7.0 CULTURAL RESOURCES

This chapter assesses the effects of the proposed project on cultural resources, including districts, sites, buildings, structures, and objects that contain evidence of past human activities.

7.1 Affected Environment

7.1.1 Prehistory

People inhabited the project area for at least 11,000 years prior to the arrival of Spanish explorers to California in the 16th century. Evidence suggests that Paleoindian (12,000 to 9,000 years before present (YBP) populations throughout California and elsewhere were small and the subsistence economies emphasized the capture of big game, including now extinct megafauna, such as mammoth and mastodon. Although Paleoindian sites are rare in California, when found, they are often near areas containing pluvial lakes and marshes.

During the Archaic Period (9,000 to 4,000 YBP), California prehistoric cultures, as elsewhere, lost their emphasis on large game hunting. Subsistence economies probably diversified somewhat, and Archaic people may have begun to use certain ecological zones, such as the coast littoral zone, more intensively than before. Advances in technology enabled more efficient use of certain plant foods, including grains and plants with hard seeds. Archaic sites are relatively rare throughout California. The earliest sites in the Bay Area are from the late Archaic Period (around 7,000 to 4,000 YBP). These sites contain large projectile points, milling stones, and a lack of high-density shell deposits that indicate the early inhabitants of the project area relied on hunting and gathering of terrestrial foods (Moratto 1984).

Population densities increased throughout the Pacific Period (4,000 to 150 YBP). Consequently, California populations sought to produce more food from available land and to locate more dependable food supplies. The Pacific period saw the human occupation and specialized use of virtually all ecological niches in California. Populations became increasingly sedentary and settled in larger villages. Increasing social stratification, ceremonialism, and long-distance trading activity is evident in the archaeological record (Chartkoff and Chartkoff 1984). In the Bay Area, many villages were established by 4,000 YBP. Village sites, commonly located near a stream, adjacent to resource-rich bayshore and marsh habitats, often had deep stratified deposits of shellfish and other remains from repeated occupations over time. Beginning around 1,700 YBP, there was an increasing complexity in artifact assemblages that seems to reflect an intensified hunting, gathering, and fishing adaptation. The introduction of the bow and arrow, harpoon, and the use of clam disk beads as currency for trade are just a few indications that populations were larger and more densely settled (Moratto 1984).

7.1.2 Ethnography

Inhabitants of the project area at the time of European contact were the Ohlone (as they presently refer to themselves) or Costanoan (from the Spanish “Costano” for coastal people). The term “Costanoan” refers to an ethnographic grouping of people who shared similar cultural and linguistic traits, and does not refer to a politically unified entity. The Ohlone occupied the Coast Ranges surrounding the San Francisco and Monterey Bays

and probably arrived in central California sometime after 1,500 years ago (around 500 A.D.). Levy (1978) estimates the Ohlone population at about 10,000 at the time of European contact. The Spanish missionized the Ohlone people quickly and occupied nearly the entire coastal portion of the Ohlone territory in the latter part of the 18th century. Introduced diseases and lower birth rates drastically affected native population levels during this period. With mission secularization in 1821, Ohlone and other mission Indians left the missions to work in surrounding areas, mostly as manual laborers on ranchos (Levy 1978).

Ethnographic information on the pre-contact Ohlone is not available; ethnographic studies from the late 1800s and early 1900s were of a population whose culture had already been significantly altered by high-intensity contact with Europeans. Today, approximately 200 Ohlone descendants live in the San Francisco and Monterey Bay areas. They formed a corporate entity, the Ohlone Tribe, in 1971. There is presently no federally recognized Ohlone group.

7.1.3 History

Below is a brief historical overview of the project area, summarized from the *Final Cultural Resources Inventory Report for the Habitat Mitigation Planning Sites, San Francisco International Airport Proposed Runway Reconfiguration Program* (Jones & Stokes, 2001). Special attention is given to the history of the salt industry and the town of Drawbridge, which has relevance for the proposed South Bay Salt Ponds ISP.

San Francisco Bay has a long history of maritime activities that undoubtedly left material remains along the water's edge. Spanish exploration of northern California began around 1769 with the expedition of Gaspar de Portola. Juan Bautista de Anza led the first Spanish overland expedition into the San Francisco Bay region in 1776 and established the Mission Dolores and San Francisco Presidio. In 1777, Lieutenant Jose Joaquin Moraga and Father Tomas de la Pena led a party of settlers from Mission Dolores into the Santa Clara Valley to establish a mission there. Father Junipero Serra founded Mission Santa Clara de Asis that year. Early explorers in present-day Alameda County included Jose Francisco Ortega in 1769, Pedro Fages in 1770 and 1772 and Bautista de Anza and Moraga in 1776. However, the project area remained largely unsettled by Euroamericans until the founding of Mission San Jose near the present town of Fremont in 1797. Mission San Jose was one of the most prosperous and populous of the Spanish missions in California.

