SECTION 3.4
Cultural Resources

3.4.1 Introduction

This section evaluates the potential for the proposed program to result in adverse cultural resources impacts related to historical resources, archaeological resources, and human remains. The analysis is based on a records search conducted at the California Historical Resources Information System – South Central Coastal Information Center (SCCIC); a Sacred Lands File (SLF) search through the Native American Heritage Commission (NAHC); a review of historic topographic maps and aerial photographs; a desktop geoarchaeological study; and a reconnaissance-level site visit. This section identifies the potential for both program-level and cumulative environmental impacts to occur, as well as feasible mitigation measures that would minimize or avoid the proposed program's impacts on cultural resources.

Information sources for the analysis presented in this section include the following:

- *Los Cerritos Wetlands Restoration Plan Program, Los Angeles County and Orange County, California: Cultural Resources Assessment Report* (ESA, 2019)
- *Staff Report: Coastal Development Permit for the Los Cerritos Wetlands Oil Consolidation and Restoration Project* (California Coastal Commission [CCC], 2018)
- *City of Long Beach Los Cerritos Wetlands Project: Historic Resources Assessment* (ESA, 2017)
- *Native American Heritage Commission Sacred Lands File Search* (Quinn, 2019)

All information sources used are included as citations within the text; sources are listed in Section 3.4.7, *References*.

3.4.2 Environmental Setting

3.4.2.1 Prehistoric Setting

The chronology of coastal southern California is typically divided into three general time periods: the Early Holocene (11,000 to 8,000 before present [B.P.]), the Middle Holocene (8,000 to 4,000 B.P.), and the Late Holocene (4,000 B.P. to A.D. 1769). Within this general timeframe, the archaeology of southern California is generally described in terms of cultural "complexes." A complex is a specific archaeological manifestation of a general mode of life, characterized archaeologically by technology, particular artifacts, economic systems, trade, burial practices, and other aspects of culture.

Early Holocene (11,000 to 8,000 B.P.)

While it is not certain when humans first came to California, their presence in southern California by about 11,000 B.P. has been well documented. At Daisy Cave, on San Miguel Island, cultural materials have been radiocarbon dated to between 11,100 and 10,950 years B.P. (Byrd and Raab, 2007). Radiocarbon evidence confirms occupation of the Orange County and San Diego County coast by about 9,000 B.P., primarily in lagoon and river valley locations (Gallegos, 2002). Similarly, the southern Channel Islands were inhabited by 8,000 B.P. as indicated by radiocarbon dates from the Eel Point site on San Clemente Island (Byrd and Raab, 2007). Early Holocene subsistence activities at Eel Point focused on maritime resources and included shellfish collection, as well as seal, sea lion, and dolphin hunting (Byrd and Raab, 2007).

During the Early Holocene, the climate of southern California became warmer and more arid and the human population, residing mainly in coastal or inland desert areas, began exploiting a wider range of plant and animal resources (Horne and McDougall, 2003). The primary Early Holocene cultural complex in coastal southern California was the San Dieguito Complex. The people of the San Dieguito Complex (about 10,000–8,000 B.P.) inhabited the chaparral zones of southwestern California, exploiting the plant and animal resources of these ecological zones (Moratto, 1984; Warren, 1967). Leaf-shaped and large-stemmed projectile points are typical of San Dieguito Complex material culture.

Middle Holocene (8,000 to 4,000 B.P.)

Middle Holocene settlement and subsistence patterns identified in the archaeological record are referred to as the La Jolla Complex (about 8,000–4,000 B.P.), which appears to be a continuation of the Early Holocene San Dieguito Complex. La Jolla groups lived in chaparral zones or along the coast, often migrating between the two. Coastal settlement focused around the bays and estuaries where shellfish and plant resources (i.e., grass seeds and nuts) were the primary subsistence resource (Byrd and Raab, 2007). La Jolla peoples produced large, coarse stone tools, but also produced well-made projectile points and milling slabs. The La Jolla Complex represents a period of population growth and increasing social complexity; however, the archaeological record indicates abandonment of the coastline after 4,000 B.P. possibly due to estuary silting and declining shellfish populations (Byrd and Raab, 2007).

Work on the southern Channel Islands indicates potential Middle Holocene trade networks connecting the southern California La Jolla populations to the groups of the Mojave Desert and the Great Basin's western margins (Byrd and Raab, 2007). Excavations on Santa Catalina Island, San Clemente Island, and San Nicolas Island identified evidence for the manufacture of the distinctive Olivella grooved rectangle (OGR) bead dating to approximately 5,000 B.P. OGR bead distribution appears to be limited to the southern Channel Islands and neighboring mainland, as well as the northern and western Great Basin. Curiously, no evidence for the presence of OGR beads comes from the northern Channel Island region, indicating a Middle Holocene trade/migratory corridor that extended from the southern Channel Islands to the neighboring mainland and beyond to the Mojave Desert and Great Basin (Byrd and Raab, 2007)

Late Holocene (4,000 B.P. to A.D. 1769)

During the Late Holocene, native populations of southern California were becoming less mobile and populations began to gather in small sedentary villages with satellite resource-gathering camps. Evidence indicates that the overexploitation of larger, high-ranked food resources may have led to a shift in subsistence towards a focus on acquiring greater amounts of smaller resources, such as shellfish and small-seeded plants (Byrd and Raab, 2007). The reliance on intensively harvested lower-ranged resources likely placed Late Holocene groups in a precarious position in terms of food acquisition. The cultural complexity that emerges during this period, which is characterized by extensive trade networks, emergent political and social leadership, and the development of new technologies, may have been driven in part to reduce food shortages. Trade during the Late Holocene reached its zenith, with asphaltum (tar), seashells, and steatite being traded from southern California to the Great Basin.

3.4.2.2 Ethnographic Setting

The program area is located in a region traditionally occupied by the Gabrielino and Juaneño Native Americans. Each group is described below.

Gabrielino

The term "Gabrielino" is a general term that refers to those Native Americans who were sent by the Spanish to the Mission San Gabriel Arcángel. Prior to European colonization, the Gabrielino occupied a diverse area that included: the watersheds of the Los Angeles, San Gabriel, and Santa Ana rivers; the Los Angeles basin; and the islands of San Clemente, San Nicolas, and Santa Catalina (Bean and Smith, 1978). Their neighbors included the Chumash and Tataviam to the north, the Juañeno to the south, and the Serrano and Cahuilla to the east. The Gabrielino are reported to have been second only to the Chumash in terms of population size and regional influence (Bean and Smith, 1978). The Gabrielino language was part of the Takic branch of the Uto-Aztecan language family.

The Gabrielino Indians were hunter-gatherers and lived in permanent communities located near the presence of a stable food supply. Subsistence consisted of hunting, fishing, and gathering. Small terrestrial game was hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith, 1978). The primary plant resources were the acorn, gathered in the fall and processed in mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly-leafed cherry. Community populations generally ranged from 50 to 100 inhabitants, although larger settlements may have existed. The Gabrielino are estimated to have had a population numbering around 5,000 in the pre-contact period (Kroeber, 1925).

The Late Prehistoric period, spanning from approximately 1,500 years B.P. to the mission era, is the period associated with the florescence of the Gabrielino (Wallace, 1955). Coming ashore near Malibu Lagoon or Mugu Lagoon in October of 1542, Juan Rodriguez Cabrillo was the first European to make contact with the Gabrielino Indians.

Maps produced by early explorers indicate that at least 26 Gabrielino villages were within proximity to known Los Angeles River courses, while an additional 18 villages were reasonably close to the river (Gumprecht, 2001). The closest village to the program area was the village of *Puvungna*, located approximately 0.75 miles north of the program area (McCawley, 1996). The Kirkman-Harriman Pictorial and Historical Map of Los Angeles County (Los Angeles Public Library, 1938) depicts two unnamed villages located approximately 2 miles northwest and 5 miles southeast of the program area.

Puvungna is reported to be the birthplace of *Chingichngish*, the primary deity of a protohistoric and early historic belief system and ceremonial complex that spread throughout the Los Angeles basin, Orange County, western Riverside County, and northern San Diego County. Most ethnohistoric data suggest that the main village of *Puvungna* was located on Alamitos Mesa at Bixby Ranch. However, as villages often covered large areas and could move to meet changing needs, *Puvungna* may refer to the entire rim of Alamitos Bay (Cleland et al., 2007).

Juañeno

The Juaneño spoke a language belonging to the Cupan group of the Takic subfamily of the Uto-Aztecan language family. The Juaneño people were so called because of their association with Mission San Juan Capistrano, although some contemporary Juaneño identify themselves by the indigenous term *Acjachemen*. The Juaneño were linguistically and culturally related to the neighboring Luiseño (with whom they are often grouped; see Bean and Shipek, 1978), Cahuilla, and Cupeño. Juaneño territory extended from just above Aliso Creek in the north to San Onofre Canyon in the south and inland from the Pacific Ocean to Santiago Peak and the ridges above Lake Elsinore (Bean and Shipek, 1978).

The Juaneño lived in sedentary autonomous villages located in diverse ecological zones. Each settlement claimed specific fishing and collecting regions. Typically, villages were located in valley bottoms, along coastal strands and streams, and near mountain foothills. Villages were usually sheltered in coves or canyons, on the side of slopes near water and in good defensive spots. The are no reported ethnographic Juaneño village in the vicinity of the program area; the closest village sites are more than 20 miles south of the program area (O'Neil and Evans, 1980).

Trails, hunting sites, temporary hunting camps, quarry sites, and ceremonial and gaming locations were communally owned, while houses, gardens, tools, ritual equipment, and ornamentation were owned by individuals or families. Most groups had fishing and gathering sites along the coast that they visited annually from January to March when inland supplies were scarce. October to November was acorn-gathering time, when most of the village would settle in the mountain oak groves. Houses were conical in form, partially subterranean, covered with thatch, reeds, brush, or bark. Sweathouses were round and earth covered. Each village was enclosed with a circular fence and had a communal ceremonial structure at the center (Bean and Shipek, 1978).

3.4.2.3 Historic Setting

Spanish Period (1769–1821)

Although Spanish explorers made brief visits to the region in 1542 and 1602, sustained European exploration of southern California began in 1769, when Gaspar de Portolá and a small Spanish contingent began their exploratory journey along the California coast from San Diego to Monterey. This was followed in 1776 by the expedition of Father Francisco Garcés (Johnson and Earle, 1990). In the late 18th century, the Spanish began establishing missions in California and forcibly relocating and converting native peoples. In 1771, Fathers Pedro Benito Cambón and Angel Fernandez Somera y Balbuena founded the Mission San Gabriel Arcángel, located approximately 23 miles north of the program area (California Missions Resource Center, 2018). Disease and hard labor took a toll on the native population in California; by 1900, the Native Californian population had declined by as much as 90 percent (Cook, 1978). In addition, native economies were disrupted, trade routes were interrupted, and native ways of life were significantly altered (Castillo, 1978).

In an effort to promote Spanish settlement of Alta California, Spain granted several large land concessions from 1784 to 1821. At this time, unless certain requirements were met, Spain retained title to the land (State Lands Commission, 1982).

Mexican Period (1821–1846)

The Mexican Period began when Mexico won its independence from Spain in 1821. Mexico continued to promote settlement of California with the issuance of land grants. In 1833, Mexico began the process of secularizing the missions, reclaiming the majority of mission lands and redistributing them as land grants. According to the terms of the Secularization Law of 1833 and Regulations of 1834, at least a portion of the lands would be returned to the Native populations, but this did not always occur (Milliken et al., 2009).

Many ranchos continued to be used for cattle grazing by settlers during the Mexican Period. Hides and tallow from cattle became a major export for Californios, many of whom became wealthy and prominent members of society. The Californios led generally easy lives, leaving the hard work to vaqueros and Indian laborers (Pitt, 1994; Starr, 2007).

American Period (1846–present)

In 1846, the Mexican-American War broke out. Mexican forces were eventually defeated in 1847 and Mexico ceded California to the United States as part of the Treaty of Guadalupe Hildalgo in 1848. California officially became one of the United States in 1850. While the treaty recognized the right of Mexican citizens to retain ownership of land granted to them by Spanish or Mexican authorities, the claimant was required to prove their right to the land before a patent was given. The process was lengthy, and generally resulted in the claimant losing at least a portion of their land to attorney's fees and other costs associated with proving ownership (Starr, 2007).

