3.4 Cultural Resources

3.4.1 Introduction

This section presents the regulatory setting, environmental setting, and potential impacts of the Proposed Project related to cultural resources.

Cultural resources are the remains and sites associated with past human activities and include prehistoric and ethnographic Native American archaeological sites, historic archaeological sites, historic buildings, and elements or areas of the natural landscape which have traditional cultural significance. A paleontological resource is defined as fossilized remains of vertebrate and invertebrate organisms, fossilized tracks, and plant fossils.

Study Area

The study area for the cultural resources evaluation is a 1-mile radius from Proposed Project channels, canals, access roads, and other features under the maintenance authority of the SCVWD under the current SMP. The study area was used to help determine general areas of sensitivity which are discussed in Section 3.4.3, *Environmental Setting*.

Area of Potential Effects

The Area of Potential Effects (APE) includes channels, canals, access roads, and other features maintained by the SCVWD under the current SMP. A 100-foot buffer from the top of bank was included in the APE to account for access and staging areas. The purpose of the APE was to determine site sensitivity in relation to specific watercourses and facilities under the Proposed Project. If present, a large number of previously-identified cultural resources located within the APE would indicate an elevated level of sensitivity, suggesting increased likelihood that Proposed Project activities could cause adverse impacts to historic properties.

3.4.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

National Historic Preservation Act/Section 106
The National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to consider the preservation of historic and prehistoric resources. The NHPA authorizes the Secretary of the Interior to expand and maintain a National Record of Historic Places (NRHP), and it has established an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the Act requires federal agencies to take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on the undertaking before licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP.

Public Review Draft

Federal review of projects is normally referred to as the Section 106 process. The Section 106 review normally involves a four-step procedure described in detail in the implementing regulations (36 CFR Part 800):

- identify and evaluate historic properties in consultation with the State Historic Preservation Officer (SHPO) and interested parties;
- assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP;
- consult with the SHPO, other agencies, and interested parties to develop an agreement that addresses the treatment of historic properties and notify the ACHP; and
- proceed with the project according to the conditions of the agreement.

National Environmental Policy Act

The National Environmental Policy Act of 1969 requires federal agencies to foster environmental quality and preservation. Section 101(b)(4) declares that one objective of the national environmental policy is to "preserve important historic, cultural, and natural aspects of our national heritage... ." For any major federal actions significantly affecting environmental quality, federal agencies must prepare, and make available for public comment, an Environmental Impact Statement.

Advisory Council on Historic Preservation Regulations, Protection of Historic Properties

The Advisory Council Regulations, Protection of Historic Properties (36 CFR 800) establish procedures for compliance with Section 106 of the NHPA of 1966. These regulations define the Criteria of Adverse Effect, define the role of the SHPO in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Prehistoric and historic resources deemed significant (i.e., eligible for listing in the NRHP, per 36 CFR 60.4) must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect NRHP-eligible properties to the SHPO for review and comment before the project's approval.

National Park Service Regulations, National Register of Historic Places

The National Park Service Regulations' NRHP (36 CFR 60) set forth procedures for nominating properties to the NRHP and present the criteria to be applied in evaluating the eligibility of historic and prehistoric resources for listing in the NRHP.

Public Review Draft

Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines

Archaeology and Historic Preservation; Secretary of the Interior's Standards and Guidelines (FR 190:44716–44742) offer non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these guidelines are the "Standards for Archaeological Documentation" (p. 44734) and "Professional Qualifications Standards for Archaeology" (pp. 44740–44741).

Section 106 of the NHPA prescribes (at 36 CFR Section 800.5) specific criteria for determining whether a project would have an adverse effect on a historic property, if any such properties exist in the APE as defined by the agency. An impact is considered adverse when prehistoric or historic archaeological sites, structures, districts, or objects listed in or eligible for listing in the NRHP are subjected to the following effects:

- physical destruction of or damage to all or part of the property;
- alteration of a property;
- removal of the property from its historic location;
- change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- neglect of a property that causes its deterioration; and
- transfer, lease, or sale of the property.

Because SCVWD would need to obtain a permit from USACE under Section 404 of the Clean Water Act, the Proposed Project constitutes a federal undertaking that would require compliance with Section 106 of the NHPA, and federal significance criteria apply. For federally permitted or funded projects, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. NRHP criteria for eligibility are defined as follows:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:
>
> - are associated with events that have made a contribution to the broad pattern of our history;
> - are associated with the lives of people significant in our past;
> - embody the distinct characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> - have yielded, or are likely to yield, information important in prehistory or history.

Public Review Draft

American Indian Religious Freedom Act

The American Indian Religious Freedom Act of 1978 allows access to sites of religious importance to Native Americans.

State Plans, Policies, Regulations, and Laws

California implements the NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the state's jurisdictions as well as serving as a consulting party in the federal process described above.

California Register of Historic Resources

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

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

- it is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- it is associated with the lives of persons important in our past;
- it 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,
- it has yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the CRHR, it must also retain enough of its character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. A historic resource that does not retain sufficient integrity to meet the NRHP criteria may still be eligible for listing in the CRHR.

The CRHR consists of resources that are listed automatically as well as those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

Public Review Draft

- California properties listed on the NRHP and those formally determined to be eligible for the NRHP;
- California Historical Landmarks from No. 770 onward; and
- California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Resources Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR include:

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

California Environmental Quality Act

CEQA, as codified at PRC Sections 21000 et seq., requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources. As defined in 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 any of the following criteria:

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

In addition, the State CEQA Guidelines define historical resources as: (1) a resource in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the State CEQA Guidelines criteria for a historical

Public Review Draft

resource, then the site is to be treated in accordance with the provisions of PRC Section 21083 regarding unique archaeological resources. The State CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (State CEQA Guidelines Section 15064[c][4]).

Per CEQA, the Proposed Project would be considered to have a significant impact on the environment if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

California Public Resources and Administrative Codes

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. Impacts include intentional disturbance, mutilation, or removal of interred human remains.

Regional and Local Plans, Policies, Regulations, and Ordinances

Applicable regional and local plans, policies, regulations, or ordinances related to cultural resources are presented in Appendix D.

