Appendix K
Draft Cultural Resources Report

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CULTURAL RESOURCES REPORT FOR THE SAN LUIS LOW POINT IMPROVEMENT PROJECT, MERCED AND SANTA CLARA COUNTIES, CALIFORNIA

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Project No. 3459-02

Total Current Project Area for the Lower San Felipe Intake Alternative, the Combination Alternative, the Treatment Alternative, and the San Luis Reservoir Expansion Alternative: 51,475 Acres

USGS 7.5' Topographic Quadrangle Maps: Calaveras Reservoir (1980), Crevison Peak (2015), Cupertino (1991), Los Banos Valley (2015), Mariposa Peak (2015), Pacheco Pass (1971), San Jose East (1980), San Jose West (1980), San Luis Dam (1969), and Santa Teresa Hills (1981), California

December 2018

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Confidentiality Statements

Archaeological remains and historic period built environment resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of cultural resources, which should not be disclosed to unauthorized persons.

Information regarding the location, character or ownership of certain historic properties may be exempt from public disclosure pursuant to the National Historic Preservation Act (54 USC 300101 et seq.) and the Archaeological Resources Protection Act (Public Law 96-95 and amendments). In addition, access to such information is restricted by law, pursuant to Section 6254.10 of the California State Government Code.

Management Summary

As proposed by the US Bureau of Reclamation (Reclamation) and the Santa Clara Valley Water District (SCVWD), the San Luis Low Point Improvement Project (SLLPIP) aims to increase the quantity and reliability of water supplies to contractors and consumers dependent on the San Luis Reservoir in Merced County. On behalf of Reclamation and the SCVWD, and under contract to CDM Smith, Pacific Legacy, Inc. conducted a cultural resources investigation for the SLLPIP as it encompasses action alternatives in Merced, Santa Clara, and San Benito counties. These included the Lower San Felipe Intake Alternative, centered on the San Luis Reservoir; the Combination Alternative, encompassing 12 work locations in Santa Clara County; the Treatment Alternative, centered on an existing SCVWD facility in Santa Clara County; the San Luis Reservoir Expansion Alternative, which encompasses the San Luis Reservoir and overlaps the Lower San Felipe Intake Alternative; and the New Pacheco Reservoir Alternative, centered on the existing Pacheco Reservoir in eastern Santa Clara County extending into San Benito County.

In 2017, the Combination Alternative was excluded from consideration as a part of the SLLPIP and design changes were made to the Treatment Alternative. In 2018, the extents of the San Luis Reservoir Expansion Alternative were altered, and the New Pacheco Reservoir Alternative was added to the Project. For completeness, this document describes the research efforts undertaken through 2018 for the Lower San Felipe Intake, Combination, Treatment, and San Luis Reservoir Expansion alternatives while focusing on the most current elements and extents of each. The cultural resources investigation for the New Pacheco Reservoir Alternative remains ongoing due to access and right-of-entry limitations. It is therefore discussed in a separate addendum report that will be updated as necessary (Pacific Legacy 2018).

The cultural resources investigation summarized in this document was carried out in compliance with federal and state historic preservation laws, including the National Environmental Policy Act, Section 106 (54 USC 306108) of the National Historic Preservation Act (54 USC 300101 et seq.), and the California Environmental Quality Act. Archival and records searches were completed for a 0.5-mile radius surrounding the area of potential effects (APE) for the Lower San Felipe Intake Alternative and the San Luis Reservoir Expansion Alternative, while a 300-foot radius surrounding the APE for the Combination Alternative and the Treatment Alternative was examined. Contact with the Native American Heritage Commission (NAHC) and potential Native American stakeholders was initiated in 2012 and in 2013. An inventory survey of the Treatment Alternative APE was conducted in 2002 (Cartier 2002), while inventory surveys within the APE for the other action alternatives were conducted in 2012 and 2016. These efforts were targeted at identifying cultural

resources that may be impacted by the SLLPIP, particularly historic properties that are listed in or may be eligible for listing in the National Register of Historic Places (NRHP) and/or historical resources that are listed in or may be eligible for listing in the California Register of Historical Resources (CRHR).