When the discovery of gold in northern California was announced in 1848, a huge influx of people from other parts of North America flooded into California. The increased population

provided an additional outlet for the Californios' cattle. As demand increased, the price of beef skyrocketed and Californios reaped the benefits. However, a devastating flood in 1861, followed by droughts in 1862 and 1864, led to a rapid decline of the cattle industry; over 70 percent of cattle perished during these droughts (McWilliams, 1946; Dinkelspiel, 2008). This event, coupled with the burden of proving ownership of their lands, caused many Californios to lose their lands during this period (McWilliams, 1946). Former ranchos were subsequently subdivided and sold for agriculture and residential settlement.

The first transcontinental railroad was completed in 1869, connecting San Francisco with the eastern United States. Newcomers poured into northern California. Southern California experienced a trickle-down effect, as many of these newcomers made their way south. The Southern Pacific Railroad extended this line from San Francisco to Los Angeles in 1876. The second transcontinental line, the Santa Fe, was completed in 1886 and caused a fare war, driving fares to an unprecedented low. Settlers flooded into the region and the demand for real estate skyrocketed. As real estate prices soared, land that had been farmed for decades outlived its agricultural value and was sold to become residential communities. The subdivision of the large ranchos took place during this time (Meyer, 1981; McWilliams, 1946).

History of the Program Area

The program area's historic-period use has largely focused on oil production and followed the overall trajectory of the Los Angeles Basin's oil industry. The Los Angeles Basin proved to be a hotbed for the oil industry; oil was found close to the surface and with railroads and ports nearby, it was easy to get California oil to market. Oil prospecting, production, and refinery activities were one of the main industries in the region, further stimulated by the rise in automobile traffic—demand for the product skyrocketed.

By the mid to late 1920s, the industry was fueling the local and national economies. The discovery of large deposits of oil in Huntington Beach (1920), Santa Fe Springs (1921) and Signal Hill (1921) immediately increased land values and black-gold fever spread throughout the Los Angeles Basin (Creason, 2010). The effects of the industry were apparent in Los Angeles area—by 1923, California was the number one oil-producing state, and was responsible for one-quarter of the world's oil output. Since the production of oil exceeded the domestic demand, much of the Los Angeles Basin oil was shipped out of the Port of Long Beach to overseas markets (Paleontological Research Institute, 2017). The landscape, economy, and culture of the Los Angeles Basin was transformed by the oil industry. The area became so well known for its oil production that it became the topic of Upton Sinclair's popular novel *Oil!*

Seal Beach Oil Production

In 1912, Geologist Dr. Ralph Arnold surveyed Rancho Los Alamitos and thought that the area would not be conducive to oil exploration and production. Because of Dr. Arnold's findings, Jotham Bixby did not support further exploration of oil drilling. However, the turning point for the Los Alamitos Land Company followed the death of the Los Alamitos Land Company's President, I.W. Hellman, in 1920. Fred H. Bixby, a rancher and co-owner of the Los Alamitos Land Company, was elected to take Hellman's place as President. Once elected, not believing Dr. Arnold's survey,

he began leasing tracts of land owned by the Alamitos Land Company to the Royal Dutch Shell Company and Standard Oil in 1921, and later to the Marland Oil Company in 1924 (Copp, 1927).

The first attempts at the discovery of oil began in 1921. Given that the oil field was within tide lands, significant preliminary work was necessary to prepare the area before drilling could commence. Roads were constructed through the excavation and piling of mud to create roadbeds above the high tide level. Derrick foundations were set on driven pilings (Copp, 1927).

Initial prospecting was conducted by Standard Oil Company. The company's Bixby No. 1 well was spudded on February 26, 1921 and drilled to 5,540 feet without penetrating an oil-bearing formation. The Alamitos No. 1 well was spudded on September 28, 1921 and drilled to a depth of 5,760 feet without encountering significant oil deposits. Other wells were drilled by various entities, such as the Seal Beach Oil Company, H.R. Dabney, Shell Company, Associated Oil Company, and Marland Oil Company, with varying degrees of success, though none proved commercially viable (Copp, 1927).

The discovery of commercial production finally came after five and a half years of wildcatting in various different locations of the Seal Beach Oil Field. On June 4, 1926, the Marland Oil Company began drilling Bixby No. 2, located on the Synergy Oil Field site, and by August 4th of the same year the Bixby No. 2 had sent the Seal Beach Oil Field into commercial production (Copp, 1927). After the success of Bixby No. 2, the Marland Oil Company began drilling four more new wells in 1926. Less than one year later, other companies began drilling leases at the Seal Beach Oil Field, including the Union Oil Company of California and the Superior Oil Company (Beyer et al., 1998). The Seal Beach Oil Field reached its peak production at 70,000 barrels per day in June of 1927 transforming the landscape from open ranch land to a field of oil derricks (Heck, 2017). A 1927 Subsurface Contour Map published in the *Mining and Metallurgy Journal* shows Tract Numbers 1077 and 1779, the McGrath Oil lease, and the Bixby lease dotted with oil wells, including the Marland Oil Company's Bixby No. 2 well.

After the opening of Seal Beach Oil Field, Fred H. Bixby directly benefited from its oil production – making him one of the wealthiest individuals in Long Beach. Bixby made over 404 acres of Rancho Los Alamitos land available for a naval hospital and Long Beach State College (Williams, 1962). He attributed much of his wealth to his business pursuits with the Los Alamitos Land Company.

Oil extraction continued in the Seal Beach Oil Field until the Postwar period when subsidence issues and three small earthquakes damaged a total of 518 wells across all Long Beach oil fields, causing a rapid decline. Major improvements in the mid-1950s lead many fields to adopt water flooding programs to help extract oil and fight subsidence, improving oil extraction output. In 1974, 80 percent of the wells (223 total) located in Seal Beach were still in production, but had minor production numbers due to the expansion of offshore drilling in San Pedro Bay at the Wilmington Field (California Department of Conservation: Division of Oil and Gas, 1974).

Long Beach Oil Production

Prosperity and growth came quickly to Long Beach in 1921, with the discovery of oil. The Royal Dutch Shell Oil Company discovered oil in a section of Rancho Los Cerritos, known as Signal Hill, which would dramatically impact Rancho Los Cerritos and the future of the City of Long Beach.

This oil boom triggered a sudden increase in housing. Signal Hill became the catalyst for a "$1 million per month" building boom in the downtown area, leading to the construction of high-rise buildings (Long Beach Area Convention & Visitors Bureau, 2017.) The oil industry became the central economic engine for the City of Long Beach. In 1936, oil was discovered in the Long Beach Harbor, and this production produced money for the City of Long Beach. Many of the oil companies offered to pay the City of Long Beach 85 percent royalties on their future oil production, and this in turn provided the City of Long Beach with money for a police and fire department, and infrastructure improvements to the City of Long Beach and its port (C-SPAN, 2017). By 1939, the Long Beach Oil Development Company was the primary oil operator and "bringing in revenues of more than $10 million a year" (Heck, 2017). By 1940, 19 million barrels of oil annually were coming from the 400 oil wells in the harbor, and by 1953, 720 wells were along the shoreline. The City of Long Beach would benefit from these oil royalties until the late 1950s, when the State of California demanded revenues from the oil production in Long Beach. Up until 1965, oil production and export covered the entire cost of harbor development in the City of Long Beach.

In the Postwar Period, Long Beach experienced a resurgence in oil production when the development of offshore oil fields at Wilmington Beach were developed. In 1963, the Wilmington Field was estimated to have 1.16 billion barrels of oil, but it wasn't until three years later, that the increase in oil "recoverability caused by water flooding" increased that value to three billion barrels (Tennyson, 2005). Many of the land-based drilling sites in Long Beach were soon over-shadowed by off-shore drilling ventures. Seal Beach, Signal Hill, and Wilmington Beach Oil Fields are all significant to the growth and development of the City of Long Beach, and still remain important economic drivers.

3.4.2.4 Archaeological Setting

A number of archaeological resources are located in the vicinity of the program area. Two areas in particular – Landing Hill, an elevated L-shaped landform that abuts and partially overlaps the South LCWA and Hellman Retained sites at the southern extremity of the program area, and Alamitos Mesa, an elevated landform located about a half mile north of the program area – contain rich assemblages of Native American archaeological sites[1].

Many of the sites on Landing Hill were first documented in the 1950s, including CA-ORA-256 through -265, all of which are prehistoric shell midden deposits. Four of the sites (CA-ORA-258, -259, -260, and -261) were subject to limited excavations in the 1950s prior to development. These sites yielded flaked and groundstone artifacts, including manos, metates, mortars, hammerstones, pestles, polishing stones, projectile points, and a variety of other items. Sites CA-

[1] Some sites or portions thereof may remain, but many sites have been destroyed or partially destroyed as a result of modern development.

ORA-256, -257, -258, and -259 were later impacted by the Marina Shores development, but remnants of the sites reportedly still exist, while sites CA-ORA-264 and -265 were impacted by development of the Boeing Company facility (Cleland et al, 2007).

In 2002-2004 data recovery efforts at sites CA-ORA-260, -261, -262, -263, -264, and -1472 uncovered 35 human burials and cultural materials dating to between about 5,600 cal B.P. to 3,000 cal B.P. Of note, Feature 2 at CA-ORA-263, a large secondary cremation feature, yielded a dense collection of "killed"[2] groundstone artifacts, stone and shell beads, fossil megafauna, and cremated human bone (Cleland et al., 2007). It should be noted that "the Heron Pointe development has mostly obliterated the remaining portion of the northern arm of the [Landing] hill, including ORA-260, -261, -262, -263, -264, and -1472" (Cleland et al., 2007: 5).

Sites at Alamitos Mesa were studied as early as the 1970s, with research largely focused on possible associations with *Puvungna*. Sites CA-LAN-234, -235, and -306 are reported to be the location of *Puvungna*. Excavations at site CA-LAN-270, a Late Prehistoric deposit situated within the lowlands a short distance to the north of Alamitos Mesa, yielded 21 human burials and a wide variety of utilitarian and ceremonial artifacts. Most sites on Alamitos Mesa have been heavily impacted by modern-day development, such as construction of the California State University – Long Beach campus and the U.S. Veterans Administration Hospital (Cleland et al., 2007).

3.4.2.5 Identification of Cultural Resources

Archival Research

SCCIC Records Search

A records search was conducted on May 15, 2019 by ESA staff. The records search included a review of all recorded archaeological resources and previous studies within the program area and a 1-mile radius, and historic architectural resources within the program area and a 0.25-mile radius (study area). The records search also included a review of the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), California Points of Historical Interest, California Historical Landmarks, Archaeological Determinations of Eligibility, and California State Historic Resources Inventory (HRI).

Previous Cultural Resources Investigations

The SCCIC records search results indicate that 112 cultural resources studies have been conducted within a 1-mile radius of the program area. Of these 112 previous studies, 86 included some form of field study, such as survey, excavation, or monitoring. Of the 86 previous field studies, 11 overlap the program area. Approximately 55 percent of the 1-mile records search radius and 100 percent of the program area have been included in previous cultural resources field studies.

Previously Recorded Cultural Resources

The records search results indicate that 40 archaeological resources have been previously recorded within a 1-mile radius of the program area, and 10 historic architectural resources have

[2] Artifacts that are intentionally broken as part of ceremonial activities.

been recorded within a 0.25-mile radius of the program area (**Table 3.4-1**, *Previously Recorded Cultural Resources within SCCIC Study Area*). Of the 40 archaeological resources, 35 are prehistoric archaeological sites, 3 are historic-period archaeological sites, and 2 are multicomponent[3] archaeological sites. The 10 historic architectural resources include 6 buildings associated with the Seal Beach Naval Weapons Station; the Long Beach Marine Stadium; the Bixby Ranch Field Office; the Los Alamitos Pump Station; and a fuel oil tank farm.