3.4.3 Environmental Setting

This environmental setting discussion is divided into three parts. The first summarizes the cultural history of the Santa Clara Valley region. Because archaeological and historic regions can encompass large geographic areas and display some cultural homogeneity throughout, a discussion of the prehistoric, ethnographic, and historic contexts is useful to evaluate the impacts to cultural resources in the APE. The second part addresses the geologic formations in the Project Area and their potential to contain paleontological resources. The third part discusses previous cultural resources surveys and assessments conducted from 2002 through 2011 in the Project Area.

Cultural History

Prehistoric Context

An analytic framework for the interpretation of South San Francisco Bay and Central Coast Ranges prehistory is provided by Milliken et al. (2007:99–123) and Hylkema (2007).

Public Review Draft

Hylkema observes three broad periods of human history in South San Francisco Bay: Early Holocene (10,000 to 6650 Before Present [B.P.]), the Middle Holocene (6650 to 3350 B.P.), and the Late Holocene (3350 to present). Milliken et al. (2007) observe six temporal periods that build from the temporal sequence originally outlined by Frederickson (1994:25–48) and synthesize subsequent dating schemes with new *Olivella* bead data:

- The Early Holocene, or Lower Archaic (9950 to 5450 B.P.)
- Early Period, or Middle Archaic (5450 to 2450 cal B.P.)
- Lower Middle Period, or Initial Upper Archaic (2450 to 1520 B.P.)
- Upper Middle Period, or Late Upper Archaic (1520 to 900 B.P.)
- Initial Late Period, or Lower Emergent (900 to 400 B.P.)
- Terminal Late Period (400 to 174 B.P.)

The post-Pleistocene era (post-10,000 B.P.) is generally characterized as a period of dramatic environmental change. Very little is known about the human history of Central California and the San Francisco Bay region before approximately 9950 B.P., but hunter-gatherers presumably inhabited the region as evidenced by Pleistocene faunal remains and other isolated finds, including fluted projectile points (Erlandson et al. 2007:161–174; Parkman 2006; Rosenthal et al. 2007:151). Warming trends in the global environment after 10,000 B.P. contributed to rising sea levels and the gradual inundation of the verdant plain—and possibly the earliest record of human occupation in the area—now submerged beneath present-day San Francisco Bay. The rising sea level eventually slowed approximately 6000 B.P. During this time, lush tidal marsh habitats formed around the margins of the Bay, creating a diverse regional ecosystem that, in turn, attracted fish species, waterfowl, sea mammals, terrestrial game, and humans.

Hylkema (2007) outlines general trends in South Bay prehistory. Early mobile forager land use gave way to semi-sedentary collector land use—and shell mound construction—near the close of the Early Holocene. Stone mortars and pestles appear in greater frequency within Middle Period archaeological deposits in the Santa Clara Valley, which suggests a milling economy with emphasis on vegetal foods, especially acorns and small seeds (Hylkema 2007:27; Moratto 1984). This contrasts with areas to the southeast of South San Francisco Bay where a greater frequency of chert projectile points and knives in the archaeological record indicate emphasis on hunting terrestrial game. The Late Period is generally considered a period of cultural and environmental florescence. At this time, growing hunter-gatherer populations in the Santa Clara Valley, southern Santa Clara Valley, and broader San Francisco Bay region contributed to intensified collection of animal and plant resources from diverse coastal, intertidal, and interior habitats. They further developed social innovations to efficiently procure animal, plant, and mineral resources, including co-harvesting subsistence strategies, storage practices, and exchange systems (Hylkema 2002:252–253; 2007:29).

Discrete temporal periods within the San Francisco Bay region are further developed by Milliken et al. (2007), who integrate accelerator mass spectrometry radiocarbon data collected from 103 well-provenienced *Olivella* beads. Within the chronological sequence outlined above, Milliken et al. (2007:105) further distinguish multiple bead horizons to refine "significant variation in time and space" in Bay Area prehistory. These bead horizons include: the Early Period/Middle Period Transition (EMT); M1, M2, M3, and M4 horizons in

Public Review Draft

the Middle Period; the Middle Period/Late Period Transition; and L1 and L2 horizons in the Late Period.

Early Period archaeological deposits and hunter-gatherer sedentism are signaled by groundstone technology—typically stone mortars and pestles—and the first cut shell beads. Early millingstone technology is represented best at sites in the Santa Clara Valley, such as CA-SCL-65 and CA-SCL-178 (Hylkema 2002:233), and discrete terrace sites in the western foothills of the southern Santa Clara Valley, or San Felipe Sink (Hildebrandt and Mikkelsen 1993:191). Shell beads from this time period are often in mortuary contexts, such as the 5,900-year-old Sunnyvale Red Burial (CA-SCL-832), which contained red ocher and double-perforated Haliotis rectangle beads (Milliken et al. 2007:115). The EMT Bead Horizon marks the end of the Early Period and is indicated by split-beveled and tiny saucer *Olivella* beads. EMT funerary contexts contain few associated goods, except for some with spire-lopped *Olivella* beads. Osteological data collected from EMT/M1 sites also reveal evidence of interpersonal violence, including healed bone fractures and puncture wounds; evidence of violent death; postmortem skeletal modifications; and haphazard disposal of human skeletal remains (Milliken 2007:113). Well-documented evidence of violence is seen at the Skyport Plaza site (CA-SCL-478), where archaeologists uncovered evidence of trophy taking, mass burials, and warfare (Milliken et al. 2007:113). The Three Wolves site, CA-SCL-732, represents another Middle Period special use cemetery where archaeologists recovered the remains of 107 individuals some with evidence of traumatic injury (Cambra et al. 1996).

During the lower and upper Middle Periods (2450 to 1250 B.P.), an intensified tidal marsh economy was present and contributed to the formation of large shell mounds along the San Francisco Bay shore. This subsistence strategy persisted into the Middle Period, though use of local resources intensified. Bead Horizon M1 (2150 to 1520 B.P.) developed out of the EMT and is signaled by the common occurrence of *Olivella* saucer beads, as well as by new bone tool forms and bone ornaments such as barbless fish spears, elk femur spatulae, bone tubes, and bone whistles (Milliken et al. 2007:115). The trade of *Olivella* saucer-beads collapsed at about 1520 B.P., or the beginning of the M2 Bead Horizon in the upper Middle Period (1520 to 900 B.P.).

