

16.1 Environmental Setting

16.1.1 Introduction and Sources of Information

This chapter addresses the cultural resources in the project area. It includes regulatory, regional, and project settings to provide a context for analyzing the effects of the project. Information on existing conditions is derived from the following sources:

- field surveys;
- a detailed historical records search;
- personal communications with the site manager, Native American tribes, and historical organizations;
- a review of historical literature; and
- additional research.

Cultural resources is the term used to describe several different types of properties: prehistoric and historical archaeological sites; architectural properties, such as buildings, bridges, and infrastructure; and resources of importance to Native Americans.

Historical resource is a CEQA term that includes buildings, sites, structures, objects, or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance, and is eligible for listing or is listed in the California Register of Historical Resources.

16.1.2 Regulatory Setting

16.1.2.1 Federal

National Historic Preservation Act and National Environmental Policy Act

The use of federal funding, or application for a federal permit, for the project triggers NEPA and Section 106 of the National Historic Preservation Act (NHPA) (36 CFR *et seq.*). According to both laws, the two compliance processes can be coordinated. The regulations and guidance outlined in the NHPA are being followed because NEPA regulations do not contain guidance on cultural resource issues.

Section 106 of the NHPA requires that, before beginning any undertaking, a federal agency must take into account the effects of the undertaking on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on these actions. The Section 106 process has six basic steps:

- initiate consultation and public involvement;
- identify and evaluate historic properties;
- assess effects of the project on historic properties;
- consult with the State Historic Preservation Officer (SHPO) regarding adverse effects on historic properties, resulting in a Memorandum of Agreement (MOA);
- submit the MOA to the ACHP; and
- proceed in accordance with the MOA.

The assessment of impacts presented in this chapter applies the Criteria of Effect and Adverse Effect, as defined by the NHPA. Because these criteria are consistent with the criteria for determining impacts for both CEQA and NEPA, this chapter will be used to document the effects of the project for the purpose of CEQA, NEPA, and Section 106.

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

National Historic Preservation Act Determination of Historical Significance

For federal projects, cultural resource significance is evaluated in terms of eligibility for listing in the National Register of Historic Places (NRHP). NRHP criteria for eligibility are defined below.

The quality of significance in American history, architecture, archaeology, 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, 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
- have yielded, or are likely to yield, information important in prehistory or history (36 CFR 60.4).

16.1.2.2 State

California Environmental Quality Act

CEQA requires that public or private projects financed or approved by public agencies assess the effects of the project on historical resources. Historical resources are defined as buildings, sites, structures, objects or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance.

CEQA requires that if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered; however, only *significant* historical resources need to be addressed.

The steps performed in a cultural resources investigation for CEQA compliance are typically as follows:

- Identify potential historical resources.
- Evaluate the eligibility of historical resources.
- Evaluate the effects of a project on all eligible historical resources.

CEQA Determination of Significant Historical Resources

CEQA guidelines define three ways that a property can qualify as a significant historical resource for the purposes of CEQA review: (1) if the resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR); (2) if the resource is included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code unless the preponderance of evidence demonstrates that it is not historically or culturally significant; or (3) the lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (California Code of Regulations, Title 14, Division 6, Chapter 3, section 15064.5).

For a historical resource to be eligible for listing on the CRHR, it must be significant at the local, state, or national level under one or more of the following four criteria:

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

Historical resources automatically listed in the CRHR include those historic properties listed in, or formally determined eligible for listing in, the NRHP (PRC Section 5024.1).

16.1.3 Regional Setting

San Pablo Bay and surrounding marshlands and uplands were used extensively by humans during prehistoric and historic times (See Jones & Stokes 2003 for detailed historical context). For several thousand years during prehistoric times, the Coast Miwok and the Patwin Indians lived in areas surrounding San Pablo Bay. These native cultures subsisted on hunting, gathering, and fishing in San Pablo Bay, bay margins, and uplands. Settlement by Europeans and Spanish in the late 1700s and early 1800s began to affect these native peoples adversely, and these populations were decimated by the early 1900s.

Early settlement of Napa, Sonoma, and Solano Counties led to large land grants and new land uses. The San Pablo Bay tidelands remained undeveloped for the 1850s and 1860s but were transformed in the 1870s with the reclamation of much of the tideland under the 1868 Green Act. By the early twentieth century levees enclosed nearly all of the San Pablo Bay marshes (Hayes 1995, Kelley 1989).

New land uses included ranching, duck hunting, urban infrastructure such as roads, and salt production.

At the time of Euroamerican contact, the two Native American groups lived in the area. The Patwin spoke suskol, while huchi was one of the languages spoken by the Coast Miwok. Native American archaeological sites in the project area portion of Sonoma and Napa Counties tend to be situated along the bases of hills and alluvial flats, in areas along the edge of the marsh/slough system.