Approximately 855.5 acres within the 2,097.5-acre Lower San Felipe Intake Alternative APE were subject to inventory survey in 2012. Twenty-four cultural resources were encountered within the APE, including six previously recorded districts, archaeological sites, or built environment resources. Twelve archaeological sites or built environment resources and six isolated finds were newly identified. Two resources within the Lower San Felipe Intake Alternative APE were previously evaluated for listing in the NRHP and/or the CRHR. One is the San Luis Gonzaga Archaeological District (P-24-000489), which is listed in the NRHP and the CRHR; the other is a California Historical Landmark (CHL-829, P-24-00643), which is listed in the CRHR.

The Combination Alternative APE was initially defined as a discontinuous 113-acre area surrounding 21 groundwater production wells, 18 pipeline segments, and one recharge pond. Many of these areas were excluded from consideration in 2012 after an inventory survey had been completed. The final APE for the Combination Alternative totaled just 28.5 acres and encompassed eight groundwater production wells, three pipeline segments, and one recharge pond. One previously recorded historic period site (CA-SCL-799H) was documented and excavated within the Combination Alternative APE in 1996; it was heavily disturbed by prior development and was not evaluated for listing in the NRHP or the CRHR. The site lies beneath a paved road and no traces of the resource were observed in 2012.

The Treatment Alternative APE, which will involve improvements within the boundaries of an existing SCVWD water treatment plant (WTP), will encompass the 11.8-acre Santa Teresa WTP in the Santa Teresa hills. A second existing facility, the Rinconada Hills WTP, was removed from consideration in 2017, though cultural resource findings for that facility are included in this document for completeness. No cultural resources were revealed within either WTP during a 2002 inventory survey (Cartier 2002) or during a 2016 archival and records search, and thus no additional inventory survey was conducted for the alternative in 2016.

The San Luis Reservoir Expansion Alternative APE, which overlaps the Lower San Felipe Intake Alternative APE, comprises 5,022 acres and nine potential disturbance areas, including the San Luis Reservoir shoreline. Approximately 4,083 acres within the San Luis Reservoir Expansion Alternative APE were subject to inventory survey between 2012 and 2016. Thirty-seven cultural resources were documented within the APE, including nine previously recorded districts, archaeological sites, or built environment resources. Nineteen archaeological sites or built environment resources and nine isolated finds were newly identified. Three resources within the San Luis Reservoir Expansion

Alternative APE have been previously evaluated for listing in the NRHP and/or the CRHR. One is the San Luis Gonzaga Archaeological District (P-24-000489), which is noted above. Another is a prehistoric site (CA-MER-130) included in the NRHP and the CRHR that is regarded as a contributing element to the San Luis Gonzaga Archaeological District. The third comprises the B.F. Sisk Dam and its key features, which have been recommended eligible for listing in the NRHP and the CRHR as a part of a historic district (JRP 2018).

Drawing on information from inventory surveys and site-specific documentary research, Pacific Legacy produced survey-level evaluations for cultural resources within the Lower San Felipe Intake Alternative APE and the San Luis Reservoir Expansion Alternative APE. Among the resources evaluated for the Lower San Felipe Intake Alternative, one prehistoric resource (CA-MER-94) is recommended eligible for listing in the NRHP and the CRHR based on findings from prior excavations; an evaluation for one resource (CA-MER-26/H, prehistoric component) remains pending further investigation; one historic period industrial site (CA-MER-492H) is recommended not eligible for individual listing in the NRHP/CRHR and is regarded as a non-contributing element of the recently defined B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018). Twelve other resources are recommended not eligible for listing in the NRHP and the CRHR (CA-MER-477H, CA-MER-484H, CA-MER-485H, CA-MER-486H, CA-MER-487H, CA-MER-488H, CA-MER-489H, CA-MER-490H, CA-MER-491H, CA-MER-493H, CA-MER-494H, and CA-MER-495H).