A total of 15 resources are located within or immediately adjacent to (within 150 feet of) the program area. Of these 15 resources, 8 are located within the program area and include 5 prehistoric archaeological resources (P-19-001821; P-30-000256, -000261, -000851, and -001473); 1 historic-period archaeological resource (P-19-004781); and 2 historic architectural resources (P-19-186926 [Los Alamitos Pump Station] and -187657 [Bixby Ranch Field Office]). The remaining 7 resources are located immediately adjacent to the program area and include 6 prehistoric archaeological resources (P-30-000257, -000258, -000259, -000262, -000850, and -001544) and 1 multicomponent archaeological site (P-30-001542).

TABLE 3.4-1
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN SCCIC STUDY AREA

Primary Number (P-)	Permanent Trinomial (CA-)	Description	Date Recorded	Eligibility Status
Archaeological Resources				
19-000102	LAN-000102	Prehistoric archaeological site: shell midden containing lithic and groundstone artifacts	1966	Not evaluated
19-000231	LAN-000231	Prehistoric archaeological site: shell midden	1961	Not evaluated
19-000232	LAN-000232	Prehistoric archaeological site: shell midden	1961	Not evaluated
19-000233	LAN-000233	Prehistoric archaeological site: shell midden	1961	Not evaluated
19-000271	LAN-000271	Prehistoric archaeological site: shell midden	1959	Not evaluated
19-000273	LAN-000273	Prehistoric archaeological site: shell midden	1961	Not evaluated
19-000274	LAN-000274	Prehistoric archaeological site: shell midden	1961	Not evaluated
19-000275	LAN-000275	Prehistoric archaeological site: shell midden	1961	Not evaluated
19-000306	LAN-000306	Prehistoric archaeological site: village site containing shell midden	1951, 1964, 1972, 1973, 1997	Listed in NR
19-000702	LAN-000702	Prehistoric archaeological site: shell midden	1974	Not evaluated
19-001007	LAN-001007	Prehistoric archaeological site: shell midden	1979	Not evaluated
19-001821*	LAN-001821	Prehistoric archaeological site: shell midden	1990	Not evaluated

[3] Contains both prehistoric and historic-period elements.

TABLE 3.4-1
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN SCCIC STUDY AREA

Primary Number (P-)	Permanent Trinomial (CA-)	Description	Date Recorded	Eligibility Status
19-003040	LAN-003040H	Historic-period archaeological site: remnants of oil tanks	2000	Not evaluated
19-004781*	LAN-004781H	Historic-period archaeological site: landfill	2017	Recommended ineligible for CR
30-000143	ORA-000143	Prehistoric archaeological site: shell midden	1964, 1965, 1969, 1997	Not evaluated
30-000256*	ORA-000256	Prehistoric archaeological site: shell midden	1969, 1996	Not evaluated
30-000257**	ORA-000257	Prehistoric archaeological site: shell midden	1969, 1996	Not evaluated
30-000258**	ORA-000258	Prehistoric archaeological site: shell midden	1969, 1996	Not evaluated
30-000259**	ORA-000259	Prehistoric archaeological site: shell midden	1969 and 1996	Not evaluated
30-000260	ORA-000260	Prehistoric archaeological site: shell midden	1969, 1996	Eligible for CR
30-000261*	ORA-000261	Prehistoric archaeological site: shell midden	1969, 1996	Eligible for CR
30-000262**	ORA-000262	Prehistoric archaeological site: shell midden	1969, 1996	Eligible for CR
30-000263	ORA-000263	Prehistoric archaeological site: shell midden	1969, 1996	Eligible for CR
30-000264	ORA-000264	Prehistoric archaeological site: shell midden	1969	Eligible for CR
30-000322	ORA-000322/H	Multicomponent archaeological site: prehistoric shell midden and historic-period structural remnants and refuse	1971, 1988, 1992, 1996, 2000	Listed in NR
30-000850**	ORA-000850	Prehistoric archaeological site: shell midden	1969, 1996	Not evaluated
30-000851*	ORA-000851	Prehistoric archaeological site: shell midden	1996	Not evaluated
30-001118	ORA-001118	Prehistoric archaeological site: shell scatter	1988, 1992, 1997, 2000	Not evaluated
30-001455	ORA-001455	Prehistoric archaeological site: shell scatter	1996,1997	Not evaluated
30-001472	ORA-001472	Prehistoric archaeological site: shell scatter	1996	Ineligible for CRHR
30-001473*	ORA-001473	Prehistoric archaeological site: shell midden	1996	Not evaluated
30-001537	ORA-001537	Prehistoric archaeological site: shell scatter	2000	Not evaluated
30-001540	ORA-001540	Prehistoric archaeological site: shell scatter	2000	Not evaluated
30-001542**	ORA-001542/H	Multicomponent archaeological site: prehistoric shell scatter and historic-period refuse scatter	2000	Not evaluated
30-001543	ORA-001543H	Historic-period archaeological site: refuse scatter	2000	Not evaluated

TABLE 3.4-1
PREVIOUSLY RECORDED CULTURAL RESOURCES WITHIN SCCIC STUDY AREA

Primary Number (P-)	Permanent Trinomial (CA-)	Description	Date Recorded	Eligibility Status
30-001544**	ORA-001544	Prehistoric archaeological site: shell scatter	2000	Not evaluated
30-001545	ORA-001545	Prehistoric archaeological site: shell scatter	2000	Not evaluated
30-001546	ORA-001546	Prehistoric archaeological site: shell scatter	2000	Not evaluated
30-001644	ORA-001644	Prehistoric archaeological site: shell midden deposits	2006	Not evaluated
30-001711	ORA-001711	Prehistoric archaeological site: shell scatter	2011	Not evaluated
Historic Architectural Resources				
19-186115	-	Historic architectural resource: Long Beach Marine Stadium constructed in 1932	1993, 1994, 2009	Listed in NR
19-186880	-	Historic architectural resource: petroleum storage farm constructed in the 1950s	2004	Recommended ineligible for CR
19-186926*	-	Historic architectural resource: flood control pump station constructed in 1957 (no longer extant)	2003	Not evaluated
19-187657*	-	Historic architectural resource: Bixby Ranch Field Office constructed prior to 1927	1996, 2016	Recommended eligible for CR
30-176506	-	Historic architectural resource: office building associated with Seal Beach Naval Weapons Station constructed in 1945	1992	Determined ineligible for NR; Not evaluated for CR
30-176507	-	Historic architectural resource: office building associated with Seal Beach Naval Weapons Station constructed in 1945	1992	Determined ineligible for NR; Not evaluated for CR
30-176508	-	Historic architectural resource: sentry structure associated with Seal Beach Naval Weapons Station constructed in 1945	1992	Determined ineligible for NR; Not evaluated for CR
30-176513	-	Historic architectural resource: water tower associated with Seal Beach Naval Weapons Station constructed in 1944	1992	Determined ineligible for NR; Not evaluated for CR
30-176515	-	Historic architectural resource: garages associated with Seal Beach Naval Weapons Station constructed in 1945	1992, 2007	Determined ineligible for NR; Not evaluated for CR
30-176516	-	Historic architectural resource: living quarters associated with Seal Beach Naval Weapons Station constructed in 1945	1992, 2007	Determined ineligible for NR; Not evaluated for CR

NOTES:

NR = National Register of Historic Places; CR = California Register of Historical Resources

* Denotes resource within the program area.

** Denotes resource immediately adjacent to (within 150 feet of) the program area.

SOURCE: Cleland et al., 2007; SCCIC, 2019.

Other Identified Resources

Synergy Oil Field (ESA-LCW-1) and Bixby No. 2 Discovery Well (ESA-LCW-2)

In addition to the Bixby Ranch Field Office (P-19-187657), there are two additional historic architectural resources within the program area not yet on file at the SCCIC. Synergy Oil Field (ESA-LCW-1) and Bixby No. 2 Discovery Well (ESA-LCW-2). These two resources were documented as part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR, and evaluated for listing in the California Register and for designation as Long Beach Historic Landmarks (ESA, 2017). The Synergy Oil Field (ESA-LCW-1) was recommended ineligible for listing in the California Register. The Bixby No. 2 Discovery Well (ESA-LCW-2) was recommended eligible for individual listing in the California Register under Criterion 1 and for designation as a Long Beach Historic Landmark under Criterion A.

Tribal Cultural Landscape

In 2018, the CCC conducted consultation with the Gabrieleño Band of Mission Indians - Kizh Nation (Kizh Nation), Gabrieleno-Tongva San Gabriel Band of Mission Indians (Gabrieleno-Tongva), and a member of the Acjachemen Tribe. Consultation was conducted in support of a Coastal Development Permit for the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083), whose boundary includes the entirety of the North Area (North and South Synergy Oil Field sites), Long Beach City Property site, and Pumpkin Patch site[4], which are all within the program area. The CCC report states that representatives of the Kizh Nation "described the tribe's view that the Los Cerritos Wetlands area is a sacred land, just as all land, water and animals are sacred" (CCC, 2018: 125). The CCC report also states that representatives of the Gabrieleno-Tongva and Acjachemen Tribe "described the project site as Sacred Lands that are part of a larger area of connected tribal sites that constitute a Tribal Cultural Landscape that may be eligible for listing by the National Register as a Tribal Cultural Property" and that "this Tribal Cultural Landscape includes several significant tribal sites and resources in close proximity to the project site, including the site of *Puvungna*, Rancho Los Alamitos (Long Beach Area), and the Hellman Ranch property" (CCC, 2018: 125). The following discussion of the tribal cultural landscape is summarized from the Coastal Development Permit (CCC, 2018). It should be noted that the tribal cultural landscape was not and has not since been formally documented or evaluated for listing in the National Register or California Register.

Tribal representatives described the Los Cerritos Wetlands and its surroundings as sacred lands that encompass a larger area of connected tribal sites. Tribal representatives indicated that the Hellman Ranch area was an extension of *Puvungna* and was connected to a network of villages surrounding the area. They noted that during development of the Hellman Ranch property in the 2000s, approximately 35 prehistoric burials and numerous artifacts were discovered. Tribes believe these resources to be associated with a Gabrieleno-Tongva settlement in Seal Beach, known as *Motuucheyngna* (sometimes referred to as *Puvungna East*). Since the Los Cerritos Wetlands are located in between *Puvungna* and *Motuucheyngna*, the wetlands are thus considered by tribes to be part of the larger cultural landscape of *Puvungna* and the surrounding villages.

[4] Only the eastern portion of the Pumpkin Patch site is within the program area.

In addition to being culturally connected, the wetlands and surrounding area are connected biologically. These connections occur through the waterways and the plants and animals present. All the tribal members that were part of the CCC's consultation effort agreed that these biological resources are sacred to tribal people as an integral component of tribal resources.

Sacred Lands File Search

The NAHC maintains a confidential file which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted on March 12, 2019 to request a search of the SLF. The NAHC responded to the request in a letter dated March 21, 2019, indicating that the SLF search was positive. The letter did not provide details on the resource(s) identified, but recommended that Native American groups be contacted for additional information regarding the resource(s). LCWA consulted with five California Native American Tribes (also sometimes referred to as "participating California Native American Tribes" in this PEIR). The results of consultation efforts are documented in Section 3.15, *Tribal Cultural Resources*, of this PEIR.

Historic Map and Aerial Photograph Review

Historic maps and aerial photographs were examined to provide historical information about land uses of the program area, to assist in the identification of potential historic architectural resources, and to contribute to an assessment of the program area's archaeological sensitivity. Available topographic maps include: the 1896, 1899, 1902, and 1943 Downey 15-minute quadrangles; the 1896 Las Bolsas 15-minute quadrangle; the 1925 Long Beach 7.5-minute quadrangle; the 1935, 1949, and 1964 Los Alamitos 7.5-minute quadrangles; and the 1935, 1949, and 1965 Seal Beach 7.5-minute quadrangles. A 1942 map depicting the Seal Beach Oil Field was also reviewed. Historic aerial photographs were available for the years 1938, 1952, 1954, 1956, 1958, 1960, 1962, 1965, 1968, 1974, 1975, 1994, and 2001 (UCSB, 2019).

Historic Topographic Maps

A review of historic topographic maps indicates that the entire program area was part of Alamitos Bay in 1896 (the date of the earliest available topographic map). The meandering course of the pre-channelized San Gabriel River is shown emptying into the bay. By 1925, the bay had been largely filled in. Naples Island had been created to the west of the program area by this time.

