3.8 Cultural and Historic Resources

This section identifies the cultural and historic resources that could be affected by implementation of the proposed program. This section is composed of the following subsections:

- Section 3.8.1, "Environmental Setting," describes the physical conditions in the program study area as they apply to cultural and historic resources.
- Section 3.8.2, "Regulatory Setting," summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts on cultural and historic resources.
- Section 3.8.3, "Analysis Methodology and Thresholds of Significance," describes the methods used to assess the environmental effects of the proposed program and lists the thresholds used to determine the significance of those effects.
- Section 3.8.4, "Environmental Impacts and Mitigation Measures for NTMAs," discusses the environmental effects of the near-term management activities (NTMAs) and identifies mitigation measures for significant environmental effects.
- Section 3.8.5, "Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs," discusses the environmental effects of the long-term management activities (LTMAs) and identifies mitigation measures for significant environmental effects.

NTMAs and LTMAs are described in detail in Section 2.4, "Proposed Management Activities."

See Section 3.10, "Geology, Soils, and Seismicity (Including Mineral and Paleontological Resources)," for a discussion of paleontological resources.

3.8.1 Environmental Setting

Information Sources Consulted

Sources of information used to prepare this section include the following:

- *California Archaeology,* by Michael J. Moratto (2004)
- *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar (Jones and Klar 2007)

- *Handbook of North American Indians, Vol. 8, California*, edited by Robert F. Heizer (1978)

- *Five Views: An Ethnic Historic Site Survey for California* (OHP 1988)

Geographic Areas Discussed

The following discussion has been divided into the following two geographic regions defined for the proposed program, to identify potential effects on cultural resources within those areas:

- Extended systemwide planning area (Extended SPA) divided into the Sacramento and San Joaquin Valley and foothills, and the Sacramento–San Joaquin Delta (Delta) and Suisun Marsh

- Sacramento and San Joaquin Valley watersheds

None of the management activities included in the proposed program would be implemented in the SoCal/coastal Central Valley Project/State Water Project (CVP/SWP) service areas. In addition, implementation of the proposed program would not result in substantial or long-term reductions in water deliveries to the SoCal/coastal CVP/SWP service areas (see Section 2.6, "No Near- or Long-Term Reduction in Water or Renewable Electricity Deliveries"). Given these conditions, the program is not expected to result in adverse impacts on cultural and historic resources in the portion of the CVP/SWP service areas located outside of the Sacramento and San Joaquin Valley watersheds and Sacramento and San Joaquin Valley and foothills. Therefore, this geographic area is not discussed in detail in this section.

Definitions

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for the historical significance they possess or convey. Cultural resources include but are not limited to the following types of resources: prehistoric and historic-era archaeological deposits; historic-era features, such as roadways and railroad tracks; buildings and structures of architectural significance; and places that are important for maintaining a community's identity or culture (i.e., traditions, beliefs, lifeways, social institutions).

Historical resources are those cultural resources that are determined eligible for listing in the California Register of Historical Resources (CRHR) pursuant to Public Resources Code (PRC) Section 5024.1.

Historic properties are cultural resources that are found eligible for inclusion in the National Register of Historic Places (NRHP) by meeting

the criteria outlined in Title 36, Section 60.4 of the Code of Federal Regulations (CFR) (36 CFR 60.4).

Traditional cultural properties are a subset of historic properties. These resources have been found eligible for listing in the NRHP "because of [their] association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1998).

Generally, for a cultural resource to be considered a historical resource (or a historic property), it must be at least 50 years old. However, properties less than 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP. For example, in California, the Oroville Dam and hydroelectric facilities are less than 50 years of age, but they have been determined eligible for the NRHP because of their importance as part of the SWP. See Section 3.8.2, "Regulatory Setting," for further description of the NRHP and CRHR.

Background

As mentioned previously, the Extended SPA and the Sacramento and San Joaquin Valley watersheds compose the CVFPP study area for purposes of cultural and historic resources. Because of the geographic diversity (i.e., differences in climate, vegetation, and land form) of this large territory, prehistoric land use varied accordingly. Prehistoric populations responded with great specificity to their respective environments, and this is reflected in the material culture left behind. As a result, archaeologists such as Moratto (2004:Figure 1) have divided the state into eight archaeological regions that basically correspond to differing environmental zones: the North Coast, Northeastern, Central Valley, Sierra Nevada, San Francisco Bay, Central Coast, South Coast, and Desert archaeological regions. Each of these archaeological regions exhibits unique cultural adaptations to its environment. In turn, archaeological data have been compiled to reflect various cultural chronologies for each region.

The Extended SPA and the Sacramento and San Joaquin Valley watersheds primarily incorporate three of the archaeological regions: the Central Valley, Northeastern, and Sierra Nevada (Figure 3.8-1). The eastern edge of the North Coast archaeological region is also included in this geographic area.

Extended Systemwide Planning Area

Sacramento and San Joaquin Valley and Foothills

Prehistoric Context The Sacramento and San Joaquin Valley and foothills area of the Extended SPA falls largely within the Central Valley archaeological region, which includes the Central Valley and the lower elevations of the adjacent mountain foothills.

Portions of the Sacramento and San Joaquin Valley and foothills that extend up the waterways flowing into the Central Valley are marginally included in the Northeastern, Sierra Nevada, and North Coast archaeological regions. Shasta Lake is located within the Northeastern archaeological region. The Sierra Nevada archaeological region contains several lakes and reservoirs of the Sacramento and San Joaquin Valley and foothills area: Lake Oroville, New Bullards Bar Reservoir, Folsom Lake, Monticello Dam, New Melones Lake, New Don Pedro Reservoir, Lake McClure, and Millerton Lake. To the west, Clear Lake and Indian Valley Reservoir are in the North Coast archaeological region.

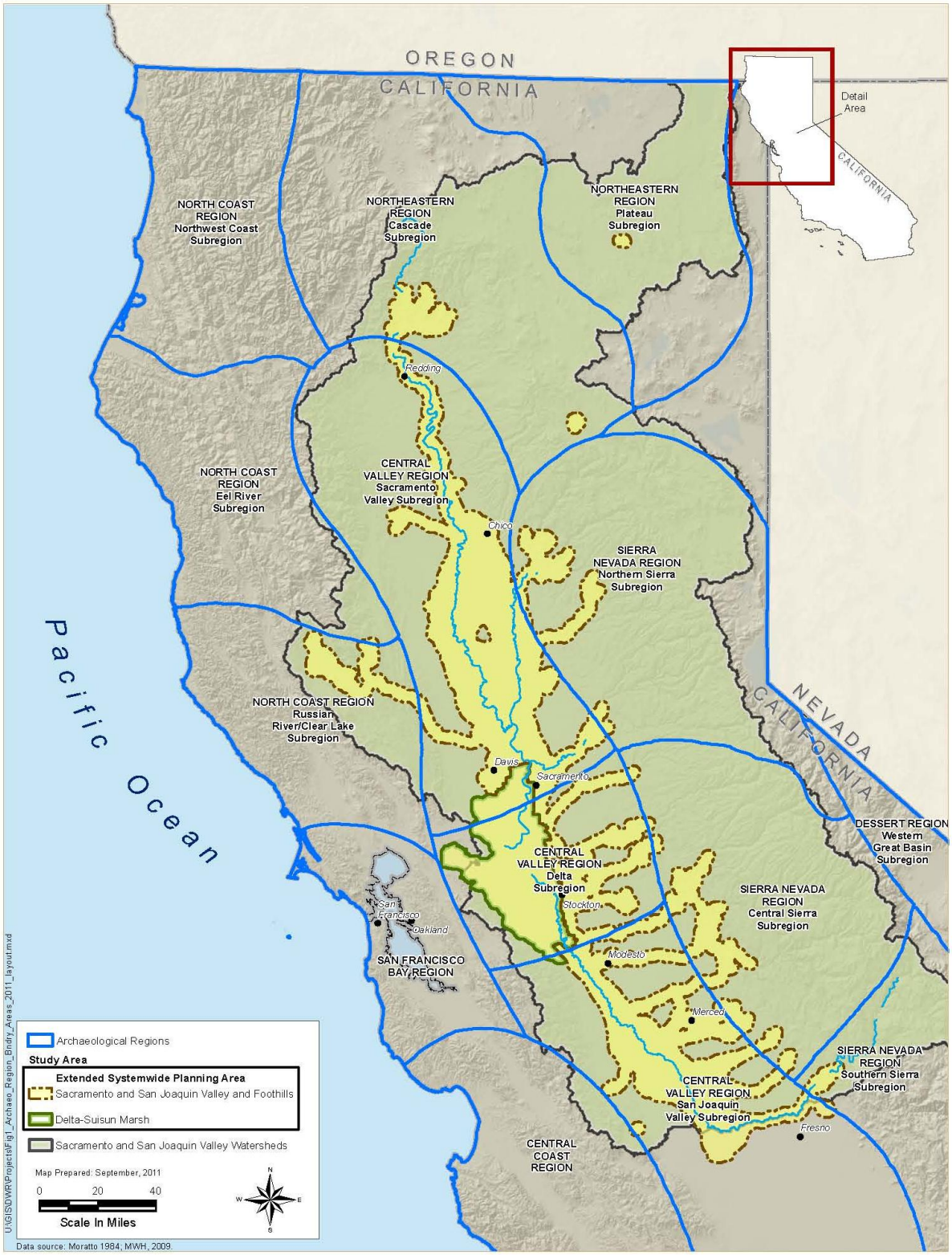

Figure 3.8-1. Boundaries of Archaeological Regions within the CVFPP Study Area

Ethnographic Context The Central Valley and Clear Lake area were among the most densely populated areas in California before colonization by the Spanish, Mexicans, and Euro-Americans. Cook (1978:91) has estimated that approximately 160,000 people occupied these regions. This population has translated into as many as 13 tribes currently affiliated with the area included in the Sacramento and San Joaquin Valley and foothills: the Wintu, Nomlaki, Konkow, Patwin, Nisenan, Plains Miwok, Northern Valley Yokuts, Pomo, Lake Wappo, Lake Miwok, Maidu, Sierra Miwok, and Foothill Yokuts (Figure 3.8-2). These tribes are described below, generally from north to south within their respective archaeological regions. Central Valley tribes are discussed first, followed by tribes in the pertinent areas of the North Coast Ranges, and then indigenous populations in the Sierra Nevada.