Nine districts, archaeological sites, or built environment resources (CA-MER-477H, CA-MER-484H, CA-MER-489H, CA-MER-491H, CA-MER-492H, CA-MER-493H, CA-MER-494H, CA-MER-495H, and P-24-000489) intersect the San Luis Reservoir Expansion Alternative APE as well as the Lower San Felipe Intake Alternative APE. Eligibility recommendations for eight of those resources are noted above. For those cultural resources that lie only within the San Luis Reservoir Expansion Alternative APE, seven (CA-MER-510H, CA-MER-511H, CA-MER-512H, CA-MER-513H, CA-MER-514H, and CA-MER-520H, and CA-MER-521H) have been determined not eligible for inclusion in the NRHP with SHPO concurrence and recommended not eligible for listing in the CRHR (Polanco 2018). An additional four historic period resources (CA-MER-515H, CA-MER-516H, CA-MER-518H, and CA-MER-519H) are recommended not eligible for listing in the NRHP or CRHR, and one (CA-MER-509H) is recommended not eligible for inclusion in either register as an individual resource or as a element of the B.F. Sisk Dam/San Luis Reservoir Historic District. The evaluation of five prehistoric sites (CA-MER-15, CA-MER-28, CA-MER-82, CA-MER-83, and CA-MER-517) remains pending further investigation.

This report begins with an introduction to the SLLPIP, specifically its geographic and regulatory setting (Section 1.0), followed by an overview of the natural environment (Section 2.0) and cultural history (Section 3.0) of the

SLLPIP vicinity. Archival and records search results are presented (Section 4.0) along with a discussion of the methods that were used during the inventory surveys (Section 5.0). The results of those surveys are detailed (Section 6.0), and conclusions and recommendations are offered regarding the known or potential significance of cultural resources encountered within the APE for the SLLPIP action alternatives (Section 7.0). Maps of previously recorded cultural resources and prior cultural resource studies associated with each action alternative are included (Appendix A), as are maps of cultural resources relocated or discovered within the APE for each action alternative (Appendix B). Confidential cultural resource records produced in 2012 and 2016 are provided (Appendix C), along with NAHC correspondence (Appendix D) and photographic documentation (Appendix E). Depending on which alternative is selected, many of the cultural resources discussed in this document may not be impacted by ground disturbing activities associated with the SLLPIP. The information and recommendations provided in this report, however, should assist Reclamation and the SCVWD in managing cultural resources associated with this and future projects.

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Acronyms and Abbreviations

amsl	above mean sea level
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
BP	before present
BLM	US Bureau of Land Management
CCIC	Central California Information Center
CCS	Cryptocrystalline silicate
CFR	Code of Federal Regulations
CHL	California Historical Landmark
CHRIS	California Historical Resources Information System
CRHR/CR	California Register of Historical Resources/California Register
CVP	Central Valley Project
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
GPS	Global Positioning System
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRHP/NR	National Register of Historic Places/National Register
NWIC	Northwest Information Center
PRC	Public Resources Code
Reclamation	US Bureau of Reclamation
ROW	Right-of-Way
SCVWD	Santa Clara Valley Water District
SHPO	State Historic Preservation Officer
SLLPIP	San Luis Low Point Improvement Project
SR	State Route
SWP	State Water Project
TAF	thousand acre-foot
USGS	United States Geological Survey
WTP	Water Treatment Plant

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Chapter 1
Project Background

As proposed by the US Bureau of Reclamation (Reclamation) and the Santa Clara Valley Water District (SCVWD), the San Luis Low Point Improvement Project (SLLPIP) aims to increase the quantity and reliability of water supplies to contractors and consumers dependent on the San Luis Reservoir in Merced County. On behalf of Reclamation and the SCVWD, and under contract to CDM Smith, Pacific Legacy, Inc. conducted a cultural resources investigation for the SLLPIP as it encompasses action alternatives in Merced, Santa Clara, and San Benito counties. These include the Lower San Felipe Intake Alternative, centered on the San Luis Reservoir; the Combination Alternative, encompassing 12 work locations in Santa Clara County; the Treatment Alternative, centered on an existing SCVWD facility in Santa Clara County; the San Luis Reservoir Expansion Alternative, which is centered on the San Luis Reservoir and overlaps the Lower San Felipe Intake Alternative; and the New Pacheco Reservoir Alternative, centered on the existing Pacheco Reservoir in eastern Santa Clara County extending into San Benito County.