The South Bay during the Middle Period also played host to the spread of the Meganos culture, which possibly arrived from the Sacramento-San Joaquin River Delta area. The Meganos culture is represented archaeologically by a dorsal extended burial mortuary pattern with few grave-associated artifacts (Bennyhoff 1994:15–24), and it also is signaled by the production of *Olivella* saddle beads. Meganos would eventually spread to the Santa Clara Valley, as seen at sites like Wade Ranch (CA-SCL-302). By the emergence of Bead Horizons M2 and M3—the "climax of upper Middle Period stylistic refinement" (Milliken et al. 2007:116)—obsidian blades, fishtail charmstones, new *Haliotis* ornament forms, and mica ornaments accompany *Olivella* saucer beads in some Bay Area archaeological contexts. Bead Horizon M4 may be a period of "post-climax culture" with a variety of wide and tall *Olivella* saddle bead forms.

Olivella bead production during the initial Late Period (900 to 400 B.P.) and L1 Bead Horizon is marked by technological sophistication and accompanied by the production of finely-crafted wealth objects. New shell bead types include *Olivella* sequin and cup beads

Public Review Draft

and an array of multi-perforated and bar-scored *Haliotis* ornaments, such as those appearing at Tamien Station, CA-SCL-690 (Hylkema 2007). A shift from collection of terrestrial mammals (canid, elk, and deer) to sea otter and deer is believed to represent economic intensification from the Middle through Late Periods, in addition to the development of co-harvesting strategies, drawing increasingly from estuarine and terrestrial habitats.

In the San Felipe Sink, a highly mobile Early Period foraging system—which utilized resources from Elkhorn Slough and inland areas—transitioned during the Middle Period to greater dependence on acorn and local lacustrine resources (Hildebrandt and Mikkelsen 1993:183, 191; Hildebrandt et al. 1991:5-7). By the Late Period, hunter-gatherer use of coastal resources appears to have switched to collecting lacustrine plants and animals; a pattern that mirrors historical observations. Arrow-sized obsidian projectile points first appear in the Bay Area during this time, and include small finely-crafted Stockton serrated points (Hylkema 2002:247). However, in the South Bay debitage and most flaked stone tools continued to be produced from local Franciscan chert, potentially indicating restricted access to North Bay obsidian sources because of social prohibitions on the exchange of obsidian and other prestige items around San Francisco Bay (Jackson and Ericson 1994:385–415). High-status burials and partial cremations, often associated with grave offerings like *Haliotis* "banjo" effigy ornaments, offer additional evidence of social stratification during the initial Late Period.

During the Late Period, many Middle Period traits gave way to social and economic forms consistent with those evident during ethnographic times. Almost abruptly at 400 B.P., archaeological evidence of *Olivella* sequin and cup beads drops off in the North Bay, replaced by the production and widespread distribution of clamshell disk beads, markers of the L2 Bead Horizon. Lipped and spire-lopped *Olivella* beads continued to be produced and exchanged in the South Bay between 400 B.P. and 300 B.P. Desert side-notched points also have been recovered from some South Bay archaeological sites dating to the Late Period (Jackson 1986).

In general, the following archaeological resources could potentially be encountered during ground-disturbing activities near bodies of water within Santa Clara Valley: remnants of large shell mounds; shallow or broadly dispersed midden sites; lithic scatters; multi-component villages; and cemeteries. Over 400 shell mounds once ringed the San Francisco Bay shoreline, and several are recorded within Santa Clara County. Some mound sites reached heights of between 5 to 60 feet, and many contain multiple depositional episodes spanning several hundred to several thousands of years. Used in prehistory and in historic times, the Yñigo Mound (CA-SCL-12/H) was once part of a cluster of 13 mounds along the southern edge of San Francisco Bay and it rose approximately 5 feet. This mound—like many around the Bay Area—has been impacted by commercial development, although intact deposits are buried beneath Moffett Field Naval Air Station (Bryne and Byrd 2009:82–88).

Other midden sites are shallow (between 1 to 4 feet deep) and are sometimes dispersed over several hundred meters. As with shell mounds, middens are composed of densely packed deposits of shell, earth, rock, ash, botanical and faunal (mammal, bird, fish, shellfish, and reptile) remains, artifacts (groundstone, flaked stone, fire-affected rock, shell tools and

Public Review Draft

ornaments, and modified bone), and features such as hearths, house floors, and human burials accumulated over longer or shorter periods of time. Some archaeological sites also contain evidence of residence during colonial and historic times, including glass beads, worked glass tools, ceramics, and metal artifacts. Middens also can be found along the San Francisco Bay, where shellfish remains are more prevalent, or they also can be found inland along rivers, creeks, sloughs, and lakes. Several large and small midden sites containing artifacts and human burials are recorded throughout the Santa Clara Valley (Hildebrandt and Mikkelsen 1993; Hylkema 2007). Lithic scatters also are evidenced by sparse or densely scattered lithic debitage from the production/use of stone tools and other processing activities. For example, one site (CA-SCL-308/H) located along a seasonal creek overlooking the Pajaro River alluvial plain in southern Santa Clara Valley contains groundstone implements, flaked stone tools and debris, fire-affected rock, as well as faunal remains and modified bone (Hildebrandt and Mikkelsen 1993).

Archaeological resources in the Santa Clara Valley also include multi-component village sites. These sites generally exhibit a suite of daily and ceremonial practices as evidenced by the presence of midden soils, which contain botanical and faunal remains, bone and stone tools, living surfaces and house floors, and human burials. One village site (CA-SCL-119/CA-SBN-24/H) is located on the shore of San Felipe Lake. It was once near four major habitat zones—oak savanna, open prairie, riparian habitat, and tule marsh—and consists of five spatially discrete loci with house floors, hearths, human burials, plant and animal remains, bone and stone tools, and shell beads. Research in the southern Santa Clara Valley continues to explore the extent to which the broad Pajaro River alluvial plain was inhabited prehistorically, or not at all. As Hildebrandt et al. (1991:5–7) summarize, some believe the plain was once a year-round wetland that prevented human settlement in areas other than at the mouths of adjacent canyons. Others believe that the plain was dry for most of the year, and prehistoric residences may be found along any of the present-day sloughs and creeks that cross the plain. It is now generally believed that human occupation along riparian and lacustrine habitats intensified after approximately 450 B.P. (Hildebrandt et al. 1991:5–7).