Central Valley As described below, the Central Valley was occupied by the Wintu, Nomlaki, Konkow, Patwin, Nisenan, Plains Miwok, and Northern Valley Yokuts.

The Wintu lived at the northern end of the Sacramento Valley. They occupied both sides of the Sacramento River drainage, from above Shasta Lake south to Cottonwood Creek.

The Nomlaki held the next section along both sides of the Sacramento River, from Cottonwood Creek south to about Deer Creek. They also controlled all of the west side of the Sacramento Valley and the adjacent east slope of the North Coast Ranges, including Thomes Creek, Stony Creek, and present-day Black Butte Reservoir.

Below the Nomlaki, the Konkow inhabited a short section on both banks of the Sacramento River, from near Deer Creek to about 15 miles downstream from Chico. Konkow lands also extended up the west slopes of the Sierra Nevada and contained much of the Feather River watershed. Lake Oroville and the Feather River to Honcut Creek are in Konkow territory.

The Patwin controlled the next portion of the Sacramento River area, from about 15 miles downstream from Chico, south to just below Knights Landing. From this point south, Patwin territory diverged westward from the river along the west edge of the Yolo Basin, all the way to the Delta. The Patwin also held the entire west side of the Sacramento Valley, from around Princeton to Suisun Bay, and inhabited the adjacent eastern slopes of the North Coast Ranges (as described below, under "North Coast Ranges").

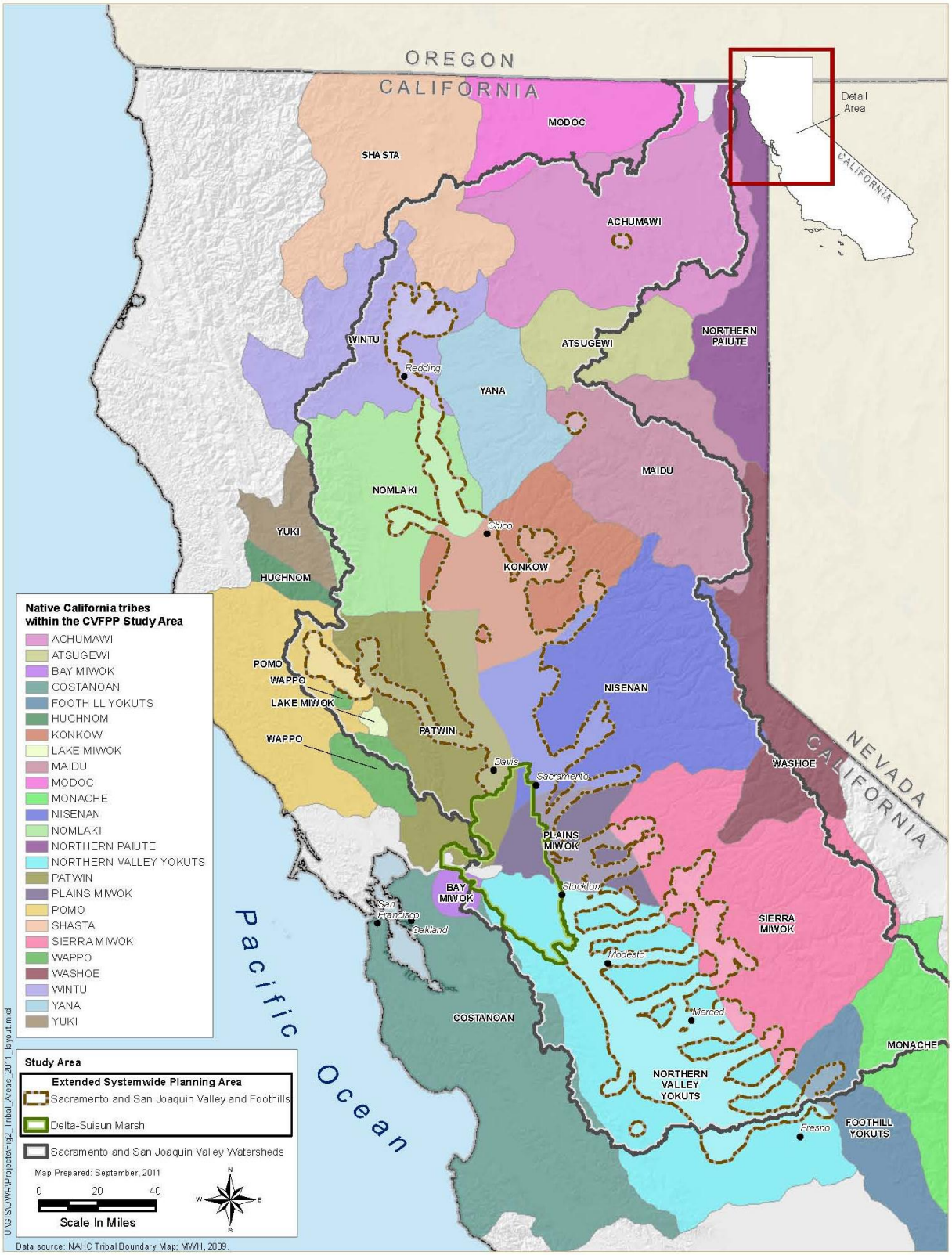

Figure 3.8-2. Tribal Areas within the CVFPP Study Area

The Sacramento River, from just below Knights Landing to south of Sacramento, was held by the Nisenan. The Nisenan also controlled the Feather River below Konkow territory to its confluence with the Sacramento River. Other important watersheds occupied by the Nisenan included those of the Yuba, Bear, and American rivers. Several reservoirs are now in what was Nisenan territory: New Bullards Bar, French Meadows, and Union Valley reservoirs, and Folsom Lake.

The remaining area along the Sacramento River, from Sacramento to the Delta, was in the hands of the Plains Miwok. Their territory extended eastward into the Sierra Nevada foothills and included the Cosumnes River and the Mokelumne River upstream to around the elevation of Camanche Reservoir. The very northern extent of the San Joaquin River, where it enters the Delta, was also held by the Plains Miwok.

Virtually all of the area along the San Joaquin River was part of Northern Valley Yokuts territory, which extended from the Delta and the Stockton area south to Mendota. The southern limit of their lands was the south bank of the San Joaquin River on the east side of the San Joaquin Valley, but their boundary trended southward along the valley's west side. In addition, the Northern Valley Yokuts inhabited the Sierra Nevada foothills adjacent to the valley, claiming the lower reaches of all major drainages—the Cosumnes, Stanislaus, Tuolumne, Merced, Mariposa, Chowchilla, and Fresno rivers. The eastern limits of the Northern Valley Yokuts' territory reached elevations that included many of the reservoirs located in the western Sierra Nevada foothills today, such as New Hogan and Farmington reservoirs. The hills around San Luis Reservoir and Los Banos Creek Reservoir on the west side of the San Joaquin Valley also belonged to the Northern Valley Yokuts.

North Coast Ranges Lakes, reservoirs, and other water bodies of the Sacramento and San Joaquin Valley and foothills located in the North Coast Ranges include Clear Lake and Cache Creek, Indian Valley Reservoir, and Lake Berryessa. In addition to the areas of the Central Valley described above, the Patwin inhabited Cache Creek upstream to just below Clear Lake, the area of Indian Valley Reservoir, and all of Putah Creek, including Lake Berryessa. Other tribes living around Clear Lake included the Pomo, the Lake Wappo, and the Lake Miwok.

Sierra Nevada Many of the tribes that occupied the Sierra Nevada foothills portion of the Sacramento and San Joaquin Valley and foothills have already been discussed: the Konkow, Nisenan, Plains Miwok, and Northern Valley Yokuts. The remaining tribes that held lands in this area were the Maidu, Sierra Miwok, and Foothill Yokuts.

Maidu territory included the upper reaches of the North and Middle forks of the Feather River and the area around Lake Almanor.

The Sierra Miwok lived on the western slopes of the Sierra Nevada, from the Cosumnes River south to the Fresno River. Other important drainages within their territory were the Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Mariposa, and Chowchilla rivers. The upper reaches of several reservoirs are now at the western margins of what were Sierra Miwok lands: New Melones and New Don Pedro reservoirs, and Lake McClure.