Although the cultural resources investigation for the SLLPIP was begun in 2009, considerable changes have been made in Project design since that time. In 2017, the Combination Alternative was excluded from consideration as a part of the SLLPIP and engineering changes were made to the Treatment Alternative. In 2018, changes were made to the extents of the San Luis Reservoir Expansion Alternative, and the New Pacheco Reservoir Alternative was added to the Project. For completeness, this document describes the research efforts undertaken from 2009 to 2018 for the Lower San Felipe Intake, Combination, Treatment, and San Luis Reservoir Expansion alternatives but focuses on the most current elements and extents of each. The cultural resources investigation for the New Pacheco Reservoir Alternative remains ongoing due to access and right-of-entry limitations. For that reason, it is discussed in a separate addendum report that will be updated as appropriate (Pacific Legacy 2018).

The cultural resources investigation for the SLLPIP was carried out in compliance with federal and state historic preservation laws, including the National Environmental Policy Act, Section 106 (54 USC 306108) of the National Historic Preservation Act (54 USC 300101 et seq.), and the California Environmental Quality Act. Archival and records searches were completed for a 0.5-mile radius surrounding the area of potential effects (APE) for the Lower San Felipe Intake Alternative and the Reservoir Expansion Alternative, while a 300-foot radius surrounding the APE for the Combination Alternative and the Treatment Alternative were examined. Contact with the Native American Heritage Commission (NAHC) and potential Native American stakeholders was initiated in 2012 and in 2013. An inventory survey of the two existing SCVWD

facilities encompassed by the Treatment Alternative was conducted in 2002 (Cartier 2002), and inventory surveys within the APE for the other action alternatives were conducted in 2012 and 2016. These efforts were targeted at identifying cultural resources that may be impacted by implementation of the SLLPIP, particularly historic properties that are listed in or may be eligible for listing in the National Register of Historic Places (NRHP) and/or historical resources that are listed in or may be eligible for listing in the California Register of Historical Resources (CRHR).

1.1 Project Location and Setting

The SLLPIP encompasses two broad areas: the San Luis Reservoir in Merced County and the Santa Clara Valley in Santa Clara County. The San Luis Reservoir is located approximately 40 miles southeast of San Jose and 10 miles west of Los Banos (*see* Figure 1-1). It is one of California's largest off-stream reservoirs with a storage capacity of over two million acre-feet. Water from the Sacramento-San Joaquin Delta is delivered to the San Luis Reservoir via the California Aqueduct, a component of California's State Water Project (SWP), and the Delta-Mendota Canal, a component of Reclamation's Central Valley Project (CVP). The reservoir has a surface area of more than 12,700 acres at its current full capacity. It measures approximately 9 miles in length, 5 miles in width, and features some 65 miles of shoreline. With the exception of water, transportation, and power infrastructure, the San Luis Reservoir area has remained largely undeveloped. In contrast, SLLPIP locations in Santa Clara County lay mostly in developed areas in San Jose, Campbell, and Los Gatos.

1.2 Project Description and Purpose

Reclamation and the SCVWD propose to implement the SLLPIP to optimize water supplies while reducing risks to water contractors and consumers. As San Luis Reservoir water levels recede during the summer and fall months when water demands are greatest, a thick layer of algae grows on the surface. When water levels drop, algae can clog water intakes and interrupt water service. The SLLPIP seeks to avoid supply interruptions by increasing the certainty of meeting the requested delivery schedule throughout the year to contractors dependent on water from the San Luis Reservoir and by increasing the reliability and quantity of yearly allocations to contractors.