Mexico achieved independence from Spain in 1821 and the following year, California was declared a territory of the Mexican republic. In 1834, the Mexican government secularized the missions and divided their vast holdings into individual land grants, or ranchos, opening the way for the emergence of a new landed elite, who introduced large-scale cattle ranching in California. The project area includes portions several of these ranchos.

Commercial activity between the United States and California increased during the Mexican Period, and the region experienced an influx of overland trappers and mountain men in search of beaver and other fur-bearing animals. Tensions between the new arrivals and native Californians intensified and hostility between the U.S. and Mexican governments culminated in outbreak of the Mexican War in 1846. The conflict was

marked by repeated American land and naval victories, and formally ended with the signing of the Treaty of Guadalupe Hidalgo in February 1848 and the cession of California to the United States.

Just over a week before the signing of the Treaty of Guadalupe Hidalgo, James Marwill discovered gold in the Sierra Nevada foothills while constructing a sawmill for John A. Sutter. Marwill's discovery led to a massive incursion of miners, prospectors, and settlers into California known as the Gold Rush (1848–1852). Although the gold seekers converged primarily on the interior mining country, the coastal regions attracted scores of merchants and settlers, who sought to take advantage of California's emerging maritime and agricultural economies. The lumber and fishing industries both boomed during the Gold Rush. The fishing industry also expanded in the 1870s following an increase in the immigration of fishermen from Italy, Greece, China, and Portugal. By the beginning of the 20th century, the staple yields of the fishing industry were salmon, crabs, cod, and oysters. Commercial oystering, which also began with the Gold Rush, was a major industry through the end of the 19th century in the willow waters and marsh areas surrounding the bay. From 1895 to 1904, oysters were the most valuable fishing product of the state. Production declined shortly thereafter, and oystering ended completely in the 1930s as a result of pollution in the San Francisco Bay (Hart 1978). The Gold Rush also fueled the growth of the salt industry in the Bay, discussed further below.

The importance of maritime shipping in the project vicinity continued throughout the Gold Rush and all succeeding historic periods and areas near major watercourses, estuaries, and nearby mudflats. Several large communities in the present South Bay area had their origins as ranchos and then grew into large agricultural centers later, facilitated by extensive transportation networks. The present-day cities of Union City, San Leandro, and Fremont originated from the consolidation of several farming communities and then grew into residential and manufacturing centers. Several fruit-growing communities, including the present city of Sunnyvale, followed a similar economic pattern.

The first roads sprang up across the South Bay in the mid-19th century to late 19th century to facilitate travel and the transportation of agricultural goods to market. The city of Mountain View in Santa Clara County originated as an agricultural community and the location of a stage stop along the road between San Jose and San Francisco in the early 1850s. Before the coming of the railroads, maritime transportation of agricultural products was an essential component in the economy of the San Francisco Bay Area. Various landings were established along the East Bay that served as vital commercial and travel links before the development of additional transportation facilities. The Port of Alviso, one of the oldest ports in the western United States, was created in the late 1840s by land speculators, to replace the Embarcadero de Santa Clara/Alviso, located 0.5 mile south of the city of Mountain View. The town of Alviso was surveyed in 1849. Alviso was the major commercial shipping depot in northern California during its heyday, but the town began to decline when the San Francisco to San Jose Railroad that bypassed Alviso was completed in 1864. In 1968, Alviso was annexed by the city of San Jose. Redwood City and Union City also emerged as important shipping centers in the South Bay. An association of farmers known as the Mt. Eden Company established a series of landings along Mt. Eden Creek in the Baumberg area in the 1850s. In 1855, Captain Richard Barron built numerous warehouses and wharves at Eden Landing. He built a salt

works in the area in the late 19th century and operated at least two other landings in the area (Wood 1883).

In 1864, the Southern Pacific Railroad (SPRR) Company built a standard-gauge line from San Francisco to San Jose. The town of San Mateo grew up around this railroad. This San Francisco-San Jose line was extended to Gilroy in 1869. However, the SPRR line did not adequately serve the fruit growing regions of Santa Clara County. In 1876, Alfred C. "Hog" Davis purchased the bankrupt narrow-gauge Santa Clara Valley Railroad (SCVRR). The SCVRR had connected Alviso, San Jose, and Santa Clara, but had gone bankrupt trying to extend the line to Santa Cruz. Davis formed the South Pacific Coast Railroad (SPCRR), which later received some financial backing from Senator James G. "Slippery Jim" Fair. Davis and Fair envisioned a new town of Newark and a line that would extend from this town to Santa Cruz via the Santa Cruz Mountains. The SPCRR originally provided a ferry service from Newark to San Francisco, but the East Bay terminal was later moved to Alameda. The San Francisco to Santa Cruz service began in May 1880 and involved an 80-mile-long trip lasting 3 hours, 30 minutes. The line was leased to SPRR in 1887 and was recognized at the time as the most profitable railroad for its size in California (Dewey, 1989). SPRR later acquired the SPCRR (now Union Pacific Railroad). Alameda County experienced considerable industrial and economic growth with the coming of the San Francisco and Alameda Railroad in 1865. By 1869, the line extended along the East Bay from San Francisco to San Jose. This line was later absorbed into the Union Pacific system.