The Northern Foothill Yokuts inhabited the western Sierra Nevada directly south of the Sierra Miwok. The area around Millerton Lake was at the very western edge of their territory.

Historic-Era Context The history of the Sacramento and San Joaquin Valley and foothills is largely tied to agriculture. It began with the Spanish and Mexican land grants, and continued through the development of farms and ranches to feed the thousands of miners who arrived during the Gold Rush. The Gold Rush was followed by World War II, the farm labor movement and the evolution of agribusiness that we see today. The area was sparsely populated by nonindigenous peoples just before the mid 1800s, but the Gold Rush resulted in an explosion of small towns, both in the valley and in the adjacent foothills to the east, to serve the miners. The establishment of the railroad solidified the presence of these towns, allowing agricultural goods to be shipped to midwestern and eastern markets, and to the population centers along the California coast. The Clear Lake area and east slopes of the North Coast Ranges contain similar kinds of resources, though not those specifically related to the Gold Rush.

The control of water resources, particularly in Northern California, has played an important part in the development of the state and contributed substantially to widespread agricultural enterprises throughout the Central Valley. The construction of water-related structures and systems began at the local level during the early days of Euro-American settlement. These largely consisted of levee construction projects for flood control and reclamation purposes, such as the levee construction along the Sacramento River to protect the fledgling city of Sacramento after the great flood of 1850 and the 1849 private construction of levees around Grand Island in the Delta for reclamation. The State recognized the need for integrated water-management infrastructure in Delta systems to control floodwaters, transfer water for irrigation, and reclaim land for agriculture shortly after achieving statehood. The State legislature enacted a series of measures to achieve these ends in the 1850s and 1860s.

These early efforts lacked cohesion and uniformity, and the need for a coordinated effort became obvious by the end of the 19th century. Accordingly, various engineering solutions were advanced at the State level by the Department of Public Works, which offered differing visions of how the Sacramento and San Joaquin rivers might be managed. In their 1896 report, Marsden Manson and Carl Ewald Grunsky suggested a system of bypasses and levees, while the 1905 report of the Dabney Commission—formed of experienced officers of the U.S. Army Corps of Engineers (USACE)–focused on levees to confine the river in a more-defined channel. None of these proposals, however, were adopted.

Following additional heavy flooding at the close of the 19th century and into the 20th century, USACE became involved with California's struggle to control the Sacramento and San Joaquin rivers. The joint State and federal "Jackson Report," named after its author, U.S. Army Captain Thomas H. Jackson, was completed in 1910. The Jackson Report (often referred to as House Doc. 81) offered a comprehensive plan for flood control that embraced construction of bypasses and levees, as well as dredging. Jackson's 1910 plan incorporated existing flood control works built by local entities into an overall system of new works designed and constructed by USACE. The Sacramento River Flood Control Project (SRFCP) was one of the largest public works projects in the nation, with hundreds of river miles dredged and thousands of miles of levees constructed, along with weirs and bypasses. It is these features—project levees, weirs (Moulton, Colusa, Tisdale, Fremont, Sacramento, Cache Creek), bypasses (Colusa, Sutter, Yolo, Sacramento), pumping plants, and related structures (Cache Creek settling basin)—that may be affected by the CVFPP.

The federal and State governments both continued to develop large-scale water projects throughout the first half of the 20th century, after construction of the SRFCP began in 1917. Although the State originally planned the construction of the CVP, the U.S. Bureau of Reclamation (Reclamation) initiated construction in 1935 to store and transfer water from Northern California to the southern San Joaquin Valley. Important elements of the CVP include Shasta Dam on the Sacramento River, Friant Dam on the San Joaquin River, and the Delta-Mendota Canal.

Later, California's SWP was built to capture and store rainfall and snowmelt runoff in Northern California and deliver it to areas of need throughout the state. This includes water agencies and districts in Southern California, Central Coastal, San Joaquin Valley, South Bay, North Bay, and upper Feather River areas.

Construction began on Oroville Dam in 1961 and on the California Aqueduct about 2 years later. The B. F. Sisk Dam, completed in 1967 to form San Luis Reservoir, is owned by Reclamation but operated by DWR.

Potential Cultural Resources of the Sacramento and San Joaquin Valley and Foothills Prehistoric archaeological sites are present within all portions of the Sacramento and San Joaquin Valley and foothills, and all site types are represented. Sites within the Central Valley are generally associated with mounds and natural levees along the major rivers, streams, and sloughs. These deposits have often been obliterated by agricultural practices, or have been affected by construction of levees or other water-related facilities. Identifying sites in the Sacramento and San Joaquin Valley is also complicated by the high degree of sedimentation in those areas. As a result, not all sites have visible evidence on the ground surface and may be buried under many feet of alluvium (Rosenthal et al. 2007:149–150).

Like valley sites, prehistoric habitation sites in the foothills are often near water, such as rivers, streams, or springs. Resource procurement or processing sites might be anywhere on the landscape where important resources (e.g., acorns and pine nuts; other botanical resources used for food, basketry, or medicine; and a variety of game animals) are present. Sites of a ceremonial or religious nature might also be located anywhere in the foothill zones.

It is expected that ethnographic resources would be of the same nature as those of prehistoric sites, and would be found in the same locations. Both the Central Valley and the Clear Lake area were densely populated before colonization.

Historic-era resources would include the full spectrum of sites related to early settlement of these regions. Resources reflecting the agricultural, mining, transportation, and settlement themes would be expected to dominate the site types, with agricultural sites dominating the Central Valley and mining sites being present in the foothill zones. Some examples of known specific historic resources within the Central Valley are Sutter's Fort, the State Capitol, and Old Sacramento State Historic Park.

Also in the Sacramento and San Joaquin Valley and foothills, the Central Valley's flood control works—its levees, bypasses, weirs, and control structures—form the infrastructural basis for plans by the State and federal governments to protect the farms and towns of the valley. These structures would be affected by the proposed program, and many of the elements of the SRFCP, CVP, and SWP have exceeded the 50-year age criterion for potential eligibility for the CRHR and NRHP. These include many

important structures that contribute to the successful operation of the system: bypasses (Colusa, Sutter, Sacramento, Yolo, Eastside, and Chowchilla), dams (Shasta, Black Butte, Indian Valley, Clear Lake, Oroville, New Bullards Bar, Folsom, Camanche, New Hogan, Farmington, New Melones, New Don Pedro, New Exchequer, Buchanan, Hidden, and Friant), weirs (Colusa, Fremont, Tisdale, Sacramento, Cache Creek, and Moulton, and the Chowchilla Bypass Bifurcation Structure), and pumping plants operated by the State and local agencies.

Delta and Suisun Marsh

Prehistoric Context The Delta and Suisun Marsh lie within the Central Valley archaeological region, described above for the Sacramento and San Joaquin Valley and foothills.

Ethnographic Context The Patwin, Plains Miwok, Bay Miwok, and Northern Valley Yokuts were the primary occupants of the area before colonization. The Patwin occupied most of the territory in the northern half of this geographic area. They held the lands surrounding Suisun Marsh, adjacent portions of the Delta eastward to the Montezuma Hills and the west edge of the Yolo Basin, and all commensurate territory to the north and west in the Delta.

The Plains Miwok lived directly east of the Patwin, occupying the northeastern section of the Delta and Suisun Marsh area. Their territory included the Yolo Basin on the west side of the Sacramento River, and the Delta east of the river and south nearly to the Calaveras River. The southern reach was near present-day Oakley.

Lands south of Suisun Bay belonged to the Bay Miwok. This territory extended east to Oakley and south around the east side of Mount Diablo. The remainder, and thus a majority of the southern half of the Delta and Suisun Marsh area, was controlled by the Northern Yokuts.

Historic-Era Context The history of the Delta and Suisun Marsh is steeped in the development of agriculture and the construction of levees to reclaim land for those purposes. These efforts date back to the mid 1800s and evolved over the next century to form and preserve the Delta's agricultural islands. Transportation has also been an important aspect of Delta history; the Delta's many waterways were used for water transport, including movement of large ships up the Sacramento and San Joaquin rivers to Sacramento and Stockton, respectively. The region has also been popular as a recreation area for boating, fishing, and hunting. The operation of duck hunting clubs in the Suisun Marsh area has supported an important recreation activity for the past 150 years.

Potential Cultural Resources of the Delta and Suisun Marsh As in the Central Valley, prehistoric archaeological sites within the Delta and Suisun Marsh are often difficult to detect because sediments have accumulated and surface features have been disturbed by agricultural and other activities. Throughout the southwest Delta, archaeological sites are often found in Piper Sands soils because of their generally higher elevations as crests of old sand dunes (West et al. 1999). Ethnographic sites would be expected in similar conditions.

The Delta and Suisun Marsh are anticipated to include primarily historic-era resources pertaining to agriculture, the transportation of agricultural goods, and early settlement. Numerous shipwrecks are known to be located within the waters of the rivers and sloughs in this geographic area. Early 20th-century duck hunting clubs, including their associated structures, within the area might also be found historically significant. The town of Locke is an example of a known historical resource within the Delta and Suisun Marsh area. Resources related to the Central Valley flood-control system in this region include the Yolo Bypass, levees, weirs, and constructed channels, such as Victoria Canal; water supply facilities include the Clifton Court Forebay, Harvey O. Banks Pumping Plant, and Delta Cross Channel.