16.1.4 Project Setting

16.1.4.1 Restoration Area of Potential Effect

The restoration Area of Potential Effects (APE) was delineated by the Corps on October 2, 2002 (Figure 16-1). The APE includes all areas of the project area where ground-disturbing activities are anticipated, including levee breaches.

On April 25, and October 15, 2002, Jones & Stokes conducted a survey of the project area. As part of the field process, buildings and structures in the project area were photographed and notes were taken. During the site visit 14 historic resources were observed that appear to be more than 50 years old. These resources were recorded on Department of Parks and Recreation 523 forms (DPR 523 forms) and evaluated for the NRHP and CEQA. The DPR 523 forms are attached to the technical report (Jones & Stokes 2003).

16.1.4.2 Restoration Area Archaeology

Several archaeological sites have been recorded within a 1-mile radius of the restoration APE; however no known archaeological sites have been recorded within the project area. Several cultural resources studies have been conducted in the area surrounding the project area, including reports produced by David A. Fredrickson in 1983, Mick Hayes in 1995, and Nicholas Valentine in 1997. Fredrickson's 1983 report discusses how environmental elements played a crucial role in the development of cultural settlement and land use patterns in the project area and surrounding region. Valentine's 1997 cultural resources report mentions that the Napa Marsh would have been a plentiful area for prehistoric subsistence and undoubtedly received heavy usage (Valentine 1997: 3).

Several prehistoric sites have been identified within a ½-mile radius of the restoration APE. Nels Nelson first identified CA-SOL-269, and 230 in the early 20th century. CA-SOL-269 is a low mound approximately 100 feet by 50 feet in size located on the eastern banks of the Napa River on Slaughterhouse Point. CA-SOL-269 is located northeast of the APE and consists of a light surface scatter of obsidian and quartz flakes. CA-NAP-230 consists of the remains of numerous shell fragments and obsidian flakes on the northwest edge of Green Island. Several additional isolated finds of prehistoric materials have been reported to the Northwest Information Center (NWIC) and are in the vicinity

of the project area. Additionally, Tom Huffman from DFG reported that he identified a charmstone and an obsidian projectile point on the surface of one of the levees within the project area (Huffman pers. comm.).

No archaeological sites were observed during the site visit; however, a formal archaeological survey of the restoration APE was not conducted because the majority of the project area is completely inundated and levees are not part of the natural environment. A qualified archaeologist conducted a sample survey of accessible locations within the restoration APE during the site visits in May and October 2002. However, because several prehistoric sites are located within a 1-mile radius of the project area, the identification of prehistoric materials by Tom Huffman, and the extensive historical occupation and land use, the project area could contain prehistoric and historic archaeological resources.

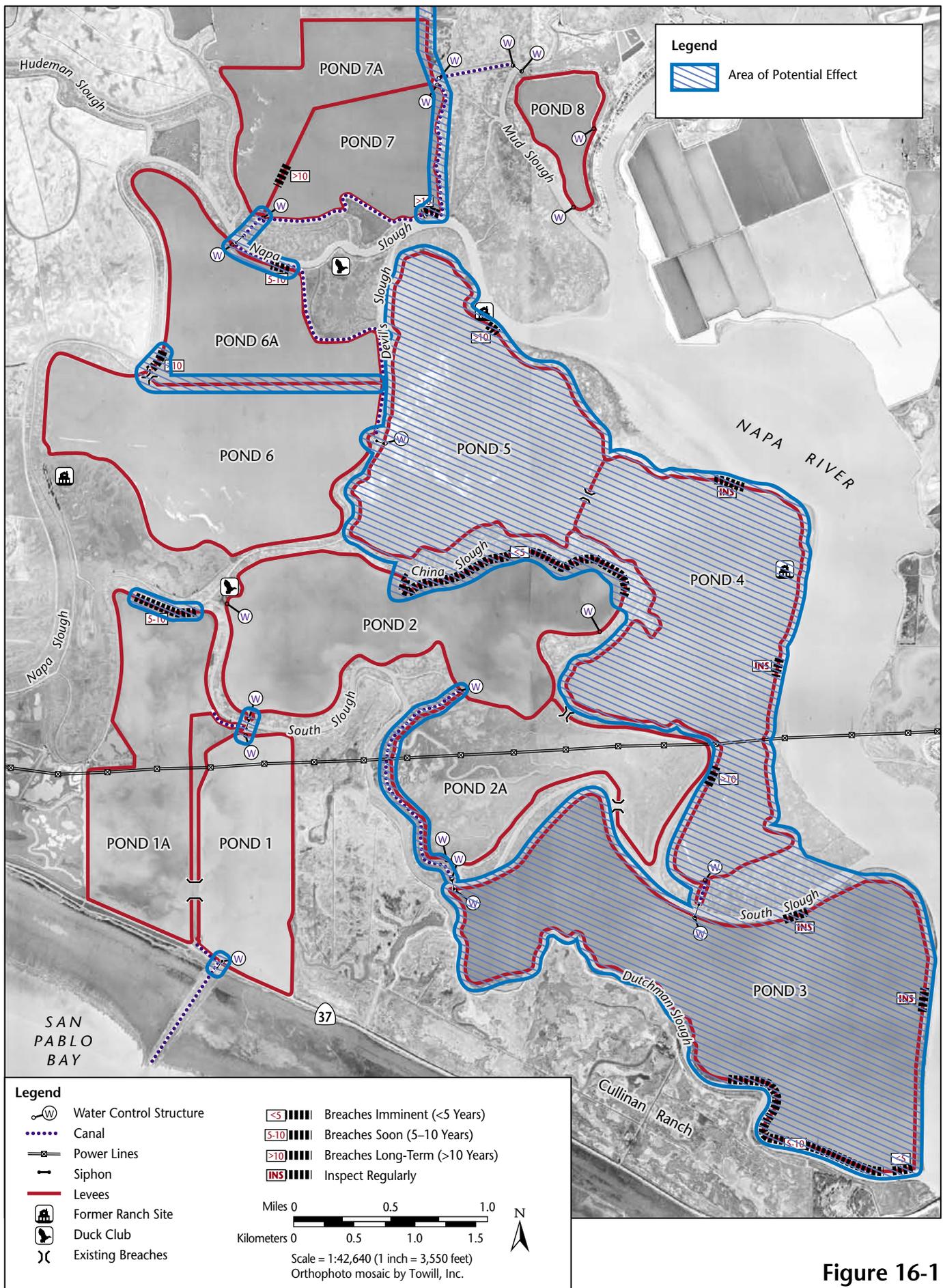
16.1.4.3 Restoration Area Built Environment

