

3.9 CULTURAL RESOURCES

Cultural resources can be the material artifacts of past human activity or historic buildings and structures. These nonrenewable resources may be found in both onshore and nearshore locations (marine and terrestrial settings) throughout the San Francisco Bay area. Land and marine cultural resources often include, but are not limited to:

- Prehistoric and historic archaeological sites
- Historic sites or districts
- Important or exemplary buildings or structures
- Culturally modified landscapes
- Locations of culturally important events
- Shipwrecks or other maritime resources

This technical report includes limited prehistoric and historic site locational information. Generally, the documents and data related to prehistoric sites are considered confidential and are only made available to qualified cultural resource specialists, project managers, or other pertinent individuals on a need-to-know basis.

3.9.1 Environmental Setting

3.9.1.1 Study Area

The study area for cultural resources included the San Francisco Bay and its embayments, the Carquinez Strait and Suisun Bay to Antioch at the San Joaquin River, and Half Moon Bay. This project does not have a defined Area of Potential Effect (APE), which is a formal study area defined in concurrence with a lead federal agency under NEPA. Within the study area defined for this program, a bibliographic survey was conducted to provide an overview of classes of resources known to the Bay Area, to establish a general baseline for known cultural resources within the project study area, and to anticipate the types of resources that might be potentially encountered with implementation of each project alternative.

3.9.1.2 Native American Consultation

No locations of Traditional Cultural Properties (TCPs) are known within the programmatic project area. As a professional courtesy, Native American communications are considered confidential and should only be made available to qualified cultural resource specialists, pertinent project managers, or other Native Americans on a need-to-know basis. The TCPs recognized by the California Native American Heritage Commission (NAHC) are also considered confidential. Native American correspondence at this programmatic level was limited to a TCP search conducted by the NAHC.

3.9.1.3 Bibliographic Survey

A screening-level research study was conducted at the Northwest Information Center (NWIC) of the California Historic Resources Information Service (CHRIS). The following USGS 7.5' Series quadrangle maps were also reviewed: Petaluma River, Petaluma Point, Mare Island, San Quentin, Richmond, Benicia, Vine Hill, Honker Bay, Antioch North, San Francisco North, San Francisco South, Oakland West, Hunters Point, San Leandro, Montara Mountain, San Mateo, Redwood Point, Half Moon Bay, Woodside, Palo Alto, and Mountain View.

Known site locations recorded in the general vicinity of the various project areas were noted. This overview is the first step in the identification of known resources. Once defined projects moves forward and project actions are refined, detailed records searches would be conducted. This work should be conducted in conjunction with appropriate marine and terrestrial archaeological field reconnaissance to identify areas of low sensitivity or potential areas of sensitivity where mitigation or other actions many be required.

Typical Settings for Cultural Resources within the San Francisco Bay Environs

The Proposed Project actions are primarily located in a coastal marine setting. The Proposed Project include terminal and routes that fall within the following geographic settings:

The Onshore Environment

Project actions in an onshore environment might include expansion of existing ferry terminal facilities, construction of new terminal facilities, or construction or repair/maintenance facilities. The onshore environment is defined here as “dry land” and does not include facilities located on piers.

The Bay Shoreline Environment

Project actions in the Bay shoreline environs might include expansion of existing piers, construction of new piers, expansion of terminal facilities located on piers, or construction of terminal facilities on piers

The Offshore Environment that Extends Out from the Bay or Coastal Shoreline

Project activities in the offshore environment are primarily related to underwater activities that include dredging, dredge spoil disposal, buoy placement, and related maintenance of ferry corridors through shallow draft waters

Cultural resources that have been recorded in the above environments, or have the potential to be located in the aforementioned geographic settings, include:

- Wharves
- Piers
- Shipwrecks
- Prehistoric sites
- Other (resources such as airplane wrecks, historic dump or disposal sites, historic structures, etc.).

Prehistory

General information concerning the regional prehistory and chronology has been primarily synthesized from Moratto (1984) and Chartkoff and Chartkoff (1984). Ethnohistoric information has been gathered from Levy (1978b; 1978a), Johnson (1978), and Kelly (1978).

Controversial Early Evidence from the Region

Although it cannot be ruled out that sites or evidence might exist in the Bay Area dating to extremely early human occupation, none has been identified to date. Some investigators have postulated hominid occupation in other regions of California (e.g., Leakey, Simpson, and Clements 1968, 1969; Leakey et al. 1972; Schuiling 1972, 1979) but no corroborative cultural or skeletal evidence of a similar age exists in the Americas.

Regional Overview

This section provides a regional overview of the prehistoric and historic periods relevant to the San Francisco Bay Area.

Paleoindian – Early Holocene Period

Early Holocene finds are typologically attributed to a Western Pluvial Lakes Tradition, often recognized as the Lake Mojave Stemmed Tradition or simply the Stemmed Point Tradition (Moratto 1984). In Central California, a number of isolated finds are attributed to the Fluted Point or Stemmed Point Traditions. These sites typically contain chipped stone crescents, graters, scrapers, choppers, perforators, expedient ground stones and various fluted/stemmed points, and geographically appear along paleo-shorelines, piedmont zones of former grasslands, and in mountain pass areas associated with fossil lakes. Sites from this period are not known within the study area, although they could be present within these environs.

Early Period and Millingstone Horizon

Millingstone Horizon sites are found in both coastal and inland settings (Wallace 1955; Leonard 1971). The Millingstone period, also called the Millingstone culture, extends to at least 6000 B.P. and probably as far back as 8500+ B.P. (cf. Warren 1968; Wallace 1955). The stone tool assemblage during this cultural period trends toward core/cobble tools and an abundance of ground stone implements (manos and metates), while projectile points appear less frequently. Hard-seed processing became one of the major components of subsistence during this period. Overall, the economy appears to have been based on plant collecting supplemented by fishing and hunting.

In the Bay Area, archaeological localities such as the Scotts Valley site, SCr-177 (Cartier 1982; 1993; cf. Erlandson 1994; and Moratto 1984), and SC1-178, situated in the Santa Clara Valley (Moratto 1984; Erlandson 1994), provide evidence for early Holocene activities in the broader San Francisco Bay Area. The immediate San Francisco Bay environs have not yielded extensive Early Period evidence. This occurrence can be attributed to a combination of factors including fluctuating shorelines, eustatic sea level changes, extensive and dynamic wetlands which can preclude resource preservation, and anthropogenic activities such as extensive coastal marine development around San Francisco Bay. Although resources from this period are not common around San Francisco Bay, their presence cannot be ruled out by mere lack of current evidence.

The Intermediate Period

The Intermediate period (Wallace 1955) has also been called the Hunting period or Middle Horizon (Beardsley 1948). About 5,000 years ago, the Millingstone culture began to gravitate toward animal proteins and marine resources. A higher percentage of projectile points and smaller chipped stone tools are present during the Intermediate period.

In the Bay Area, this period of occupation is often referred to as the Ellis Landing Facies (Beardsley 1954), named for a shellmound situated in a salt marsh in Richmond. Excavated by Nels Nelson in the early 1900s (e.g., Nelson 1910), the Ellis Landing mound (Cco-295) yielded stratified cultural materials that allowed Nelson to identify an “upper” and “lower” cultural sequence. The upper component contained perforate charmstones, incised bone tubes, saucer-shaped *Olivella* beads, stemmed projectile points, and mortars with flared sides (Moratto 1984). The lower level contained spatulate bone objects, rectilinear and triangular *Haliotis* pendants, *Olivella* saucer and saddle-shaped beads, red ochre, cobble mortars, grooved sinker stones, and large non-stemmed points (Moratto 1984). Sites from this period are known within the project area.

The Late Prehistoric Period

Meighan (1954) originally characterized the Late Prehistoric period in California, although this work pertained mainly to cultures from the Southern California area. The period began sometime around the B.C./A.D. transition and expanded culturally around 500 A.D. This cultural expansion was roughly coeval with the introduction of bow-and-arrow technology. The end of the period is recognized at the close of the 18th century, when the Spanish mission system had its greatest effect on the native Californian populations.