Sacramento and San Joaquin Valley Watersheds

Prehistoric Context The Sacramento and San Joaquin Valley watersheds encompass the entire Central Valley, from Fresno north, and include the Delta. This geographic area also encompasses the watersheds of the rivers and streams in the adjacent southern Cascade Range (including the Pit River system), Sierra Nevada, and North Coast Ranges that flow into the Central Valley. Thus, all of the waterways and water bodies found within the Extended SPA are also found within the Sacramento and San Joaquin Valley watersheds. However, the Sacramento and San Joaquin Valley watersheds much more prominently incorporate portions of the Northeastern and Sierra Nevada archaeological regions, along with small sections of the North Coast archaeological region.

The entire watershed of the Pit River, including Goose Lake and the McCloud River, is an important aspect of the Northeastern archaeological region, as is Lake Almanor. The headwaters of many of the streams and rivers that drain westerly into the Central Valley are found within the Sierra Nevada archaeological region. Similarly, on the west side of the Central Valley, the headwaters of creeks (e.g., Sony and Putah creeks) flowing east into the valley are associated with the North Coast archaeological region.

Ethnographic Context At least 22 ethnographic groups have been identified for the Sacramento and San Joaquin Valley watersheds. From

north to south within the Central Valley, these include the Wintu, Nomlaki, Konkow, Patwin, Nisenan, Bay Miwok, Plains Miwok, and Northern Valley Yokuts. The occupants of the southern Cascade Range north and east of the Sacramento Valley and in the Pit River watershed were the Wintu, Shasta, Achumawi, Atsugewi, and Yana peoples. Tribes living on the west slope of the Sierra Nevada were the Maidu, Konkow, Nisenan, Washoe, Sierra Miwok, Northern Foothill Yokuts, and North Fork Mono. The Eastern and Southeastern Pomo inhabited Clear Lake and the upper reaches of Cache Creek in the North Coast Ranges. They shared territory with the Lake Miwok at the southeast end of Clear Lake and with the Lake Wappo at the south edge of the lake near Kelseyville. The Putah Creek drainage was held by the Patwin, while the Wappo were in northern Napa County.

Many of these tribes have already been discussed in relation to the Extended SPA, particularly those in the Central Valley, the North Coast Ranges, and the lower foothills of the Sierra Nevada. Because the Extended SPA is fully contained within the Sacramento and San Joaquin Valley watersheds area, information on those occupants is not repeated here. The remaining tribes in the Northeastern and Sierra Nevada areas are presented according to the archaeological regions with which they are primarily affiliated.

Northeastern Region Tribes that inhabited the Northeastern Region of the Sacramento and San Joaquin Valley watersheds include the Wintu, Shasta, Achumawi, Atsugewi, and Yana. The Wintu occupied a small section in the southern part of this area. This was the area surrounding Lake Shasta, and the drainages of the Sacramento and McCloud rivers upstream nearly to the Shasta-Siskiyou county line. Directly north of the Wintu, the Okwanuchu Shasta held the northwest corner of this geographic area. Their territory included the headwaters of the Sacramento and McCloud rivers, and lands north to the base of Mount Shasta.

Most of the Northeastern Region belonged to the Achumawi, who controlled nearly the entire watershed of the Pit River, beginning at Goose Lake. The largest concentration of known ethnographic villages is along the lower reaches of the Pit River, from the Fall River Valley downstream to their boundary with the Wintu.

The Atsugewi occupied the area south of the Achumawi, including a portion of the Pit River at its confluence with Horse Creek. They held most of Hat Creek, from its headwaters and downstream to near its junction with the Pit River; the headwaters of Burney Creek downstream to Burney; and the headwaters of Old Cow Creek and Cow Creek, which ultimately flow into the Sacramento River.

Directly west of the Atsugewi were the Yana, who inhabited the drainages and foothills of the southern Cascade Range from at or near the south bank of the Pit River, south almost to Chico. The Yana held the headwaters and virtually all of the watersheds of the creeks that flow into the Sacramento River (occupied by the Wintu and Nomlaki) within this area.

Sierra Nevada Many of the tribes living in the Sierra Nevada inhabited regions above the foothill zones. In addition to the Nisenan and the Sierra Miwok (both discussed previously), these tribes include the Maidu, Washoe, and North Fork Mono. The Maidu controlled territory surrounding most of the upper Feather River watershed, including virtually all of the North Fork Feather River above Richbar and the Middle Fork below Sierra Valley. This area encompasses Lake Almanor and Antelope Lake.

The Washoe occupied Sierra Valley and the headwaters of the Middle Fork Feather River, including the mountains around Lake Davis and Frenchman Lake. They also occupied the headwaters of the Stanislaus River and regularly traveled the west slope of the Sierra Nevada to gather acorns and trade with their neighbors.

The North Fork Mono occupied a very small segment of the Sacramento and San Joaquin Valley watersheds, along the upper reaches of the San Joaquin River above Millerton Lake.

Historic-Era Context Much of the historic context for the Sacramento and San Joaquin Valley watersheds is identical to that of the Extended SPA. Adding northeastern California, the higher elevations of the Sierra Nevada, and an expanded portion of the North Coast Ranges does little to change the overall historic-era background. However, a noticeable difference would be an emphasis on timber-related activities in these regions instead of the Gold Rush activities that occurred in the foothills.

Potential Cultural Resources of the Sacramento and San Joaquin Valley Watersheds The potential for the presence of prehistoric archaeological sites in the Sacramento and San Joaquin Valley watersheds is the same as the potential in both the Sacramento and San Joaquin Valley and foothills and the Delta and Suisun Marsh. Because of the harsher climates in these areas, the Northeastern and Sierra Nevada archaeological regions supported fewer people and in a more seasonal manner; thus, site density is generally lower, except around the margins of valleys, marshes, and lakes, and along major rivers and streams. On the other hand, the potential for prehistoric quarry sites is higher in these regions, along with Clear Lake and parts of Napa Valley, where important sources of tool stone (i.e., obsidian, basalt) are located. Expectations for ethnographic sites in the

Sacramento and San Joaquin Valley watersheds generally reflect those for the prehistoric archaeological sites.

Historic-era resources present in the Sacramento and San Joaquin Valley watersheds would be the same as those present in the Extended SPA. Agricultural, mining, transportation, and settlement themes would be expected to dominate the site types, with agricultural sites dominating the Central Valley, and mining and timber industry sites being present in the Sierra Nevada foothill zones. These would also be applicable to northeast California and the North Coast Ranges. Most of the currently existing flood control facilities (i.e., reservoirs, levees, bypasses, weirs) north of Fresno are also located within the Sacramento and San Joaquin Valley watersheds.

3.8.2 Regulatory Setting

The following text summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts on cultural and historic resources.

Federal

National Historic Preservation Act of 1966 The National Historic Preservation Act (NHPA) established federal policy on historic preservation at a time when post–World War II infrastructure development and urban renewal projects were rapidly destroying archaeological sites and historic buildings throughout the nation. The NHPA acknowledges the importance of our heritage resources and affirms the public interest in preserving those resources so that their "vital legacy of cultural, educational aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans" (NHPA 1966:Section 1(b)(4)). To this end, the NHPA established the National Historic Landmarks designation, the State Historic Preservation Offices (SHPOs), and the NRHP.

National Register of Historic Places The NRHP is the nation's master inventory of historic properties identified as important to the history of the United States. In California, the NRHP is administered by the National Park Service in conjunction with the SHPOs. The NRHP includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level. The NRHP criteria and associated definitions are outlined in National Register Bulletin Number 15, *How to Apply the National Register Criteria for Evaluation* (Andrus 1990). The criteria for eligibility for listing on the NRHP are found in 36 CFR 60.4, and include resources that:

a) are associated with events that have made a significant contribution to the broad patterns of our history; or

b) are associated with the lives of persons significant in our past; or

c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) have yielded, or may be likely to yield, information important in prehistory or history.

Section 106 Review Section 106 of the NHPA requires a federal agency with jurisdiction over a federally funded, assisted, or licensed undertaking to take into account the effects of the agency's undertaking on properties listed or eligible for listing in the NRHP (16 U.S. Code (USC) 470 et seq.). Some individual projects under the proposed program would be under the jurisdiction of USACE or Reclamation, and these projects would need to comply with Section 106 of the NHPA.

For compliance with Section 106 of the NHPA, the lead federal agency or the federal agency acting as a federal nexus for Section 106 through a required federal permit such as USACE's permits for Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, is required to consult with the SHPO before granting permits, funding, or any other authorization related to the undertaking. The Section 106 review process is implemented using a five-step procedure:

- Identify and evaluate historic properties.
- Assess the effects of the undertaking on properties that are eligible for listing in the NRHP.
- Consult with the SHPO and other agencies for the development of an agreement that addresses the treatment of historic properties.
- Receive comments from the Advisory Council on Historic Preservation on the agreement or results of consultation.
- Implement the project according to the conditions of the agreement.