History of the Salt Industry in South Bay. The solar salt industry in San Francisco Bay began in the mid 1850s. The first operations were simple levees built around naturally occurring salt pans in Alameda County to increase their capacity. They were small family enterprises that used intensive hand labor for production and harvest. Nearly all of the salt produced in San Francisco Bay during this era was shipped to Nevada to be used for the processing of silver ore. By the late 1800s, an estimated 37 salt production facilities had been established throughout the South Bay. Most of these facilities were constructed by diking tidal marshes. The diked marshes were fitted with operator-controlled intake structures to capture seawater during high tides. The Baumberg ponds first came into production in the late 1800s. The Alviso ponds came into production in 1929 (Ver Planck 1958).

By the early 1900s, the quality of the salt produced in San Francisco Bay had increased significantly, and the market expanded to include fine or "table" salt. Between 1924 and 1941, many of the small plants consolidated. Following the consolidation, only Leslie and Oliver salt companies remained. The Leslie Salt Company was created in 1936 from the consolidation of 19 small operations (Jones & Stokes 2003). In that year, the Leslie Salt Company produced 300,000 to 325,000 tons of salt on roughly 12,500 acres. By 1946, the company produced 500,000 tons on 25,000 acres. In 1950, the company's production was up to 750,000 tons and by 1959 production reached one million tons and included production in the North Bay (Siegel and Bachand 2002). By the 1950s, 85 percent of wetlands in the San Francisco Bay had been filled, dried out, or converted to salt ponds. By the 1960s, Leslie Salt owned 50,000 acres of salt ponds around the Bay. The Oliver Salt Company, located at the foot of the Hayward-San Mateo Bridge, ceased

to operate in the 1970s. In 1979, Cargill bought Leslie and is now is the only solar salt producer in San Francisco Bay (San Francisco BCDC 1994, Jones & Stokes 2003).

In 1972, Congress created the San Francisco Bay National Wildlife Refuge (renamed the Don Edwards SFBNWR in 1995 in honor of the former congressman). In 1979, SFBNWR purchased 11,430 acres from Leslie Salt (now Cargill Salt). Cargill still retains the salt making rights on these lands. In 2000, Cargill Salt decided to consolidate its Bay Area salt operations and offered 19,000 acres of excess ponds in the North and South Bays (reduced to 16,500 acres in 2002) to the state and federal government. To date, there has been no formal NRHP eligibility evaluation of the South Bay salt works.

Historic Town of Drawbridge. Drawbridge is located on Station Island, between Coyote Slough on the north, Warm Springs Slough (now Mud Slough) on the south, and two salt ponds on the east and west. The SPCRR (now the Union Pacific Railroad; see railroad history above) built a narrow-gauge railroad bridge over Coyote Slough and a second over Mud Slough. The following history is summarized from the San Francisco Bay Wildlife Society's booklet *"Drawbridge: A Hand-Me-Down History"* (Dewey, 1989) and the website: www.sjunderbelly.com/ unbelly/ Draw/ draw9.html.

The first building on the island was a two-room cabin the SPCRR built in 1876 for the railroad bridge tender. At that time, the only access to the island was by rail or boat. The tidal marsh that covered the island presented some challenges to early builders. All buildings were elevated (built on pilings or sills) to avoid daily flooding and walkways between the buildings were also elevated. The railroad bed was sometimes called "Main Street" or "A Street." The SPCRR charged one dollar a year for setting a walkway on railroad property.

The area provided an abundance of waterfowl, fish and shellfish to attract Bay Area sportsmen, who began to flock to the area in the 1880s, following completion of the SPCRR line to Santa Cruz. Numerous duck hunter's cabins and blinds were built, the first of which was the Gordon Gun Club (built 1880), and Drawbridge became a popular stopover along the SPCRR line. The first permanent residence was built in 1894, SPCRR officially named the stop Drawbridge in 1897, and by the early 1900s, there were about 40 buildings on the island. The Sprung Hotel was built in 1902 and collapsed in the 1960s. By 1906, the town had two hotels (the Sprung and the Hunter's Home, or Sportsman's Hotel, also built in 1902) and 79 cabins (a mixture of private residences and duck clubs). The town experienced considerable damage during the earthquake of 1906.