Much of what is known of the later prehistory of the San Francisco Bay Area has been gleaned from numerous excavations at the Emeryville Shellmound (Ala-309). The mound’s estimated size was at least 100 meters by 300 meters, with a maximum depth of almost 10 meters (Moratto 1984). Max Uhle’s excavations at the site in the early 1900s (Uhle 1907) revealed a stratified deposit with numerous cultural sequences. The lower levels contained flexed burials associated with artifacts such as pointed bone implements, chert bifaces, perforate charmstones, red ochre, and a predominance of bay oyster shells (Moratto 1984). Upper levels appeared to have cremation burials, polished stone artifacts, flaked obsidian tools, and an abundance of clam (Moratto 1984). In 1924, Schenck “rescued” materials, including approximately 700 burials, most interred in a flexed position, as the site was being prepared for construction of a paint factory (Schenck 1926).

Ethnography

The ethnographic or ethnohistoric period generally refers to the time from initial contact between the European cultures and local Native American groups to the present. Initial references to Native Americans during this period are often sketchy references found in expeditionary diaries or church baptismal records. Descriptions of Native American lifeways were later refined, frequently via informant interviews, by anthropologists, ethnographers, historians, and archaeologists (e.g., Milliken 1995). However, in most cases the decimation of Native American cultures occurred at a much faster rate than these research and recordation efforts.

Costanoan

The name Costanoan is derived from the Spanish *Costaños* or *Costeños*, or coast people (Swanton 1952). The Costanoan group designates a linguistic family consisting of eight different yet related languages (Levy 1978b). The Costanoan languages, together with Miwok, compose the Utian language family of the Penutian stock. Native Americans from the area also use the term Ohlone, which means “the Abalone people,” when referring to their ancestors.

The arrival of Costanoan groups into the Bay Area appears to be temporally consistent with the appearance of the Late Period artifact assemblage in the archaeological record, as documented at sites such as the Emeryville Shellmound or the Ellis Landing mound. The cultural territory of the Costanoan groups extended along the coast from San Francisco Bay in the north to just beyond Carmel in the south.

Linguistic evidence suggests that the Costanoans’ ancestors probably moved into the San Francisco and Monterey Bay areas approximately 1,500 years ago. The various groups subsisted as hunter-gatherers and relied on local terrestrial and marine flora and fauna. Their predominant plant food was the acorn, but they exploited a wide range of other foods, including various seeds, buckeye, berries, roots, land and sea mammals, waterfowl, reptiles, and insects (Levy 1978b). The Costanoans constructed watercraft from tule reeds and possessed bow and arrow technology. They fashioned blankets from sea otter pelts, fabricated basketry from twined reeds of various types, and assembled a variety of stone and bone tools in their assemblage. Costanoan villages consisted of dwelling structures, sweatshouses, dance enclosures, and assembly houses constructed from thatched tule reeds and a combination of wild grasses, wild alfalfa, ferns, and carrizo. Before European contact, the Costanoans were politically organized into autonomous tribelets that had distinct cultural territories.

The first European contact with the Costanoans was probably in 1602, when Sebastian Vizcaino’s expedition moored in Monterey. The estimated Costanoan population in 1770—when the first mission was established in Costanoan territory—was approximately 10,000. By 1832, the population had declined to fewer than 2,000, mainly due to diseases introduced by the Europeans. When the Spanish mission system rapidly expanded across California, the Costanoan traditional way of life was irreversibly altered. The pre-contact hunter-gatherer subsistence economy was replaced by an agricultural economy, and the Spanish missionaries prohibited traditional social activities (Levy 1978b).

The Karkin, Chochenyo, and Ramaytush Costanoan Groups

The Karkin, Chochenyo, and Ramaytush were tribelets belonging to the larger cultural group recognized as the Costanoan Indians. The environs around Carquinez Strait were primarily tidal marsh and open water during the ethnographic period. At the time of European contact, an estimated 2000 Chochenyo ranged from Richmond to Mission San Jose, and out into the Livermore Valley. Ramaytush, also known as San Francisco Costanoan, was spoken among tribelets living in what are now San Mateo and San Francisco counties. At the time of European contact, the Ramaytush had about 1,400 speakers of their distinct language.

The cultural identity of the entire Costanoan group rapidly disappeared after the European contact. In the literature, the Karkin, Chochenyo, and Ramaytush populations are usually referred to in a larger cultural context within the Ohlone or Costanoan tradition, and except for anecdotal or extrapolated information, specific data on these small tribelet communities is sparse

in the academic literature. In 1971, descendents of the various Costanoan tribelets, including possible descendents of the Karkin, Chochenyo, and Ramaytush tribelets, formed a “corporate entity” known as the Ohlone Indian Tribe (Levy 1978b).

Coast Miwok

Potential and existing North Bay terminal sites are located in the territory of the Coast Miwok, who together with the Lake and Eastern Miwok, comprise the larger ethnic group termed *Miwok* by ethnographers. Coast Miwok territory extended from Duncan’s Point north of Bodega Bay along the coast and interior of Sonoma and Marin Counties to San Pablo Bay on the south. Coast Miwok territory extended east as far as midway between the Sonoma and Napa Rivers (Kelly 1978; Figure 3.9.1).

Coast Miwok villages were in most cases located near major watercourses and, less commonly, on the coast. The villages were composed of several structure types, such as dwelling houses, a sweathouse (in larger villages), and secret society dance houses (in larger villages). Dwelling houses were built on conical frames of willow or driftwood poles, with bunches of grass, tule, or rush covering the structure.

Coast Miwok subsistence strategy focused on the coast and adjacent inland areas for much of the year, where salmon and other fish, deer, crab, kelp, seeds, mud hens, geese, eels, mussels, and clams were available. Acorns were pounded into meal, leached, and boiled with hot stones to make mush. Bread was made by mixing leached acorn meal with water and red earth and then baking it in an earth oven. Fishing was performed in a variety of ways: bay fish were caught in a seine strung between two tule balsas (rafts), and surf fish were captured with circular dip nets.

Early contact between the Coast Miwok and Europeans first occurred on the Marin County coast as early as 1579, when Sir Francis Drake spent five weeks on the coast to repair his damaged ship (Kroeber 1925). Spanish explorers made contact with the Coast Miwok in the late 1700s. By 1776, the Franciscan fathers of the San Francisco mission began forced conversions and brought Coast Miwok to mission lands, initiating a partial abandonment of native settlement. Subsequent ranching and settlement by Mexicans and Americans further displaced Coast Miwok from their homes and subjected the group to intense depredations of homicide and epidemic diseases (Cook 1976).

Eastern Miwok

Some of the potential and existing terminals are located within the territory of the Eastern Miwok, who together with the Lake and Coast Miwok, comprise the larger ethnic group termed *Miwok* by ethnographers. There were many distinct linguistic groups within the Eastern Miwok, including the Plains, Northern Sierra, Southern Sierra, Central Sierra, and Bay language areas. The project locations in this area are exclusively assigned to traditional Bay Miwok territories.

The Bay Miwok ranged from the environs near Mount Diablo into the delta of the Sacramento-San Joaquin river system. The Bay Miwok were the first tribelet of the Eastern Miwok to succumb to missionization by the Spanish. The first Bay Miwok, deriving from the Saclan tribelet, were converted at the Mission San Francisco in 1794 (Levy 1978a). The baptisms continued through 1827, with most apparently occurring between 1805 and 1812 (op cit. 401). The primary Miwok political unit was the tribelet. Each tribelet was considered an independent and sovereign nation with control over a specified territory.

The Gold Rush brought further disease to the native inhabitants. By then, nearly all of the Eastern Miwok had adapted in some way or another to economies based on cash income. Hunting and gathering activities continued to decline and were rapidly replaced with economies based on ranching and farming.

Patwin

The Montezuma Slough area is in the homeland of the Patwin. Patwin territory included the lower portion of the west side of the Sacramento Valley west of the Sacramento River from about the location of the town of Princeton in the north to Benicia in the south. In this larger territory, the Patwin have traditionally been divided into River, Hill, and Southern cultural/geographic groups, although in actuality a more complex set of linguistic and cultural differences existed than is indicated by these three divisions (Johnson 1978).

The tribelet represented the basic social and political unit. Patwin villages contained four types of permanent structures, which were earth covered, semi-subterranean, and either elliptical or circular in shape included the dwelling house, the ceremonial dance house, the sweathouse, and the menstrual hut (Johnson 1978).

Patwin subsistence consisted of hunting and gathering from a village base. Acorns were a staple food and were pulverized with a long river cobble pestle (Merriam 1967) in wooden mortars (Johnson 1978). The acorns were then leached in a sand basin and made into a bread or soup. Individuals or small groups undertook hunting and fishing. The Patwin produced numerous basketry implements that included cooking baskets, scoop trays, winnowing trays, fish baskets, baby carriers, and burial accompaniments.