Hayes (1995) and Valentine (1997) identified two historic properties (the Detian/Fleishacker Duck Club and associated structures and the Cullinan Ranch and associated levees) in the vicinity of the project area and determined that neither resource met NRHP eligibility requirements.

A total of twelve buildings, structures, and linear features more than 50 years old located within the restoration APE have been identified and evaluated for historical significance. None of the resources evaluated appear to be historically or architecturally significant. A brief description and evaluation of NRHP and CRHR eligibility for each historic resource and linear feature is presented below. (See Jones & Stokes 2003 for DPR records).

Duck Blinds and Fishing Sheds

A total of three duck blinds and two fishing sheds are located in the project area. The structures are generally small (covering 40-80 feet) wood frame structures supported by post-and-pier or wood pilings. The blinds and sheds are typically clad with plywood, shingled, or corrugated metal and roof forms are either gabled, flat, or shed style. They include window and door openings and walkways with rails and often feature wood piers. One duck blinds is a converted abandoned fishing boat that was permanently moored in the marsh. Most structures are somewhat deteriorated and are partially collapsed and/or missing siding. According to historic maps the duck blinds and fishing sheds in the project area date from approximately the 1930s to the 1950s. The duck blinds and fishing sheds located in the project area lack integrity and therefore do not appear to meet the criteria for listing in the NRHP or the CRHR.



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Figure 16-1
Cultural Resources
Area of Potential Effect for Restoration Area

Farming and Ranching Building Remains

Farm and ranch building remnants are located in the project area. These remains are comprised of concrete foundations with heavily deteriorated wood structures. The remains were once part of a complex of buildings constructed in the mid-twentieth century for ranching and dairying purposes. The remains lack historical significance and therefore do not appear to meet the criteria for listing in the NRHP or the CRHR.

Wharf and Dock Remains

Wharf and dock remnants are located throughout the project area. The remnants originally accessed duck blinds and fishing sheds that are no longer in existence. The remains are in various stages of deterioration, are typically comprised of vertical wood posts with plywood, and vary in length from approximately two to fourteen feet. The remains lack historical significance and therefore do not appear to meet the criteria for listing in the NRHP or the CRHR.

Pump House

A pump house is located in the project area. The tower is a tall, gabled roofed building with wood siding. The building was constructed in the early 1950s and is still in use. The water tower lacks historical and architectural significance and therefore does not appear to meet the criteria for listing in the NRHP or the CRHR.

Levee and Slough System

The levee and slough system consists of several earthen levees, canals, and sloughs. According to historic maps by 1915, most of the tidelands area was reclaimed for agricultural use. The levee and slough system lacks integrity, and for this reason, it does not appear to meet the criteria for listing in the NRHP or the CRHR.

Salt Ponds

Eleven large salt ponds are located throughout the project area. The salt ponds were created in the area in the mid-twentieth century and continued to be used until the 1990s. The ponds lack historical significance and for this reason, they do not appear to meet the criteria for listing in the NRHP or the CRHR.—Water Conveyance Structure

Water Conveyance Structure

A water conveyance structure is located at the southern edge of Pond 1. The rectangular structure is comprised of wood plank boards and is supported by a wood-frame foundation. A large discharge pipe extends from the structure to San Pablo Bay. The water conveyance structure was constructed in the early 1950s. The structure lacks historical significance and therefore does not appear to meet the criteria for listing in the NRHP or the CRHR.