Title 36, Section 800.5(a)(1) of the CFR presents the NRHP criteria for adverse effect. An undertaking has an adverse effect when it may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP, in a manner that would

diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Examples of adverse effects, as listed in 36 CFR 800.5(a)(2), are as follows:

- Physical destruction of or damage to all or part of the property
- Alteration, isolation, or removal of the property, or 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, audible, or atmospheric elements that diminish the integrity of the property's significant historic properties
- Neglect of a property that causes its deterioration, unless such deterioration is consistent with cultural values
- Transfer, lease, or sale of property out of federal ownership

The SHPO has 30 days to review the finding of effect for a proposed project.

Antiquities Act of 1906 The Antiquities Act of 1906 (16 USC 431–433) provides for fines or imprisonment of any person convicted of appropriating, excavating, injuring, or destroying any historic or prehistoric ruin or monument or other object of antiquity that falls under the jurisdiction of the federal government.

American Indian Religious Freedom Act of 1978 The American Indian Religious Freedom Act (Public Law (PL) 95-341; 42 USC 1996) established federal policy to protect and preserve the inherent rights of freedom for American Indians, Eskimos, Aleuts, and Native Hawaiians to believe, express, and exercise their traditional religions on federal and tribal trust lands. Among these rights are access to sites, use and possession of sacred objects, and the freedom to worship through traditional ceremonies and rites.

Archaeological Resources Protection Act of 1979 The Archaeological Resources Protection Act (16 USC 470aa–470mm) amended the Antiquities Act, set a broad policy stating that archaeological resources are important to the nation and should be protected, and required special permits before the excavation or removal of archaeological resources from public or Indian lands. The purpose of this act was to secure, for the present and future benefit of the American people, the protection of archaeological

resources and sites that are on public lands and Indian lands. The act was also intended to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals with collections of archaeological resources and data obtained before October 31, 1979. The Archaeological Resources Protection Act also requires confidentiality of information on the nature and location of archaeological sites.

Native American Graves Protection and Repatriation Act of 1990 The Native American Graves Protection and Repatriation Act (PL 101-601; 25 USC 3001 et seq.) was intended to ensure the protection and rightful disposition of Native American cultural items and burials located on federal or tribal trust lands, and in the possession or control of the federal government. This law requires federal agencies and certain recipients of federal funds (including state agencies) to document Native American human remains and cultural items within their collections, notify Native groups of their holdings, and provide an opportunity for the repatriation of these materials. This act also requires planning to deal with the potential inadvertent discovery and collection of Native American human remains and associated funerary objects, sacred objects, and objects of cultural patrimony on federal and tribal trust lands.

Executive Order 13007, Indian Sacred Sites, of 1996 On March 24, 1996, President Bill Clinton issued Executive Order (EO) 13007, requiring executive branch agencies with statutory or administrative responsibility for management of federal lands to (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners, and (2) avoid adversely affecting the physical integrity of such sacred sites, to the extent practicable. Where appropriate, agencies must maintain the confidentiality of sacred sites.

Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, of 2000 On November 6, 2000, President Clinton issued EO 13175, recognizing the unique legal relationship between the United States and American Indian tribal governments. The executive order requires federal agencies to consult and collaborate with federally recognized Indian tribes as part of a process to strengthen government-to-government relationships. EO 13175 also established policies for reviews of waiver applications by tribes, as well as accountability practices for federal agencies in collaborating and consulting with Indian tribes.

State

California Environmental Quality Act Statute and Guidelines CEQA and the CEQA Guidelines include procedures for identifying, analyzing, and disclosing potential adverse impacts on cultural resources, which

include all resources listed in or formally determined eligible for listing in the NRHP, the CRHR, or local registers.

Section 21083.2 CEQA Section 21083.2 defines a "unique archaeological resource" as "an archaeological artifact, object, or site" that meets the following criteria:

1. Contains information needed to answer important scientific questions and that there is a demonstrable public interest in that information

2. Has a special and particular quality such as being the oldest of its type or best available example of its type

3. Is directly associated with a scientifically recognized important prehistoric or historic event or person

Section 21083.2 also requires the lead agency to consider the effects of a project on these resources. If it is demonstrated that a project will affect a unique archaeological resource, treatment to preserve the site may be required. Such treatments may include but are not limited to:

1. Planning construction to avoid archaeological sites

2. Deeding archaeological sites into permanent conservation easements

3. Capping or covering archaeological sites with a layer of soil before building on the sites

4. Planning parks, green space, or other open space to incorporate archaeological sites

If a unique archaeological site cannot be avoided, mitigation, which may involve excavation, is required.

Section 15064.5 Section 15064.5 of the CEQA Guidelines further requires that the lead agency mitigate substantial adverse changes to resources listed on the CRHR or local registers, and coordinate with the Native American Heritage Commission (NAHC) if Native American human remains are identified as a result of a project. A substantial adverse change is defined as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Treatment and mitigation measures are further discussed under Section 15126.4(b). Section 15064.5 also reiterates the need to contact NAHC if human remains are found pursuant to PRC Section 5024.1, as stated below.

California Public Resources Code

PRC Section 5024.1: California Register of Historical Resources The CRHR includes resources that are listed in or formally determined eligible for listing in the NRHP, as well as some designated California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR. Those properties are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise. The eligibility criteria for listing in the CRHR are similar to those for NRHP listing, but focus on the importance of the resources to California history and heritage. The criteria of eligibility for the CRHR include a resource that:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage

2. Is associated with the lives of persons important in our past

3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values

4. Has yielded, or may be likely to yield, information important in prehistory or history

PRC Sections 5097.91 Through 5097.98: California Native American Heritage Commission The California NAHC was established in 1976. This legislation requires State and local agencies to cooperate with the NAHC with respect to Native American resources. The NAHC identifies and catalogs places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands. In addition, the NAHC performs other duties regarding the preservation and accessibility of sacred sites and burials, and the disposition of Native American human remains and burial items. If human remains of Native American origin are discovered, the NAHC is responsible for identifying the person or persons it believes to be the most likely descendant of the deceased Native American.

California Health and Safety Code Projects implemented under the proposed program would be subject to sections of the California Health and Safety Code pertaining to the discovery and treatment of human remains.

Section 7050.5: Removal of Human Remains Sections 7050.5(b) and 7050.5(c) of the California Health and Safety Code pertain to the discovery of human remains in a location outside of a dedicated cemetery. Should human remains be uncovered during the course of construction, work must cease immediately in the vicinity of the finds until the county coroner has had an opportunity to examine the remains. The coroner has 2 working days to respond to notification of the presence of human remains. If the coroner determines that the finds are of an archaeological nature and are likely Native American, he or she must notify NAHC about the remains within 24 hours.

Sections 8010–8030: California Native American Graves Protection and Repatriation Act of 2001 Sections 8010–8011 of the California Health and Safety Code establish a State repatriation policy that is consistent with and facilitates implementation of the federal Native American Graves Protection and Repatriation Act. The policy requires that all California Indian human remains and cultural items be treated with dignity and respect, and encourages voluntary disclosure and return of remains and cultural items by publicly funded agencies and museums in California. The policy provides mechanisms to aid California Indian tribes, including those not recognized by the federal government, in filing repatriation claims and obtaining responses to those claims.

Regional and Local

Future actions under the proposed program would occur in multiple jurisdictions. As a result, each action could trigger disparate regulatory requirements related to cultural resources. For example, this may include local (county and city) ordinances and regulations regarding the preservation of historical resources. The number of possible ordinances that might be applicable to the proposed program throughout California are too numerous to list, although they will be thoroughly addressed when specific projects are implemented under the program. Consultation with local agencies regarding local cultural resources ordinances and jurisdictions will occur, as necessary.

Should a place-based project be defined and pursued as part of the proposed program, and should the CEQA lead agency be subject to the authority of local jurisdictions, the applicable county and city policies and ordinances would be addressed in a project-level CEQA document as necessary.

3.8.3 Analysis Methodology and Thresholds of Significance

This section provides a program-level evaluation of the direct and indirect effects on cultural resources of implementing management actions included

in the proposed program. These proposed management actions are expressed as NTMAs and LTMAs. The methods used to assess how different categories of NTMAs and LTMAs could affect cultural resources are summarized in "Analysis Methodology"; thresholds for evaluating the significance of potential impacts are listed in "Thresholds of Significance." Potential effects related to each significance threshold are discussed in Section 3.8.4, "Environmental Impacts and Mitigation Measures for NTMAs," and Section 3.8.5, "Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs."

Analysis Methodology

Impact evaluations were based on a review of the management actions proposed under the CVFPP, expressed as NTMAs and LTMAs in this PEIR, to determine whether these actions could potentially result in impacts on cultural and historical resources. NTMAs and LTMAs are described in more detail in Section 2.4, "Proposed Management Activities." The overall approach to analyzing the impacts of NTMAs and LTMAs and providing mitigation is summarized below and described in detail in Section 3.1, "Approach to Environmental Analysis." NTMAs can consist of any of the following types of activities:

- Improvement, remediation, repair, reconstruction, and operation and maintenance of existing facilities
- Construction, operation, and maintenance of small setback levees
- Purchase of easements and/or other interests in land
- Operational criteria changes to existing reservoirs that stay within existing storage allocations
- Implementation of the vegetation management strategy included in the CVFPP
- Initiation of conservation elements included in the proposed program
- Implementation of various changes to DWR and Statewide policies that could result in alteration of the physical environment

All other types of CVFPP activities fall within the LTMA category. NTMAs are evaluated using a typical "impact/mitigation" approach. Where impact descriptions and mitigation measures identified for NTMAs also apply to LTMAs, they are also attributed to LTMAs, with modifications or expansions as needed.