The Patwin probably first encountered Europeans during Spanish domination of California. At least by 1800, Spanish missionaries from Mission Dolores (San Francisco de Asís) recruited neophytes from the Patwin villages for mission labor (Bennyhoff 1977). Under Mexican rule in California, the Patwin suffered from numerous military incursions and attacks from Mexican and American settlers who occupied Patwin territory. The Patwin also suffered from epidemic diseases, such as malaria and smallpox, which led to a decline in the Patwin population (Johnson 1978). Finally, to facilitate the development of ranching, agriculture, mining, and large settlements after the U.S. conquest of California, the U.S. government called for removal of remnant Patwin descendents to reservations.

Historic Setting

The summarized historic period represents the modern settlement California and the Bay Area from the time of the first European explorations and settlements to the present. This overview focuses on events important to San Francisco Bay and the associated historical activities that occurred in and near the shoreline environment. The following historic setting is essentially a compilation of two recent Bay Area reports completed under the aegis of URS.¹

¹ *Underwater Cultural Resources Survey for the Proposed SFO Runway Reconfiguration Project by Ecosystems Management Associates, Inc.* (2001) for URS Corporation and *Final Cultural Resources Inventory Report for the Habitat Migration Planning Sites, San Francisco International Airport Proposed Runway Reconfiguration Project*, (2001) by Jones & Stokes for URS Corporation.

Spanish Period

Jose de Ortega located the entrance to the San Francisco Bay in 1769, but formal entry into the bay occurred a few years later with Juan Manuel de Ayala. In Contra Costa County Spanish contact was made in 1772 by Pedro Fages while in Marin County, the first coastal exploration was in 1579 by Englishman Francis Drake. His exact anchoring continues to be debated. The first Spanish overland expedition into the San Francisco Bay region was led by Juan Bautista de Anza, who reached San Francisco in 1776 and located the sites of Mission Dolores and the Presidio. All of these expeditions were augmented with military support and the ecclesiastical presence of Franciscan priests who were responsible for establishing mission authority and converting California's Native American inhabitants to Christianity (Bean and Rawls 1983; Hoover et al. 1990; Merrit 1928.) By 1823, the Spanish network of missions, presidios, and pueblos extended from San Diego to Sonoma, enabling the Spanish to gain control of Alta California.

British, Russian, French, and American Exploration

The Spanish were extremely protective of the California territory and found outside influences difficult to control. The Spanish viewed the San Francisco Bay as a remote outpost and established the area as a buffer zone to protect the more densely inhabited areas to the south. Despite this they were unable to retain San Francisco as an isolated outpost because governments of England, France, Russia, and Prussia all became interested in California. Once the abundant natural resources were found profitable and steam power became available for ships, interest in the area dramatically increased.

Mexican Period

In 1821, Mexico achieved independence from Spain, and the following year, California was declared a territory of the Mexican republic. Apart from sending in new governors and small numbers of soldiers, Mexican intervention in California was minimal over the next several years.

The Mexican government's order for the secularization of the missions would have a major impact on the subsequent historical development of California. The 1834 secularization order downgraded the missions to the status of parish churches and divided their vast holdings into individual land grants, or ranchos. The secularization of the missions opened the door for approximately 700 private land grants and the rise of family ranchos. The ranchos raised cattle for the hide and tallow trade, sheep, horses, grain, and wine grapes. Most of these ranchos were involved in trade, specifically hides and tallow in exchange for New England goods. The advent of this trade mobilized interest of people from around the globe and increasingly more ships entered the bay. Missions and military installations in the San Francisco Bay environs included: Mission Delores (San Francisco de Asis), Presidio (Presidio de San Francisco), Mission Santa Clara (Santa Clara de Asis), Mission San Jose (San Jose de Asis), Mission San Rafael (San Rafael Arcangel), Mission Sonoma (San Francisco Solano).

American Period

Commercial activity between the United States and Mexican California increased during the Mexican period, with an influx of fur trappers and individuals in search of resources. The influx of settlers and pioneers crossing the Sierra Nevada range into Mexican California brought internal conflicts that lead to the 1846 war between Mexico and the United States. The conflict

formally ended with the signing of the Treaty of Guadalupe Hidalgo in February 1848. Alta California was ceded to the United States and was admitted as a state in 1850.

The discovery of gold led to the Gold Rush (1848–1852), which attracted a tremendous influx of prospectors and settlers. A thousand people called San Francisco home by 1848, but the news of gold hunting near Sacramento nearly emptied the growing community as mariners, hide processors and tradesmen deserted for the new gold diggings. Soon some of the prospectors found that hauling freight and gold-hunting passengers was more profitable than panning for gold. The discovery of gold at Sutter’s Mill and the American control of California ended the hide trade. Within a year and a half, thousands of immigrants came to San Francisco and completely changed the lifestyle of the San Francisco community.

Maritime trade arrived through three major shipping channels approaching San Francisco. These lanes converge outside the Golden Gate to form the single channel entering San Francisco Bay. Lumber schooners came through this channel from the Mendocino coast, along with sealers, whalers, fishermen, traders, and passenger ferries. San Francisco became a major city and port almost overnight and grew at a phenomenal rate replacing Monterey as the coast’s principal port. Large docks were built in order to discharge cargo directly onto the wharves instead of being ferried by rowboats to shore. From those docks, the cargo was distributed and sometimes reloaded onto smaller vessels to transport to various settlements. By July 1850, more vessels entered the bay than departed. Some 500 ships lay abandoned inside and outside the anchorage by their crews, who had deserted them in hopes of finding a better life, mostly in the gold fields. Sometimes ships, surrounded by other vessels, became landlocked. Unable to depart, they were more valuable as dock space than as a means for transport. In relation to San Francisco, development on the peninsula south of San Francisco was much different. This region remained rural with sparsely populated villages. Oakland remained a quiet suburb of busy San Francisco until 1863 when the San Francisco-Oakland railroad was built. Six years later, western Oakland became the terminus of the transcontinental railroad in 1869. This transportation role molded Oakland’s future development.

Maritime Transportation

Before development of transcontinental and regional railroads, maritime transportation of agricultural products played a principal role in the economy of the San Francisco Bay Area. In the South Bay, the Port of Alviso was created to replace the Embarcadero de Santa Clara/Alviso, and is one of the oldest ports (1840s) in the western United States. In the North Bay, Mexican ranchers began using the rivers to transport hides and tallow out of the bay and into ships for export. Petaluma and the Petaluma River became a major shipping depot and agricultural center. Other development in this area included the Sausalito waterfront, which developed into an anchorage and supply point for whaling vessels and other commercial ships.

Ferry enterprises traveling to Oakland, San Pablo Bay, and San Francisco flourished during the late 19th century and the first half of the 20th century. The Bay was a transportation corridor for both local and international traffic. During the early part of the American period, the ferries united the sparsely populated rural communities and ranches with San Francisco. By the early 1870s, the railroad companies owned the ferries operating on the Bay. As communities in the area grew larger, local trade produced a demand for more frequent ferry schedules and for inter-urban lines to feed the ferry terminals. Despite all this success, the needs of the Bay Area were

rapidly changing. Most ferry service ceased in 1939 with the completion of several bridges spanning the Bay and the opening of the Bay Bridge to electric trains.

Fishing Industry

In the 1850s, commercial fishing in the San Francisco Bay began with whaling and salmon fishing. Chinese immigrants turned to shrimp fishing in the years following the Gold Rush. Throughout California's coastal waters, shrimp were harvested and sold. By 1855 over fifty Chinese shrimping vessels, mostly sampans and junks, operated on the San Francisco Bay. After 1870, shrimp fishing evolved into a major industry along the shores of San Pablo and San Francisco Bays. Approximately 26 fishing camps or villages have been recorded in this region. During the 1870s, a significant expansion of the fishing industry occurred due to the increased immigration of fisherman 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 (Hart 1978).

Shipbuilding

In the mid-1840s, San Francisco relied heavily upon East Coast boat builders for ship manufacturing. These builders constructed prefabricated river and delta boats and sent them around Cape Horn. It was not until after the Gold Rush that large numbers of boat builders arrived. They emigrated from New England, the British Isles, Scandinavia, the Mediterranean, and China. Due to the deep water and easy access and good storage, Hunters Point became a principal shipbuilding location, particularly during the advent of World War I. Soon after, other South Bay ports were being established as shipyards and others were enlarged for construction of steamers.