Drawbridge peaked in popularity in the 1920s. By 1926, there were 90 cabins and 5 passenger trains came through town each day. Electricity came to the island in 1931. Most of the cabin owners were middle class professionals. A number of boat builders also took up residency on the island. Residents reported an ethnic division between the north and south ends of town and residents of the two ends apparently did not get along very well. Cabins were individually designed and the exterior and interior designs varied considerably. People also lived in dwellings called "arks"; houseboats pulled up on the marsh and hoisted onto pilings. A freshwater aquifer underlying the island supplied several wells.

By 1940, there were only about 50 cabins left. Several factors contributed to the decline of the town in subsequent decades. The island began to sink and buildings and structures

on the island subsided as a result of groundwater pumping in nearby communities. Wildlife was impacted by pollution from raw sewage that was dumped by neighboring communities into the South Bay. The smell of sewage became a nuisance, wells were fouled, and swimming in the sloughs lost its attraction. Construction of railroads and highways led to a decline in maritime shipping and construction of salt ponds by Arden Salt and other companies also reduced the navigability of the sloughs in the area. The Depression probably also played an earlier role. Reports in local newspapers that Drawbridge had become a ghost town brought vandals and squatters to the town, accelerating its demise. By 1976, one resident and 24 taxed residences remained at Drawbridge. The last two residents, Nellie Irene Dollin and Charlie Luce, left in 1974 and 1979, respectively.

Drawbridge is now within the Don Edwards SFBNWR. Although suggestions for preserving the town were initially included in plans for the refuge, the current plan is to do nothing. None of the remaining structures at Drawbridge have been formally evaluated for eligibility to the NRHP.

7.1.4 Research Methods

A screening level analysis of cultural resources, consisting of archival research, review of historic maps, and contact with Native American organizations, was undertaken for this project. The layout of the ponds in the South Bay is not conducive to archaeological survey and intensive archaeological survey of the entire project area was not undertaken for this EIR/EIS.

Archival research was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS), located at Sonoma State University, Rohnert Park in April of 2003. Research included a review of cultural resources and cultural resource surveys within 0.5-mile of the project area. The following lists were reviewed:

- National Register of Historic Places
- California Register of Historical Resources
- California Inventory of Historic Resources (State of California 1976)
- California Points of Historical Interest (State of California 1992)
- Historic Spots in California (Kyle et al. 1990)

USGS topographic maps and historical maps were also studied to determine where unrecorded historic structures were located and to understand details regarding the topography of the project area prior to extensive land alteration during construction of the salt ponds. Information from an effects assessment of cultural resources within the Eden Landing (Baumberg) Ecological Mitigation Tract was also used (Far Western Anthropological Research Group, Inc., Past Forward, Inc., Caltrans, 2001).

The California Native American Heritage Commission (NAHC) was contacted to incorporate the opinions and concerns of Native Americans in the project area. The NAHC consulted its Sacred Lands File for Native American burial sites and sacred places that could exist in the project area. The NAHC did not indicate the presence of Native American burial sites and sacred places in the project area, but cautioned that persons of Native American descent with an interest in the project area could have additional

knowledge and/or concerns. The NAHC provided several Native American contacts for the project area. A list of the contacts supplied appears in Appendix H. Letters were mailed to these contacts in May 2003, informing them of the proposed project and soliciting their comments and concerns regarding the project (see Appendix I). A letter was received from Katherine Perez, representing the Ohlone Indian Tribe, indicating the project's potential to impact unknown burials and recommending that ground disturbance be minimized and monitored to minimize the potential for impacts to unknown sites. To date, no comments or concerns have been expressed by the other individuals/groups contacted.

A public scoping meeting to solicit comment on the environmental effects of the ISP and the scope and significant issues to be analyzed in the EIS/EIR was held on March 27, 2003. To date, no comments pertaining to cultural resource issues have been received.

7.1.5 Cultural Resources in the Project Vicinity

Based on the information provided during archival research and knowledge of the natural setting, the West Pond Complex is located in an area of low to moderate sensitivity for prehistoric archaeological sites, while the sensitivity of the Baumberg and Alviso ponds ranges from low to high.

Nearly all of the prehistoric tidal marsh in the South Bay was diked between the 1850s and 1950s. Almost all prehistoric marsh surfaces in the area are located in the interior side of dikes. Nearly all existing tidal marshes formed in sediments deposited after dikes were constructed. These tidal "fringing" or "strip" marshes outboard of dikes established in the positions of previously unvegetated historic tidal channel beds or mudflats (Atwater *et al*. 1979). Within the modern South Bay, prehistoric tidal marsh surface with the potential for relatively shallow-buried prehistoric archaeological sites are restricted to locations within (a) diked bayland interiors, and (b) rare, locally preserved, undiked, prehistoric tidal marshes. Ground disturbance under the ISP would not occur within these locations and would be restricted only to the levees.