Beyond direct implementation of NTMAs and LTMAs, land use changes and induced growth are two mechanisms by which effects on cultural resources could occur. Effects of land use changes are discussed in Section 3.14, "Land Use and Planning," and the effects of induced growth are discussed in Section 6.1, "Growth-Inducing Impacts."

Thresholds of Significance

The following applicable thresholds of significance have been used to determine whether implementing the proposed program would result in a significant impact. These thresholds of significance are based on the questions posed in Appendix G of the CEQA Guidelines, as amended. A cultural resource impact is considered significant if implementation of the proposed program would do any of the following when compared against existing conditions:

- Result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines
- Result in a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines
- Disturb any human remains, including those interred outside of formal cemeteries

3.8.4 Environmental Impacts and Mitigation Measures for NTMAs

This section describes the physical effects of NTMAs on cultural and historic resources. For each impact discussion, the environmental effect is determined to be either less than significant, significant, potentially significant, or beneficial compared to existing conditions and relative to the thresholds of significance described above. These significance categories are described in more detail in Section 3.1, "Approach to Environmental Analysis." Feasible mitigation measures are identified to address any significant or potentially significant impacts. Actual implementation, monitoring, and reporting of the PEIR mitigation measures would be the responsibility of the project proponent for each site-specific project. For those projects not undertaken by, or otherwise subject to the jurisdiction of, DWR or the Board, the project proponent generally can and should implement all applicable and appropriate mitigation measures. The project proponent is the entity with primary responsibility for implementing specific future projects and may include DWR; the Board; reclamation districts; local flood control agencies; and other federal, State, or local agencies. Because various agencies may ultimately be responsible for implementing (or ensuring implementation of) mitigation measures

identified in this PEIR, the text describing mitigation measures below does not refer directly to DWR but instead refers to the "project proponent." This term is used to represent all potential future entities responsible for implementing, or ensuring implementation of, mitigation measures.

Impact CUL-1 (NTMA): ***Potential Damage to or Destruction of Known Archaeological Resources from Ground Disturbance or Other Construction-Related Activities***

Construction of flood protection structures might reduce impacts on cultural sites that would be eroded and damaged by flooding by reducing the frequency of flood events. However, construction activities associated with NTMAs, such as building new levees or modifying or repairing existing structures, could affect known prehistoric and historic-era archaeological resources that are listed in, or eligible for listing in, the NRHP and the CRHR. Significant impacts on known archaeological sites could result from such actions as preparing levee foundations on top of a site or grading an access road related to levee construction through an archaeological deposit. Therefore, this impact would be **potentially significant**.

Mitigation Measure CUL-1a (NTMA): ***Conduct Cultural Resource Studies and Avoid Effects on Known Archaeological Resources***

To minimize potential adverse effects on prehistoric and historic-era archaeological resources, the project proponent will conduct cultural resource studies before project approval (where feasible and appropriate) to identify the presence of such resources at all project sites. Where field surveys cannot be completed before project approval, such as in locations where access permission has not been received, field surveys will be completed before ground disturbance begins. These archaeological studies and surveys will be conducted by professionals who meet the Secretary of the Interior's standards for archaeology professionals. Should resources eligible for listing in the NRHP and CRHR be identified within the study area, effects on those resources resulting from any NTMA will be avoided, if feasible. Methods of avoidance may include redesigning or relocating the project, such as moving an access road around an archaeological site instead of through it.

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-1 (NTMA) to a **less-than-significant** level. Where avoidance is not feasible, see Mitigation Measure CUL-1b (NTMA) below.

Mitigation Measure CUL-1b (NTMA): ***Conduct Additional Evaluations and Recover Sufficient Data to Compensate for Damage to or Destruction of Known Archaeological Sites***

If a substantial adverse change to an archaeological resource that has been determined as eligible for listing in the NRHP or the CRHR cannot be avoided, the project proponent will deploy a qualified archaeologist to conduct additional research and other tasks. These tasks will include preparing a research design; conducting additional archival and historical research, when appropriate; conducting an archaeological excavation; analyzing artifacts, features, and other attributes of the resource; and preparing a technical report documenting the methods and results of the investigation in accordance with the California Office of Historic Preservation's *Guidelines for Archaeological Research Design* (1991). The purpose of this work will be to recover a sufficient quantity of data to compensate for damage to or destruction of the resource. The procedures to be employed in this data recovery program will be determined in consultation with responsible agencies and interested parties, such as Native American tribes, as identified by the Native American Heritage Commission, as appropriate. The approved measures must be implemented before construction activities occur at the archaeological site.

An alternative method to mitigate impacts on archaeological sites considered eligible for listing in the NRHP and CRHR is to have the primary construction contractor for the project proponent cap the site with soil, gravels, rock, or appropriate vegetation to protect the deposit. For example, sites subject to inundation and water-level fluctuations may be protected from erosion by application of a layer of gravel/rock or soil, or both. A layer of soil (i.e., sterile fill) may also be placed over a site where construction of a building is planned, such that all construction activities will occur in the fill material. For sites located in areas subject to looting, vegetation such as blackberry brambles or wild rose may be planted over the site as a useful deterrent, but only in areas where operations and maintenance of facilities would not be impaired by the deterrent vegetation. If capping an archaeological site proves necessary, the project proponent will provide the materials and labor, regularly monitor and evaluate the efficacy of the mitigation, and refresh the protection, when necessary.

Implementing Mitigation Measures CUL-1a (NTMA) and CUL-1b (NTMA) would reduce Impact CUL-1 (NTMA) to a **less-than-significant** level.

Impact CUL-2 (NTMA): ***Potential Damage to or Destruction of Previously Undiscovered Buried Archaeological Resources from Ground Disturbance or Other Construction-Related Activities***

Not all archaeological resources are visible on the ground surface. Depending on the location and landform, sites have the potential to be located wherever Holocene alluvium has accumulated, and deposits have been uncovered at depths of up to 20 feet in the Central Valley (Meyer et al. 2010). Construction of flood protection structures might reduce erosion caused by floods that might otherwise expose and damage unknown buried sites. However, ground-disturbing construction activities associated with NTMAs, such as building new levees or access roads, could affect NRHP- and CRHR-eligible prehistoric and historic-era archaeological resources that are buried and not visible on the ground surface. Therefore, this impact would be **potentially significant**.

Mitigation Measure CUL-2 (NTMA): *If Cultural Resources Are Discovered, Immediately Halt Construction and Implement an Accidental-Discovery Plan*

Should cultural resources such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during construction activities, work will be suspended immediately at the location of the find and within a 50-foot radius. A qualified archaeologist will conduct a field investigation of the specific site and recommend mitigation necessary to protect or recover any cultural resource determined by the archaeologist to represent a historical resource or unique archaeological resource.

Based on the archaeologist's recommendations, the project proponent will develop measures in consultation with responsible agencies and, as appropriate, interested parties such as Native American tribes. The approved mitigation must be implemented before construction activities resume at the archaeological site, as identified by the Native American Heritage Commission.

All of the steps identified above will be detailed in an accidental-discovery plan developed before construction so that all parties are aware of the process that must be implemented should buried archaeological resources be uncovered during construction.

Construction monitoring by a qualified archaeologist in areas determined particularly sensitive for buried archaeological remains will be implemented by project proponents when warranted, as recommended by the archaeological professional. Reasons for providing an archaeological monitor may include but are not limited to the previous identification of buried cultural deposits in the project vicinity or the previous recordation of an archaeological site that could not be recently identified on the ground surface. Furthermore, some landforms, such as mounded areas in

floodplains adjacent to water courses, are more likely to be sensitive for buried resources. Large-scale projects involving a great deal of ground disturbance (e.g., lengthy levee construction) could benefit from geoarchaeological studies to determine those areas most likely to contain buried cultural deposits.

Discoveries of human remains will be treated as described in Mitigation Measure CUL-5c (NTMA), below.

Implementing this mitigation measure would reduce Impact CUL-2 (NTMA) to a **less-than-significant** level.

Impact CUL-3 (NTMA): ***Potential Damage or Disturbance to or Change in Significance of Built-Environment Resources***

Buildings and other structures (e.g., bridges, weirs, pumping facilities), as well as features such as roads, canals, ditches, levees, and power lines, constitute the built environment. Although many of these elements may exceed 50 years in age, they do not necessarily qualify as historical resources or historic properties. However, some of these types of built resources have the potential to meet the eligibility criteria for listing in the NRHP and the CRHR (see eligibility criteria in Section 3.8.2, above), either as contributing elements to districts, such as water systems, or as individual properties. Projects associated with NTMAs could cause substantial adverse change to eligible resources that are part of the built environment, possibly via construction or maintenance activities that could either destroy or modify elements that contribute to the eligibility of a particular resource. Construction of a new levee that causes an eligible house to be razed is one example of significant adverse change resulting in destruction of a resource. Modernization of a weir that has been determined individually eligible owing to its method of construction, whereby alterations significantly modify the original design and configuration of the structure, could be considered a maintenance activity that has an adverse effect on an eligible resource. Conversely, further alterations to levee and water conveyance systems that have experienced routine maintenance and upgrades (e.g., increasing the height or width of levees) would not be considered adverse effects because the structures have been previously modified and new modifications would not compromise their continued historic use.