3.9.1.4 Cultural Resources Baseline Information

For this programmatic EIR, a screening level survey was conducted of archaeological and historic information to gain an understanding of resources that might be present at or near existing or proposed terminal locations. This functions as one step in the identification of potential issues and constraints as ferry transit facilities are advanced and defined. Many of the ferry sites lacked specific location information; therefore, a search was performed of the general area as opposed to specific street locations or addresses.

General Review of Ferry Terminal Locations

Many of the potential new ferry terminals are not specifically sited, and even at known ferry terminal locations, new facilities or changes to existing facilities and improvements have not been defined. An initial review of literature and record sources for the vicinity of the terminal locations was performed to generally identify types of historic and prehistoric resources, as well as the nature and type of resources present in the general area (i.e., wharves, piers, structures, listed prehistoric sites, etc.). This review was not a formal search of resource record databases, such as would be completed for a specified project and its final proposed locations, but it is intended to provide an initial identification of sites and resources that could be affected by an overall alternative.

The results of this review are listed in Appendix CUL-A. A brief overview of each site is described. In general, many of the terminal sites are located in communities having a history of maritime development and activities, where piers or wharves were located which in some cases may still be in use. A few terminal locations are in the general vicinity of potentially significant archaeological sites such as shell mounds or possible Native American occupation sites. All of these sites and resources would be evaluated as specific terminals and routes are proposed.

Marine Cultural Resources

There is a significant potential for subsurface marine cultural resources in San Francisco Bay. The sedimentation process in the San Francisco Bay Estuary has been affected by 150 years of regional anthropogenic activity. Changes in tributary runoff, alterations of the Bay shoreline wetlands and marshes, and sediment dredging and redeposition activities have all contributed to recent Bay sedimentation patterns.

Since the time of initial European contact, numerous cultural resources have been wrecked, dumped, abandoned, deposited or otherwise lost within the Bay and its environs. Likewise, prehistoric and protohistoric sites are known within the Bay environs, specifically the numerous shell mounds that have been recorded along the Bay margins (Appendix CUL-A).

3.9.1.5 Dredging and Archaeological Resources

Since 1824, the U.S. Army Corps of Engineers (USACE) has planned, built, and maintained federal navigation and flood control projects in the Bay. The U.S. Navy is also responsible for current dredging activities, including those at Mare Island and the Alameda Naval Air Station. Other dredging activities are conducted by both public and private marine operators, ports, refineries, and flood control and reclamation districts around the Bay.

In many locations, recent maintenance dredging or a continuum of dredging history could preclude the requirement for cultural resources survey. This was noted in a recent marine archaeology report that examined various nearshore and offshore sites throughout the San Francisco Bay (Ecosystems 2001), in which it was assumed that constant maintenance dredging would have obliterated any marine cultural resources in the project Area of Potential Effect.

Dredged material currently disposed within the Bay is limited to four state and federally designated sites in the Carquinez Strait, San Pablo Bay, Suisun Bay, and off Alcatraz island. Depending on volume and suitability of dredged materials, dredging projects may consider a range of reuse/disposal sites within the counties surrounding the Bay region. Options include:

- In-Bay disposal;
- Deep ocean disposal;
- Upland/wetland reuse;
- Upland landfill disposal; and
- Reuse as fill material for construction projects.

These possible locations of dredge spoils disposal could contain cultural resources.

3.9.1.6 Regulatory Setting

Regulatory requirements applicable to cultural resources are summarized in the following sections.

Federal Regulations

A number of federal regulations address the protection of cultural resources, which are summarized below. The WTA program does not have federal involvement at this time, but these requirements will likely apply at later stages when federal funding or authorizations are required.

Executive Order 11593 (1971)

Executive Order 11593 provides federal protection and enhancement of the “cultural environment,” in support of the Antiquities Act, Historic Sites Act, the National Historic Preservation Act, and the National Environmental Policy Act.

Executive Order 13007 (1996)

Executive Order 13007 requires that all Executive Branch agencies that have responsibility for the management of Federal lands will, where practicable, permitted by law, and not clearly inconsistent with essential agency functions, provide access to and ceremonial use of Native American sacred sites by Native American religious practitioners. Likewise, agencies will avoid adversely affecting the integrity of such sacred sites. The order also requires that federal agencies, when possible, maintain the confidentiality of sacred sites.

Executive Order 13175 (1990)

Executive Order 13175 provides that each federal agency must have an accountable process to ensure regular and meaningful consultation and collaboration with Native American tribal governments, or their representative organizations, in the development of regulatory policies that have tribal implications.

Antiquities Act (1906)

The federal government formally recognized the importance of some cultural resources with passage of the 1906 Antiquities Act, 16 United States Code (USC) 431-433. This act, with its applicable regulation in 43 CFR 3, protects all historic and prehistoric sites on federal lands and prohibits excavation or destruction of such antiquities unless a permit (Antiquities Permit) is obtained from the secretary of the federal agency that has the jurisdiction over those lands. It also authorizes the President to declare areas of public lands as National Monuments and to reserve or accept private lands for that purpose.

Historic Sites Act (1935)

The Historic Sites Act, codified at 16 USC 461 et seq., declares a national policy to preserve historic sites, buildings, antiquities, and objects of national significance, including those located on refuges. The Historic Sites Act provides procedures for designation, acquisition, administration, and protection of such sites.

National Historic Preservation Act, as amended (1966)

The National Historic Preservation Act (NHPA) declares federal policy to protect historic sites and values in cooperation with other nations, states, and local governments. The NHPA establishes a program of grants to assist states for historic preservation activities. Subsequent amendments designated the State Historic Preservation Officer (SHPO) as the individual responsible for administering state-level programs. The act also created the President's Advisory Council on Historic Preservation (ACHP). Federal agencies are required to consider the effects of their undertakings on historic resources and to give the ACHP a reasonable opportunity to comment on those undertakings.

National Environmental Protection Act, as amended (1969)

Under the National Environmental Policy Act (NEPA), 42 USC 4321–4327, federal agencies are required to consider potential environmental impacts and appropriate mitigation measures for projects with federal involvement. If the project has federal involvement (e.g., a 404 permit), the lead federal agency will be responsible for project compliance with Section 106 of the NHPA and its implementing regulations, set forth by the Advisory Council on Historic Preservation (ACHP) at 36 CFR 800.

Archaeological and Historic Preservation Act (1974)

Under 16 USC 469-469c, the Archaeological and Historic Preservation Act (AHPA) requires Federal agencies to provide notice to the Secretary of the Interior of any dam constructions and, if archeological resources are found, for recovery or salvage of those resources. The law also applies to any agency whenever it received information that a direct or federally assisted activity could cause irreparable harm to prehistoric, historic, or archaeological data. Up to one percent of project funds could be used to pay for salvage work. The NHPA also authorized additional funding to be availed for this purpose.

American Indian Religious Freedom Act (1978)

The American Indian Religious Freedom Act, 42 USC 1996 et seq., regulated under 43 CFR 7, has been established to protect religious practices, ethnic heritage sites, and land uses of Native Americans. The act makes it a policy to protect and preserve for American Indians, Eskimos, Aleuts, and Native Hawaiians their inherent right of freedom to believe, express, and exercise their traditional religions. The act allows them access to sites, use and possession of sacred objects, and freedom to worship through ceremonial and traditional rights. It further directs various federal departments, agencies, and other instrumentalities responsible for administering relevant laws to evaluate their policies and procedures in consultation with Native American traditional religious leaders to determine changes necessary to protect and preserve Native American cultural and religious practices.

Archaeological Resources Protection Act (1979)

The Archaeological Resources Protection Act (ARPA) supplements the provisions of the Antiquities Act of 1906, and declares it illegal to excavate or remove from federal or Native American lands any archeological resources without a permit from the land manager (or federal agency with jurisdiction over those lands). Permits may be issued only to educational or

scientific institutions and only if the resulting activities will increase knowledge about archeological resources.

Native American Graves Protection and Repatriation Act (1990)

The Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001 et seq., defines cultural items, sacred objects, and objects of cultural patrimony, and establishes ownership hierarchy for remains found on federal lands. It also provides for specific case review, allows excavation of human remains, and stipulates return of the remains according to ownership. NAGPRA also sets penalties for violations of the act, calls for cultural resource inventories, and has provisions for the return of specified cultural items to the appropriate Native American tribe(s) and/or Native Hawaiian organization(s). NAGPRA is initiated when the project and the finds are situated on federal lands.