A wide range of management measures and alternatives have been examined in order to alleviate interruptions in water service and to maintain water quality. A multi-level screening process identified four alternatives in 2018 that would be fully analyzed and subject to environmental review. As noted above, these include the Lower San Felipe, Treatment, San Luis Reservoir Expansion, and New Pacheco Reservoir alternatives. The Lower San Felipe, Treatment, San Luis Reservoir Expansion alternatives are described briefly below, along with

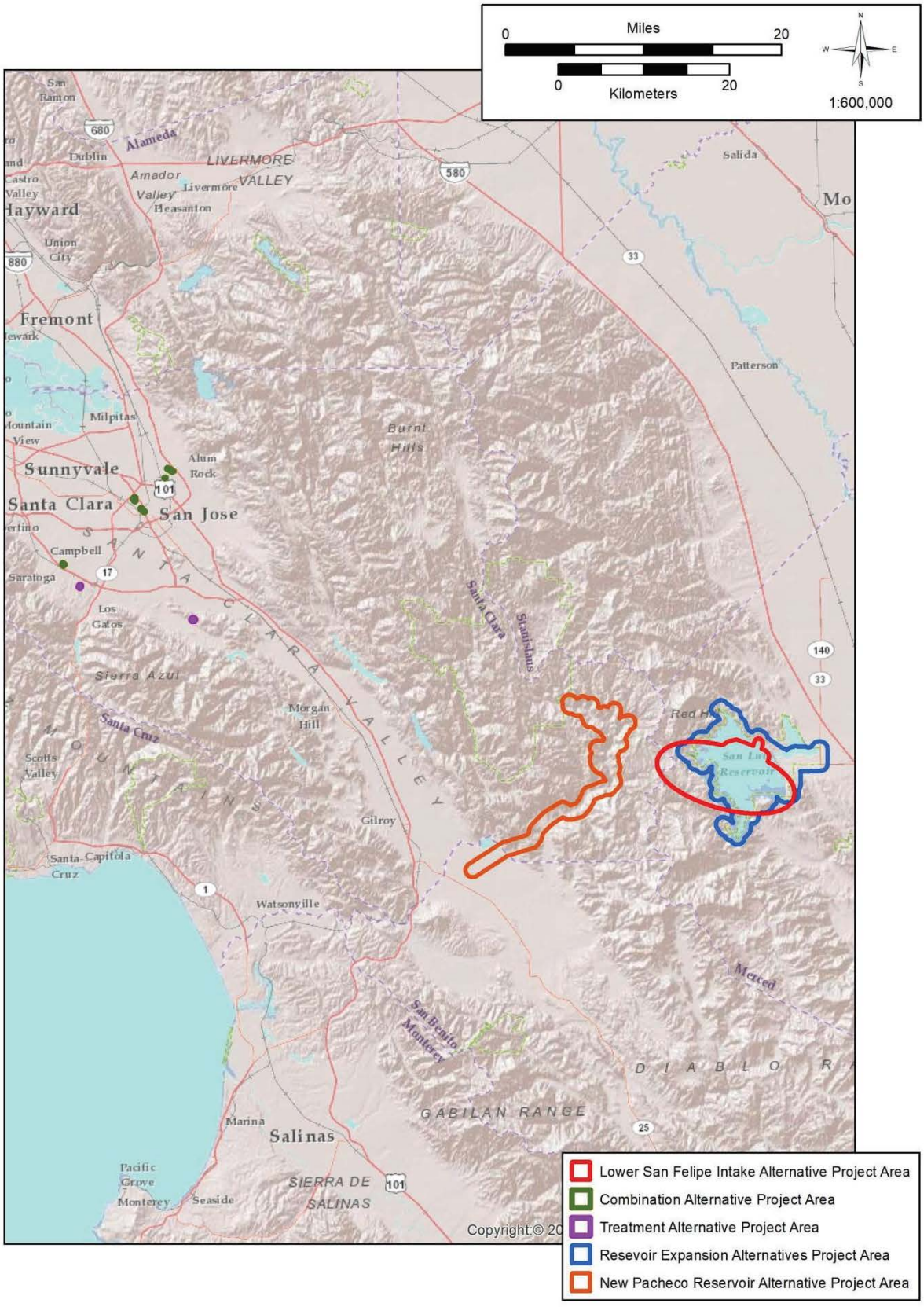

Figure 1-1. San Luis Low Point Improvement Project Vicinity Map.

the Combination Alternative, which was subject to investigation but later dropped as a viable action alternative.