Historic archaeological sites associated with maritime or fishery activities could be located where mudflat harbors and anchorages once existed, although the likelihood of discovering such remains has been reduced by infilling, diking, land reclamation, and other large-scale modifications of the bayshore landscape. Moreover, subsidence and sea-level rises have continued to accrete sediments in the project area. However, as discussed below, features of this modified landscape are now more than 50 years old and may themselves qualify as significant cultural resources.

Records at the NWIC indicate that portions of the project area have been surveyed for cultural resources. At fifteen of the Alviso ponds, accessible areas have been completely surveyed for archaeological resources. Less than 5 percent of the area of the remaining ponds has been surveyed, and many ponds have not been surveyed at all (J&S 2001). Surveys have been conducted within the Baumberg Complex in conjunction with the Eden Landing Ecological Reserve Project (Hope et al, 1996; Ananian 1985; and Far Western Anthropological Research Group, Inc., Past Forward, Inc., Caltrans, 2001).. Surveys within the project area are too numerous to list here, but are available for review by qualified individuals at the NWIC.

According to information available at the NWIC, there are 7 previously recorded archaeological sites within the project area (1 prehistoric and 6 historic), and 13 previously recorded archaeological sites (4 prehistoric, 8 historic, 1 prehistoric/historic) outside the project area, but within a 0.5-mile radius of the project. These resources are summarized by pond complex in Tables 7-1 and 7-2 below.

Table 7-1.
Recorded cultural resources within the project area

Pond complex	Trinomial site no.	Primary site no.	P/H	Description
Alviso Ponds	CA-SCL-810H	P-43-001110	H	Port of Alviso historic ship building facility
	CA-ALA-338	P-01-002057	P	Disturbed remnants of shell midden site
Baumberg Ponds	CA-ALA-494H	P-01-000210	H	Oliver Salt Co. piling and foundations
	CA-ALA-495H	P-01-000211	H	Location of former Rocky Point Saltworks (pre-1898, absorbed by Oliver Salt Company by 1909); no surface remains
	CA-ALA-496H	P-01-000212	H	Pilings and foundation of former Union Pacific Salt (ca. 1872-1927)
	CA-ALA-489H, -497H, -501H	P-01-000217	H	Eden Landing historic shipping station (warehouses, wharves, associated developments)
	CA-ALA-593H	P-01-002257	H	Small late-19th century historic refuse scatter (on levee)

Table 7-2.
Recorded cultural resources within 0.5 mile of the project area.

Pond complex	Trinomial site no.	Primary site no.	P/H	Description
Alviso Ponds	CA-SCL-23	P-43-000043	P	Midden mound (occupation site)
Baumberg Ponds	CA-ALA-485	P-01-000201	P	Sparse marine shell deposit
	CA-ALA-487H	P-01-000203	H	Refuse scatter
	CA-ALA-492H	P-01-000208	H	Small, low density refuse scatter
	CA-ALA-493H	P-01-000209	H	Medium density refuse scatter
	CA-ALA-498H	P-01-000214	H	Location of former Nielsen Salt Works (no surface indication of site remains)
	CA-ALA-499H	P-01-000215	H	Stock shute, old fencing
	CA-ALA-500H	P-01-000216	H	Historic occupation area
	---	P-01-001791	H	Shipwreck
	CA-ALA-592H	P-01-002256	H	Small refuse scatter
West Bay Ponds	CA-SMA-248	P-41-000244	P	Lithic scatter
	CA-SMA-386H	P-41-002076	P/H	Lithic scatter/ two refuse dumps
	C-155 (reported find, not formally recorded)		P	unknown

Of these sites, only CA-ALA-338, the disturbed remnants of a prehistoric shell midden site, is within an area of potential construction. Construction of a new inlet is proposed at or near this location. The site was recorded in 1980 by D. Chavez. Extensive shell, powdery grey midden soil, and some charcoal were observed along the levee. Chavez noted the site was "greatly disturbed." No features, burials, or artifacts were located.

In addition to the recorded sites discussed above, the following structures of potential historic interest are noted within the project area:

- Levees and other structures associated with the South Bay salt works (all three complexes)
- Abandoned historic town of Drawbridge (Alviso Pond Complex)
- Historic SPCRR line, now Union Pacific Railroad (Alviso Pond Complex)

None of these resources have been formally evaluated for the CRHR or NRHP. As noted in the historical overview above, the salt industry dates back to the 1850s in the South Bay and the existing network of ponds is at least 50 years old. Given the social and economic significance of the salt industry in the South Bay, it is likely that the salt pond complexes would qualify as an historic district for the NRHP. A similar complex in San Diego County, the Western Salt Company Salt Works in Chula Vista, California, was evaluated by EDAW in 2001 and recommended eligible as an historic district for the NRHP and CRHR (Gustafson and Gregory, 2001).