The Late Period shift towards intensively collecting wetland resources was observed historically and is evidenced by at least one contact period cemetery (CA-SCL-714/H) north of Pajaro Gap in the Pajaro River drainage. Cemeteries also are described by Cambra et al. (1996; CA-SCL-732) and Hylkema (2007; CA-SCL-690). A formal, planned cemetery, CA-SCL-690, where approximately 124 human burials were discovered, is located 1,000 feet east of the Guadalupe River in downtown San Jose. The river and Los Gatos Creek are major contributors of sediment to the Santa Clara Valley, which increase the likelihood of encountering buried archaeological resources along water courses. At the time of European contact, Native Americans buried and cremated their dead. Grave goods—including shell beads, stone and bone implements—are associated with some burials.

Ethnographic Context/Ohlone

The Project Area is located within the ethnographic territory of the Muwekma Costanoan/Ohlone Indians. For the Costanoan/Ohlones, areas around streams were frequently settled and/or heavily used and, as described above, are generally locations of high sensitivity for archeological deposits. In general, protohistoric and colonial

Public Review Draft

archaeological resources could potentially be encountered during ground-disturbing activities near bodies of water within Santa Clara Valley. This would include Native American village sites and processing areas as a continuation of settlement patterns associated with the Late Period (see above); artifacts and features deposited by European settlers; as well as, material evidence of cultural intermingling, perhaps similar to that recovered from mission and mercantile colonies in the Bay Area (Lightfoot 2005) and from subsequent Mexican ranchos and American settlements.

The ethnographic territory of the Muwekma Costanoan/Ohlone includes all of present-day Santa Clara County, and originally included (1) the San Francisco Peninsula south to Big Sur (in Monterey County) and (2) inland from Carquinez Strait to Soledad (Levy 1978:485). In the aboriginal Tamien and Chochenyo (or Lisyan) languages spoken in Costanoan/Ohlone territory, "Muwekma" means "People" (Levy 1978). As Field et al. (2007:62) further clarify, Muwekma accurately reflects how Costanoan/Ohlones identified themselves in the Santa Clara Valley region and Ohlone is used to define Costanoan/Ohlone in their entire territory. The Costanoan language belongs to the Penutian stock (Golla 2007:71–82), and is divided between eight separate languages (not dialects): Karkin; Chochenyo (East Bay Costanoan); Tamien (Santa Clara Costanoan); Ramaytush (San Francisco Costanoan); Awaswas (Santa Cruz Costanoan); Mutsun; and Rumsen.

The primary sociopolitical unit was the village community, or tribelet. Ohlone tribelets consisted of a principal village, at which the chief resided, surrounded by several secondary settlements (Kroeber 1962:81–120). The Ohlone were further grouped into clans—with either deer or bear moieties—and each village community averaged between 100 to 2,000 people with households averaging between 10-15 persons (Levy 1978:487). Tribelet boundaries were typically defined by physiographic features, and are generally believed to provide enough habitat diversity to "buffer the vagaries of environmental perturbations during most years, but small enough to remain manageable from a few village locations that may have been moved once or twice a year" (Lightfoot and Parrish 2009:80). Chiefs may have been either men or women, and they were usually in charge of: resolving disputes; organizing events, including dances and hunting expeditions; and advising the broader community, with assistance from a council of elders (Levy 1978:487).

An array of seasonally available plant and animal species typically were collected for dietary, medicinal, and other requirements. A steady harvest was ensured by careful management of the land, such as through the practice of controlled burning of extensive areas to curb the spread of unwanted species and to promote the growth of seed-bearing plants and grazing area for game animals (Levy 1978; Lightfoot and Parrish 2009). Gathered in the fall, acorns were an important food source, especially acorns from Coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), tanbark oak (*Lithocarpus densiflora*), and California black oak (*Q. kelloggii*). Berries, bulbs, greens, and the seeds from a number of plants also were consumed. Ohlone diet also included migratory waterfowl; terrestrial birds; large and small game, especially deer, elk, rabbit, and woodrat; sea mammals; fish, including steelhead, salmon, and sturgeon; reptiles; and insects. Many plant and animal species could be incorporated into other areas of Ohlone daily life; some were used for clothing, medicine, tools, cordage, and structures.

Public Review Draft

Ohlone material culture includes finely woven twined and coiled basketry, tule balsas, shell beads and ornaments, bone tools, and stone tools—created from Franciscan chert, obsidian, steatite, and other rocks or minerals (Levy 1978). Red ocher (cinnabar) could be procured from hills at present-day New Almaden. Houses were made from available materials, but in most places in the San Francisco Bay Area they were hemispheric frames of bent willow poles covered with a thatch of tule, rush, or grass. Additional structures include sweathouses, dance enclosures, and large earth-covered assembly houses.

By the mid-1800s, Spanish missionization, diseases, raids by Mexican slave traders, and dense immigrant settlement had disrupted Ohlone culture, dramatically reducing the population, and displacing the native people from their villages and land-based resources. Reduction of Ohlone villages, conversion to Catholicism, and exposure to Spanish language, culture and material practices commenced with the establishment of Mission Santa Clara in early 1777 and the settlement of San Jose in the same year (Milliken 1995). The majority of Ohlones who joined Mission Santa Clara during the mid-1790s resided at seven main villages in the Santa Clara Valley, four of which probably contained more than 100 inhabitants (Milliken 2007:51–52). Milliken estimates by 1800 most native residents of the Santa Clara Valley had experienced severe psychological depression from the spread of epidemic diseases and witnessed environmental deterioration resulting from introduced grazing and farming practices. Spanish missions further eroded native cultural, social, and economic institutions, resulting in the elimination of perhaps 80 percent of native residents in the Bay Area.

At places like Alisal rancheria, near Pleasanton, Ohlone cultural practices endured as they regrouped and remade themselves, following the closure of Spanish missions and during subsequent periods of Mexican and American settlement. Although the Ohlone lost their original land base because of Spanish missionizing efforts, rancho allotments, and legal obstacles preventing favorable rulings in U.S. courts, their tribal status as the Verona Band was formally recognized by the U.S. Bureau of Indian Affairs as early as 1906. However, this status was short-lived and the Ohlone were "lost in a bureaucratic paper shuffle in Washington D.C." (Field et al. 2007:65). Assuming the Ohlone had ceded their lands and *rancherias*, they lost their federal status and are currently an unrecognized Native American tribe. Field et al. (2007) details the on-going Ohlone revitalization movement—and attempts to regain federal recognition—from the twentieth century up to the present day.