16.1.4.4 Water Delivery Project Component Area of Potential Effect

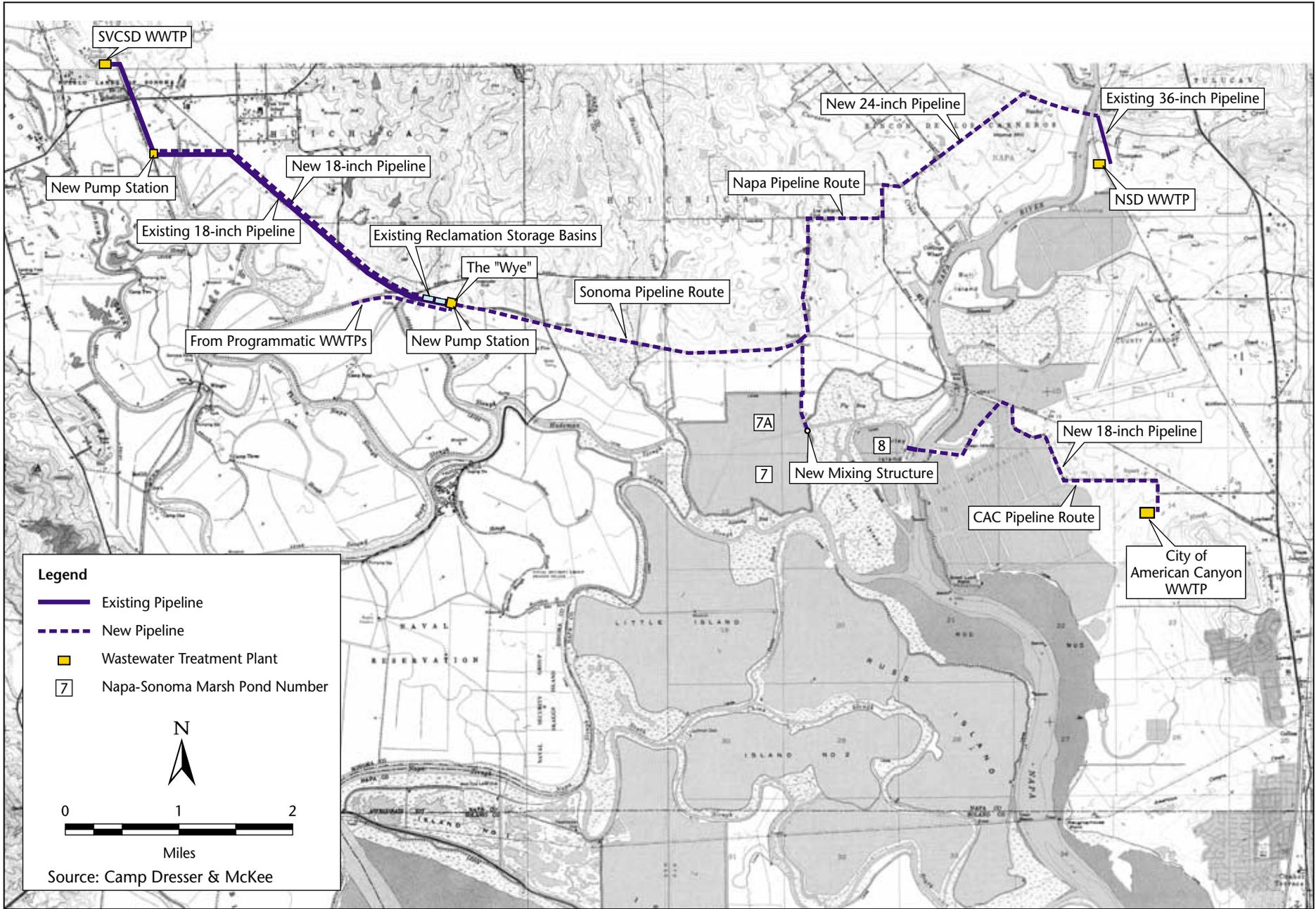
The pipeline APE was delineated in February 2003 (Figure 16-2) and includes all areas of the project where ground disturbing activities are anticipated, including new trenching for the pipeline and staging areas.

