term, mid-term, or long-term project. Monitoring shall be implemented consistent with the locations, depths, duration, and timing recommendations specified in the technical memorandum for the project. Monitors shall work under the direction of the Qualified Professional Paleontologist. The number of monitors required to be on site during ground-disturbing activities shall be determined by the Qualified Professional Paleontologist and shall be based on the construction scenario – specifically the number of pieces of equipment operating at the same time, the distance between these pieces of equipment, and the pace at which equipment is working – with the goal of monitors being able to effectively observe sediments as they are exposed. Monitors shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens, and to request assistance from construction equipment operators to recover samples for screen washing as necessary. Monitors shall prepare daily logs detailing the types of activities and soils observed, and any discoveries. The Qualified Professional Paleontologist, in consultation with LCWA, shall have the ability to modify (i.e., increase, reduce, or discontinue) monitoring requirements based on observations of soil types and frequency of discoveries. Requests for modifications shall be submitted in writing to LCWA for approval prior to implementation.</p> <p>Mitigation Measure GEO-5: Paleontological Discoveries. If any potential fossils are discovered by paleontological resources monitors or construction personnel, all work shall cease at that location (within 100 feet) until the Qualified Professional Paleontologist has assessed the discovery and made recommendations as to the appropriate treatment. The paleontological resources monitor (if one is present) or construction personnel (if a monitor is not present) shall flag the fossiliferous area for avoidance until the Qualified Professional Paleontologist can evaluate the discovery and develop plans for avoidance or removal/salvage of the specimen(s), if deemed significant. Significant discoveries shall be salvaged following SVP Guidelines.</p> <p>Mitigation Measure GEO-6: Preparation, Identification, Cataloging, and Curation Requirements. All significant fossil discoveries shall be prepared to the point of identification to the lowest taxonomic level possible, cataloged, and curated into a certified repository with retrievable storage (such as a museum or university). All GPS data, field notes, photographs, locality forms, stratigraphic sections, and other data associated with the recovery of the specimens shall be deposited with the institution receiving the specimens. The Qualified Professional Paleontologist shall be responsible for obtaining a signed curation agreement from a certified repository in southern California prior to the start of the program. Given the length of the program, multiple agreements may be necessary due to changing capacities of repositories.</p>	

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
	Mitigation Measure GEO-7: Reporting Requirements. The Qualified Professional Paleontologist shall prepare weekly status reports detailing activities and locations observed (with maps) and summarizing any discoveries to be submitted to LCWA via email for each week in which monitoring activities occur. Monthly progress reports summarizing monitoring efforts shall be prepared and submitted to LCWA for the duration of monitored ground disturbance. Reports detailing the results of monitoring for any near-term, mid-term, or long-term project and treatment of significant discoveries shall be submitted to LCWA within 120 days of completion of treatment, or within 30 days of completion of monitoring if no significant discoveries occurred. If significant fossils are recovered, the Qualified Professional Paleontologist shall file the final report with the Natural History Museum of Los Angeles County and the certified repository.	
Cumulative	Mitigation Measures GEO-1 through GEO-7 (construction).	Less than Significant (construction and operation)
3.6 Greenhouse Gas Emissions and Energy		
Impact GHG-1: The proposed program would not generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.	No mitigation is required.	Less than Significant
Impact GHG-2: The proposed program would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.	No mitigation is required.	Less than Significant
Impact EN-1: The proposed program would not result in a significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during program construction or operation.	No mitigation is required.	Less than Significant
Impact EN-2: The proposed program would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	No mitigation is required.	Less than Significant
3.7 Hazardous and Hazardous Materials		
Impact HAZ-1: The proposed program would not create a significant hazard to the public or the environment through the routine transport, use, or disposal, or reasonable foreseeable upset and accident conditions that release hazardous materials.	No mitigation is required.	Less than Significant
Impact HAZ-2: The proposed program would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	No mitigation is required.	Less than Significant