On the 1925 map, Steamshovel Slough and wetlands are present within the Northern Synergy Oil Field site. On the 1925 and 1935 maps, wetlands are depicted in portions of the Southern Synergy Oil Field site, South LCWA site, and Hellman Retained site. Two water retention basins are depicted in portions of the Southern Synergy Oil Field site and Long Beach City Property site. The pre-channelized San Gabriel River is shown cutting through the program area, and a manmade channel (Hellman Channel) is shown in the South LCWA site.

By 1949, the program area is largely developed with oil wells and tanks. Steamshovel Slough and wetlands are present within the Northern Synergy Oil Field site. The Southern Synergy Oil Field site, Long Beach City Property site, Central Bryant site, Central LCWA site, Zedler Marsh site, and Hellman Retained site appear fully devoted to oil extraction. The South LCWA site appears undeveloped, but the channel present in 1925 remains. The San Gabriel River had been

channelized by 1949, and a channel or creek was located in the approximate location of where the Haynes Cooling Channel would later be constructed.

The 1964/1965 maps depict similar conditions to those that existed in 1949. Steamshovel Slough and wetlands are still present within the Northern Synergy Oil Field site, and the Southern Synergy Oil Field, Long Beach City Property, Central Bryant, Central LCWA, Zedler Marsh, and Hellman Retained sites remain developed with oil extraction facilities. By this time, the Los Alamitos Retarding Basin had been created. A building is depicted in the State Lands Parcel site. The Haynes Cooling Channel had been constructed in its current course. The residential development on a portion of Landing Hill, located to the south of the program area, had been developed by this time.

1942 Seal Beach Oil Field Map

A review of the 1942 Seal Beach Oil Field map indicates that portions of the program area were under ownership or extraction by several different entities. The following list provides the companies in operation in 1942.

- Union Oil Co. of California (North Synergy Oil Field site)
- Continental Oil Co. (North Synergy Oil Field, South Synergy Oil Field, Long Beach City Property, and Pumpkin Patch sites)
- Tide Water Associated Oil Co. (South Synergy Oil Field, Long Beach City Property, Central Bryant, Central LCWA, Isthmus Bryant, Zedler Marsh, Isthmus LCWA, Los Alamitos Pump Station, Los Alamitos Retarding Basin, Haynes Cooling Channel, Hellman Retained, and South LCWA sites)

Historic Aerial Photographs

A review of historic aerials indicates that portions of the program area were in use as part of the oil industry as early as 1938 (date of oldest available aerial photograph) or were undeveloped. The San Gabriel River had been channelized to its current course by this time, and a channel or creek is shown in the approximate location of where the Haynes Cooling Channel would later be constructed. A human-made channel (Hellman Channel) is visible in the South LCWA site. A building and tanks are visible on the Long Beach Property site. Buildings and tanks are also visible on the Isthmus LCWA site, and buildings are visible on the Hellman Retained site.

The 1952 aerial photograph depicts similar conditions as present in 1938 throughout the program area, although there is additional oil infrastructure present. A building is shown within the State Lands Parcel site. Conditions are nearly identical in the 1956 aerial photograph, but the first indication of the culvert for Calloway Marsh is visible. The 1958 aerial photograph depicts the South Area, with the first indication of the culvert for Zedler Marsh visible. Construction of the housing development on Landing Hill to the south of the program area is evident. A basin had been created in the Los Alamitos Retarding Basin site by this time.

The 1960 aerial depicts similar conditions within the program area to those present in the 1950s. The housing development on Landing Hill to the south of the program area had been largely constructed by this time, and the Haynes Generating Station to the northeast of the program area

appears to be under construction. The 1960 aerial photograph depicts tanks within the Hellman Retained site. No significant changes are apparent in the 1965 aerial, with the exception of the construction of the Haynes Cooling Channel. The 1965 aerial also depicts additional buildings within the Hellman Retained site. No significant changes are apparent in the 1974 aerial photograph, but the building within the State Lands Parcel site had been demolished by this time.

Geoarchaeological Review

A geoarchaeological review of the program area and its surroundings was conducted to assess the archaeological sensitivity and the potential for the proposed program to encounter subsurface cultural materials. Literature reviewed included previous archaeological survey reports and site records, geological maps, geotechnical borings, hydrologic reports, and historic maps and photos.

Environmental and Geological Setting

The proposed program is located within the Los Cerritos Wetlands complex, situated within the Peninsular Ranges Geomorphic Province of California. Younger bedrock within this Province is composed of uplifted marine and terrestrial sedimentary rock dating from the Cretaceous period (approximately 80 million years ago [mya]) to the Pleistocene epoch (less than 2 mya). The program area is specifically located in the southeastern portion of the Los Angeles Basin on the coastal floodplain of the San Gabriel River, which is bounded generally by Bolsa Chica Mesa to the south, and Signal Hill and the Dominguez Hills to the north (CCC, 2018).

The Los Cerritos Wetlands are situated within the Alamitos Gap, an erosional feature, between Landing Hill to the south and Bixby Hills to the north (Earth Technology Corporation, 1988). The hills consist of uplifted late to middle Pleistocene shallow marine deposits including siltstone, sandstone, and conglomerate (Saucedo et al., 2016: Figure 1).

Evolution of the Los Cerritos Wetlands complex would have broadly followed a sequence similar to one observed in the well-studied Ballona Wetlands in Santa Monica Bay (see Altschul et al., 2005; also Homburg et al., 2014). During the last Ice Age, approximately 26,000 to 12,000 years ago, global sea level was substantially lower than current conditions and the edge of the coastal plain was well west of its present day location. Coastal drainages were progressively inundated as sea levels rose following the Late Glacial Maximum forming a series of bays and lagoons. Evidence from Ballona suggests that marine transgression reached its maximum around 7,000 years ago (Altschul et al., 2005); during this time, higher base level may have reduced the influx of terrestrial alluvium into coastal embayments. Stabilization of sea levels by around 4,000 years ago was followed by renewed deltaic building and sedimentation along the interior margins of embayments, and forming marsh and tidal mud flat environments (Cleland et al., 2007).

Historically, the program area was naturally a vegetated tidal wetland in Alamitos Bay. The wetland received fresh water from the meandering channel, Coyote Creek, as well as precipitation runoff from Landing Hill. In places, the tidal wetlands would have been bordered by freshwater marsh and willow swamp. An intertidal flat surrounded Steamshovel Slough, a tidal slough that is still present today. Prior to development of the area, the Los Cerritos Wetlands complex covered approximately 2,400 acres and extended up to 2 miles inland (CCC, 2018). However, starting in

the late 1800 and early 1900s, the wetlands were progressively filled and drained for oil production, agriculture, landfilling, and residential and commercial development.

Surface geology within the program area is mapped entirely as artificial fill, which includes deposits from a range of human activities. The greatest amount of fill is likely upland material imported to support development of the numerous oil wells that formerly operated within the program area. Large portions of the wetlands were also used at times as a landfill. Surface elevations within the program area range between 0 and approximately 15 feet above mean sea level (amsl); since natural elevation of the low-lying tidal marsh would have been a few inches to feet, high elevations likely mark the location of particularly thick fill.

Natural deposits directly underlying the artificial fill consist of paralic estuary material, surface manifestations of which are present to the north and south of the artificial fill. The estuary deposits, which consist of unconsolidated, interfingered terrestrial and marine fine-grained sand, silt, and clay, are late Holocene to late Pleistocene in age (Saucedo et al., 2016). The interfingering of marine and terrestrial deposits reflects the interplay of changes in sea level, tectonics, and climate. Beneath the estuary deposits are layers of alluvium. The results of geotechnical borings near the center of the program area suggest that estuary and alluvial deposits cumulatively are approximately 75 feet thick, and are underlain by Pleistocene-aged San Pedro Formation deposits (Camp et al., 1991; see also Earth Technology Corporation, 1988; Engineering Enterprises, 1989).

Soils within the program area are mapped as Bolsa series silty clay loam (NRCS, 2019). This soil series develops in mixed alluvium on alluvial fans. The silty clay loam and silt loam textures in a typical pedon are consistent with marsh deposits; the soil mapping does not appear to account for the presence of placed fill.

Archaeological Sites in the Vicinity of the Program Area

Archaeological sites recorded at the historic extent of the wetland complex suggest a subsistence pattern based largely on shellfish. Landing Hill (e.g., CA-ORA -256, -257, -258, -259, -260, -261, -262, -263, -264, -1472, -1473) and Bixby Hill (e.g., CA-LAN-102, -231, -232, -233, -271, -273, -274, -275, -306, -702, -1007) both contain multiple pre-contact sites overlooking the program area at elevations between approximately 20 and 60 feet amsl. At a minimum, the sites contain shell debris (chione and pectin) and, typically, dark, organic soils. These upland sites also contain varying quantities of groundstone and/or chipped stone artifacts. The sites have been classified as seasonal camps (e.g., McKinney, 1969a,b,c,d). Near the toe of Landing Hill at elevations of approximately less than 10 feet amsl, there is a second group of sites (e.g., CA-ORA-850, -851, -1542, -1543, -1544), some of which have been interpreted as temporary camps for exploiting estuary and marsh resources (Underwood, 2000a,b). The sites contain chione and pectin shell, as well as dark soil. No features are noted at these sites, and artifacts are generally absent.

Archaeological Sensitivity

The program area appears to have a high sensitivity for archaeological resources. The general vicinity of the program area was clearly a focus of prehistoric human activity prior to its

widespread conversion to oil production in the historic period. Fill layers have the potential to contain prehistoric archaeological resources, although such resources have a low likelihood of retaining sufficient archaeological context due to disturbances. Fill layers also have a high sensitivity for subsurface archaeological deposits associated with oil production, as well as agriculture and other historic uses; such deposits have the potential to be in context.

Use of marsh landforms for prehistoric resource procurement has the potential to have resulted in discernable accumulations of shellfish processing and other cultural materials within lowland wetlands. The low-lying, saturated environment is unlikely to have attracted occupation, so dense, rich cultural accumulations would not be expected. However, inadvertent loss of tools, as well as processing of subsistence resources, may have left traces of past activities in the uppermost portions of the soil stratum. Distinguishing shellfish procurement sites from naturally-occurring accumulations of shell, particularly in the absence of artifacts and features, could be challenging.

Alluvium underlying the estuary deposits reflects an earlier coastal plain environment. The coastal plain may have been more amenable to sustained human occupation than on later estuary landforms; if present, archaeological sites associated with camps would be expected to contain a more diverse artifact assemblage reflecting a greater range of human behaviors than those associated with temporary resource procurement sites.

Cultural Resources Reconnaissance Survey

A reconnaissance-level site visit of the program area was conducted on June 13, 2019 by ESA archaeologist Candace Ehringer, M.A., RPA, and ESA architectural historian Alison Garcia Kellar, M.S. During the site visit, staff documented the general cultural resources context and noted key features and resources that might warrant discussion in the existing conditions context of the PEIR. No resources were formally documented during the survey, but resources were noted on field maps, photographed, and assigned temporary field designations for ease of reference. Previously recorded resources were not visually inspected during the site visit.

A total of seven previously unrecorded cultural resources were noted during the survey, including five historic architectural resources (LCWA-CRE-002-B, LCWA-CRE-003-B, LCWA-CRE-005-B, LCWA-CRE-006-B, and LCWA-CRE-007-B) and two historic-era archaeological resources (LCWA-CRE-001-H and LCWA-CRE-004-H) (**Table 3.4-2**, *Cultural Resources Observed during Site Visit*).