Historic-Period Background

The first mention of the Ohlone in historical records comes from the 1542 account of Juan Rodriquez Cabrillo, who sailed into Monterey Bay and observed some of California's native residents. Over 200 years later, an expeditionary force under the direction of Captain Gaspar de Portola traversed Ohlone lands on their way to the East Bay. After 1770, when the presidio of Monterey and Mission San Carlos Boromeo were founded, additional expeditions reached the South San Francisco Bay area. For example, a 1776 expedition headed by Juan Bautista de Anza reached the Guadalupe River and possibly crossed near Tamien Station in search of suitable locations for additional Spanish settlements (Hylkema 2007:34). At this time, Anza observed "the plains surrounding the Guadalupe River maintained large numbers of villages with a thriving Native American population" (Hylkema 2007:35). For this reason, Mission Santa Clara was established in 1777 and

Public Review Draft

named *Santa Clara de Thamien*. The pueblo of *San Jose de Guadalupe* (San Jose Pueblo) was established later that year on the east side of the Guadalupe River. Flooding of the Guadalupe River in 1779 resulted in the relocation of the mission and it was renamed *Misión Santa Clara de Asís*. After 1803, the area around Mission Santa Clara was designated as a rancho and used as pasture for livestock (Hylkema 2007:38).

With the establishment of the independent government of Mexico in 1821, Spanish missions were eventually secularized and former mission lands typically were allotted to wealthy Mexican citizens. Fifty grants of land were made in what is now Santa Clara County (Kyle 1990:404–411), including *Rancho San Ysidro* (Old Gilroy); *Rancho Los Tularcitos* (Milpitas); *Rancho Milpitas* (Milpitas); *Rancho Ulistac* (Agnew); R*ancho Patoría de las Borregas* (Mountain View and Sunnyvale); *Rancho Rincón de San Francisquito* (Palo Alto); *Rancho Rinconada del Arroyo de San Francisquito* (Palo Alto); *Rancho San Francisquito* (Stanford University); *Rancho San Antonio* (Los Altos); *Rancho Purísima Concepción* (Los Altos Hills); *Rancho Quito* (Saratoga); *Rancho Rinconada de los Gatos* (Los Gatos); *Rancho Santa Teresa* (San Jose); *Rancho El Potrero de Santa Clara* (San Jose); *Rancho Los Coches* (San Jose); *Rancho Las Animas* (Southern Santa Clara County); *Rancho Ojo de Agua de la Coche* (Morgan Hill); and *Rancho Cañada de Pala* (eastern Santa Clara County). The Peralta Adobe, constructed in 1777 and the oldest building in San Jose, was located in *Rancho San Antonio*. One rancho—*Rancho Polsomi*—contains several prehistoric shell mounds and was granted to an Ohlone Indian, Lope Ínigo, who chose to be buried in one mound after his death in 1864. Under Mexican law, settlement by non-Mexican citizens was permissible and soon immigrants from the U.S. settled in the Bay Area, although they often illegally squatted on rancho lands. Following the end of the Mexican-American War in 1848, California was admitted to the Union (1850), becoming the 31st state. For Mexican landowners, most of their property was subsequently lost to American settlers. Several present-day towns in Santa Clara County emerged from disbursed Mexican lands: Gilroy, Los Gatos, Milpitas, San Jose, and Santa Clara (Gudde 1969).

As the American Period began, an influx of new economies resulted in an increase in settlement and the development of farming, ranching, industry, and businesses in Santa Clara County. Santa Clara Valley's agricultural productivity was accelerated by 1) immigrants—especially of Italian origin—who arrived en masse to Santa Clara County around 1870 and became involved in one of the most productive fruit growing and distribution regions in the U.S. (Hylkema 2007:42), and 2) by technological innovations for irrigating crops and orchards. Significant alterations to watercourses within Santa Clara Valley during the historic period are potentially seen archaeologically (artifacts, features, and structural foundations) as a growing Bay Area population settled by and increasingly drew from available freshwater sources. By 1919, at least ten fruit and vegetable canning plants were operating in Santa Clara County, and the region's fruit packing industry peaked in the 1930s with 30 packing plants operating in the county. The Town of Campbell, founded in 1885, was at one time the center of the fruit-growing and canning industry in Santa Clara County (Kyle 1990). After the booming agricultural economy of the 1930s, Santa Clara County focused on technology with the founding of Hewlett Packard and Fairchild Semiconductor. The area is now synonymous with the term "Silicon Valley," and is the location of several of the world's leading computer, microprocessor, and Internet companies.

Public Review Draft

Santa Clara County Water History

In the 1920s, persistent flooding, growing communities, and agricultural productivity in Santa Clara County led farmers and community leaders to petition for the creation of a water conservation committee for controlling and managing the valley's water resources. At that time, the Santa Clara Valley Water Conservation Committee was formed, and it subsequently spearheaded the establishment of the Santa Clara Valley Water Conservation District in 1929. Since that time, reservoirs have been constructed to alleviate problems associated with periodic droughts and slow rapidly dropping groundwater levels. In 1952, the County Board of Supervisors formed the Santa Clara County Flood Control and Water Conservation District. In the 1970s, the Santa Clara County Flood Control District changed its name to the Santa Clara Valley Water District, with responsibilities for providing water supply and flood management (SCVWD 2010).