State Regulations

In California, cultural resources include archaeological and historical objects, sites and districts, historic buildings and structures, cultural landscapes, and sites and resources of concern to local Native American and other ethnic groups. Compliance procedures are set forth in the California Environmental Quality Act (CEQA) Sections 15064.5 and 15126.4. The primary applicable state laws and codes pertinent to the proposed project are presented below.

California Native American Graves Protection and Repatriation Act (2001)

In the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010-8030), broad provisions are made for the protection of Native American cultural resources. The act sets the state policy to ensure that all California Native American human remains and cultural items are treated with due respect and dignity. The act also provides the mechanism for disclosure and return of human remains and cultural items held by publicly funded agencies and museums in California. Likewise, the act outlines the mechanism with which California Native American tribes not recognized by the federal government may file claims to human remains and cultural items held in agencies or museums.

California Public Resources Code Section 5020

This California Code created the California Historic Landmarks Committee in 1939 and authorizes the Department of Parks and Recreation to designate Registered Historical Landmarks and Registered Points of Historical Interest.

California Public Resources Code Section 5097.9

Procedures are detailed under California Public Resources Code (PRC) Section 5097.9 for actions taken whenever Native American remains are discovered. No public agency, and no private party using or occupying public property, or operating on public property, under a public license, permit, grant, lease, or contract made on or after July 1, 1977, shall in any manner whatsoever interfere with the free expression or exercise of Native American religion as provided in the United States Constitution and the California Constitution; nor shall any such agency or party cause severe or irreparable damage to any Native American sanctified cemetery, place of worship, religious or ceremonial site, or sacred shrine located on public property, except on a clear and convincing showing that the public interest and necessity so require. The

commission, pursuant to Sections 5097.94 and 5097.97, shall enforce the provisions of this chapter.

California Public Resources Code Section 7050.5

Every person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the Public Resources Code. In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission.

California Public Resources Code Section 7051

Every person who removes any part of any human remains from any place where it has been interred, or from any place where it is deposited while awaiting interment or cremation, with intent to sell it or to dissect it, without authority of law, or written permission of the person or persons having the right to control the remains under Section 7100, or with malice or wantonness, has committed a public offense that is punishable by imprisonment in the state prison.

14 California Code of Regulations 4308

Under this state preservation law, no person shall remove, injure, disfigure, deface, or destroy any object of archaeological, or historical interest or value.

Underwater Cultural Resources

It is important to note that federal-level mandates also cover underwater cultural heritage, such as shipwrecks and related historic maritime resources and submerged prehistoric sites. These legislative acts would be pertinent in instances where near-shore, intertidal, or offshore cultural resources are detected during project constructions or related activities. Although originally intended to address terrestrial resources, the Antiquities Act of 1906 and the ARPA of 1976 cover underwater cultural heritage to certain extents. The ARPA of 1976, which superseded the Antiquities Act of 1906, is applicable only if the underwater cultural resources are found on lands owned by the federal government.

The acts cited below, although federal-level, also apply to resources in state waters. As such, these acts are concurrently relevant for both federal and/or state-level projects.

Submerged Lands Act (1953)

This act is largely superseded by the Abandoned Shipwreck Act but has been used by states to protect abandoned historic shipwrecks by citing various state-level historic preservation laws. The Submerged Lands Act established state jurisdiction over offshore lands within 3 miles of shore (or 3 marine leagues for Texas and the Gulf coast of Florida). The Act did reaffirm the federal claim to the Outer Continental Shelf, which consists of those submerged lands seaward of

state jurisdiction. However, the act limited states' claims to the submerged lands inside the landward boundary of the Outer Continental Shelf. Several federal courts rejected state positions on historic preservation laws, for various reasons, that pertained to shipwrecks within this 3-mile zone. Judicial conclusions from cases involving the Submerged Lands Act were inconsistent and confusing, yet shipwrecks in state waters were still at risk from damage and destruction. These circumstances provided the momentum for the passage of the Abandoned Shipwreck Act.

Abandoned Shipwreck Act (1987)

The Abandoned Shipwreck Act, 43 USC 2101–2106, is a federal-level legislative act but it does protect shipwrecks found in state waters. The Abandoned Shipwreck Act also states that the laws of salvage and finds do not apply to abandoned shipwrecks protected by the Act. Under the Abandoned Shipwreck Act, the United States asserts title to abandoned shipwrecks located within state waters that are either:

- Embedded in state-submerged lands,
- Embedded in the coralline formations protected by a state on submerged lands, or
- Resting on state-submerged lands and either included in or determined eligible for the National Register of Historic Places.

The Abandoned Shipwreck Act also has a provision for the simultaneous transfer, by the federal government, of title for those abandoned shipwrecks to the state(s) in whose waters the wrecks are located.

National Marine Sanctuaries Act

National Marine Sanctuaries Act, 16 USC 1431 et seq., is also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972. The National Marine Sanctuaries Act provides for the establishment of national marine sanctuaries in waters extending to the outer limits of the 200-nautical-mile Exclusive Economic Zone of the United States. The act has provisions for civil judicial actions and administrative penalties against persons damaging, removing, or destroying natural resources within the sanctuary. This protection also extends to submerged cultural resources. The sanctuaries are protected and managed by the Sanctuaries and Reserves Division of the National Oceanographic and Atmospheric Administration. The National Marine Sanctuaries Act would apply in instances where project actions might affect resources in a designated national marine sanctuary. National marine sanctuaries near San Francisco Bay include (Figure 3.9.2):

- The Gulf of the Farallones National Marine Sanctuary, established in 1981, which covers a 1,255 square mile area (948 square nautical miles) just north of San Francisco Bay
- The Monterey Bay National Marine Sanctuary, established in 1992, which covers 400 miles (348 nautical miles) along the California coast, extends an average of 35 miles (30 nautical miles) offshore, and covers over 5,300 square miles (4,024 square nautical miles). Proposed project components are within this sanctuary.

3.9.2 Impacts and Mitigation**3.9.2.1 Significance Criteria****Conformity of Federal and State Evaluation Criteria**

The criteria for eligibility for the California Register of Historic Resources (CRHR) are very similar to those that qualify a property for the National Register of Historic Places (NRHP), which is the significance assessment tool used under NHPA. The criteria of the NRHP apply when a project has federal involvement. The development and adaptation of a ferry expansion plan by the WTA is a CEQA-level project, and federal cultural resources significance criteria would apply when resources or project actions fall under the jurisdiction of a federal agency. This could apply when actions:

- Occur on the outer continental shelf (e.g., deep water dredge disposal sites);
- Require a USACE 404 permit;
- Occur on lands administered by the U.S. Navy, Coast Guard (other federal agency); or
- Require nation-to-nation consultation between a federally recognized Native American tribe or individual and the federal government.

A property that is eligible for the NRHP is also eligible to be listed on the CRHR. All potential impacts to significant resources under a federal agency must be assessed and addressed under the procedures of Section 106 of the NHPA, set forth at 36 CFR 800. All resources encountered when implementing a specific ferry expansion project, with the exception of isolate artifacts and isolate features that appear to lack integrity or data potential, will have to be evaluated for significance vis-à-vis Section 106.

Federal Significance Criteria

The four evaluation criteria to determine a resource's eligibility for the NRHP, in accordance with the Code of Federal Regulations (CFR) outlined in 36 CFR 800, are identified at 36 CFR 60.4. These evaluation criteria, listed below, are used to help determine what properties should be considered for protection from destruction or impairment as a result of project-related activities (36 CFR 60.2).

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

- (a) Resources that are associated with events that have made a significant contribution to the broad patterns of our history;
- (b) Resources that are associated with the lives of persons significant in our past;
- (c) Resources 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 distinguishable entity whose components may lack individual distinction; or

- (d) Resources that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

State Significance Criteria

In considering impact significance under CEQA, the significance of the resource itself must first be determined. At the state level, consideration of significance as an “important archaeological resource” is measured by cultural resource provisions considered under CEQA Sections 15064.5 and 15126.4, and the draft criteria regarding resource eligibility to the CRHR.

Generally under CEQA, a historical resource is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in CEQA Section 15064.5, and defined as any historical resource that:

- (a) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- (b) Is associated with lives of persons important in our past;
- (c) 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
- (d) Has yielded, or may be likely to yield, information important in prehistory or history.