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SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
<p>Impact HAZ-3: The proposed program would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.</p>	<p>Mitigation Measure HAZ-1: Health and Safety Plan. The contractor(s) shall prepare and implement site-specific Health and Safety Plans as required by and in accordance with 29 CFR 1910.120 to protect construction workers and the public during all excavation and grading activities. This Plan shall be submitted to LCWA, the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area), or Long Beach/Signal Hill Joint Powers Authority (the CUPA for the Long Beach area), for review prior to commencement of construction. The Health and Safety Plans shall include, but are not limited to, the following elements:</p> <ul style="list-style-type: none"> • Designation of a trained, experienced site safety and health supervisor who has the responsibility and authority to develop and implement the site Health and Safety Plan; • A summary of all potential risks to construction workers and maximum exposure limits for all known and reasonably foreseeable site chemicals; • Specified personal protective equipment and decontamination procedures, if needed; • Emergency procedures, including route to the nearest hospital; and • Procedures to be followed in the event that evidence of potential soil or groundwater contamination (such as soil staining, noxious odors, debris or buried storage containers) is encountered. These procedures shall be in accordance with hazardous waste operations regulations and specifically include, but are not limited to, the following: immediately stopping work in the vicinity of the unknown hazardous materials release, notifying the LCWA, and the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area), or the Long Beach/Signal Hill Joint Powers Authority (the CUPA for the Long Beach area), the LARWQCB, or CalGEM, as appropriate, and retaining a qualified environmental firm to perform sampling and remediation. <p>Mitigation Measure HAZ-2: Soil, Landfill Materials, and Groundwater Management Plan. In support of the Health and Safety Plan described in Mitigation Measure HAZ-1, the contractor(s) shall develop and implement a Soil, Landfilled Materials, and Groundwater Management Plan that includes a materials disposal plan specifying how the contractor will remove, handle, transport, and dispose of all excavated material in a safe, appropriate, and lawful manner. The Plan shall identify protocols for soil and landfilled materials testing and disposal, identify the approved disposal site, and include written documentation that the disposal site can accept the waste. Contract specifications shall mandate full compliance with all applicable federal, state, and local regulations related to the identification, transportation, and disposal of hazardous materials, including those encountered in excavated soil, landfilled materials, or dewatering effluent.</p>	Less than Significant

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Impacts	Mitigation Measures	Significance after Mitigation
	<p>As part of the Soil, Landfill Materials, and Groundwater Management Plan, the contractor shall develop a groundwater dewatering control and disposal plan specifying how groundwater (dewatering effluent), if encountered, will be handled and disposed of in a safe, appropriate and lawful manner. The Plan shall identify the locations at which groundwater dewatering is likely to be required, the test methods to analyze groundwater for hazardous materials, the appropriate treatment and/or disposal methods, and approved disposal site(s), including written documentation that the disposal site can accept the waste. The contractor may also discharge the effluent under an approved permit to a publicly owned treatment works, in accordance with any requirements the treatment works may have.</p> <p>This Plan shall be submitted to the LCWA, and the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area), or the Long Beach/Signal Hill Joint Powers Authority (the CUPA for the Long Beach area), or the Orange County Environmental Health Division (the CUPA for the City of Seal Beach area) for review and approval prior to commencement of construction.</p>	
Impact HAZ-4: The proposed program would not result in a safety hazard or excessive noise for people residing or working in the program area plan.	No mitigation is required.	Less than Significant
Impact HAZ-5: The proposed program would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	No mitigation is required.	No Impact
Impact HAZ-6: The proposed program would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.	No mitigation is required.	No Impact
Cumulative	No mitigation is required.	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
3.8 Hydrology and Water Quality		
Impact HYD-1: The proposed program would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	Mitigation Measure HYD-1: A Monitoring and Adaptive Management Plan (MAMP) shall be prepared and implemented prior to commencement of construction or restoration activities. The MAMP shall provide a framework for monitoring site conditions in response to the program implementation. The monitoring shall focus on sediment quality in areas subject to the greatest deposition from storm events and that are also not subject to regular tidal flushing, (e.g., the southwestern corner of the Long Beach Property site). The sediment quality monitoring shall be performed at a frequency that would capture the potential build-up of contaminants in the deposited sediment before concentration are reached that would impact benthic macro-invertebrates and other sensitive species. The findings of the monitoring efforts shall be used to identify any source of impairment, and if discovered, provide measures for remediation of the sediment source area(s). The MAMP shall be submitted for review and approval to permitting agencies prior to commencement of construction or restoration activities.	Less than Significant
Impact HYD-2: The proposed program would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed program may impede sustainable groundwater management of the basin.	No mitigation is required.	Less than Significant
Impact HYD-3a: The proposed program would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on site or off site.	Mitigation Measure HYD-1.	Less than Significant
Impact HYD-3b: The proposed program would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	No mitigation is required.	Less than Significant
Impact HYD-3c: The proposed program would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would 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.	No mitigation is required.	Less than Significant