Paleontological Resources

The Santa Clara Valley contains a diverse record of geologic and biologic history, spanning more than 150 million years, and dates from the Jurassic Period to the present. The processes of multiple tectonic influences (faulting, uplift, sedimentary deposition, sea level fluctuations) have combined to create a significant record of both marine and terrestrial fossils in the Project Area. (Santa Clara County Parks and Recreation Department 2006)

Much of the paleontological interest in the region is caused by discoveries of fossilized Pleistocene vertebrates from Quaternary deposits in the South San Francisco Bay Area. Descriptions of these fossil vertebrates have provided scientists with one of the most complete records of Pleistocene fauna in California. (Santa Clara County Parks and Recreation Department 2006)

Fossil mammal assemblages have been collected from Quaternary sediments bordering South San Francisco Bay: the Lawrence Expressway Site, the Cupertino–Calabasas Site, and a site near the Anderson Dam–Morgan Hill vicinity. All of these sites have produced fossil elephant, camel, and bison specimens. Stratigraphic occurrences of sandstone, clay, and silt lithologies that are exceptional for preserving vertebrate and microvertebrate taxa have been assigned to the Pleistocene Quaternary alluvium units. Such Quaternary alluvium and Quaternary undifferentiated deposits occur locally within the Project Area and can occur in stream, terrace, fluvial, alluvial fan, floodplain, slope debris, and ravine fill deposits. However, urban development certainly has obscured or removed portions of many of these deposits. (Santa Clara County Parks and Recreation Department 2006)

Sediments of Holocene age that form thin surficial cover are considered to be of little paleontological interest and are, therefore, considered to possess low sensitivity for fossil specimens. (Santa Clara County Parks and Recreation Department 2006)

Specific to the Proposed Project channels, in 2005, a fossil of a young Columbian mammoth (*Mammuthus columbi*) was found on a floodplain/overflow area east of the Guadalupe River downstream of Trimble Road in San Jose, just north of Mineta San Jose International Airport. The fossil dates from the late Pleistocene epoch and included portions of skull,

Public Review Draft

tusks, molar teeth, femur, toes, ribs, and other bone fragments. (Children's Discovery Museum of San Jose 2011; University of California Museum of Paleontology 2005)

Previous Surveys

Pre-construction surveys and assessments of areas surrounding proposed maintenance activity areas were conducted in 2002–2011 by State Parks Archaeologist Mark Hylkema, in accordance with the 2002 SMP EIR. In Archaeological Survey Reports (ASRs) presented annually to SCVWD from 2002 onward, Hylkema has discussed specific project locales, described proposed ground-disturbing activities within each, and evaluated the likelihood of encountering cultural resources within each proposed activity work site. These evaluations were based on the results of record and archival searches conducted at the Northwest Information Center of the California Historical Resources Information System (CHRIS) at Sonoma State University and augmented by data retained by Hylkema. Areas in which the removal of sediment within existing stream profiles was proposed and/or areas near known cultural resources were deemed potentially sensitive, and Hylkema consequently has recommended cultural resource monitoring by a qualified archaeologist in those locations.

For the current SMP, a monitoring program was implemented by Albion Environmental, Inc. in 2002–2003, and by Pacific Legacy, Inc. in 2004–2010, for those locations deemed potentially sensitive in ASR reports provided by Mark Hylkema. Ground-disturbing activities for which cultural resource monitors were required included vegetation removal, silt or sediment removal, the removal of previously installed stream maintenance features (such as concrete rip-rap or tailings), the installation of bank protection features (such as rock weirs or retaining walls), and stream channel widening or rerouting. Historic or temporally indeterminate debris was noted at many of the locations monitored between 2002 and 2010; however, most of these items were observed in transposed secondary contexts and few yielded in situ cultural materials. Exceptions included a historic debris scatter discovered along Permanente Creek, an isolated prehistoric boulder mortar found along Alamitos Creek at Bubblingwell Place, and in situ human remains recovered from Adobe Creek at O'Keefe Lane. All in situ discoveries were recorded on DPR Form 523 and fully documented. Only one inadvertent discovery was recorded under the current SMP: the historic barge found in the Alviso Slough in 2010. It was fully documented according to the standards of the Historic American Engineering Record and monitored during ground-disturbing activities. A summary of the findings of the monitoring program is provided in Table 3.4-1.

Public Review Draft

Table 3.4-1. Cultural Resource Monitoring for the SCVWD SMP, 2002-2010

Contractor and Year Work Performed	Monitoring Locations	Results
Albion Environmental, Inc. (2002)	Thompson Creek near Aborn Road Guadalupe River near W. Alma San Thomas Aquinas Creek near Avon Adobe Creek at Moos Family Property Adobe Creek at Ward Family Property	Negative Negative Negative Negative Negative
Albion Environmental, Inc. (2003)	Thompson Creek at Quimby Road Thompson Creek at Pettigrew Drive Thompson Creek at Quimby Creek Thompson Creek near Aborn Road Wildcat Creek at Montpere Way and Quito Road Hale Creek at Gronwall Lane Prospect Creek at Blue Hills Drive Matadero Creek at Page Mill Road	Negative Negative Negative Negative Negative Negative Negative Negative
Pacific Legacy, Inc. (2004)	Saratoga Creek at Walnut Avenue Alamitos Creek near Graystone Lane Berryessa Creek at Piedmont Avenue Canoas Creek near Cottle Road Saratoga Creek near Civic Center Golf Creek	Negative Negative Negative Negative Negative Negative
Pacific Legacy, Inc. (2005)	Canoas Creek Upstream from Hillsdale Avenue Guadalupe River Upstream from Trimble Road Adobe Creek Upstream from El Camino Real Guadalupe River Upstream from Coleman Avenue Guadalupe River Upstream from Highway 101 Saratoga Creek Downstream from Warburton Ave. Permanente Creek near Deer Meadow Trail	Negative Negative Negative Negative Negative Negative Negative
Pacific Legacy, Inc. (2006)	Adobe Creek downstream from Foothill Expressway Permanente Creek, Rancho San Antonio Preserve Hale Creek Upstream from Foothill Expressway	Negative Permanente Historic Trash Scatter Negative
Pacific Legacy, Inc. (2007)	Greystone Creek at Olive Branch Lane Alamitos Creek at Bubblingwell Place Adobe Creek at O'Keefe Lane Alamitos Creek at Greystone Creek Confluence Alamitos Creek at McKean Road	Negative PL- SCVWD-ABO -ISO01 PL- SCVWD-ACO -ISO01 Negative Negative
Pacific Legacy, Inc. (2008)	Adobe Creek at O'Keefe Lane, Los Altos Berryessa Creek near Cropley Avenue Guadalupe River at West Alma Avenue Alamitos Creek at Greystone Creek Alamitos Creek near Brett Hart Road Alamitos Creek at Greystone Lane Alamitos Creek near Almaden Expressway	Negative Negative Negative Negative Negative Negative Negative