The Lower San Felipe Intake Alternative (Merced County) would include the construction of a new intake connected to the existing San Felipe Division Intake to allow operation of the San Luis Reservoir below the three hundred thousand acre-foot (TAF) level without creating the potential for a water supply interruption to the San Felipe Division.[1] This alternative would involve the construction of a new aeration facility, improvements to Dinosaur Point Road, the use of a staging area at Basalt Point, dredging within the reservoir basin, the construction of a new intake tunnel within the dredging area, a new intake at Gate Shaft Island, and a new tunnel through Dinosaur Point.

The Combination Alternative (Santa Clara County), excluded from consideration as a part of the SLLPIP in 2017, would have included multiple structural components and management measures to maximize operation flexibility and supply reliability in the San Felipe Division. This alternative was centered in the City of San Jose and the Town of Los Gatos in Santa Clara County. It included increased groundwater aquifer recharge and recovery capacity, desalination, re-operation of SCVWD raw and treated water systems, and institutional measures.

The Treatment Alternative (Santa Clara County) would include technological retrofits at the existing SCVWD Santa Teresa Water Treatment Plant (WTP), which was built in 1989. Although these retrofits would include the construction of new facilities, all construction would occur within the existing WTP boundaries and would not encroach on neighboring parcels. A second facility, the Rinconada WTP, was originally included as a part of the Treatment Alternative but was removed from consideration in 2017.

The San Luis Reservoir Expansion Alternative (Merced County) includes the placement of additional fill material on the B.F. Sisk Dam embankment at the San Luis Reservoir to raise the dam crest, thereby increasing the reservoir's storage capacity. This alternative also would build upon dam embankment expansion and foundation modifications to address seismic concerns that are currently being investigated by Reclamation as a part of the B.F. Sisk Dam Safety of Dams Modification Project. As a part of this alternative, the dam crest would be raised by adding additional embankment material; stability berms and downstream crack filters would be installed; modifications to the Dinosaur Point boat launch would be made to increase the operating elevation of the ramps; the crest of an existing dike protecting the Pacheco Pumping Plant would be raised; and modifications would be made at multiple locations along

[1] The San Felipe Division of the Central Valley Project is located in the Central Costal area of California and covers portions of Monterey, San Benito, Santa Clara, and Santa Cruz counties. Water for the San Felipe Division is transported from the San Luis Reservoir through the Pacheco Tunnel under the Diablo Mountains and distributed through a series of buried conduits and pipes (Simonds 1994).

State Route (SR) 152 to prevent inundation of the roadway when the enlarged reservoir is filled to capacity.

Increasing the storage capacity of the San Luis Reservoir would potentially increase the yield of CVP and SWP deliveries when water supplies in excess of the reservoir's existing storage capacity are available. The increased yield could increase SCVWD's capacity to access their CVP supply prior to the reservoir being drawn below the three hundred TAF level, thus avoiding the potential for a water supply interruption. The three alternatives being considered under the San Luis Reservoir Expansion Alternative include the CVP Reservoir Expansion Alternative, the Shared CVP and SWP Reservoir Expansion Alternative, and the Increased Carryover Storage Alternative. Each differs in its operations mode and water distribution while sharing the same construction footprint and potential impact areas, thus each is effectively treated in this investigation as a single action alternative. In 2018, following design changes made to the Crest Raise Alternative under the B.F. Sisk Dam Safety of Dams Modification Project, changes also were made to the footprint of the San Luis Reservoir Expansion Alternative with which it overlaps. These changes included the addition of a haul route between the Basalt Hill Borrow Area and a potential construction staging area as well as a change in the footprint of the Basalt Hill borrow area**,** Borrow Area 6, and potential construction staging areas (*see* Section 1.3.4).