The abandoned town of Drawbridge dates back to 1876 when the town was founded. The last

resident left Drawbridge in 1979. Many of the remaining buildings are older than 50 years, but subsidence, flooding, and vandalism have taken their toll on the town and the integrity of most of these buildings is very poor.

The South Coast Pacific Railroad (now Union Pacific Railroad), which was constructed as a narrow-gauge railroad by James Fair and Alfred Davis, opened in 1880. Railroads in general, and this railroad in particular, played an important roll in the social and economic development of the area. It is not known whether portions of the original rail alignment remain.

No other structures of potential historic interest were noted in the ISP area. The Port of Alviso (listed as an historic district on the NRHP) and several duck cabins are also noted in proximity to the ISP area, but outside its area of impact.

7.2 Criteria for Determining Significance of Effects

7.2.1 Federal Significance Criteria

The National Historic Preservation Act (NHPA) of 1966 established the federal government's policy on historic preservation and the programs, including the National Register of Historic Places (NRHP), through which that policy is implemented. Under the NHPA, historic properties include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" (16 United States Code [USC] 470w (5)). The criteria used to evaluate the NRHP eligibility of properties affected by federal agency undertakings are contained in 36 CFR 60.4 and are as follows:

The quality of the significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and:

1. That are associated with events that have made a significant contribution to the broad patterns of our history;
2. That are associated with the lives of persons significant in our past;
3. That embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguished entity whose components may lack individual distinction; or
4. That has yielded or may be likely to yield information important in prehistory or history.

An historical property must also retain the integrity of its physical identity that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

An action is considered to have an effect on an historic property when the action has the potential to alter the characteristics of the property that may qualify the property for inclusion in the NRHP, including its location, setting, and use. The effect is considered adverse when it may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Pursuant to 36 CFR 800.9, adverse effects on historic properties include, but are not limited to, the following:

- Physical destruction or alteration of all or part of the property
- Isolation of the property from, or alteration of, the property's setting, when that character contributes to the property's qualifications for listing in the NRHP
- Introduction of visual, audible or atmospheric elements that are out of character with the property or that alter its setting
- Neglect of a property, resulting in its deterioration or destruction
- Transfer, lease, or sale of the property

Section 106 (16 USC 470f) of the NHPA requires federal agencies, prior to taking action to implement an undertaking, to take into account the effects of their undertaking on historic properties and to afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment regarding the undertaking.

Specific regulations regarding compliance with Section 106 state that although the tasks necessary to comply with Section 106 may be delegated to others, the federal agency (in this case, the USFWS) is ultimately responsible for ensuring that the Section 106 process is completed according to statute. The Section 106 process has four basic steps:

- Identify and evaluate historic properties.
- Assess adverse effects of the project on historic properties.
- Resolve any adverse effects of the project on historic properties in consultation with the State Historic Preservation Officer (SHPO)/Tribal Historic Preservation Officer (THPO), and other interested parties, resulting in a memorandum of agreement (MOA).
- Proceed in accordance with the MOA.

7.2.2 State Significance Criteria

A project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of an historical resource (California Code of Regulations (CCR) Section 15064.5[b]). The *CEQA Guidelines* (Section 10564.5[c]) also require consideration of potential project impacts to "unique" archaeological sites that do not qualify as historical resources. Impacts to resources that do not qualify as historical resources or "unique" archaeological sites are not considered significant, and need not be considered further in the CEQA process (Public Resources Code (PRC) Section 21083.2).

CEQA establishes statutory requirements for establishing the significance of archaeological sites in (PRC) Section 21083.2 and historical resources in PRC Section 21084.1. The two PRC sections operate independently to ensure that significant potential effects on archaeological and historical resources are considered as part of a project's environmental analysis. Section 21083.2 defines a "unique archaeological resource" as "...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 that there is a demonstrable public interest in that information.

- It has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event.

Section 21084.1 defines historical resources as those listed on or eligible for listing on the California Register of Historical Resources (CRHR). The CRHR establishes 50 years as the period in which sufficient time has passed to allow a scholarly perspective in understanding the historic importance of a resource. An historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- It is associated with the lives of persons important to local, California, or national history;
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

An historical resource must also retain the integrity of its physical identity that existed during the resource's period of significance. Similar to the NRHP, integrity under the CRHR is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

As noted above, under CEQA, a project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of a resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of an historic resource that convey its historic significance and qualify it for inclusion in the CRHR or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g).

The following steps normally are taken in a cultural resources investigation to comply with CEQA:

- Identify cultural resources.
- Evaluate the significance of the cultural resources.
- Evaluate the effects of a project on all cultural resources.
- Develop and implement measures to mitigate the effects of the project on significant cultural resources.