TABLE ES-8
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Impacts	Mitigation Measures	Significance after Mitigation
Impact HYD-3d: The proposed program would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows.	No mitigation is required.	Less than Significant
Impact HYD-4: The proposed program would not risk release of pollutants due to program inundation.	No mitigation is required.	Less than Significant
Impact HYD-5: The project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan rise.	No mitigation is required.	Less than Significant
Cumulative	No mitigation is required.	Less than Significant
3.9 Land Use and Planning		
Impact LU-1: The proposed program would not physically divide an established community.	No mitigation is required.	Less than Significant
Impact LU-2: The proposed program would not conflict with most applicable land use plan, policy, or regulation of an agency with jurisdiction over the proposed program, adopted for the purpose of avoiding or mitigating an environmental effect.	No mitigation is required.	Less than Significant
Cumulative	No mitigation is required.	Less than Significant
3.10 Mineral Resources		
Impact MIN-1: The proposed program would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.	No mitigation is required.	No Impact
Cumulative	No mitigation is required.	No Impact

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Impacts	Mitigation Measures	Significance after Mitigation
3.11 Noise		
Impact NOI-1: The proposed program would not result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed program in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	<p>No mitigation is required.</p> <p>While the proposed program would result in less-than-significant impacts associated with construction noise, to reduce and minimize the construction noise generated on the program area and attenuated at the nearest off-site residences, the following construction noise reduction measures are recommended:</p> <p>Noise Reduction Measure NOISE-1: Staging Areas and Mufflers. Staging areas for construction shall be located away from existing off-site residences. All construction equipment shall use properly operating mufflers. These requirements shall be included in construction contracts.</p> <p>Noise Reduction Measure NOISE-2: Limit Grading. All grading activities shall be conducted outside of the nesting season for sensitive bird species. The nesting season has been identified as extending from March 1 to August 15. (Refer to Section 3.3 Biological Resources for more information on potential impacts to bird species and the corresponding mitigation).</p> <p>Noise Reduction Measure NOISE-3: Noise Barriers. Where feasible, grading plans and specifications shall include temporary noise barriers for all grading, hauling, and other heavy equipment operations that would occur within 300 feet of sensitive off-site receptors and occur for more than 20 working days. The noise barriers shall be 12-feet high, but may be shorter if the top of the barrier is at least one foot above the line of sight between the equipment and the receptors. The barriers shall be solid from the ground to the top of the barrier, and have a weight of at least 2.5 pounds per square foot, which is equivalent to ¾ inch thick plywood. The barrier design shall optimize the following requirements: (1) the barrier shall be located to maximize the interruption of line-of-sight between the equipment and the receptor, which is normally at the top-of-slope when the grading area and receptor are at different elevations. However, a top-of-slope location may not be feasible if the top-of-slope is not on the project site; (2) the length and height of the barrier shall be selected to block the line-of-sight between the grading area and the receptors; (3) the barrier shall be located as close as feasible to the receptor or as close as feasible to the grading area; a barrier is least effective when it is at the midpoint between noise source and receptor.</p>	Less than Significant
Impact NOI-2: The proposed program would not result in generation of excessive groundborne vibration or groundborne noise levels.	No mitigation is required.	Less than Significant
Impact NOI-3: The proposed program would not expose people residing or working in the project area to excessive noise levels for a project located within the vicinity of a private airstrip or an airport land use plan.	No mitigation is required.	No Impact
Cumulative	No mitigation is required.	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
3.12 Public Services		
Impact PS-1a: The proposed program would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection.	Mitigation Measure PS-1: Fire Prevention and Protection Training. Prior to the start of construction activities, the Applicant shall prepare and conduct a fire prevention and protection training for all construction personnel associated with the proposed program. Topics shall include general fire prevention practices such as avoiding smoking on the program area as well as specific preventative measures pertaining to high-fire-risk activities including handling of oil and welding and cutting. Personal protection measures including the locations of fire extinguishers on the program area and site exit routes should also be disclosed to ensure construction worker safety in the event of a fire. The material for the training shall be obtained in consultation with the Orange County Fire Authority and the Long Beach Fire Department.	Less than Significant
Impact PS-1b: The proposed program would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police protection.	No mitigation is required.	Less than Significant
Impact PS-1c: The proposed program would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for parks.	Refer to Impact REC-1 and Impact REC-2 provided in Section 3.13, <i>Recreation</i> .	N/A
Cumulative	No mitigation is required.	Less than Significant
3.13 Recreation		
Impact REC-1: The proposed program would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	No mitigation is required.	Less than Significant
Impact REC-2: The proposed program would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.	No mitigation is required.	Less than Significant
Cumulative	No mitigation is required.	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
3.14 Transportation		
<p>Impact TRA-1: The proposed program would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.</p>	<p>Mitigation Measure TRA-1: Prior to the start of construction of the program component(s) that require a full or partial roadway closure, LCWA shall require the construction contractor(s) to prepare a traffic control plan. The traffic control plan will show all signage, striping, delineated detours, flagging operations and any other devices that will be used during construction to guide motorists, bicyclists, and pedestrians safely through the construction area and allow for adequate access and circulation to the satisfaction of the cities of Seal Beach and Long Beach and Orange and Los Angeles Counties, as applicable. The traffic control plan shall be prepared in accordance with the applicable jurisdiction's traffic control guidelines and will be prepared to ensure that access will be maintained to individual properties, and that emergency access will not be restricted. Additionally, the traffic control plan will ensure that congestion and traffic delays are not substantially increased as a result of the construction activities. Furthermore, the traffic control plan will include detours or alternative routes for bicyclists using on-street bicycle lanes as well as for pedestrians using adjacent sidewalks. LCWA shall provide written notice at least two weeks prior to the start of construction to owners/occupants along streets to be affected during construction.</p> <p>During construction, LCWA will maintain continuous vehicular and pedestrian access to any affected residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. Access will be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described above, LCWA shall notify the owner or occupant of the closure of the driveway at least five working days prior to the closure. The traffic control plan shall include provisions to ensure that the construction of the proposed program does not interfere unnecessarily with the work of other agencies such as mail delivery, school buses, and municipal waste services.</p> <p>LCWA shall also notify local emergency responders of any planned partial or full lane closures or blocked access to roadways or driveways required for program construction. Emergency responders include fire departments, police departments, and ambulances that have jurisdiction within the program area. Written notification and disclosure of lane closure location must be provided at least 30 days prior to the planned closure to allow emergency response providers adequate time to prepare for lane closures.</p>	Less than Significant
<p>Impact TRA-2: The proposed program would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).</p>	No mitigation is required.	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
Impact TRA-3: The proposed program would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Mitigation Measure TRA-1.	Less than Significant
Cumulative	Mitigation Measure TRA-1.	Less than Significant
3.15 Tribal Cultural Resources		
Impact TRI-1: The proposed program would not cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	No mitigation is required.	Less than Significant
Impact TRI-2: The proposed program would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Mitigation Measures BIO-1 through BIO-11 as provided in Section 3.3, <i>Biological Resources</i> , and Mitigation Measures CUL-1, and CUL-4 through CUL-16, as provided in Section 3.4, <i>Cultural Resources</i> .	Significant and Unavoidable
Cumulative	Mitigation Measures BIO-1 through BIO-9, as provided in Section 3.3, <i>Biological Resources</i> , and Mitigation Measures CUL-1, and CUL-4 through CUL-16, as provided in Section 3.4, <i>Cultural Resources</i> (construction). Mitigation Measures BIO-1, BIO-6, and BIO-8 through BIO-11, as provided in Section 3.3, <i>Biological Resources</i> (operation).	Less than Significant