However, because implementing the proposed program could adversely affect the eligibility of elements of the built environment that constitute historic resources for listing in the NRHP or the CRHR, this impact would be **potentially significant**.

Mitigation Measure CUL-3a (NTMA): ***Conduct Cultural Resources Studies and Avoid Effects on Built-Environment Resources***

In areas potentially containing historic resources, the project proponent will ensure that architectural history studies and surveys will be conducted by professionals who meet the Secretary of the Interior's professional standards, to identify the presence of built-environment resources within a particular project location. Should buildings or structures that are eligible for listing in the NRHP or CRHR be identified within the study area, impacts on those resources resulting from any NTMA will be avoided, if feasible. Project relocation and redesign are appropriate avoidance measures. For example, should constructing a new levee require removal of a historic farmhouse, realigning the levee away from the structure would avoid a significant adverse change to the structure.

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-3 (NTMA) to a **less-than-significant** level. If avoidance is not feasible, see Mitigation Measure CUL-3b (NTMA) below.

Mitigation Measure CUL-3b (NTMA): ***Follow the Secretary of the Interior's Standards for the Treatment of Historic Properties***

In some cases, completely avoiding an element of the built environment that qualifies as a historical resource or historic property may not be feasible, and the feature must be altered as part of project implementation. In such a scenario, any program-related alterations to historic-era buildings or structures, including relocations, will conform to the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (1995). The project proponent will develop and implement any plans necessary to mitigate alterations to historic properties in accordance with these standards. The plans will be submitted to the SHPO for approval before project implementation.

Where a resource can be modified or relocated consistent with these standards and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-3 (NTMA) to a **less-than-significant** level. If these standards cannot be met, see Mitigation Measure CUL-3c (NTMA) below.

Mitigation Measure CUL-3c (NTMA): ***Record Built-Environment Resources to Historic American Buildings Survey and Historic American Engineering Record Standards***

In some cases, avoiding or relocating a building or structure considered eligible for the NRHP or CRHR may not be feasible, and that resource must be demolished. These situations are expected to be rare occurrences. However, in such a scenario, the project proponent will retain a qualified architectural historian to document the affected historical built-environment resource according to Historic American Buildings Survey (HABS) or Historic American Engineering Record (HAER) standards, as appropriate. HABS and HAER documentation packages will be entered into the Library of Congress, as well as the appropriate Information Center of the California Historical Resources Information System.

However, recording a building or structure to HABS/HAER standards as described in Mitigation Measure CUL-3c (NTMA) may not reduce the impact on significant historic buildings and structures to a less-than-significant level; although information on the building or structure would be recorded, the building or structure would still be removed. Where Mitigation Measure CUL-3c (NTMA) must be implemented, Impact CUL-3 would be **potentially significant and unavoidable**.

Impact CUL-4 (NTMA): *Potential Damage or Disturbance to Traditional Cultural Properties* d*uring Ground Disturbance or Other Construction-Related Activities*

Traditional cultural properties (TCPs) are cultural resources with tangible locations that are important to the cultural continuity and longevity of a community, have been important to the community for more than 50 years, and meet the criteria for eligibility for listing in the NRHP and CRHR. Although most TCPs in California are associated with Native American communities, they are not exclusively so. TCPs can be archaeological or built-environment resources, or they can be features of the natural landscape. TCPs are often locations on the landscape that have sacred or other special meaning to Native American communities. Cultivating and harvesting plants for traditional medicines and foods, and for uses such as basketry, remain important activities to Native American communities. Some of the areas where such plants grow, which are often located adjacent to rivers and streams, may qualify as TCPs. Ground-disturbing construction activities or the demolition or modification of the built environment associated with NTMA projects could cause a significant adverse change to TCPs. Therefore, this impact would be **potentially significant**.

Mitigation Measure CUL-4a (NTMA): *Conduct Cultural Resources Studies and Avoid Effects on TCPs*

In areas potentially containing traditional cultural properties, an ethnographer or archaeologist who meets the Secretary of the Interior's

standards as a professional cultural resource specialist will consult with appropriate populations (Native Americans or otherwise) before approval of any project and identify the presence of any TCPs at the project location. Native American TCPs may be identified by an ethnographer who has worked intensively with community members (often, but not always, elders) possessed of considerable knowledge about places important to the community. Should TCPs be identified in the project area, they will be avoided by project redesign or relocation, if feasible. As an example, the proposed location of a water-monitoring device may be moved to another, still appropriate, place along a stream bed to avoid a section of the creek bank that is a TCP for medicinal plants, thereby avoiding a substantial adverse change to the resource.

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-4 (NTMA) to a **less-than-significant** level**.** However, if avoidance is not feasible, see Mitigation Measure CUL-4b (NTMA) below.

Mitigation Measure CUL-4b (NTMA): ***Consult with Native American Communities and Implement Appropriate Measures to Mitigate Effects on TCPs***

Effects to TCPs are expected to be rare occurrences. However, where an identified TCP cannot be fully avoided by a proposed project, the project proponent will engage in early, meaningful consultation with Native American communities, as identified by the Native American Heritage Commission, to identify ways to mitigate impacts on TCPs. For example, if TCP locations that presently support plant species cultivated and harvested by Native American communities for traditional medicines and foods, or for uses such as basketry, are slated for destruction to make way for planned construction, the project proponent may work with the Native American community associated with the TCP to identify other nearby locations that can support these same plants. The project proponent can then take steps to enhance existing plant populations at those locations or provide materials and labor to cultivate new plants, with assistance from the Native American community.

Working with local Native American communities to develop interpretive programs is another measure to mitigate impacts on TCPs. Programs may include developing signage, constructing visitor centers describing locations that have sacred or other special meaning to Native Americans, developing and implementing management plans for important cultural resources, or establishing conservation easements to protect culturally important places.

Implementing Mitigation Measure CUL-4a (NTMA) and a suite of measures as necessary in Mitigation Measure CUL-4b (NTMA) would reduce Impact CUL-4 (NTMA) to a less-than-significant level in most cases, but may not necessarily reduce impacts on some categories of TCPs. For example, a tribe's sacred site that is regularly visited for ceremonies could be destroyed during levee construction. In this situation, the direct impacts of the action cannot be fully mitigated even though some form of mitigation may be negotiated with the tribe to ameliorate the action. In such instances, Impact CUL-4 (NTMA) would be **potentially significant and unavoidable**.

Impact CUL-5 (NTMA): ***Potential Damage or Disturbance to Human Remains, Including Those Interred Outside of Formal Cemeteries, during Ground Disturbance or Other Construction-Related Activities***

Cemeteries are defined by fencing or grave markers or both, but they may also be unmarked. Marked cemeteries may be informal family cemeteries found in rural settings or formal entities managed by local governments or cemetery boards. Formal cemeteries, in particular, can often be identified during record searches early in the project-planning process. However, unmarked cemeteries and Native American burials are difficult to locate during project planning and are often discovered only after construction has begun. Ground disturbance associated with NTMAs could disturb cemeteries and burial places, especially previously undiscovered burial places. Because cemeteries and burial places could be disturbed, this impact would be **potentially significant**.

Mitigation Measure CUL-5a (NTMA): ***Conduct Cultural Resources Studies and Avoid Effects on Human Remains***

The project proponent will ensure that archaeological and historical studies and surveys will be conducted by professionals who meet the Secretary of the Interior's standards, to identify the presence of human remains within a particular project location. Should human remains be identified within the study area, impacts on those remains resulting from any NTMA will be avoided, if feasible. Project relocation and redesign are appropriate avoidance measures. For example, should construction of a new maintenance facility be proposed at a place known to contain human remains, relocation of the facility would avoid disturbing the burials.

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-5 (NTMA) to a **less-than-significant** level**.** However, if avoidance is not feasible, see Mitigation Measures CUL-5b (NTMA) and/or CUL-5c (NTMA) below, as applicable.

Mitigation Measure CUL-5b (NTMA): ***Relocate Known Cemeteries***

The project proponent will consult with the entity (county, city, or private) that has jurisdiction over the cemetery, and with interested parties as appropriate, to identify a satisfactory place to relocate human remains that would provide protection from future disturbance. Similarly, if Native American burials are known to exist in an archaeological site, the project proponent will work with the appropriate tribe, as identified by the Native American Heritage Commission, to identify a satisfactory location for reinterment of burials in a protected location. In these and other circumstances where a known cemetery must be relocated, implementing this mitigation measure would reduce Impact CUL-5 (NTMA) to a **less-than-significant** level.