Section 15064.5 of CEQA also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under Public Resources Code (PRC) Section 5097.98.

Impacts to “unique archaeological resources” and “unique paleontological resources” are also considered under CEQA, as described under PRC Section 21083.2. 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 one of the following criteria:

- (a) The archaeological artifact, object, or site contains information needed to answer important scientific questions, and there is a demonstrable public interest in that information; or
- (b) The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
- (c) The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource is an archaeological artifact, object, or site that does not meet the above criteria. Impacts to non-unique archaeological resources and resources that do not qualify for listing on the CRHR receive no further consideration under CEQA.

Under CEQA Section 15064.5, a project potentially would have significant impacts if it caused substantial adverse change in the significance of one of the following:

- (a) A historical resource (i.e., a cultural resource eligible for the CRHR);
- (b) An archaeological resource (defined as a unique archaeological resource that meets CRHR criteria);

- (c) A unique paleontological resource or unique geologic feature (i.e., where the project would directly or indirectly destroy a site or resources); or
- (d) Human remains (i.e., where the project would disturb or destroy burials).

A non-unique archaeological or paleontological resource is given no further consideration, other than the simple recording of its existence by the lead agency.

3.9.2.2 Impacts and Mitigation

As previously noted, the Proposed Project actions are located in onshore, Bay shoreline, and offshore environments. As detailed in Appendix CUL-A, cultural resources have been recorded or have the potential to be located in these settings.

As specific projects move forward for evaluation, detailed record searches, archival reviews, field reconnaissance, and consultation with Native American groups/individuals and local historical societies will be conducted as appropriate. These tasks, in conjunction with related research and consultations, will further establish the cultural resources data baseline and facilitate assessments of potential impacts to significant cultural resources. It will be the responsibility of the project proponent to direct these activities in a manner consistent with Section 106 and CEQA guidelines, as applicable.

Construction and Operation (Dredging)

Impact CUL-1 Dredging of new channels or for pier retrofit or installation could impact submerged and sub-bottom cultural resources in San Francisco Bay.

Additional dredging may be required for pier retrofits or related activities at other locations, but is likely to be minor in extent and would affect areas where previous construction has taken place. The Proposed Project includes only one terminal location, Hercules/Rodeo, which would require new construction dredging. Submerged and sub-bottom resources are known to exist within the San Francisco Bay and California coastal submarine environments. Prehistoric resources, such as submerged shellmounds, settlement sites, ceremonial artifacts, and possibly watercraft, are known to exist in these settings. Known historic resources in these environs could include maritime vessels, wharf or pier remnants, shrimp farm remnants, refuse dumps, ammunition dumps, airplane fuselages, and materials related to these or other historical activities. Previously unknown resources could also be encountered.

Summary of Impact CUL-1

- The Proposed Project involves expansion of ferry service to new terminals. This expansion would require dredging at only one location, Hercules/Rodeo. Additional dredging could be required for pier retrofits, but is likely to be minor in extent and would affect areas where previous construction has taken place. Encountering and adversely disturbing buried sites could inadvertently destroy the cultural value of the resource. Dredging and related constructions for the new terminal could have potentially significant impacts to cultural resources if they are eligible for, or listed on, either the NRHP/CRHR, or resources that qualify as a “unique archaeological resource” under CEQA. This is a potentially significant impact.

Mitigation CUL-1.1: To avoid or mitigate impacts to cultural resources, they must be evaluated against the federal and state significance criteria previously described. Prior to project construction, a focused literature search shall be conducted to identify any known resources. For sites that cannot be adequately characterized by existing literature or available site history information, marine archaeological surveys may be necessary to detect any previously unknown submerged or sub-bottom resources. Depending on the Proposed Project undertaking and the geographic or bathymetric setting, appropriate remote sensing field surveys could include deployment of a side-scan sonar, sub-bottom profiler, and magnetometer to help detect these resources. Follow-up diver survey, high-resolution side-scan sonar, sub-bottom profiler, magnetometer survey, or Remote Operated Vehicle (ROV) investigations might be required to positively identify the targets.

If resources are detected, they shall be identified and evaluated against the NRHP/CRHR significance criteria, and as a “unique archaeological resource” under CEQA. If the resources are not eligible for—or already on—the NRHP/CRHR and do not qualify as a “unique archaeological resource” under CEQA, then no further consideration of these resources is required. If the resources are eligible for—or currently on—the NRHP/CRHR or qualify as a “unique archaeological resource” under CEQA, then impacts could occur to those resources. If a resource is found to be significant, then the resource shall be avoided through alterations in project design, when feasible.

Under CEQA, preservation-in-place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place for archaeological resources may be accomplished by, but not necessarily limited to, a suite of approaches such as:

- Planning construction activities to avoid archaeological sites;
- Incorporation of sites within parks or other open spaces;
- Covering the archaeological site with a layer of chemically stable soil before building facilities on top of the site; and/or
- Deeding the site into a permanent conservation easement.

In the event that avoidance of cultural resources is not possible via project design modifications, appropriate mitigation shall be required. This could include further recordation or data recovery, in accordance with Section 106 of the NHPA. This could include a record of the resource, such as a wharf, pier, building or structure in a Historic American Building Survey/Historic American Engineering Record (HABS/HAER) at a level compatible with National Park Service standards. Adequate recordation of a built-environment resource shall include the following:

- The development of site specific history and appropriate contextual information regarding the particular resource, in addition to archival research and comparative studies;
- Accurate mapping of the noted resources, scaled to indicated size and proportion of the structures;
- Architectural descriptions of the structures;
- Photographic documentation of designated resources; and
- Recordation using measured architectural drawings.

Mitigation of impacts to a built-environment resource may also take place in the form of preservation or reuse of a wharf, pier, building, or structure. The preservation or reuse of an eligible structure would include abiding by the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. If the building is considered a historic resource under CEQA, the local building inspector must grant code alternatives under the State Historic Building Code.

In some cases, HABS/HAER documentation might not provide an adequate mitigation to reduce impacts to a less than significant level, and might not be a sufficient mitigation measure for some resources. Mitigation should capture the history of a resource and share it with the public so that the public can continue to feel a connection with common heritage. If the pier/building/structure cannot physically be retained, then it is incumbent on the lead agency to pursue ways that the memory of the resource is retained and made easily available. To this end, educational resources such as web media, static displays, interpretive signs, use of on-site volunteer docents, or informational brochures can supplement HABS/HAER. Often, it might be possible to incorporate the resource into the project as one means of resource mitigation.

The CEQA lead agency will be responsible for coordinating all necessary mitigation measures. This might include coordination with a federal lead agency, where federal permitting, land ownership, or other federal-level issues affect a specific project action.

Impact After Mitigation: The proposed mitigation may be adequate to avoid significant impacts. This condition applies to the Hercules/Rodeo location, which would require new construction dredging, and to any ancillary dredging at other locations. Further evaluations would be needed when final locations and designs are known in order to fully evaluate the significance of potential impacts. However, according to CEQA Section 15126.4(b)(1), in certain cases with built-environment resources, the mitigation steps outlined in CUL-1.1 might not reduce the impacts on a resource to a less than significant level. In some circumstances, documentation of a historical resource by way of historic narrative, photographs, or architectural drawings—as mitigation for demolition of the resource—might not mitigate the effects to a point where no significant effect on the environment would occur. In these cases, there could be potentially significant impacts to the resource after mitigation.

***Impact CUL-2* Deposition of dredge spoils for upland reuse or wetland restoration could impact submerged or terrestrial cultural resources.**

Dredging would result in spoils that would require disposal. Only finer-grained materials (Bay Mud and sand) are suitable for aquatic disposal or upland reuse. Rock, coarse gravel, or materials such as concrete, steel, and other construction debris found in the submarine environment are not suitable for aquatic disposal/upland wetland reuse and must be taken to appropriate locations for disposal or recycling. Depending on the volume and suitability of dredged materials, dredging projects may consider a range of disposal options, including in-Bay disposal, ocean disposal, upland reuse, wetland restoration, upland landfill disposal, and reuse as fill material for construction projects. It is assumed that deep-ocean disposal would occur at a previously designated disposal site, that in-Bay disposal would not be allowed for new dredging projects, and that upland disposal would occur at an existing landfill. Therefore, only upland reuse or wetland restoration activities could impact terrestrial and marine cultural resources. Construction dredging would occur at only one location, Hercules/Rodeo. The estimated volume

of dredged material at this location is less than 50,000 cubic yards (cy). Disposal of this dredged material at locations that have cultural resources could have a potentially significant impact on those resources.