TABLE ES-8
SUMMARY OF ENVIRONMENTAL EFFECTS AND MITIGATION MEASURES

Impacts	Mitigation Measures	Significance after Mitigation
3.16 Utilities and Service Systems		
Impact UTL-1: The proposed program would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.	<p>Mitigation Measure TRA-1, as provided in Section 3.14, <i>Transportation</i>.</p> <p>Mitigation Measure UTL-1: Water Will Serve Letter. Prior to issuance of a certificate of occupancy of the visitor center, a will serve letter will be obtained to verify that the water mains surrounding the program boundary have the capacity to serve the visitor center.</p> <p>Mitigation Measure UTL-2: Sewer Capacity Study. Prior to issuance of a certificate of occupancy of the visitor center, a sewer capacity study will be performed to verify that the sewer lines surrounding the program boundary have the capacity to serve the visitor center.</p>	Less than Significant
Impact UTL-2: The proposed program would not have sufficient water supplies available to serve the proposed program and reasonably foreseeable future development during normal, dry and multiple dry years.	Mitigation Measure UTL-1.	Less than Significant
Impact UTL-3: The proposed program would not result in a determination by the wastewater treatment provider which serves or may serve the proposed program that it has adequate capacity to serve the proposed program's projected demand in addition to the provider's existing commitments.	Mitigation Measure UTL-2.	Less than Significant
Impact UTL-4: The proposed program would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	No mitigation is required.	Less than Significant
Impact UTL-5: The proposed program would not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	No mitigation is required.	Less than Significant
Cumulative	No mitigation is required.	Less than Significant

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