Public Review Draft

Contractor and Year Work Performed	Monitoring Locations	Results
Pacific Legacy, Inc. (2009)	Saratoga Creek near Warburton Bridge Guadalupe River near Ross Creek Confluence Thompson Creek near Everdale Drive Alamitos Creek near Alamaden Expressway Alamitos Creek near Fieldwood Court Thompson Creek near Farnsworth Road Alamitos Creek at Randol Creek	Negative Negative Negative Negative Negative Negative Negative
Pacific Legacy, Inc. (2010)	Santa Teresa at San Vincente Avenue Calabazas Creek near Padero Court South Bay Advanced Recycled Water Treatment Facility Project Excavations Alviso Slough	Negative Negative Negative Historic Alviso Barge

Source: Albion Environmental, Inc. 2002, 2003; Pacific Legacy, Inc. 2004–2010

3.4.4 Impact Analysis

Methodology

CEQA requires assessment of a project's potential effects on historical resources, as defined in Section 15064.5 of the State CEQA Guidelines (see below). In general, historical resources are those listed or eligible for inclusion on the CRHR or in a local register, or identified based on a survey that meets the requirements of Sections 5020.1 (k) and 5024.1(g) of the California Public Resources Code. The identification of historical resources involves several steps, including: identifying cultural resources within a project's boundaries; evaluating the resources to determine if they qualify as historical resources; and determining the direct or indirect effects of the project on significant historical resources. Resources found not to be "historical resources" or otherwise "historically significant" need no further management. In general, effects on significant CEQA resources can be reduced to less-than-significant levels by applying the proper treatment or management measures, such as avoidance, further documentation, evaluation for eligibility to be included on the CRHR, or data recovery.

As discussed above under 3.4.3, *Environmental Setting,* the potential for the occurrence of prehistoric and historic cultural resources generally is high along existing waterways. Furthermore, because of alluvial flooding along waterways, the potential for buried cultural deposits is high. Several components of the Proposed Project would require ground-disturbing activities that could disturb previously documented or unknown and potentially important prehistoric and historic cultural resources. The Proposed Project would not include any activities that could affect buildings, so an evaluation of buildings was not undertaken as part of this analysis. Although rare, paleontological resources also may be located in areas where ground-disturbing activities would occur under the Proposed Project, and thus it is possible that Proposed Project activities could unearth and damage previously undiscovered paleontological resources.

Public Review Draft

An analysis of the types of activities to be undertaken and their potential impacts on cultural and paleontological resources is provided below. These or similar activities have been occurring on SCVWD-maintained canals and channels for many years. The 2002 SMP EIR provided a programmatic approach to reducing impacts to cultural resources to less-than-significant levels. Treatment measures proposed for the current SMP included pre-construction surveys and preparation of an Archaeological Survey Report, avoidance, monitoring, evaluation of finds, data recovery, and protocols for inadvertent discoveries.

Potential Effects of SMP Activities

Routine activities undertaken as part of the Proposed Project include bank stabilization, sediment removal, vegetation management, management of animal conflicts, minor maintenance, canal maintenance, and sediment reuse/disposal. These routine activities include varying degrees of ground-disturbing activities which may affect cultural resources. Ground-disturbing and construction activities could adversely affect previously documented or unknown potentially important cultural resources, resources determined to be historic properties, or paleontological resources. Certain activities proposed by the SCVWD do not have the potential to disturb native soils and therefore do not have the potential to impact historic properties. , Proposed Project activities have therefore been divided into two categories: (1) activities that will disturb native soils by excavation, construction, or sediment disposal; and (2) activities that will not disturb native soils.

The first category applies to maintenance activities required for bank stabilization, sediment removal, vegetation management, and minor maintenance which require the disturbance of native soils by excavation and/or construction. These include bank stabilization, culvert replacement, stream channel or canal access, channel or canal clearing, sediment removal, hazardous tree removal, and the reuse of sediments for habitat restoration. Where cultural resources are present in native soils, disturbance of these native soils has the potential to impact such resources.

The second category consists of activities such as those that are accomplished from the top of bank, those conducted in imported fill material, those involving the use of handheld equipment, or those involving other non-ground-disturbing activities (e.g., management of animal conflicts). These activities do not have the potential to disturb native soils and therefore would not impact cultural resources. These activities do not require any additional assessment.

Criteria for Determining Significance

Defining Significant Cultural Resources

A resource is considered a historical resource if it qualifies as eligible for listing in the CRHR, included in a local register of historical resources, determined by the lead agency to be historically significant, or meets the criteria found in PRC 5024.1 (g).

Properties that are eligible for listing in the CRHR must meet one or more of the following criteria:

Public Review Draft

- Criterion 1: Association with events that have made a significant contribution to the broad patterns of California's history and cultural heritage ;
- Criterion 2: Association with the lives of persons important in our past;
- Criterion 3: Embodying 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
- Criterion 4: Has yielded, or may be likely to yield, information important in prehistory or history.

The CRHR interprets the integrity of a cultural resource as its physical authenticity. An historic cultural resource must retain its historic character or appearance and thus be recognizable as an historic resource. Integrity is evaluated by examining the subject's location, design, setting, materials, workmanship, feeling, and association. If the subject has retained these qualities, it may be said to have integrity. It is possible that a cultural resource may not retain sufficient integrity to be listed in the NRHP yet still be eligible for listing in the CRHR. If a cultural resource retains the potential to convey significant historical/scientific data, it may be said to retain sufficient integrity for potential listing in the CRHR. Most significant Native American prehistoric sites are eligible because of their age, scientific potential, and/or burial remains. A historical resource also may be one that is included in a local register of historical resources, as defined in section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of section 5024.1 (g) of the PRC. Objects, buildings, structures, sites, areas, place, record, or manuscripts can also be considered an historical resource if the lead agency determines that the resource is historically significant. The lead agency is tasked with providing substantial evidence for this determination generally following the criteria for listing on the CRHR

A resource can also be considered a historical resource if it is identified in a historical resource survey and listed on the CRHR if it meets four criteria. These include 1) the survey has been or will be included in the State Historic Resources Inventory; 2) the report and documentation are prepared by accepted standards; 3) the resource is evaluated and determine to have a significance rating of 1 to 5 on the DPR Form 523; and, 4) the survey is updated if more than 5 years old to determine if the present condition of the resource (PRC Section 5024.1[g]).