The final alternative examined as a part of the environmental review process is the No Project/No Action Alternative. The No Project/No Action Alternative defines the impacts of taking no action or not implementing the SLLPIP. All of the alternatives outlined above, as well as the New Pacheco Reservoir Alternative, are presented in an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) currently being developed by Reclamation and the SCVWD (Reclamation 2018).

1.3 Area of Potential Effects

Each action alternative examined as a part of the SLLPIP environmental review process encompasses its own APE, or area within which the proposed action may directly or indirectly cause alterations in the character or use of significant cultural resources. The Combination Alternative APE was set within an urban environment and the Treatment Alternative APE is confined to an existing facility. The footprints for each of these alternatives were thus constrained by their setting and by surrounding infrastructure (e.g., roads, existing pipelines, fencelines, etc.). The Lower San Felipe Intake Alternative APE and the San Luis Reservoir Expansion Alternative APE are centered near the San Luis Reservoir and are much less circumscribed. The APE for each action alternative is described below.

1.3.1 Lower San Felipe Intake Alternative

The Lower San Felipe Intake Alternative APE encompasses six locations within and around the San Luis Reservoir that may be subject to ground disturbing activities. Cumulatively, those locations span approximately 2,097.5 acres and include an aeration facility, the Basalt Point use area, the Dinosaur Point area, Dinosaur Point Road, the intake or dredging area surrounding the proposed pipeline or tunnel, and Gate Shaft Island (*see* Figure 1-2). For the purposes of this investigation, a Project Area was defined for the Lower San Felipe Intake Alternative comprising a generalized 0.5-mile radius surrounding the APE. The Project Area encompasses Dinosaur Point Road from SR 152 to San Luis Reservoir, the center of the reservoir surrounding the proposed intake pipeline or tunnel, the Basalt Point use area, the proposed intake structure, and the proposed aeration facility near the Romero Overlook. This 24,964-acre Project Area was subject to archival and records searches in advance of a 2012 inventory survey of the Lower San Felipe Intake Alternative APE.

1.3.2 Combination Alternative

The Combination Alternative APE encompassed a 100-foot radius surrounding eight groundwater production wells, three pipeline segments, and one recharge pond that would have been subject to ground disturbing activities. The APE for these locations totaled approximately 28.5 acres that spanned seven discontinuous areas in Santa Clara County (*see* Figure 1-3). Because it lay within a mostly urban environment subject to numerous prior cultural resource studies, a 300-foot radius surrounding the Combination Alternative APE was established as the alternative Project Area, thus limiting the extents of the archival and records searches. The final Project Area for the Combination Alternative encompassed approximately 122.3 acres. Twelve additional groundwater production wells and associated pipelines were initially identified as a part of the alternative but were dropped from consideration subsequent to archival and records searches and a 2012 inventory survey. The alternative as a whole was removed from consideration under the SLLPIP in 2017.

1.3.3 Treatment Alternative

The Treatment Alternative APE encompasses the full extents of the existing SCVWD Santa Teresa WTP. It spans 11.8 acres and is located northwest of Graystone Lane in the Santa Teresa hills above San Jose (*see* Figure 1-4). Proposed retrofits at the facility would include upgrades to plant electrical systems, plant infrastructure, and solids handling facilities. Because these retrofits would be confined to the facility footprint, a 300-foot radius surrounding the Treatment Alternative APE was established as the alternative Project Area to focus the efforts of a 2016 archival and records search. The Rinconada WTP, a 6.5-acre facility located east of More Avenue near the Rinconada County Club in Los Gatos, was initially included as a part of the alternative but was removed from consideration in 2017.