A records search conducted at the Northwest Information Center on February 25, 2003, indicated that there were three prehistoric resources located within the APE. A field survey was conducted on February 26, 2003, by qualified Jones & Stokes archaeologists. ~~No archaeological remains were identified during the cultural resources inventory; however, efforts were made to relocate sites CA-NAPSON 224, unnumbered Nelson's shell mound (C-164), and CA NAP 230. No evidence of CA-NAPSON 224 was identified on the surface of the project area, and the topographic features discussed by Nelson in 1907 are no longer visible on the landscape. The area surrounding the location of CA-NAPSON 224 has been highly disturbed by agricultural activities and more recent off-road-vehicle use. Both locations for unnumbered Nelson's shell mound (C-164) were intensively surveyed for any sign of archaeological remains; however, none were visible on the surface. The locations for unnumbered Nelson's shell mound have been disturbed by the installation of previous water pipelines and a fiber optic line. No evidence of CA-NAP 230 was found other than scattered flakes of obsidian and shell fragments. The pipeline APE does not contain built environment resources.~~

Sonoma Pipeline Archaeology

Several prehistoric sites appear to be located in or immediately adjacent to the Sonoma pipeline APE. Two prehistoric shellmound sites recorded by Nels Nelson in 1907 appear to be in or immediately adjacent to the pipeline APE. CA-SON-224 is a shellmound located east of Schnell Creek. The site was originally recorded in 1907 by Nels Nelson and was described as a "campsite" consisting of "a circular prominence 30–35 feet in diameter and 1 to 1-1/2 feet high. Shell is almost absent but 2 or 3 obsidian flakes were found."

Unnumbered Nelson's shell mound was identified by Nels Nelson in 1907 and described the site as a campsite with "peculiar circular rises in the surface." No description was given of artifacts or size of this site. However, an isolated find



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Figure 16-2
Cultural Resources Area of Potential Effect for
Water Delivery Option: Project Component

(C-164) by Sonoma State University archaeologists in 1987 may indicate the original location of the unnumbered Nelson's shell mound. Unnumbered Nelson's shell mound appears to have been incorrectly plotted and the isolated find, recorded as C-164, in an adjacent similar location has topographic features similar to those described by Nelson and is most likely unnumbered Nelson's shell mound according to the NWIC researchers. Both potential locations for unnumbered Nelson's shell mound appear to be within the pipeline APE. (The specific locations of these sites cannot be provided in a figure in the EIR because of the sensitive nature of the resource.)

CA-NAP-225, a prehistoric shellmound, was recorded by Nelson in 1907 and is located 75–100 feet northeast of the APE.

Approximately six archaeological studies were conducted between 1975 and 1994 that surveyed the current project APE. No archaeological remains were identified during the previous investigations in the APE.

No archaeological remains were identified during the cultural resources inventory; however, efforts were made to relocate sites CA-SON-224, and unnumbered Nelson's shell mound (C-164). No evidence of CA-SON-224 was identified on the surface of the project area, and the topographic features discussed by Nelson in 1907 are no longer visible on the landscape. The area surrounding the location of CA-SON-224 has been highly disturbed by agricultural activities and more recent off road–vehicle use. Both locations for unnumbered Nelson's shell mound (C-164) were intensively surveyed for any sign of archaeological remains; however, none were visible on the surface. The locations for unnumbered Nelson's shell mound have been disturbed by the installation of previous water pipelines and a fiber optic line. The pipeline APE does not contain built environment resources.

Napa Pipeline Archaeology

No historic resources have been previously identified in the pipeline APE; however, a historic ranch complex, Stanly Ranch, is located adjacent to the Napa pipeline. No signs of archaeological remains were identified in the Napa portion of the pipeline APE.

CAC Pipeline Archaeology

CA-NAP-230 appears to be located adjacent to the western end of the pipeline alignment. This site was recorded by Nels Nelson in 1907 and includes the remains of numerous shell fragments and obsidian flakes on the northwest edge of Green Island. The area has been heavily disturbed and is currently a residential complex with several houses and associated structures. CA-NAP-230 is located on Green Island located under the residential complex of the Cargill caretaker. No evidence of CA-NAP-230 was found other than scattered flakes of

obsidian and shell fragments. No signs of archaeological remains were identified in the APE.

16.1.4.5 Water Delivery Program Component Area

A records search and cultural resource surveys have not been conducted for the program component area, but would be conducted as part of further environmental analysis, should efforts progress on the Water Delivery Program Component.

16.2 Environmental Impacts and Mitigation Measures

16.2.1 Methodology and Significance Criteria

Information on cultural resources in the project area was gathered by completing a records search, contacting the Native American Heritage Commission (NAHC) and Native American representatives with interest in the project area, contacting local historical organizations, conducting site visits, and resource surveys, and conducting archival research to prepare a detailed historical context of the project area.

A records search was conducted at the NWIC of the California Historical Resources Information System in April 2002 and February 2003. The records search covered the entire project area and a ½-mile radius. The state database of previous studies and previously recorded cultural resources sites were consulted. Additional sources consulted included the NRHP, the California Inventory of Historic Resources, California Historical Landmarks, and California Points of Historical Interest.