CEQA and the *CEQA Guidelines* also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

7.3 Impacts

A screening level cultural resource investigation was conducted for this project. As discussed above, this consisted of a record search at the Northwest Information Center of the California Historical Resources Information System, additional background research and review of historical maps, and contact with Native American organizations including the Native American Heritage Commission. Pedestrian surveys were not conducted in conjunction with this project. As identified above, 7 archaeological sites have been recorded within the project area, and an additional 14 archaeological sites have been recorded within 0.5 mile of the project area.

Under Alternatives 2 and 3, ground disturbance and compaction from the use of heavy vehicles and machinery during construction of new water conveyance features (inlets and outlets) along the existing salt pond levees has the potential to impact recorded and unrecorded archaeological sites, as discussed below. A single prehistoric site (CA-ALA-338) is recorded at one of the proposed inlet locations at the Alviso Pond complex. This site could be directly impacted by ground disturbance for the new inlet construction. The site has not been formally evaluated. However, as noted above, the site has been greatly disturbed and probably does not retain sufficient integrity to qualify for listing on the NRHP or CRHR. None of the other previously recorded sites would be directly impacted by project-related construction. Ground disturbance would occur in areas with potential to contain unrecorded prehistoric and historical archaeological sites, or Native American human remains. Thus, Alternatives 2 and 3 could result in a substantial adverse change to such resources.

In addition, construction of new water conveyance features that would occur under Alternatives 2 and 3 could impact potentially significant features of the built environment, including the historic salt works infrastructure. Impacts to these resources would be addressed under the terms of an existing Programmatic Agreement (PA) between USFWS and the SHPO.

7.3.1 No Project/No Action Alternative

The No Project/No Action alternative would not cause any impacts to cultural resources from construction of water control structures because no such structures are proposed under this alternative. The following impacts have been identified for the No Project/No Action alternative:

> *CULTURAL RESOURCES IMPACT-1: Potentially significant archaeological sites or human remains could be exposed through erosion and evaporation.*

The existing infrastructure would not be maintained. Without maintenance, erosion of the levees into the ponds over time could expose potentially significant archaeological sites or human remains. There is potential for greater exposure of surface sites as the ponds dry down in the summertime; however, this is not likely to significantly impact sites.

Significance: Potentially significant. Since this alternative will result in the project not being implemented, no mitigation measures are proposed.

CULTURAL RESOURCES IMPACT-2: Accidental breaches of levees could result in impacts to surface archaeological sites and features of the built environment.

Accidental breaches of levees that have served a flood control purpose in the past, but would not be maintained under this alternative, could impact surface sites and features of the built environment with historical significance (e.g., features of the historic salt works, the historic town of Drawbridge, and the South Coast Pacific RR).

Significance: Potentially significant. Since this alternative will result in the project not being implemented, no mitigation measures are proposed.

In addition, drying of the ponds has the potential to create gypsum/salt-affected soil conditions (see Chapter 5.0, Sediments) and more acid conditions in some ponds. The specific impact of saline and low pH soils on archaeological sites is not known.

7.3.2 Alternative 1 (Seasonal Ponds Alternative)

Alternative 1 would not cause any impacts to cultural resources because no new water control structures are proposed and no new ground disturbance is anticipated. Levees would be maintained, so impacts to cultural resources from accidental breaches are not expected. The following impacts have been identified for Alternative 1:

CULTURAL RESOURCES IMPACT-1: Potentially significant archaeological sites or human remains could be exposed through erosion and evaporation.

The levees would be maintained, so erosion is less likely to impact sites. Ponds would be allowed to dry down in the summertime and archaeological sites could become more exposed at these times. However, as noted above for the No Project/No Action Alternative, this is not likely to significantly impact sites.

Significance: Less than significant.

Drying of the ponds has the potential to create gypsum/salt-affected soil conditions (see Chapter 5.0, Sediments) and more acid conditions in some ponds. The specific impact of saline and low pH soils on archaeological sites is not known.

7.3.4 Pond Management Alternative 2 (Simultaneous March-April Initial Discharge)

Impacts to cultural resources from Alternatives 2 and 3 are expected to be the same since the timing of initial discharge will not affect the nature or degree of the impacts. The following impacts have been identified for Alternative 2:

CULTURAL RESOURCE IMPACT-3: Ground-disturbing activities and use of heavy vehicles and machinery could damage known and unknown archaeological sites that meet the criteria for listing on the NRHP or CRHR.

Significance: Potentially significant, but mitigated.