Summary of Impact CUL-2

- The Proposed Project involves expansion of ferry service to new terminals. This expansion would require dredging at some terminals, for both channels and ancillary project components. Construction dredging at Hercules/Rodeo would result in approximately 50,000 cy of spoils that would require disposal. Upland reuse or use for wetland restoration activities could impact terrestrial and marine cultural resources. Disposal at sites that have not previously been evaluated for cultural resources could pose a potentially significant impact to resources, should they exist.

Mitigation CUL-2.1: Same as CUL-1.1.

Mitigation CUL-2.2: Impacts could be mitigated by avoidance of the particular disposal site.

Impact After Mitigation: Impact CUL-2 would be less than significant after implementation of Mitigation CUL-2.1 or CUL-2.2.

***Impact CUL-3* Project actions such as retrofitting, expansion, or improvement of existing facilities, or construction of new facilities, could impact terrestrial historic and prehistoric cultural resources and historic built environment resources.**

On-shore project construction would involve construction of new facilities and could include expansion of existing ferry terminals. While some of the existing structures, or components thereof, are more than 50 years of age (e.g., the Ferry Building), the majority of terminals are significantly more recent (less than 25 years). Impacts at most sites are anticipated to be less than significant. However, project actions have the potential to significantly impact historic built environment structures and districts (including historic terminal structures), or prehistoric and historic (nonbuilt) archaeological sites.

Summary of Impact CUL-3

- The Proposed Project would involve construction of new terminals and expansion of ferry service. In addition, existing terminals could require renovation or expansion of facilities. While impacts at most sites are anticipated to be less than significant because the buildings at most terminal locations are less than 25 years old, these activities could potentially significantly impact historic built environment structures and districts (including historic terminal structures), or prehistoric and historic (nonbuilt) archaeological sites. These impacts could be potentially significant.

Mitigation CUL-3.1: Same as CUL-1.1.

Impact After Mitigation: Impact CUL-3 would be less than significant after implementation of Mitigation CUL-3.1.

***Impact CUL-4* Project actions such as construction and related activities could impact previously unknown resources.**

During project construction and related activities, the potential always exists to encounter previously unknown cultural resources. This would include prehistoric and historic submarine and terrestrial resources.

Summary of Impact CUL-4

- The Proposed Project would require construction in several areas. Such construction could potentially significantly impact previously unknown resources. Until final locations and designs are known, the impact on unknown cultural resources cannot be determined. Therefore, this remains a potentially significant impact.

Mitigation CUL-4.1: Same as CUL-1.1.

Impact After Mitigation: Impact CUL-4 could be potentially significant after implementation of Mitigation CUL-4.1.

References

- Bean W., and J. J. Rawls. 1983. *California: An Interpretive History* (Fourth edition). McGraw Hill, New York.
- Beardsley, R.K. 1948. Cultural Sequences in Central California Archaeology. *American Antiquity* 14(1):1-28.
- Beardsley, R.K. 1954. Temporal and Aerial Relationships in Central California Archaeology. Berkeley. University of California Archaeological Survey Reports 24, 25.
- Bennyhoff, J. A. 1977. *Ethnography of the Plains Miwok*. University of California Center for Archaeological Research at Davis, Publication No. 5 (1961), Davis, California.
- California Department of Transportation (Caltrans). 1990. Historic Property Survey Report for the Proposed I-880 Reconstruction Project in the Cities of Oakland and Emeryville, Alameda County, ALA-880 32.12/34.31; ALA-580 45.99/46.95; ALA-80 1.99/3.39. 04195-190271 MEQ85001. Four Volumes. California Department of Transportation District 4. Oakland.
- Cartier, R. 1982. Current Research. *American Antiquity* 47(1): 229. 1993. The Scotts Valley Site: CA-SCr-177. Santa Cruz Archaeological Society.
- Cartier, R. (editor). 1993. *The Scotts Valley Site: CA-SCr-177*. Santa Cruz: Santa Cruz Archaeological Society.
- Chartkoff, J. and K.K. Chartkoff. 1984. *The Archaeology of California*. Stanford University Press.
- Cook, S. F. 1976. *The Conflict between the California Indian and White Civilization*. University of California Press, Berkeley.
- Ecosystems Management Associates, Inc. 2001. Underwater Cultural Resources Survey for the Proposed SFO Runway Reconfiguration Project. Prepared for URS Corporation. ECO-M Ref. No. 01-05.
- Erlandson, J. 1994. *Early Hunter-Gatherers of the California Coast*. Plenum Press, New York.
- Hart, J. D. 1978. *A Companion to California*. Oxford University Press, New York.
- Hoover, M.B., H. E. Rensch, E.G. Rensch, and W.N. Abeloe. 1990. *Historic Spots in California*. Stanford University Press.
- Johnson, P. 1978. Patwin. In: *Handbook of North American Indians, Volume 8, California*. R. F. Heizer (ed.): 350-360. Smithsonian Institute Press, Washington D.C.
- Jones & Stokes 2001. Final Cultural Resources Inventory Report for the Habitat Migration Planning Sites, San Francisco International Airport Proposed Runway Reconfiguration Project. Prepared for URS Corporation.
- Kelly, I. 1978. Coast Miwok. In: *Handbook of North American Indians, Volume 8, California*. R. F. Heizer (ed.): 414-425. Smithsonian Institute Press, Washington D.C.
- Kroeber, A.L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnography, Bulletin 78. Smithsonian Institute Press, Washington D.C.

- Leakey, L.S.B., R.D. Simpson, and T. Clements. 1968. Archaeological Excavations in the Calico Mountains, California: Preliminary Report. *Science* 160:1022–1023.
- Leakey, L.S.B., R.D. Simpson, and T. Clements. 1969. Man in America: The Calico Mountains Excavations. Chicago. The Encyclopaedia Britannica Yearbook of Science and the Future 1970:64–75, 77–79.
- Leakey, L.S.B., R.D. Simpson, T. Clements, R. Berger, J. Witthift, and Participants of the Calico Conference. 1972. Pleistocene Man at Calico: A Report on the International Conference on the Calico Mountains Excavations, San Bernardino County, California. Redlands. San Bernardino County Museum.
- Levy, R. 1978a. Eastern Miwok. In: Handbook of North American Indians, Volume 8, California. R. F. Heizer (ed.): 398-413. Smithsonian Institute Press, Washington D.C.
- Levy, R. 1978b. Costanoan. In: Handbook of North American Indians, Volume 8, California. R. F. Heizer (ed.): 485–495. Smithsonian Institute Press, Washington D.C.
- Leonard, N.N. III. 1971. Natural and Social Environments of the Santa Monica Mountains. University of California, Los Angeles, Archaeological Survey Annual Report 1970–1971: 97–135.
- Meighan, C.W. 1954. A Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10(2): 215–227.
- Merriam, C. H. 1967. Ethnographic Notes on California Indian Tribes. University of California Archaeological Survey Reports 68. Berkeley, CA.
- Merrit, F. C. 1928. History of Alameda County. 2 vols. S. J. Clarke Publishing Company, Chicago.
- Milliken, R. 1995. A Time of Little Choice: the Disintegration of Tribal Culture in the San Francisco Bay Area – 1769-1810 Ballena Press, Menlo Park, CA.
- Moratto, M. 1984. California Archaeology. Academic Press, Florida.
- Nelson, N. 1910. The Ellis Landing Shellmound. Berkeley. University of California Publications in American Archaeology and Ethnology 7(5):357–426.
- Schenck, W.E. 1926. The Emeryville Shellmound: Final Report. Berkeley. University of California Publications in American Archaeology and Ethnology 23(3):147–282.
- Schuiling, W.C. 1972. Pleistocene Man at Calico. San Bernardino County Museum Association.
- Schuiling, W.C. 1979. Pleistocene Man at Calico. *Quarterly of San Bernardino County Museum Association* 26(4).
- Swanton, J.R. 1952. The Indian Tribes of North America. Washington D.C. Smithsonian Institution Press.
- Uhle, M. 1907. The Emeryville Shellmound. Berkeley: University of California Publications in American Archaeology and Ethnology 7(1): 1–106.
- Wallace, W.R. 1955. A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11(3): 214–230.