Thresholds of Significance

For the purposes of this analysis, the Proposed Project would result in a significant impact on cultural resources if it would:

A. cause a substantial adverse change in the significance of a historical or archaeological resource as defined in Section 15064.5;

B. directly or indirectly destroy a unique paleontological resource or site; or

C. disturb any human remains, including those interred outside of formal cemeteries.

Public Review Draft

Definitions of "historical resource," "archaeological resource," and "substantial adverse change", as used in the State CEQA Guidelines, are summarized below.

Historical Resource

Section 15064.5 of the State CEQA Guidelines defines "Historical resource" as:

- A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in the CRHR (mandatory significance).
- A resource included in a local register of historical resources or identified as significant in an historical resource survey unless the preponderance of evidence suggests it is not significant (presumptive significance).
- In the absence of a federal, state, or local listing, if substantial evidence demonstrates its significance (discretionary significance). This includes any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Generally, a resource shall be historically significant if it:
    - Is associated with events that made a significant contribution to the broad patterns of California's history and cultural heritage.
    - Is associated with the lives of people important in our past.
    - Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values.
    - Has yielded or may be likely to yield information important in prehistory or history.

Substantial Adverse Change

Section 15064.5 of the State CEQA Guidelines defines "substantial adverse change" as:

- Physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.
- Demolition or material alteration in an adverse manner of those physical characteristics of an historical resource which convey its historical significance and justify its inclusion in or eligibility for inclusion in the CRHR inclusion in a local register, or identification in a historical resources survey.

Public Review Draft

Environmental Impacts

Impact CR-1: Disturbance to Known and Previously Undiscovered Archaeological or Historic Resources (Significance Criterion A; Less than Significant)

Ground-disturbing maintenance activities conducted under the Proposed Project would have the potential to disturb known or previously undiscovered cultural resources within the Project Area. Archeological Survey Reports and recommendations have been performed for the current SMP since 2002, and they are used as a reference for proposed maintenance activities..

Sediment Removal and Bank Stabilization

Sediment removal and bank stabilization activities would involve ground disturbances of creek channels and banks in the Project Area, for implementation of the activities themselves and the potential construction of temporary access routes. Ground disturbances associated with these activities could adversely impact known or previously undiscovered important archaeological or historic resources. Project sediment removal or bank stabilization activities could result in alteration of the elements of these resources that made them eligible for the CRHR, or could result in a substantial change in the significance of a historical resource. The majority of these activities would be conducted in canals or modified or engineered channels; therefore, any undiscovered resources may have already been altered or destroyed during canal or channel construction or historic maintenance activities. Nevertheless, stream channels are areas that are considered highly sensitive for the presence of cultural resources, and although most work would not extend below as-built conditions, work conducted in native soils below the engineered channel could encounter previously undiscovered deposits.

Other Maintenance Activities

All other categories of maintenance (vegetation management, minor maintenance, management of animal conflicts, and canal maintenance) include ground-disturbing activities that could affect known or previously undiscovered archaeological or historic resources. Specifically, vegetation management activities include discing. Minor maintenance activities include minor sediment removal or grading. Management of animal conflicts could include physical alterations of habitat (ex., reconstruction of levee side slopes or surface compaction of levee faces). Because routine canal maintenance activities would include all general work activities, effects would be the same as described above for other routine maintenance activities. The effects of these other maintenance activities on known or unknown archaeological or historic resources would be similar to those described for sediment removal and bank stabilization activities.

Public Review Draft

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP update to minimize the potential for disturbances to archaeological or historic resources. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-40: Discovery of Cultural Remains or Historic or Paleontological Artifacts
BMP GEN-41: Review of Projects with Native Soil

Conclusion

By implementing these BMPs, known cultural resources would be identified, flagged, and avoided, and procedures would be followed to minimize impacts on previously unknown archaeological or historic resources. This impact would be less than significant and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact CR-2: Discovery of Human Remains (Significance Criterion C; Less than Significant)

Ground-disturbing maintenance activities conducted under the Proposed Project would have the potential to unearth human remains, including Native American remains.

Sediment Removal/Bank Stabilization

As described above, sediment removal and bank stabilization activities would involve ground-disturbing activities. These activities could affect Native American remains. Native Americans consider the remains of their ancestors and the offerings buried with them to be sacred and wish to prevent the disturbance of interments. Any non-Native American remains would need to be considered as well.

Other Maintenance Activities

Other proposed maintenance activities (vegetation management, minor maintenance, management of animal conflicts, and canal maintenance) would, in some cases, also involve ground-disturbing activities that could potentially affect Native American remains.

Applicable Best Management Practices

The following BMP would be implemented as part of the SMP Update to appropriately respond to the discovery of human remains. A description of this BMP is provided in Chapter 2, *Project Description*.

BMP GEN-40: Discovery of Cultural Remains or Historic or Paleontological Artifacts

Public Review Draft

Conclusion

By implementing this BMP, any human remains would be dealt with in a respectful and appropriate manner. As a result, this impact would be less than significant and no mitigation would be required.

Mitigation Measures: No mitigation is required.

Impact CR-3: Impacts to Sensitive Paleontological Resources as a Result of Maintenance Activities (Significance Criterion B; Less than Significant)

The Proposed Project could affect known or unknown paleontological resources during ground-disturbing or excavation activities.

Sediment Removal/Bank Stabilization

Because the majority of sediment removal and bank stabilization activities would be conducted in channels and canals that have been modified from their natural condition, they would not be expected to contain geologic material with a high likelihood of containing paleontological resources. As such, the discovery of paleontological resources during Proposed Project activities is extremely unlikely. However, activities that would result in excavation of native soils, such as bank stabilization, could uncover previously undiscovered paleontological resources.

Other Maintenance Activities

Other proposed maintenance activities (vegetation management, minor maintenance, management of animal conflicts, and canal maintenance) could involve ground-disturbing activities, including potential excavation of native soils. The potential effects of these activities on known or undiscovered paleontological resources would be similar to that described for sediment removal and bank stabilization activities.

Applicable Best Management Practices

The following BMPs would be implemented as part of the SMP Update to minimize the potential for impacts to sensitive paleontological resources. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-40: Discovery of Cultural Remains or Historic or Paleontological Artifacts
BMP GEN-41: Review of Projects with Native Soils

Conclusion

These BMPs would include stop-work and treatment measures in the event of a discovery of paleontological resources. As a result, this impact would be less than significant and no mitigation would be required.

Mitigation Measures: No mitigation is required.