Mitigation Measure CUL-5c (NTMA): ***Immediately Halt Construction If Human Remains Are Discovered and Implement a Burial Treatment Plan***

Construction activities have the potential to result in unanticipated effects on buried human remains where there is no surface indication of their presence. Under these circumstances, the project proponent will adhere to the requirements described in Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98:

- If human remains are uncovered during ground-disturbing activities, potentially damaging excavation must halt in the area of the remains and the local county coroner must be notified. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code, Section 7050.5(b)).

- If the coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code, Section 7050(c)).

- In turn, under the provisions of PRC Section 5097.98, NAHC will identify a Most Likely Descendant (MLD). The MLD designated by the NAHC will have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods.

For large projects (e.g., new levee construction) or projects where a high probability of encountering human remains exists, a burial treatment plan will be developed by the project proponent in consultation with local

Native American tribes before construction. During this process, all parties will be made aware of the actions required should buried Native American human remains be uncovered during construction. The plan will detail all of the activities identified above and include treatment preferences identified by the MLD.

Smaller, localized projects do not require a burial treatment plan. Examples of such projects are modifications of existing facilities and projects that do not involve ground disturbance (e.g., purchases of easements, structure modifications). However, should human remains be uncovered during these project activities, treatment of the remains will strictly follow the requirements in Section 7050.5 of the California Health and Safety Code and PRC Section 5097.98.

Implementing Mitigation Measures CUL-5a (NTMA), CUL-5b (NTMA), and CUL-5c (NMTA) and complying with other provisions of the California Health and Safety Code would reduce Impact CUL-5 (NTMA) to a **less-than-significant** level.

3.8.5 Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs

This section describes the physical effects of LTMAs on cultural and historic resources. LTMAs include a continuation of activities described as part of the NTMAs and all other actions included in the proposed program, and consist of all of the following types of activities:

- Widening floodways (through setback levees and/or purchase of easements)
- Constructing weirs and bypasses
- Constructing new levees
- Changing operation of existing reservoirs
- Achieving protection of urban areas from a flood event with 0.5 percent risk of occurrence
- Changing policies, guidance, standards, and institutional structures
- Implementing additional and ongoing conservation elements

Actions included in the LTMAs are described in more detail in Section 2.4, “Proposed Management Activities.”

Impacts and mitigation measures identified above for NTMAs would also be applicable to many of the LTMAs and are identified below. The NTMA impact discussions and mitigation measures are modified or expanded where appropriate, or new impacts and mitigation measures are included if needed, to address conditions unique to LTMAs. The same approach to future implementation of mitigation measures described above for NTMAs and the use of the term "project proponent" to identify the entity responsible for implementing mitigation measures also apply to LTMAs.

LTMA Impacts and Mitigation Measures

Impact CUL-1 (LTMA): ***Potential Damage to or Destruction of Known Archaeological Resources from Ground Disturbance or Other Construction-Related Activities***

Where the LTMAs would continue activities included in the NTMAs, this impact would be the same as Impact CUL-1 (NTMA). However, the LTMAs also would include activities of greater scope, which could result in greater direct effects on prehistoric and historic-era archaeological resources eligible for listing in the NRHP and the CRHR. Those activities could involve constructing flood bypasses and restoring and realigning stream channels. In addition to the impact examples provided under Impact CUL-1 (NTMA), archaeological sites could be affected by wave activity from modified reservoir fluctuations. The LTMAs would also occur across a broader geographic setting than the NTMAs. This impact would be **potentially significant.**

Mitigation Measure CUL-1a (LTMA): ***Implement Mitigation Measure CUL-1a (NTMA)***

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-1 (LTMA) to a **less-than-significant** level. Where avoidance is not feasible, see Mitigation Measure CUL-1b (LTMA) below.

Mitigation Measure CUL-1b (LTMA): ***Implement Mitigation Measure CUL-1b (NTMA)***

Implementing Mitigation Measures CUL-1a (LTMA) and CUL-1b (LTMA) would reduce Impact CUL-1 (LTMA) to a **less-than-significant** level.

Impact CUL-2 (LTMA): ***Potential Damage to or Destruction of Previously Undiscovered Buried Archaeological Resources from Ground Disturbance or Other Construction-Related Activities***

Where the LTMAs would continue activities included in the NTMAs, this impact would be the same as Impact CUL-2 (NTMA). However, the LTMAs also would include activities of greater scope, which could result in greater direct effects on prehistoric and historic-era archaeological resources eligible for listing in the NRHP and the CRHR. Those activities could involve constructing flood bypasses and restoring and realigning stream channels. The LTMAs would also occur across a broader geographic setting than the NTMAs. This impact would be **potentially significant**.

Mitigation Measure CUL-2 (LTMA): ***Implement Mitigation Measure CUL-2 (NTMA)***

Implementing this mitigation measure would reduce Impact CUL-2 (LTMA) to a **less-than-significant** level.

Impact CUL-3 (LTMA): ***Potential Damage or Disturbance to or Change in Significance of Built-Environment Resources***

Where the LTMAs would continue activities included in the NTMAs, this impact would be the same as Impact CUL-3 (NTMA). However, the LTMAs also include activities of greater scope, which could result in greater direct effects on historic resources or properties. Those activities could involve constructing new weirs and bypasses. This impact would be **potentially significant**.

Mitigation Measure CUL-3a (LTMA): ***Implement Mitigation Measure CUL-3a (NTMA)***

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-3 (LTMA) to a **less-than-significant** level. If avoidance is not feasible, see Mitigation Measure CUL-3b (LTMA) below.

Mitigation Measure CUL-3b (LTMA): ***Implement Mitigation Measure CUL-3b (NTMA)***

Where a resource can be modified or relocated consistent with these standards and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-3 (LTMA) to a **less-than-significant** level. If these standards cannot be met, see Mitigation Measure CUL-3c (LTMA) below.

Mitigation Measure CUL-3c (LTMA): ***Implement Mitigation Measure CUL-3c (NTMA)***

Recording a building or structure to HABS/HAER standards as described in Mitigation Measure CUL-3c (LTMA) would not reduce the impact on significant historic buildings and structures to a less-than-significant level; although information on the building or structure would be recorded, the building or structure would still be removed. Where Mitigation Measure CUL-3c (LTMA) must be implemented, Impact CUL-3 (LTMA) would be **potentially significant and unavoidable**.

Impact CUL-4 (LTMA): ***Potential Damage or Disturbance to Traditional Cultural Properties during Ground Disturbance or Other Construction-Related Activities***

Where the LTMAs would continue activities included in the NTMAs, this impact would be the same as Impact CUL-4 (NTMA). However, the LTMAs also include activities of greater scope, which could result in greater direct effects on TCPs. Those activities could involve constructing flood bypasses and restoring and realigning stream channels. This impact would be **potentially significant**.

Mitigation Measure CUL-4a (LTMA): ***Implement Mitigation Measure CUL-4a (NTMA)***

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-4 (LTMA) to a **less-than-significant** level. However, if avoidance is not feasible, see Mitigation Measure CUL-4b (LTMA) below.

Mitigation Measure CUL-4b (LTMA): ***Implement Mitigation Measure CUL-4b (NTMA)***

Implementing Mitigation Measure CUL-4a (LTMA) and a suite of measures as necessary in Mitigation Measure CUL-4b (LTMA) would reduce Impact CUL-4 (LTMA) to a less-than-significant level in most cases, but would not necessarily reduce impacts on some categories of TCPs. In such instances, Impact CUL-4 (LTMA) would be **potentially significant and unavoidable**.

Impact CUL-5 (LTMA): ***Potential Damage or Disturbance to Human Remains, Including Those Interred Outside of Formal Cemeteries, during Ground Disturbance or Other Construction-Related Activities***

This impact would be similar to Impact CUL-5 (NTMA), as described above. Actions that could affect cemeteries and burial places under the LTMA include modifying or constructing new weirs and bypasses. This impact would be **potentially significant**.

Mitigation Measure CUL-5a (LTMA): ***Implement Mitigation Measure CUL-5a (NTMA)***

Where avoidance is implemented and no further mitigation is required, implementing this mitigation measure would reduce Impact CUL-5 (LTMA) to a **less-than-significant** level. However, if avoidance is not feasible, see Mitigation Measures CUL-5b (LTMA) and/or CUL-5c (LTMA) below, as applicable.

Mitigation Measure CUL-5b (LTMA): ***Implement Mitigation Measure CUL-5b (NTMA)***

If Native American burials are known to exist in an archaeological site, the project proponent will work with the appropriate tribe to identify a satisfactory location for reinterment of burials in a protected location. In these and other circumstances where a known cemetery must be relocated, implementing this mitigation measure would reduce Impact CUL-5 (LTMA) to a **less-than-significant** level.

Mitigation Measure CUL-5c (LTMA): ***Implement Mitigation Measure CUL-5c (NTMA)***

Implementing Mitigation Measures CUL-5a (LTMA), CUL-5b (LTMA), and CUL-5c (LMTA) and complying with other provisions of the California Health and Safety Code would reduce Impact CUL-5 (LTMA) to a **less-than-significant** level.

LTMA Impact Discussions and Mitigation Strategies

The impacts of the proposed program's NTMAs and LTMAs related to cultural and historic resources and the associated mitigation measures are thoroughly described and evaluated above. The general narrative descriptions of additional LTMA impacts and mitigation strategies for those impacts that are included in other sections of this draft PEIR are not required for cultural and historic resources.