The NAHC was contacted in April 2002 and asked to review its sacred lands file and provide a list of Native American representatives potentially interested in the project area. In May 2002, letters briefly describing the project, including a map of the project area, were sent to six Native American representatives. The letters requested that the representatives provide comments and express any concerns about the project. To date, no comments or concerns have been received. Follow-up letters and telephone calls to the Native American representatives were made in October 2002. Follow-up letters were sent in March 2003 updating the Native American Representative on the pipeline portion of the project.

Cultural resources staff initiated consultation with historical organizations in Napa and Solano Counties, including the Napa Historical Society, Napa Cultural Heritage Commission, Vallejo Archaeological Heritage and Landmarks Commission, and the Solano County Historical Society. Letters were sent to the

above organizations in May 2002 and follow-up telephone calls are also complete in progress.

In addition, cultural resources staff conducted archival research at the California State Library, Sacramento, the Sonoma State University library in Rohnert Park, the Sonoma Valley Historical Society, the Depot Park Museum in Sonoma, and the Sonoma Ecology Center in Sonoma in an effort to identify important historic people, events, and architectural trends that may have been associated with the project area. In addition, previous reports were consulted including the *Hamilton Wetland Restoration Plan and Final Environmental Impact Report/Environmental Impact Statement, Marin County, California* (Jones & Stokes 1998), the *Cultural Resources Inventory Report for Habitat Mitigation Planning Sites, San Francisco International Airport Proposed Runway Configuration Program* (Jones & Stokes 2000), and *Bel Marin Keys Environmental Impact Report* (Jones & Stokes 2002)

16.2.1.1 Criteria for Determining Effects under CEQA

The project would have a significant impact on cultural resources 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

Actions that would materially impair the significance of a historic resource are any actions that would demolish or adversely alter those physical characteristics of a historic resource that convey its historical significance and qualify it for inclusion in the CRHR or in a local register or survey that meet the requirements of sections 5020.1(k) and 5024.1(g) of the Public Resources Code.

16.2.1.2 Criteria for Determining Effects under Section 106

Under federal regulations, a project has an effect on a historic property when the undertaking could alter the characteristics of the property that may qualify the property for inclusion in the NRHP, including alteration of location, setting, or use. An undertaking may be considered to have an adverse effect on a historic property when the effect may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to

- physical destruction or alteration of all or part of the property;

- isolation of the property from or alteration of the property's setting when that character contributes to the property's qualifications for listing in the NRHP;
- introduction of visual, audible, or atmospheric elements that are out of character with the property or that alter its setting;
- neglect of a property resulting in its deterioration or destruction; or
- transfer, lease, or sale of the property (36 CFR 800.9).

16.2.2 No-Project Alternative

16.2.2.1 Impact C-1: Potential to Materially Impair Significant Cultural Resources

Historical and archaeological resources in the project area would continue to deteriorate under the No-Project Alternative. Structures such as water control facilities, small wharfs and docks, fishing sheds, duck blinds, farming and ranching remains, and other post-settlement land uses would continue to age and deteriorate. None of the resources located in the project area appear to meet the criteria for listing in the NRHP or the CRHR, therefore, this impact is not considered significant.

16.2.3 Salinity Reduction Option 1A: Napa River and Napa Slough Discharge

16.2.3.1 Impact C-1: Potential to Materially Impair Significant Cultural Resources

The field surveys and a literature review of the project area indicate that there are 24 cultural resources within the project area. None of the resources located in the project area appear to meet the criteria for listing in the NRHP or the CRHR, therefore, this impact is not considered significant.

16.2.3.2 Impact C-2: Potential for Ground-Disturbing Activities to Damage Previously Unidentified Buried Cultural Resources Sites

Buried or otherwise unidentified cultural resources could be inadvertently unearthed during ground-disturbing activities, which could result in the demolition of or substantial damage to significant cultural resources. This impact is considered significant. Implementation of Mitigation Measure C-1 would reduce this impact to a less-than-significant level.

Mitigation Measure C-1: Stop Work If Cultural Resources Are Discovered during Ground-Disturbing Activities

If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or non-human bone are inadvertently discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures are measures that mitigate impacts through data recovery programs such as excavation or detailed documentation.

If cultural resources are discovered during construction activities, the construction contractor and lead contractor compliance inspector will verify that work is halted until appropriate treatment measures are implemented. Concurrence of the project sponsors will be obtained before resuming construction activities in the area of the find.

16.2.3.3 Impact C-3: Potential to Damage Previously Unidentified Human Remains

Buried human remains, if present, could be inadvertently unearthed during excavation activities, which could result in damage to these remains. Therefore, this impact is considered significant. Implementation of Mitigation Measure C-2 would reduce this impact to a less-than-significant level.