Warren, C.N. 1968. Cultural Tradition and Ecological Adaptation the Southern California Coast. In: Archaic Prehistory in the Western United States, C. Irwin-Williams, ed. Portales. Eastern New Mexico University Contributions in Anthropology 1(3)1–14.

Internet Resources:

www.beniciahistoricalmuseum.org Accessed on 5/17/02

www.visitvallejo.com/AboutVallejo/av.vhistory.html Accessed on 5/16/02

www.bayareacouncil.org/ppi/tpt/5lv_hfb1.html Accessed on 5/16/02

www.weblink.com/landmarks/train_ferry.html Accessed on 5/17/02

<http://cal-parks.ca.gov> Accessed on 5/16/02

www.cityofmartinez.org/community/about.html Accessed on 5/16/02

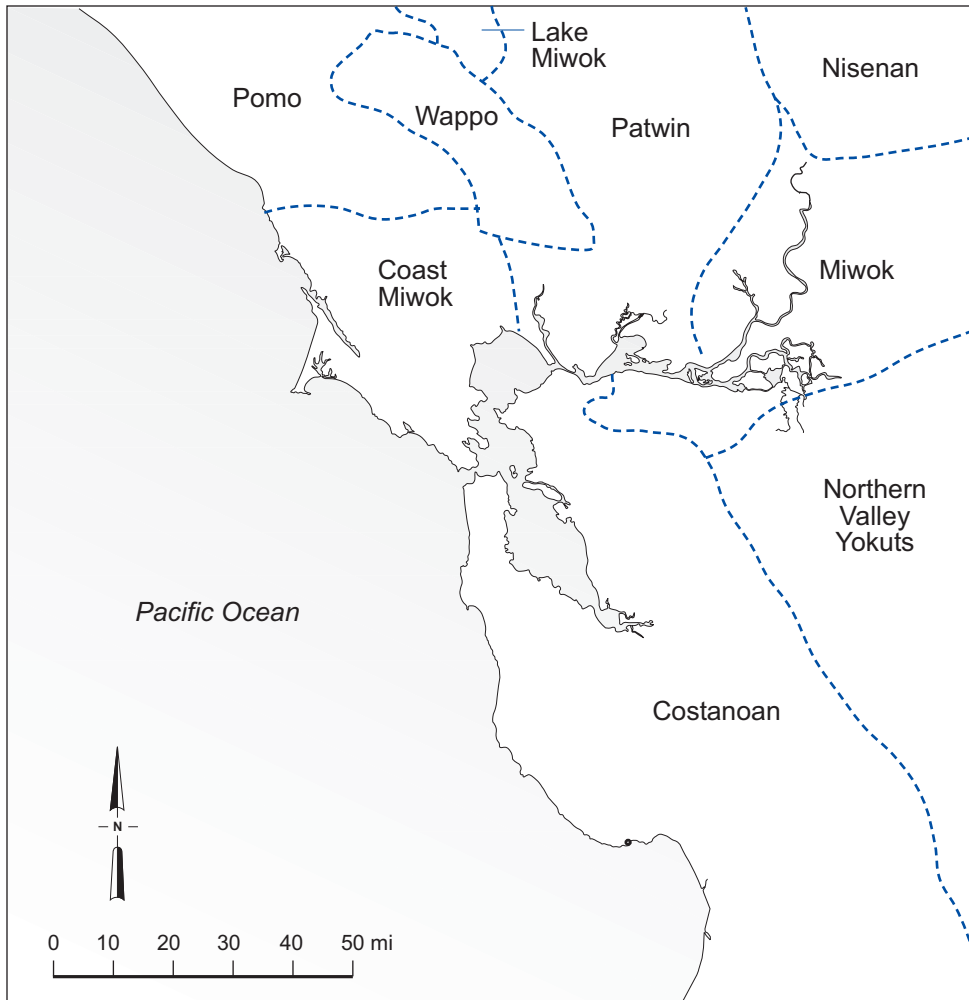
www.ci.hercules.ca.us/cityfact/History.html Accessed on 5/17/02

www.ci.richmond.ca.us Accessed on 5/16/02

www.ci.san-leandro.ca.us/slcityhistory.html Accessed on 5/17/02

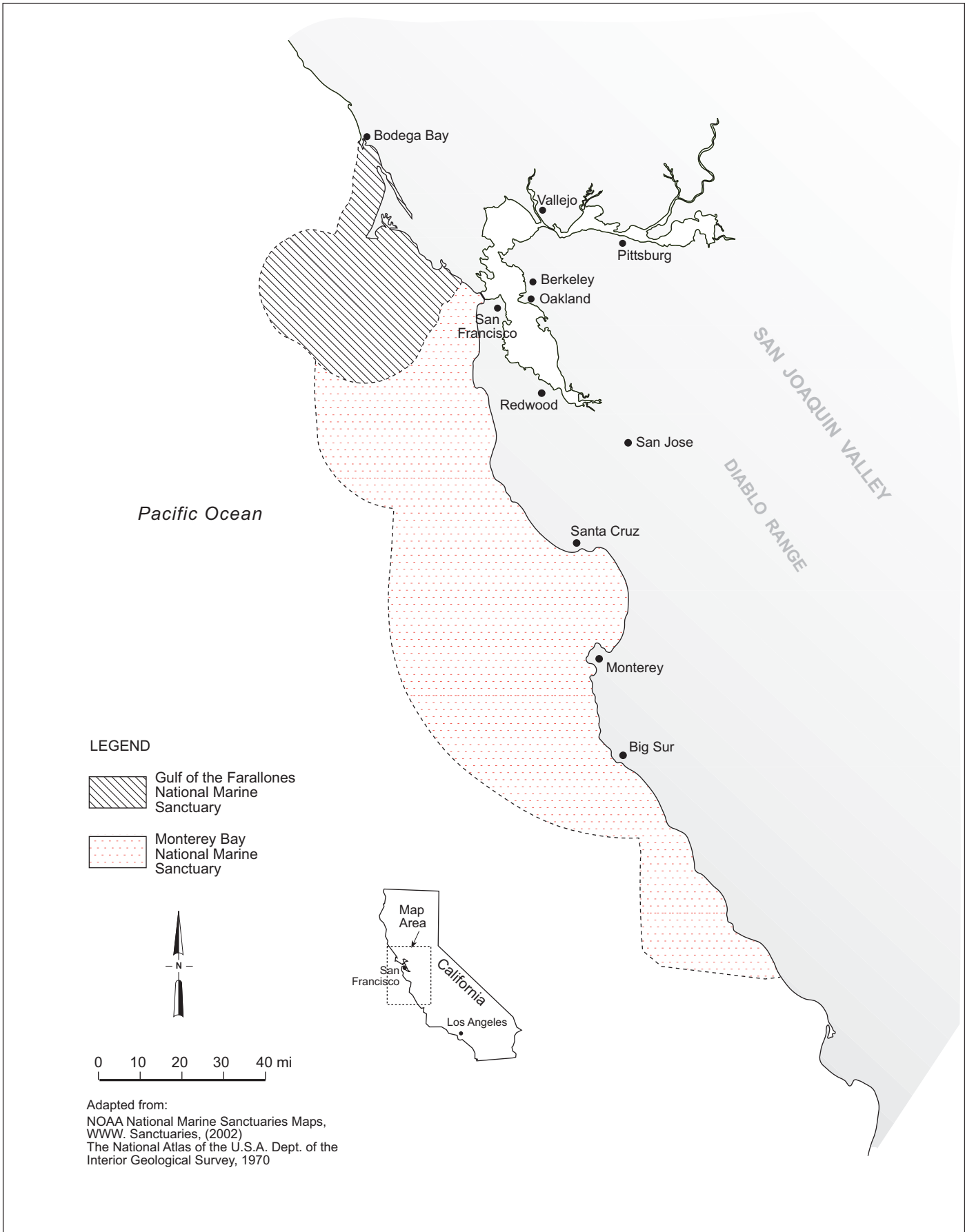
www.ci.redwood-city.ca.us Accessed on 5/16/02

www.fostercity.org/community_info Accessed on 5/16/02



Source: Handbook of North American Indians, Vol. 8, 1978





	Project No.43-00066890	NATIONAL MARINE SANCTUARIES NEAR SAN FRANCISCO BAY	Figure 3.9.2
	Water Transit Authority Program EIR		