CULTURAL RESOURCE MITIGATION-1A: Contractors and construction personnel involved in ground-disturbing activities will be advised of the possibility of encountering cultural resources (including, but not limited to, chipped or ground stone, historic debris, building foundations, and non-human bone) during construction work. If such resources are encountered or suspected, work within 100 feet of the discovery will be halted immediately and the USFWS (Alviso, West Pond complexes) or CDFG (Baumberg Pond complex) will be notified. A qualified professional archaeologist will be consulted, who will assess any discoveries and develop appropriate management recommendations for treatment of the resource. USFWS or CDFG will obtain concurrence from SHPO on measures to be implemented before allowing construction activities in the area of the find to resume. This procedure will be included on all construction plans and specifications.

CULTURAL RESOURCE MITIGATION-1B: USFWS/CDFG will pursue a strategy of avoiding impacts to cultural resources, where feasible. If avoidance of potentially significant resources is determined to be infeasible, USFWS/CDFG will conduct a controlled archaeological test excavation to determine archaeological site significance. If a resource that cannot be avoided is determined to be significant, USFWS/CDFG and SHPO will consult to develop a plan for data recovery excavation. Data recovery excavations will then be completed by a qualified professional archaeologist in accordance with the plan.

Post-mitigation Significance: Less than significant

CULTURAL RESOURCE IMPACT-4: Ground-disturbing activities and use of heavy vehicles and machinery could disturb or damage buried human remains not identified during field surveys. (Note that according to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052)).

Significance: Potentially significant, but mitigated**.**

CULTURAL RESOURCE MITIGATION-2: If bone is encountered and appears to be human, California law (PRC Section 7050.5) and federal law (the Native American Graves Protection and Repatriation Act, or NAGPRA) require that potentially destructive construction work in the vicinity of the find and in nearby areas reasonably suspected to overlie adjacent human remains is halted and the county coroner (in the county where the find occurs) is contacted. After contacting the coroner, steps will be taken to contact the appropriate Native American individual or tribe and to determine the appropriate disposition.

Post-mitigation Significance: Less than significant

CULTURAL RESOURCE IMPACT -5: Construction of new water control features could affect potentially significant features of the built environment.

The construction of new water control features could impact the historical integrity of the salt works, which have not yet been formally evaluated. The types of impacts that would occur would be similar to those which have occurred under Cargill operations and maintenance. However, since a federal agency (USFWS) would assume responsibility for the Alviso and West Bay ponds, actions on these ponds may be considered a federal undertaking under Section 106 of the NHPA and would be covered under an existing Programmatic Agreement (PA) between the USFWS and SHPO. Actions on the Baumberg ponds with the potential to impact potentially significant features of the built environment would be reviewed by CDFG.

Significance: Potentially significant, but mitigated**.**

CULTURAL RESOURCE MITIGATION-3: USFWS would review proposed construction projects within the Alviso and West Bay ponds under the terms of the existing PA between the USFWS and SHPO, and determine the level of work required to identify, evaluate, and conduct an assessment of effects to cultural resources within the construction area of potential impact. Actions on the Baumberg ponds with the potential to impact potentially significant features of the built environment would be reviewed by CDFG. If implementing the ISP would result in unavoidable effects on identified significant features of the built environment within the Alviso or West Bay ponds, the USFWS will determine the appropriate course of action in accordance with the PA. If implementing the ISP would result in unavoidable effects on identified significant features of the built environment within the Baumberg ponds, CDFG will determine the appropriate course of action.

Post-mitigation Significance: Less than significant

CULTURAL RESOURCES IMPACT-6: Planned breaches of the Island Pond levees could result in impacts to surface archaeological sites and features of the built environment.

Under Alternatives 2 and 3, the Island Ponds (Alviso Ponds A19, A20, and A21) would be breached. This could cause scouring effects from increased velocities in Coyote Creek, which could erode and cause some damage to known and unknown archaeological sites and potentially to unknown human remains along the Coyote Creek levees. The breaching would also impact the integrity of the existing Island Pond levees, which have not been formally evaluated, but may have historical significance. The introduction of tidal waters to these ponds would not result in a significant change in water levels from the present and therefore is unlikely to significantly impact other features of the built environment, including the remnants of the historic town of Drawbridge and South Coast Pacific RR. USFWS would assume responsibility for Island Ponds and any actions on these ponds may be considered a federal undertaking under Section 106 of the NHPA and would be covered under an existing PA between the USFWS and SHPO.

Significance: Potentially significant

CULTURAL RESOURCE MITIGATION-4: Under the terms of the existing PA between the USFWS and SHPO, the USFWS would review the potential impact of breaching of the Island Pond levees and determine the appropriate course of action with respect to potential impacts to cultural resources.

Post-mitigation Significance: Less than significant

7.3.5 Pond Management Alternative 3 (Phased Initial Release)

As noted above, the timing of initial release does not affect cultural resources. Therefore, impacts to cultural resources under this alternative would be identical to those under Alternative 2, above.