Mitigation Measure C-2: Comply with State Laws Pertaining to the Discovery of Human Remains

If human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- the coroner of Napa and/or Solano County has been informed and has determined that no investigation of the cause of death is required; and
- if the remains are of Native American origin,
 - the descendants of the deceased Native Americans have made a recommendation to the land owner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
 - the California Native American Heritage Commission (NAHC) was unable to identify a descendent or the descendent failed to make a recommendation within 24 hours after being notified by the commission.

According to the California Health and Safety Code, six or more human burials at one location constitute a cemetery (Section 8100), and disturbance of Native American cemeteries is a felony (Section 7052). Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC and the project sponsors must comply with state and federal laws relating to the disposition of Native American burials.

16.2.4 Salinity Reduction Option 1B: Napa River and Napa Slough Discharge and Breach of Pond 3

Impacts under Salinity Reduction Option 1B (Impacts C-1, C-2, and C-3) are nearly the same as those under Salinity Reduction Option 1A. Though there would be less construction under this option, a breach of Pond 3 could adversely affect cultural resources if present. Operational effects would also be nearly the same. Mitigation measures would also be the same as with Option 1A.

16.2.5 Salinity Reduction Option 1C: Napa River and Napa Slough Discharge and Breach of Pond 3 and Pond 4/5

Impacts under Salinity Reduction Option 1C (Impacts C-1 and C-2) are nearly the same as those under Salinity Reduction Option 1A. Though there would be the smallest amount of construction under this option, breaches on Pond 3 and Pond 4/5 could adversely affect cultural resources if present. Operational effects would also be nearly the same as Salinity Reduction Option 1A. Mitigation measures would also be the same as with Option 1A.

16.2.6 Salinity Reduction Option 2

Impacts under Salinity Reduction Option 2 (Impacts C-1 and C-2) are nearly the same as those under Salinity Reduction Option 1A. There would be additional construction under this option, and construction of the siphon between Pond 6 and Pond 2 ~~and canal widening south of SR 37~~ could adversely affect cultural resources if present. Operational effects would also be nearly the same. Mitigation measures would also be the same as with Option 1A.

16.2.7 Water Delivery Option

16.2.7.1 Impact C-4: Changes in the Significance of a Historic and/or Archaeological Resource

Water Delivery Project Component

Archaeological surveys in the project area did not identify archaeological remains along the Napa Pipeline or CAC Pipeline routes; however, there is the potential for construction of the Sonoma Pipeline to affect Site C-164 (unnumbered Nelson's shell mound), a shell mound with associated habitation debris.

Given that ~~both~~ all three pipeline routes are located in, or near, areas along or near marshes, sloughs, alluvial flats, and water environments, all of which are known areas of Native American habitation, there is a high possibility of encountering other Native American resources. Additionally, there is the potential of encountering historic archaeological sites or subsurface structures associated with the rail lines and ranch complex. As such, construction of the pipelines that are currently proposed for the Water Delivery Option could affect archaeological resources. This impact is considered significant. Implementation of Mitigation Measures ~~C-4~~C-3 would reduce this impact to a less-than-significant level.

Mitigation Measure C-3: Conduct Archaeological Monitoring of Construction Activities in the Vicinity of CA-NAP-224, C-164, and CA-NAP-230

For the three areas determined to have a high potential for containing archaeological resources, an archaeological monitor will be on site during initial grading/trenching activities of the subject areas to inspect for the presence of archaeological resources. In the event that archaeological resources are encountered, the monitor will have the authority to temporarily halt construction activities in the area of discovery to allow an archaeological testing program to record, collect, and evaluate the resources encountered. If the resource is determined to be significant for the NRHP and/or the CRHR, a data recovery program will be implemented. The collection of archaeological materials recovered during any additional site investigations, along with a testing report, will be deposited into a local qualified repository for retention and curation. A copy of the testing report will be deposited with the California Historical Resources Regional Information Center. Construction monitoring will include preparation of a report with appropriate graphics summarizing the results, analyses, and conclusions.

Should archaeological resources be identified, the archaeologist will evaluate the significance of the resource(s), conducting additional investigation if/as necessary, and will provide specific mitigation recommendations based on the significance of the resource. Development of the mitigation recommendations will incorporate the requirements of Section 21083.2 of CEQA pertaining to

archaeological resources. If the area of potential effect contains buildings, structures, or objects older than 45 years (the Office of Historic Preservation has determined that buildings, structures or objects older than 45 years may be of historical value), the agency responsible for compliance with Section 106 of the NHPA will consult with the state Office of Historic Preservation regarding potential impacts on these properties. Implementation of the mitigation measures will occur before, or in conjunction with, pipeline construction activities based on the recommendations of the archaeologist.

Water Delivery Program Component

Exact alignments and construction methods have not yet been determined for the potential future pipelines associated with the Water Delivery Program Component of the Water Delivery Option. Given that much of the area in the vicinity of the potential future pipelines is near marshes, sloughs, alluvial flats, and water environments, all of which are known areas of Native American habitation, there is a high likelihood that Native American resource sites are present in the general area and could be affected by pipeline construction activity. Also, in the absence of any information to indicate otherwise, there is the potential that historic resources are located in the general area. This impact is considered significant. Implementation of Mitigation Measure C-4 would reduce this impact to a less-than-significant level.