TABLE 3.4-2
CULTURAL RESOURCES OBSERVED DURING SITE VISIT

Temporary Designation	Area	Site	Description	Notes
LCWA-CRE-001-H	Central	Long Beach City Property	Archaeological resource: foundation (unknown use)	Foundation with former structure visible in 1938 aerial.
LCWA-CRE-002-B	Central	Long Beach City Property	Historic architectural resource: tanks	Tanks visible in 1938 aerial as a much larger grouping.
LCWA-CRE-003-B	Isthmus	Isthmus LCWA	Historic architectural resource: 7 buildings/structures; 3 metal tanks; 1920s German equipment	Buildings and structures visible in aerials as early as 1938.
LCWA-CRE-004-H	South	State Lands Parcel	Archaeological resource: concrete pad related to the Airport Club/Marina Palace constructed in 1950.	Building is visible in 1952 and 1968 aerials, and is no longer extant by the 1974 aerial. The no longer extant building was a Quonset hut that served as a gambling house and music venue.
LCWA-CRE-005-B	South	Hellman Retained	Historic architectural resource: operations shed, workshops, and related equipment; decommissioned tank farm; decommissioned service tank	Several of these buildings and structures are visible in 1938 aerial. They appear in their current configuration in the 1965 aerial.
LCWA-CRE-006-B	South	Haynes Cooling Channel	Historic architectural resource: Haynes Cooling Channel	Visible in 1965 aerial photograph.
LCWA-CRE-007-B	South	South LCWA	Historic architectural resource: Hellman Channel	Hellman Channel visible on 1935 topo map.

3.4.3 Regulatory Framework

3.4.3.1 State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state and is codified at Public Resources Code (PRC) Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

The *CEQA Guidelines* (Title 14 California Code of Regulations [CCR] Section 15064.5) recognize that historical resources include: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by

substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of Section 21083, which is as a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required. The *CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*CEQA Guidelines* Section 15064.5(c)(4)).

A significant effect under CEQA would occur if a project results in a substantial adverse change in the significance of a historical resource as defined in *CEQA Guidelines* Section 15064.5(a). Substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired" (*CEQA Guidelines* Section 15064.5(b)(1)). According to *CEQA Guidelines* Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics that:

A. Convey its historical significance and that justify its inclusion in, or eligibility for inclusion in, the California Register; or
B. Account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

C. Convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a Lead Agency for purposes of CEQA.

In general, a project that complies with the *Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Standards) (Grimmer, 2017) is considered to have mitigated its impacts to historical resources to a less-than-significant level (*CEQA Guidelines* Section 15064.5(b)(3)).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-period property must be significant at the federal, state, and/or local level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and,
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the NAHC within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. The MLD has 48 hours from the time of being granted access to the site by the landowner to inspect the discovery and provide recommendations to the landowner for the treatment of the human remains and any associated grave goods (i.e., artifacts associated with human remains).

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

California Government Code Sections 6254(r) and 6254.10

These sections of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another state agency, or a local agency, including the records that the agency obtains through a consultation process between a Native American tribe and a state or local agency."

California Coastal Act

The California Coastal Act provides some guidance for addressing impacts to cultural resources in Article 3, Section 30344(2) and Article 5, Section 30244. Article 3, Section 30344(2) requires that manmade resources of cultural, historic, economic, and educational importance to the public be inventoried with a description of the resources' historic, educational, and technical notes of interest. Article 5, Section 30244 requires reasonable mitigation measures be implemented when coastal development would adversely impact archaeological resources as identified by the State Historic Preservation Officer.

3.4.3.2 Local

City of Seal Beach General Plan

The Seal Beach General Plan, Cultural Resources Element (2003), contains the following goal, policies, and implementation measures relevant to the program:

Goal 1: Preserve and protect historical, archaeological, and paleontological resources.

Policy 1: Balance the benefits of development with the project's potential impacts to existing cultural resources.

Policy 2: Identify, designate, and protect sites and buildings of historic importance.

Policy 3: Coordinate cultural resource programs and development project review with affected resources agencies and Native American representatives.

Policy 4: Identify funding programs to assist private and public property owners in the preservation of buildings and sites of historic importance.

Policy 5: Assess development proposal for potential impacts to significant archaeological resources pursuant to Section 15064.5 of the California Environmental Quality Act. Require a study conducted by a professional archaeologist for all development proposals located in areas known to be sensitive for cultural resources.

Implementation Measures

Protect Significant Archaeological Resources

Assess development proposal for potential impacts to significant archaeological resources pursuant to Section 15064.5 of CEQA. Require a study conducted by a professional archaeologist for all development proposal located in areas known to be sensitive for cultural resources. Guidance for such studies is provide within General Plan Appendix A. The objective of the study is to determine if significant archaeological resources are potentially present and if the project will significantly impact the resource if significant impacts are identified, either require the project to modified to avoid the impacts, or require measure to mitigate the impacts. Mitigation may involve archaeological investigation and resource recovery.

Preserve Significant Historic Resources

Assess development proposal for potential impacts to significant historic resources pursuant to Section 15064.5 of CEQA. For structures that potentially have historic significance, require a

study conducted by a professional architectural historian or historian to determine the actual significance of the structure and potential impacts of the proposed development. Require modification of project to avoid significant impacts, or require mitigation measures. Protect historical buildings and sites to the extent possible.

Historical, Archaeological, and Paleontological Resource Management Guidelines

Prepare and maintain guidelines for historic, archaeological, and paleontological resources management to guide review of the development proposals. Archaeological resources management guidelines are provided within Appendix A of the General Plan.

Establishment of Programs for Preservation of Historic/Archaeological/Paleontologic Resources

Identify and implement programs to assist and encourage private property owners to preserve historic, archaeologic, and paleontologic resources within the City of Seal Beach.

Inventory of Historic and Cultural Landmarks

Establish and update as needed a City Inventory of Historic and Cultural Landmarks using criteria and recorded standards consistent with state regulation for use in evaluating development proposals under CEQA.

City of Long Beach General Plan

The Historic Preservation Element of the City of Long Beach General Plan (2010) includes the following goals, as well as detailed policies and implementation measures.

> **Goal 1:** Maintain and support a comprehensive, citywide historic preservation program to identify and protect Long Beach's historic, cultural, and archaeological resources.
>
> **Goal 2:** Protect historic resources from demolition and inappropriate alterations through the use of the City's regulatory framework, technical assistance, and incentives.
>
> **Goal 3:** Maintain and expand the inventory of historic resources in Long Beach.
>
> **Goal 4:** Increase public awareness and appreciation of the City's history and historic, cultural, and archaeological resources.
>
> **Goal 5:** Integrate historic preservation policies into City's community development, economic development, and sustainable-city strategies.

Local Designation

The Long Beach Municipal Code (2.63.050) establishes criteria for designating local historic landmarks and landmark districts. A cultural resource may be recommended for designation as a Landmark if it retains integrity and manifests one or more of the following criteria:

A. It is associated with events that have made a significant contribution to the broad patterns of the City's history; or

B. It is associated with the lives of persons significant in the City's past; or

C. It embodies the distinctive characteristics of a type, period or method of construction, or it represents the work of a master or it possesses high artistic values;

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

A group of cultural resources may be recommended for designation as a Landmark District if it retains integrity as a whole and meets the following criteria:

A. The grouping represents a significant and distinguishable entity that is significant within a historic context.

B. A minimum of sixty percent (60%) of the properties within the boundaries of the proposed landmark district qualify as a contributing property.

3.4.4 Significance Thresholds and Methodology

3.4.4.1 Significance Thresholds

For the purposes of this Program Environmental Impact Report (PEIR) and consistency with Appendix G of the *CEQA Guidelines*, the proposed program would have a significant impact on cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5; or

c) Disturb any human remains, including those interred outside of dedicated cemeteries.

3.4.4.2 Methodology

Historical Resources

Analysis of impacts to historic architectural resources that qualify as historical resources (as defined i*n CEQA Guidelines* Section 15064.5) requires that a lead agency shall first determine whether a building, structure, object or feature is a historical resource. If the lead agency determines a historic architectural resource is a historical resource, its significance may be materially impaired for the reasons outlined below. Typically, the significance of a historical resource of an architectural or structural nature is materially impaired through demolition or alteration. The resource may also be materially impaired by incompatible adjacent new construction that alters the setting of the resource, thereby diminishing its integrity and significance.

According to the *CEQA Guidelines*, a project with an effect that may cause a substantial adverse change in the significance of a historical resource may have a significant effect on the environment (*CEQA Guidelines* Section 15064.5(b)). A substantial adverse change means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings, resulting in material impairment of the historical resource (*CEQA Guidelines*

Section 15064.5(b)(1)). According to *CEQA Guidelines* Section 15064.5(b)(2), the significance of a historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

A historic district must preserve the majority of its components to retain integrity as a whole. Typically, a district that retains a majority of its contributors is considered to have sufficient integrity to be eligible for listing in the California Register. A district that does not retain the majority of its contributors is considered to have lost integrity, and is no longer able to convey its historical significance or considered eligible for listing in the California Register.

In general, a project that complies with the Standards (Grimmer, 2017) is considered to have mitigated its impacts to historical resources to a less-than-significant level (*CEQA Guidelines* Section 15064.5(b)(3)). In some circumstances, documentation of a historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur (*CEQA Guidelines* Section 15126.4(b)(2)).

Archaeological Resources

Analysis of impacts to archaeological resources includes consideration of archaeological resources that qualify as historical resources (as defined in *CEQA Guidelines* Section 15064.5) and as unique archaeological resources (as defined in PRC Section 21083.2). Per *CEQA Guidelines* Section 15064.5(c), a lead agency shall first determine whether a site is a historical resource. If the archaeological site does not meet the criteria for historical resource, it is then assessed for significance as a unique archaeological resource.

If a lead agency determines an archaeological site is a historical resource, its significance may be materially impaired for the same reasons outlined above under the heading "Historical Resources." Typically, the significance of a historical resource of an archaeological nature is materially impaired through ground-disturbing activities that destroy partially or in whole the surface and subsurface expression of the resource such that it no longer conveys its historical significance. However, the resource may also be materially impaired through the introduction of new visual elements that alter the setting of the resource, thereby diminishing its integrity. Other actions that can impact these types of resources include vandalism and unauthorized collection as a result of increased human presence during construction and/or operation of a project.

CEQA Guidelines Section 15126.4(b)(3) states that the lead agency should seek to avoid damaging effects on historical resources of an archaeological nature, and shall consider preservation in place as the preferred manner of mitigating impacts. If preservation in place is not feasible, mitigation must be developed to minimize significant adverse impacts. For resources eligible under California Register Criterion 4 (information potential), data recovery through excavation should be undertaken to recover the scientifically consequential information contained within the archaeological resource. For resources eligible under Criterion 1 (significant events), Criterion 2 (important persons), or Criterion 3 (design/workmanship) other types of mitigation may be necessary to address those elements of the resource. *CEQA Guidelines* Section 15370 provides guidance on the types of mitigation that may be considered, and includes: avoiding impacts altogether; minimizing impacts; rectifying impacts through repair, rehabilitation, or restoration; reducing impacts through preservation; and compensatin for impacts by providing substitute resources. For resources eligible under Criteria 1-3, applicable mitigation could include documentary/archival research, oral history, public interpretation, etc., depending on the nature of the resource and the type/degree of impact.

If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of PRC Section 21083.2, which is as a unique archaeological resource. Similar to that described for historical resources of an archaeological nature, impacts to unique archaeological resource can occur from project-related ground disturbance, and vandalism and unauthorized collection as a result of increased human presence during construction and/or operation of a project. PRC Section 21083.2(b) states that if the project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. If avoidance is not feasible, then mitigation measures, such as data recovery excavation, shall be required (PRC Section 21083.2(c)). It should be noted that the time and cost limitations of PRC Section 21083.2 only apply to unique archaeological resources (*CEQA Guidelines* Section15064.5(c)(2)).

Human Remains

A project may also cause a significant environmental effect if it disturbs human remains, including those interred outside of formal cemeteries. As with archaeological resources, impacts to human remains occur mainly as a result of project-related ground disturbance. Impacts to human remains can be mitigated by following the procedures outlined in California Health and Safety Code Section 7050.5 and PRC Section 5097.98.

As stated in Chapter 1, *Introduction*, on March 8, 2019, the Los Cerritos Wetlands Authority sent a Notice of Preparation to responsible, trustee, and federal agencies, as well as to organizations, and individuals potentially interested in the proposed program to identify the relevant environmental issues that should be addressed in the PEIR. Issues related to cultural resources were identified.

3.4.5 Program Impacts and Mitigation Measures

Impact CUL-1: The proposed program would result in a significant impact if the proposed program would cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5.