Mitigation Measure C-4: Conduct Records Search and Visual Survey

Before initiation of any grading or other surface disturbance activity for construction of each potential future pipeline, a records search for historic and cultural resources will be completed. A qualified archaeologist will conduct a field visual survey along the construction route of each pipeline to supplement the records search and provide a basis for determining whether significant resources exist. Based on the results of the records search and visual survey, and any additional investigation necessary to assess the presence and significance of onsite resources, mitigation will be provided. Development of the mitigation recommendations will need to incorporate the requirements of Section 21083.2 of CEQA pertaining to archaeological resources.

16.2.7.2 Impact C-5: Disturbance of Human Remains

Water Delivery Project Component

As discussed above, portions of the proposed pipeline alignments for the Water Delivery Option are along or near areas where the probability of encountering Native American resources is high. The Native American resources could include human remains. This impact is considered significant. Implementation of Mitigation Measure C-2, "Comply with State Laws Pertaining to the Discovery of Human Remains," would reduce this impact to a less-than-significant level. This measure is described under Impact C-3 above. Operation

of the proposed pipelines is passive; therefore, no impact is anticipated on human remains.

Water Delivery Program Component

Exact alignments and construction methods have not yet been determined for the pipelines associated with the Program Component of the Water Delivery Option. It is anticipated that the potential risk of encountering or disturbing human remains would be comparable to those described above for currently proposed pipelines. This impact is considered significant. Implementation of Mitigation Measure C-2, “Comply with State Laws Pertaining to the Discovery of Human Remains,” would reduce this impact to a less-than-significant level. This measure is described under Impact C-3 above.

16.2.8 Habitat Restoration Option 1: Mixture of Tidal Marsh and Managed Ponds

Impacts under Habitat Restoration Option 1 are nearly the same as those described under Salinity Reduction Option 1A for Impacts C-2 and C-3, and similar to those described under Salinity Reduction Option 1B and 1C because exterior levees would be breached in both cases. However, more levees would be breached, and the breaches would be wider, under Habitat Restoration Option 1 than under Salinity Reduction Options 1B or 1C. In addition, several miles of levees would be lowered to elevations near MHHW. Impact C-1 is slightly different under this option and is described below.

16.2.8.1 Impact C-1: Potential to Materially Impair Significant Cultural Resources

Additional construction would be required to remove the intake and outfall facilities, downgrade levees, and construct ditch blocks. Furthermore, scouring and other elevation changes are anticipated and desired as part of marsh restoration during operation.

None of the cultural resources located in the project area appear to meet the criteria for listing in the NRHP or the CRHR, therefore, this impact is not considered significant. ~~Furthermore, because no project is being implemented, no mitigation is required.~~

Mitigation Measure C-45: Halt Construction if Cultural Resources Are Uncovered

If buried cultural resources are discovered during construction activities, the construction contractor and lead contractor compliance inspector will verify that work is halted until appropriate treatment measures are implemented.

Concurrence of the project sponsors will be obtained before resuming construction activities in the area of the find.

Mitigation Measure C-56: Include Archeological Monitoring for Sensitive Locations

For sensitive locations are identified in the inventory report, a qualified archaeological monitor should observe ground-disturbing activities associated with the project construction.

16.2.9 Habitat Restoration Option 2: Tidal Marsh Emphasis

More levees would be breached under Habitat Restoration Option 2 than under Habitat Restoration Option 1, and the number of ponds open to the tidal prism is greatest under this option. However, impacts under Habitat Restoration Option 1 (Impacts C-1 and C-2) are nearly the same as those under Habitat Restoration Option 1. If necessary, Mitigation Measures C-5 and C-6 will be implemented under Option 2.

16.2.10 Habitat Restoration Option 3: Pond Emphasis

Fewer levees would be breached under Habitat Restoration Option 3 than under Habitat Restoration Option 1, and the number of ponds open to the tidal prism is least under this option. However, impacts under Habitat Restoration Option 3 (Impacts C-1 and C-2) are nearly the same as those under Habitat Restoration Option 1. If necessary, Mitigation Measures C-5 and C-6 will be implemented under Option 3.

16.2.11 Habitat Restoration Option 4: Accelerated Restoration

Additional levee lowering, channel excavation, and the use of fill material to accelerate restoration would occur under Habitat Restoration Option 4, potentially affecting significant cultural resources. However, impacts under Habitat Restoration Option 4 (Impacts C-1 and C-2) are nearly the same as those under Habitat Restoration Option 1. If necessary, Mitigation Measures C-5 and C-6 will be implemented under Option 4.