Construction

As described in Chapter 2, *Project Description*, of this PEIR, construction on the proposed program area would generally involve remediation of contaminated soil and groundwater, grading, revegetation, construction of new public access opportunities (including trails, visitor centers, parking lots, and viewpoints), construction of flood management facilities (including earthen levees and berms), and modification of existing infrastructure and utilities.

There are 23 potential historical resources within or immediately adjacent to the proposed program area, including 15 archaeological resources (11 prehistoric sites, 3 historic-period sites, and 1 multicomponent site) and 8 historic architectural resources. **Table 3.4-3**, *Known Cultural Resources within or adjacent to the Program Area*, lists the resources by area.

Of the 23 resources, only six have been evaluated for listing in the California Register. Resources P-19-004781 [City Landfill] and ESA-LCW-1 [Synergy Oil Field]) have been evaluated as ineligible for listing in the California Register, and they do not qualify as historical resources. These two resources require no further consideration or mitigation under CEQA. Resources P-19-187657 [Bixby Ranch Field Office] and ESA-LCW-2 [Bixby No. 2 Discovery Well]) have been evaluated as eligible for the California Register, and qualify as historical resources. These two resources were analyzed as part of the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083). Resources P-30-000261 and -000262 have been evaluated as eligible for the California Register and qualify as historical resources. The remaining 17 known resources have not been evaluated for listing in the California Register, and it is unknown if they qualify as historical resources.

In addition to the resources listed in the table, the Los Cerritos Wetlands is part of a tribal cultural landscape identified by some tribal representatives during consultation with the CCC. This tribal cultural landscape has not been formally documented or evaluated for listing in the California Register. In light of the information provided in the CCC Staff Report for the Coastal Development Permit for the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (CCC, 2018), LCWA has made a discretionary determination to treat this tribal cultural landscape as a historical resource for the purposes of this PEIR, consistent with *CEQA Guidelines* Section 15064.5(a)(4). The physical characteristics of the tribal cultural landscape that appear to convey its historical significance, as identified by the CCC's consultation efforts, include the village sites of *Puvungna* and *Motuucheyngna* (represented by prehistoric archaeological sites in the California State University – Long Beach and the Hellman Ranch areas, respectively), prehistoric archaeological sites within the Los Cerritos Wetlands, as well as the waterways, plants, and animals that are present in the area.

TABLE 3.4-3
KNOWN CULTURAL RESOURCES WITHIN OR ADJACENT TO THE PROGRAM AREA

Primary Number (P-)	Permanent Trinomial (CA-)	Temporary Designation	Description	Eligibility Status	Site	Comments
South Area						
30-000256	ORA-000256	—	Prehistoric archaeological site: shell midden	Not evaluated	South LCWA	—
30-000257	ORA-000257	—	Prehistoric archaeological site: shell midden	Not evaluated	Adj. South LCWA	—
30-000258	ORA-000258	—	Prehistoric archaeological site: shell midden	Not evaluated	Adj. South LCWA	—
30-000259	ORA-000259	—	Prehistoric archaeological site: shell midden	Not evaluated	Adj. South LCWA	—
30-000261	ORA-000261	—	Prehistoric archaeological site: shell midden	Eligible for CR	South LCWA	—
30-000262	ORA-000262	—	Prehistoric archaeological site: shell midden	Eligible for CR	Adj. South LCWA	—
30-000850	ORA-000850	—	Prehistoric archaeological site: shell midden	Not evaluated	Adj. Hellman Retained	—
30-000851	ORA-000851	—	Prehistoric archaeological site: shell midden	Not evaluated	Hellman Retained	—
30-001473	ORA-001473	—	Prehistoric archaeological site: shell midden	Not evaluated	South LCWA	—
30-001542	ORA-001542/H	—	Multicomponent archaeological site: prehistoric shell scatter and historic-period refuse scatter	Not evaluated	Adj. Los Alamitos Retarding Basin	—
30-001544	ORA-001544	—	Prehistoric archaeological site: shell scatter	Not evaluated	Adj. Los Alamitos Retarding Basin	—
—	—	LCWA-CRE-004-H	Historic-period archaeological site: building foundation	Not evaluated	State Lands Parcel	—
—	—	LCWA-CRE-005-B	Historic architectural resource: operations shed, workshops, and related equipment; decommissioned tank farm; decommissioned service tank	Not evaluated	Hellman Retained	—
—	—	LCWA-CRE-007-B	Historic architectural resource: Hellman Channel	Not evaluated	South LCWA	—

TABLE 3.4-3
KNOWN CULTURAL RESOURCES WITHIN OR ADJACENT TO THE PROGRAM AREA

Primary Number (P-)	Permanent Trinomial (CA-)	Temporary Designation	Description	Eligibility Status	Site	Comments
Isthmus Area						
—	—	LCWA-CRE-003-B	Historic architectural resource: 7 buildings/structures; 3 metal tanks; 1920s German equipment	Not evaluated	Isthmus LCWA	—
Central Area						
19-001821	LAN-001821	—	Prehistoric archaeological site: shell midden	Not evaluated	Long Beach City Property	—
19-004781	LAN-004781H	—	Historic-period archaeological site: landfill	Previously recommended ineligible for CR	Pumpkin Patch	—
—	—	LCWA-CRE-001-H	Historic-period archaeological site: building foundation (unknown use)	Not evaluated	Long Beach City Property	—
—	—	LCWA-CRE-002-B	Historic architectural resource: tanks	Not evaluated	Long Beach City Property	—
—	—	LCWA-CRE-006-B	Historic architectural resource: Haynes Cooling Channel	Not evaluated	Haynes Cooling Channel	—
North Area						
19-187657	—	—	Historic architectural resource: Bixby Ranch Field Office constructed prior to 1927	Previously recommended eligible for CR	Northern Synergy Oil Field	Addressed in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083)
—	—	ESA-LCW-1	Historic architectural resource: Synergy Oil Field	Previously recommended ineligible for CR	Northern and Southern Synergy Oil Fields	Addressed in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083)
—	—	ESA-LCW-2	Historic architectural resource: Bixby No. 2 Discovery Well	Previously recommended eligible for CR	Southern Synergy Oil Field	Addressed in the Los Cerritos Wetlands Oil Consolidation and Restoration Project EIR (State Clearinghouse Number 2016041083)

SOURCES: ESA, 2019; SCCIC, 2019

Also, given that the entire program area was not systematically surveyed as part of this assessment, there could be additional as-yet-unidentified archaeological and historic architectural resources within the program area that would require evaluation for listing in the California Register to determine if they qualify as historical resources. In particular, portions of the program area have been used historically for oil extraction/production, and there may be historic architectural resources related to the oil industry that have not been documented or evaluated for listing in the California Register either individually or as part of a potential district or landscape.

Additionally, the program area is considered to have a high potential to encounter buried prehistoric and historic-period archaeological resources. Intact prehistoric resources could be encountered below depth of fill, although historic-period archaeological resources, particularly those associated with the oil industry, could be encountered within fill layers. Should buried archaeological resources be encountered, they would require evaluation for listing in the California Register to determine if they qualify as historical resources.

Actions that have the potential to adversely impact historical resources include:

- Demolition, alteration, or incompatible changes to the setting of eligible or unevaluated historic architectural resources
- Soil remediation, excavation, grading, or other ground-disturbing activities within or in the immediate vicinity of eligible or unevaluated archaeological resources or that unearth subsurface archaeological resources
- Demolition or material alteration in an adverse manner to those physical characteristics of the tribal cultural landscape that convey its historical significance. Construction-related impacts of the proposed program on each sub-category of historical resources are considered below.

Historical Architectural Resources

Potential impacts to historic architectural resources within the program area are considered significant and unavoidable. There are unevaluated historic architectural resources that could qualify as historical resources (i.e., be found eligible for the California Register) and that may be demolished or materially altered in an adverse manner as a result of the proposed program. Implementation of Mitigation Measures CUL-1 through CUL-3 would lessen the impact by requiring that qualified cultural resources personnel conduct future project-specific studies and develop appropriate treatment for significant resources. However, should a resource be found eligible for the California Register and subsequently be demolished or altered in such a manner that it no longer conveys its historical significance (i.e., is altered in a way that is inconsistent with the Standards), and the resource is no longer eligible for the California Register, it is possible that no feasible mitigation exists that would reduce this impact to a level of less than significant. Typically, impacts resulting from alteration of historic architectural resources can be mitigated to less than significant by following the Standards, which results in a resource that retains sufficient integrity to remain eligible for listing in the California Register. Impacts to historic architectural resources as a result of demolition are more difficult to mitigate to less than significant since the resource would no longer exist and would no longer be eligible for listing in the California Register. While documentation of the resources can lessen the impact from demolition, it does not in and of itself mitigate the impact to a level of less than significant. In

order to develop effective mitigation, the nature of the resource and its physical characteristics would need to be understood to develop measures that would lessen the impact. Since it cannot be predicted at the program level why a resource may be eligible, or what comprises its essential physical characteristics, or what mitigation would be appropriate, or if it would be possible to develop feasible mitigation that would sufficiently reduce the impact, the proposed program's impact on historic architectural resources qualifying as historical resources is considered significant and unavoidable.

Archaeological Resources

Potential impacts to archaeological resources within the program area are considered significant and unavoidable. There are unevaluated archaeological resources that could qualify as historical resources and that may be demolished or materially altered in an adverse manner as a result of the proposed program. Also, since the proposed program includes ground disturbance, there is a potential to encounter subsurface archaeological resources that could qualify as historical resources during construction. Implementation of Mitigation Measures CUL-1 and CUL-4 through CUL-15 would lessen the impact by requiring that qualified cultural resources personnel conduct future project-specific studies, develop appropriate treatment for significant resources, and conduct archaeological and Native American monitoring of ground disturbance. However, should a resource be found eligible for the California Register and subsequently be destroyed or altered in such a manner that it no longer conveys its historical significance, and the resource is no longer eligible for the California Register, it is possible that no feasible mitigation exists that would reduce this impact to a level of less than significant. This is especially true for archaeological resources that are eligible for non-scientific values under Criteria 1-3 since data recovery excavations only mitigate impacts to scientific values under Criterion 4. Since it cannot be predicted at the program level under what criteria a resource may be eligible, or what mitigation would be appropriate, or if it would be possible to develop feasible mitigation that would sufficiently reduce the impact, the proposed program's impact on archaeological resources qualifying as historical resources is considered significant and unavoidable.

Tribal Cultural Landscape

Potential impacts from the proposed program on the tribal cultural landscape could occur if the proposed program resulted in the demolition or material alteration to the essential physical characteristics that convey the historical significance of the tribal cultural landscape, such as the village sites of *Puvungna* and *Motuucheyngna*, Native American or prehistoric archaeological sites within or near the Los Cerritos Wetlands, waterways, plants, or animals.

With regards to potential impacts to *Puvungna* and *Motuucheyngna*, the archaeological manifestations of these two village sites that contribute to the landscape's historical significance would not be impacted. *Puvungna* is located about 0.75 miles to the north of the proposed program area, in the area of California State University – Long Beach and its vicinity. *Motuucheyngna* is on a portion of the former Hellman Ranch property that has since been developed as a residential subdivision. No impacts to the archaeological sites associated with these two villages are anticipated as a result of the proposed program.

With regards to potential impacts to other Native American or prehistoric archaeological sites within the Los Cerritos Wetlands, there are 12 prehistoric archaeological sites within or immediately adjacent to (within 150 feet of) the program area. These include five archaeological sites that are within or partially overlap the program boundary (CA-LAN-1821 and CA-ORA-256, -261, -851, and -1473). Of these five sites, only one site (CA-LAN-1821) is entirely within the program area. The remaining sites are on the fringes of the program boundary and some appear to only slightly overlap with the program area. There are also seven archaeological sites that are within 150 feet of the program boundary (CA-ORA-257, -258, -259, -262, -850, -1542, and -1544). Of the 12 prehistoric sites, only two (CA-ORA-261 and-262) have been previously evaluated as eligible for listing in the California Register, and as such they would likely contribute to the significance of the landscape, however, these sites were reportedly destroyed by construction of Heron Pointe. The remaining sites have not been subject to formal evaluations, but they are considered potential contributors to the significance of the landscape. In addition, there could be as yet unidentified prehistoric archaeological sites on the surface or subsurface within the program area that could contribute to the significance of the landscape. Therefore, the proposed program could result in the demolition or material alteration to Native American or prehistoric archaeological sites within the Los Cerritos Wetlands that convey the historical significance of the tribal cultural landscape. Implementation of Mitigation Measures CUL-1 and CUL-4 through CUL-15 would lessen the impact to archaeological resources that contribute to the significance of the tribal cultural landscape:

- Mitigation Measures CUL-1, CUL-4 through CUL-6, and CUL-8 require that qualified cultural resources personnel conduct future project-specific studies to identify archaeological resources and develop appropriate treatment for resources that contribute to the significance of the tribal cultural landscape.
- Mitigation Measure CUL-7 requires consideration of avoidance and preservation in place of archaeological resources, including those that contribute to the landscape's significance, to ensure that destructive treatment measures are a last resort.
- Mitigation Measures CUL-9 through CUL-11, CUL-14, and CUL-15 require establishment of a plan and procedures for avoidance and discoveries measures during construction, training construction personnel on the significance of the area and procedures to follow in the event of discoveries, monitoring of ground disturbance by archaeologists, and proper curation/disposition of recovered archaeological materials. These measures would ensure the protection, identification, and appropriate handling and treatment of archaeological resources that contribute to the landscape's significance.
- Mitigation Measures CUL-12 and CUL-13 require that LCWA consult with Native American representatives during the preparation of all cultural resources-related documents and that Native American groups are included in monitoring of ground disturbance. These measures would ensure that tribal values are considered in identification, evaluation, and treatment of archaeological resources that contribute to the landscape's significance.

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.

With regards to potential impacts to the waterways, plants, and animals, the purpose of the proposed program is to restore the natural waterways and habitat of the Los Cerritos Wetlands. These actions would have a beneficial effect on the waterways, plants, and animals. As noted in Chapter 2, *Project Description*, of this PEIR, the proposed program would restore the tidal wetland process by providing a more natural connection between the wetlands and surrounding water sources. This would increase estuarine habitat with a mix of tidal channels, mudflat, salt marsh, and brackish/freshwater marsh and ponds. The existing waterways within the wetlands are human-made and not natural, with the exception of Steamshovel Slough, and do not resemble the historical or pre-contact appearance of the Los Cerritos Wetlands. The proposed program would develop channels that resemble more natural waterways, such as the meandering channels to be excavated off of the Hellman Channel, and would breach the San Gabriel River levee. This would result in a more natural tidal influence between the saltwater/freshwater sources and the wetlands. As discussed in Section 3.3, *Biological Resources*, of this PEIR, the result would be a net increase in jurisdictional wetlands.

Also as noted in Chapter 2, *Project Description*, the proposed program would restore and maintain native habitat and maximize wildlife corridors. As discussed in Section 3.3, *Biological Resources*, of this PEIR, the creation of suitable habitat would have a net benefit on several special-status species (e.g., monarch butterfly, estuary sea-blite, black skimmer, California least tern, and others). Historically the wetlands provided natural resources to surrounding Native American village sites. The plants, animals, fish, and shellfish once present within the wetlands were gathered, hunted, and fished to provide sustenance, tools, ceremonial objects, and other materials for native populations. Restoration of native habitat would attract wildlife back to the area and would allow for a variety of species to again flourish within the wetlands, creating an ecosystem more closely resembling the one that existed historically and in pre-contact times.

The proposed program also includes several mitigation measures that would lessen potential construction-related impacts to plants and animals that are considered part of the tribal cultural landscape. Mitigation Measures BIO-1 through BIO-9 in Section 3.3, *Biological Resources*, of this PEIR, would require: avoidance of special-status plants or restoration of affected special-status plants; environmental awareness training for construction personnel and biological monitoring; restoration of affected breeding habitat for the Belding's savannah sparrow, nesting bird and raptor avoidance; pre-construction surveys for burrowing owl and creation of a management plan to minimize or avoid impacts to burrowing owls; pre-construction surveys for bat roosting habitat and creation of an exclusion plan to minimize or avoid impacts to breeding bats; focused surveys for special-status wildlife species and creation of an avoidance plan to minimize or avoid impacts to occupied habitat; and revegetation of sensitive natural communities. Implementation of these measures would ensure that any potential construction-related impacts to plants and animals are less than significant.

Potential impacts to the tribal cultural landscape would be further reduced by considering Native American tribal values ascribed to the Los Cerritos Wetlands throughout the course of

development and construction of the proposed program. Mitigation Measure CUL-16 would require that LCWA seek input from California Native American Tribes regarding development of project-level designs, planting selections/palettes, and educational/interpretive signage. This would ensure that tribal values ascribed to the Los Cerritos Wetlands as part of the tribal cultural landscape are considered as part of the design, restoration, and educational elements of the proposed program (see Section 3.15, *Tribal Cultural Resources*, of this PEIR, for a full discussion of input received from California Native American Tribes during consultation on the proposed program).

In summary, some of the essential physical features of the tribal cultural landscape would not be impacted (village sites of *Puvungna* and *Motuucheyngna*), or could be enhanced by the restoration elements of the proposed program (jurisdictional wetlands, plant and animal habitats). However, the proposed program includes ground disturbing activities that have the potential to result in a substantial adverse change to Native American or prehistoric archaeological resources within the Los Cerritos Wetlands. Since these types of resources contribute to the significance of the tribal cultural landscape, the proposed program could materially impair the landscape's ability to convey its historical significance, resulting in a substantial adverse change in the significance of the tribal cultural landscape even with the implementation of mitigation. Therefore, impacts to the tribal cultural landscape would be significant and unavoidable at the program level.

Operation

Operation of the proposed program would include ongoing inspection and maintenance of the perimeter levees and berms, flood walls and water-control structures; removal of non-native vegetation in restored habitat and stormwater management features; trash removal within the restored wetlands; and operation of the visitor centers and associated parking lots. These actions would have no impact to historic architectural resources. Any ground disturbance associated with these activities would occur within soils that have already been subject to ground disturbance and archaeological/Native American monitoring, and they are unlikely to unearth archaeological resources. Operation of the proposed program would include increased public access to the program area, and could potentially result in the vandalism of or disturbances to archaeological resources. However, the public access program would constrain visitors to pedestrian trails and bike paths, elevated perimeter pedestrian walkways, and designated viewing areas with overlooks. It would also include educational and interpretive features that would educate the public about the cultural significance of the area, and the implications of unauthorized tampering with resources. Impacts to historic architectural resources and archaeological resources from operation of the proposed program would be less than significant.

The actions described above could also impact to the tribal cultural landscape. As discussed above, no impacts to the archaeological sites associated with *Puvungna* and *Motuucheyngna* are anticipated as a result of the proposed program. Any ground disturbance associated with operational activities would occur within soils that have already been subject to ground disturbance and archaeological/Native American monitoring, and they are unlikely to unearth Native American or prehistoric archaeological resources associated with the landscape. As discussed in Section 3.3, *Biological Resources*, of this PEIR, operational impacts to plants and animals would be minimal or would be lessened by implementation of BIO-1, BIO-6, and BIO-8

though BIO-11, which require restoration of affected special-status plants; preparation of a lighting plan and requiring that nighttime lighting is shielded downward to minimize spillage onto adjacent area; preparation of a Mitigation, Maintenance and Monitoring Program to ensure successful revegetation of sensitive natural communities; and a functional assessment of the wetland areas that will be restored in the program area. Also, resulting modification to existing waterways or creation of new waterways would result in a net increase in jurisdictional wetlands, and with implementation of BIO-10, operational impacts on the wetlands would be assessed. With implementation of these mitigation measures, impacts to the tribal cultural landscape from operation of the proposed program would be less than significant.

Mitigation Measures

Mitigation Measures BIO-1 through BIO-11, as provided in Section 3.3, *Biological Resources*.

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).

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.

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 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.

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.

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 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.

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 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.

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 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**.

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 *CEQA Guidelines* 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:

a. *Research Design.* 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.

b. *Data Recovery for Resources Eligible under Criterion 4.* 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**).

c. *Treatment for Resources Eligible under Criteria 1, 2, or 3.* 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.

d. *Security Measures.* The plan shall include recommended security measures to protect archaeological resources from vandalism, looting, and non-intentionally damaging activities during field work.

e. *Procedures for Discovery of Human Remains and Associated Funerary Objects or Grave Goods.* The plan shall outline the protocols and procedures to be followed in the event *that* 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**.

f. *Reporting Requirements.* 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.

   Upon completion of all other treatment for resources eligible under Criteria 1, 2, or 3, the Qualified Archaeologist shall document the resource-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.

g. *Curation or Disposition of Cultural Materials.* 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**.

h. *Protocols for Native American Coordination and Monitoring.* The plan shall outline the role and responsibilities of Native American Tribal representatives in *accordance* 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**.

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:

a. *Establishment of Environmentally Sensitive Areas.* The plan shall outline areas that will be designated Environmentally Sensitive Areas (including maps), if needed. Significant or unevaluated archaeological 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 *delineated* 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.

b. *Provisions for Archaeological Monitoring.* 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 *disturbance* in locations/depths that have been previously monitored as part of the program shall not be subject to additional monitoring.

c. *Procedures for Discovery of Archaeological Resources.* 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.

   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 landscape, then *avoidance* 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.

d. *Procedures for Discovery of Human Remains and Associated Funerary Objects or Grave Goods.* The plan shall outline the protocols and procedures to be followed in the event that *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**.

e. *Reporting Requirements.* 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 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 *beyond* 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.

f. *Curation or Disposition of Cultural Materials.* 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**.

g. *Protocols for Native American Coordination and Monitoring.* 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**.

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.

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 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**.

Mitigation Measure CUL-12: Native American Coordination. LCWA shall seek input from participating Native American Tribes[5] 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.

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

[5] The term "Participating Native American Tribes" includes those California Native American Tribes who consulted with LCWA pursuant to AB 52 during the preparation of this PEIR and who continue to choose to consult with LCWA, as well as those California Native American Tribes who did not participate in consultation on the PEIR but who choose to consult with LCWA pursuant to AB 52 on future CEQA documents.

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 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.

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.

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 *CEQA Guidelines* 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 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.

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 Juañeno) 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**.

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.

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.

Mitigation Measure CUL-16: Future Native American Input. LCWA shall consult with participating California Native American Tribes,[6] 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.

Significance after Mitigation

Significant and Unavoidable

Impact CUL-2: The proposed program would result in a significant impact if the proposed program would cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

Construction

As described under Impact CUL-1, there are 14 known archaeological resources within or in the immediate vicinity of the program area. Also, given that the entire program area was not systematically surveyed as part of this assessment, there could be additional as-yet-unidentified archaeological resources within the program area. Additionally, the program area is considered to have a high potential to encounter buried prehistoric and historic-period archaeological resources.

[6] The term "Participating Native American Tribes" includes those California Native American Tribes who consulted with LCWA pursuant to AB 52 during the preparation of this PEIR and who continue to choose to consult with LCWA, as well as those California Native American Tribes who did not participate in consultation on the PEIR but who choose to consult with LCWA pursuant to AB 52 on future CEQA documents

Intact prehistoric resources could be encountered below depth of fill, although historic-period archaeological resources, particularly those associated with the oil industry, could be encountered within fill layers. Actions that have the potential to adversely impact archaeological resources include soil remediation, excavation, grading, or other ground-disturbing activities within or in the immediate vicinity of known archaeological resources or that unearth subsurface archaeological resources.

Mitigation Measures CUL-1, and CUL-4 through CUL-15 would reduce impacts to archaeological resources by requiring qualified cultural resources personnel conduct future project-specific studies; development of appropriate treatment for significant resources; and archaeological and Native American monitoring of ground disturbance. However, even with implementation of these mitigation measures, impacts to archaeological resources would be significant and unavoidable at the program level.

Operation

Operation of the proposed program would include ongoing inspection and maintenance of the perimeter levees and berms, flood walls and water-control structures; removal of non-native vegetation in restored habitat and stormwater management features; trash removal within the restored wetlands; and operation of the visitor centers and associated parking lots. Any ground disturbance associated with these activities would occur within soils that have already been subject to ground disturbance and archaeological/Native American monitoring, and they are unlikely to unearth archaeological resources. Operation of the proposed program would include increased public access to the program area, and could potentially result in the vandalism or disturbances to archaeological resources. However, the public access program would constrain visitors to pedestrian trails and bike paths, elevated perimeter pedestrian walkways, and designated viewing areas with overlooks. It would also include educational and interpretative features that would educate the public about the biological and cultural significance of the area, and the implications of unauthorized tampering with wetlands and its resources. Impacts to archaeological resources from operation of the proposed program would be less than significant.

Mitigation Measure

Mitigation Measures CUL-1 and CUL-4 through CUL-15.

Significance after Mitigation

Significant and Unavoidable

Impact CUL-3: The proposed program would result in a significant impact if the proposed program would disturb any human remains, including those interred outside of formal cemeteries.

Construction

The proposed program is an area where numerous Native American burials have been previously recovered, including from an archaeological site that appears to overlap the fringes of the

program area. Given the prehistoric and ethnohistoric occupation of the area, it is possible that Native American human remains, including those interred outside of formal cemeteries, could be located within the program area. No formal or historic-era cemeteries are known to be located within the program area. Actions that have the potential to disturb human remains include program-related soil remediation, excavation, grading, or other ground-disturbing activities.

Mitigation Measure CUL-17 would reduce impacts to human remains by requiring compliance with California Health and Safety Code Section 7050.5 and California PRC Section 5097.98, and ensuring that human remains and any associated funerary objects or grave goods are treated in a manner consistent with state law. With implementation of this mitigation measures impacts to human remains would be less than significant.

Operation

Operation of the proposed program would include ongoing inspection and maintenance of the perimeter levees and berms, flood walls and water-control structures; removal of non-native vegetation in restored habitat and stormwater management features; trash removal within the restored wetlands; and operation of the visitor centers and associated parking lots. Any ground disturbance associated with these activities would occur within soils that have already been subject to ground disturbance, and they are unlikely to disturb human remains. Impacts to human remains from operation of the proposed program would be less than significant.

Mitigation Measures

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.

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.

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.

Significance after Mitigation

Less than Significant with Mitigation

3.4.6 Cumulative Impacts

This analysis of cumulative impacts takes into consideration impacts on cultural resources from implementation of the proposed program. The geographic area of analysis for cultural resources typically covers the region within which similar types of cultural resources occur. The geographic scope of analysis for historic architectural resources (buildings, structures, objects) is the cities of Seal Beach and Long Beach. The types of development that historically occurred with the cities includes development related to agriculture; oil production; seaside resorts and tourism; ports and shipping; and saloons and gambling dens. This geographic scope of analysis for historic architectural resources is appropriate because the types of resources within this area is expected to be similar to those that occur within the program area, such as buildings and structures related to the oil industry.

The geographic scope of analysis for the tribal cultural landscape, archaeological resources, and human remains encompasses the broadly defined coastal zone of Orange and Los Angeles Counties, from roughly Santa Monica in the north to Newport Beach in the south. Prehistoric groups occupying this area focused to a large degree on littoral and immediately inland areas, particularly those associated with the estuaries and marshes at the mouths of the coastal drainages. A focus on coastal resources in these estuaries, coupled with use of inland resources, created archaeological patterns somewhat distinct from those of the more inland areas of southern California. This geographic scope of analysis is appropriate for archaeological resources and human remains because the types of resources within this area are expected to be similar to those that occur within the program area.

3.4.6.1 Construction

Multiple projects, mostly development within urban settings, are proposed throughout the geographic scope of analysis. Cumulative impacts to cultural resources could occur if any of these projects, in conjunction with the proposed program, would have impacts on resources that, when considered together, would be significant.

Historic Architectural Resources

Potential impacts to historic architectural resources within the program area are considered significant and unavoidable. There are unevaluated historic architectural resources that may be demolished or materially altered in an adverse manner as a result of the proposed program. While implementation of Mitigation Measures CUL-1 through CUL-3, which require that qualified cultural resources personnel conduct future project-specific studies and the development of appropriate treatment for significant resources, would lessen the impact, there are no feasible mitigation measures that would reduce the impact to a level of less than significant at the program level. The proposed program's residual impact to historic architectural resources that may qualify as historical resources is significant and unavoidable. The cumulative projects proposed throughout the geographic scope of this analysis have the potential to impact historic architectural resources as some of the projects would demolish or alter historic architectural resources. When taken together, the incremental contribution of the construction of the proposed program when combined with other projects in the geographic scope is cumulatively considerable. There is no feasible mitigation for cumulative impacts to historic architectural resources other than not undertaking the proposed program.

Archaeological Resources

Potential impacts to archaeological resources within the program area are considered significant and unavoidable. There are unevaluated archaeological resources that may be demolished or materially altered in an adverse manner as a result of the proposed program. While implementation of Mitigation Measures CUL-1 and CUL-4 through CUL-15, which require that qualified cultural resources personnel conduct future project-specific studies, the development of appropriate treatment for significant resources, and archaeological and Native American monitoring of ground disturbance, would lessen the impact, there are no feasible mitigation measures that would reduce the impact to a level of less than significant at the program level. The proposed program's residual impact to archaeological resources that may qualify as historical resources or unique archaeological resources is significant and unavoidable. The cumulative projects proposed throughout the geographic scope of this analysis have the potential to impact archaeological resources as some of the projects would include ground disturbance. When taken together, the incremental contribution of construction of the proposed program when combined with other projects in the geographic scope is cumulatively considerable. There is no feasible mitigation for cumulative impacts to archaeological resources other than not undertaking the proposed program.

Tribal Cultural Landscape

Potential impacts from the proposed program on the tribal cultural landscape are considered significant and unavoidable. While some of the essential physical characteristics of the landscape (*Puvungna* and *Motuucheyngna*) would not be impacted and others (waterways, plants, and animals) would receive a beneficial effect or a less than significant impact with mitigation, some of the essential physical characteristics of the landscape (Native American or prehistoric archaeological sites within the Los Cerritos Wetlands) could be impacted by the proposed program and there is no feasible mitigation to lessen this impact to a level of less than significant.

As discussed in Section 3.4.5, *Program Impacts and Mitigation Measures*, above, the archaeological manifestations of the two village sites that contribute to the landscape's historical significance, *Puvungna* and *Motuucheyngna*, would not be impacted by the proposed program. *Puvungna* is located about 0.75 miles to the north of the program area, in the area of California State University – Long Beach and its vicinity. *Motuucheyngna* is on a portion of the former Hellman Ranch property that has since been developed as a residential subdivision. No impacts to the archaeological sites associated with these two villages are anticipated as a result of the proposed program.

Also as discussed in Section 3.4.5, *Program Impacts and Mitigation Measures*, above, the proposed program would either result in a beneficial effect to waterways, plants, and animals or require mitigation to lessen construction-related impacts. The proposed program would result in a net increase or benefit to jurisdictional wetlands and several special-status species. Temporary impacts resulting from construction would be mitigated to less-than-significant level by implementation of Mitigation Measures BIO-1 through BIO-9, outlined in Section 3.3, *Biological Resources*, of this PEIR, These measures require: avoidance of special-status plants or restoration of affected special-status plants; environmental awareness training for construction personnel and biological monitoring; restoration of affected breeding habitat for the Belding's savannah sparrow, nesting bird and raptor avoidance; pre-construction surveys for burrowing owl and creation of a management plan to minimize or avoid impacts to burrowing owls; pre-construction surveys for bat roosting habitat and creation of an exclusion plan to minimize or avoid impacts to breeding bats; focused surveys for special-status wildlife species and creation of an avoidance plan to minimize or avoid impacts to occupied habitat; and revegetation of sensitive natural communities.

Potential impacts to the tribal cultural landscape would be further reduced by considering Native American tribal values ascribed to the Los Cerritos Wetlands throughout the course of development and construction of the proposed program. Mitigation Measure CUL-16 would require that LCWA seek input from California Native American Tribes regarding development of project-level designs, planting selections/palettes, and educational/interpretive signage. This would ensure that tribal values ascribed to the Los Cerritos Wetlands as part of the tribal cultural landscape are considered as part of the design, restoration, and educational elements of the program.

However, as noted in Section 3.4.5, *Program Impacts and Mitigation Measures*, there are known Native American or prehistoric archaeological resources within the program area that could contribute to the significance of the landscape and that may be impacted by the proposed program. Additionally, there is a potential for as yet unidentified prehistoric archaeological sites on the surface or subsurface within the program area that could contribute to the significance of the landscape and that may also be impacted by the proposed program. Implementation of Mitigation Measures CUL-1 and CUL-4 through CUL-15 would lessen the impact to archaeological resources that contribute to the significance of the tribal cultural landscape. However, even with implementation of these measures, the destruction or material alteration of a resource that contributes to the landscape would constitute a significant impact 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. Therefore, the proposed program's residual impact on the tribal cultural landscape, which has been discretionarily determined by LCWA to be a historical resource for the purposes of this PEIR, is significant and unavoidable.

The cumulative projects proposed throughout the geographic scope of this analysis also have the potential to result in a substantial adverse change in the significance of the tribal cultural landscape as some of these projects are also within or in the vicinity of the tribal cultural landscape. Past, present, and foreseeable projects have resulted in or could result in the demolition or material alteration to some aspects of the tribal cultural landscape that convey its significance. Past projects in the program's vicinity, such as the construction of California State University – Long Beach, U.S. Veterans Administration Hospital, Rancho Los Alamitos/Bixby Hill, and Heron Pointe, resulted in the demolition or material alteration of archaeological sites associated with the villages of *Puvungna* and *Motuucheyngna*. Additionally, other past projects have encroached upon the wetlands leading to habitat degradation and loss, resulting in the material alteration of waterways, plant habitat, and animal habitat. Future projects could also materially alter the tribal cultural landscape through the introduction of development that is incompatible with the landscape's setting or through ground disturbance within archaeological sites that contribute to the significance of the landscape. When taken together, past, present, and foreseeable projects result in a significant cumulative impact to the tribal cultural landscape.

The purpose of the proposed program is to restore the wetlands and the proposed program would result in an overall benefit to several of the essential physical characteristics of the landscape, such as the waterways, plants, and animals. Other projects have in the past resulted in greater impacts to the landscape than the proposed program, including impacts to archaeological sites associated with the villages of *Puvungna* and *Motuucheyngna*, as well as other Native American or prehistoric archaeological resources that may have contributed to the significance of the landscape, and impacts to waterways (including wetlands), plant habitat, and animal habitat. The incremental effects of the proposed program are not considered significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. Therefore, the incremental contribution of the proposed program on impacts to the tribal cultural landscape as a tribal cultural resource would not be cumulatively considerable.

Human Remains

In the event that human remains are encountered during implementation of the proposed program, Mitigation Measure CUL-17 would ensure that the remains are treated in accordance with relevant state laws and the proposed program's residual impact on human remains would be less than significant. It is assumed that any other projects in the geographic scope of analysis have or would also follow state law. Therefore, cumulative impacts on human remains during construction of the proposed program would not be cumulatively considerable.

Mitigation Measure

Mitigation Measures BIO-1 through BIO-9, as provided in Section 3.3, *Biological Resources*, and CUL-1 through CUL-17.

Significance after Mitigation

Significant and Unavoidable

3.4.6.2 Operation

No impacts to historic architectural resources, archaeological resources, or human remains are anticipated during project operations. Operational impacts to the tribal cultural landscape would be mitigated to a less-than-significant level by implementation of BIO-1, BIO-6, and BIO-8 though BIO-11, which require restoration of affected special-status plants; preparation of a lighting plan and requiring that nighttime lighting is shielded downward to minimize spillage onto adjacent area; preparation of a Mitigation, Maintenance and Monitoring Program to ensure successful revegetation of sensitive natural communities; and a functional assessment of the wetland areas that will be restored in the program area. Therefore, cumulative impacts during operations would not be cumulatively considerable.

Mitigation Measure

Mitigation Measures BIO-1, BIO-6, and BIO-8 through BIO-11, as provided in Section 3.3, *Biological Resources*.

Significance after Mitigation

Less than Significant with Mitigation

3.4.7 References

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