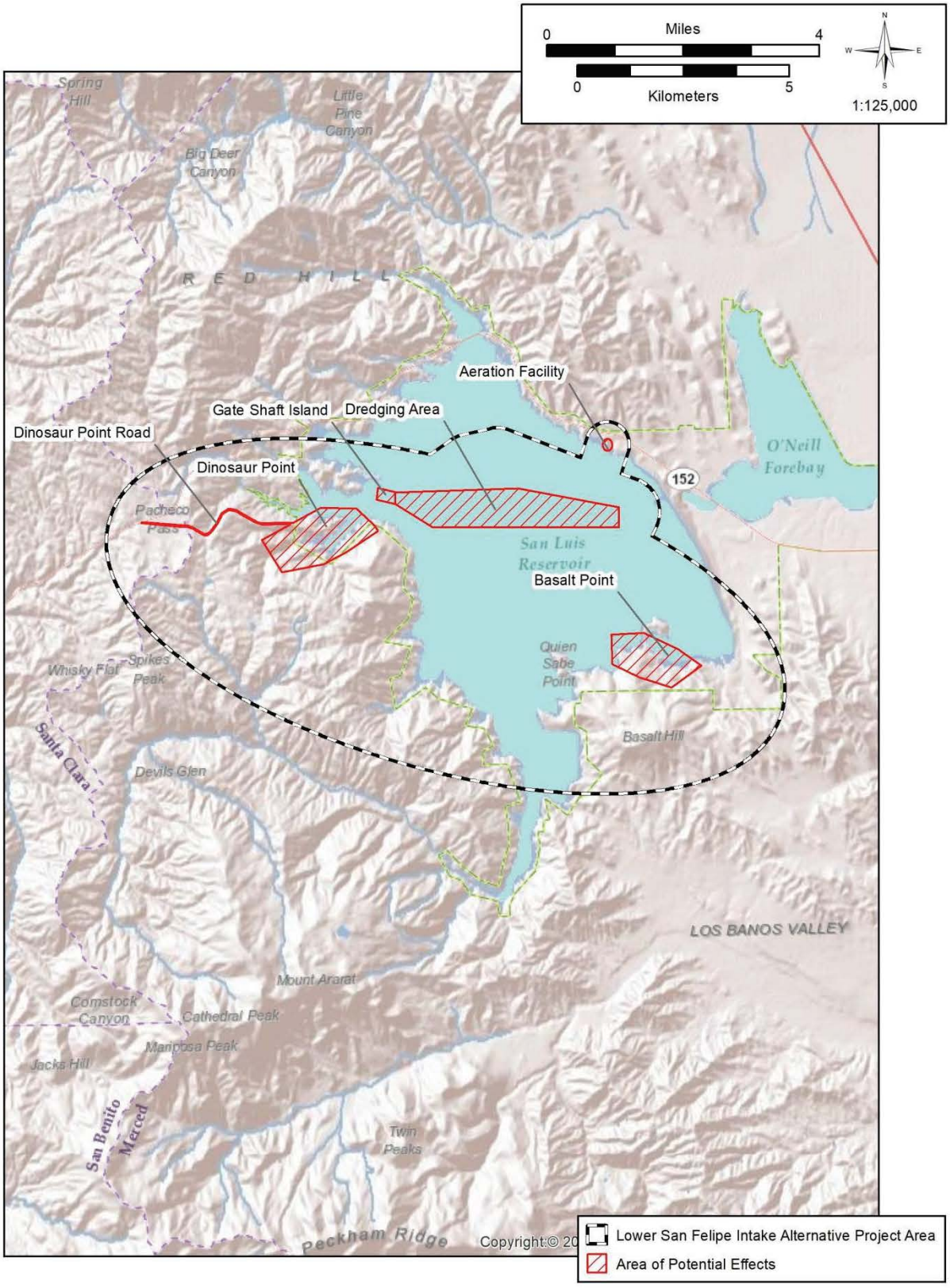

Figure 1-2. The Lower San Felipe Intake Alternative Project Area and Area of Potential Effects.

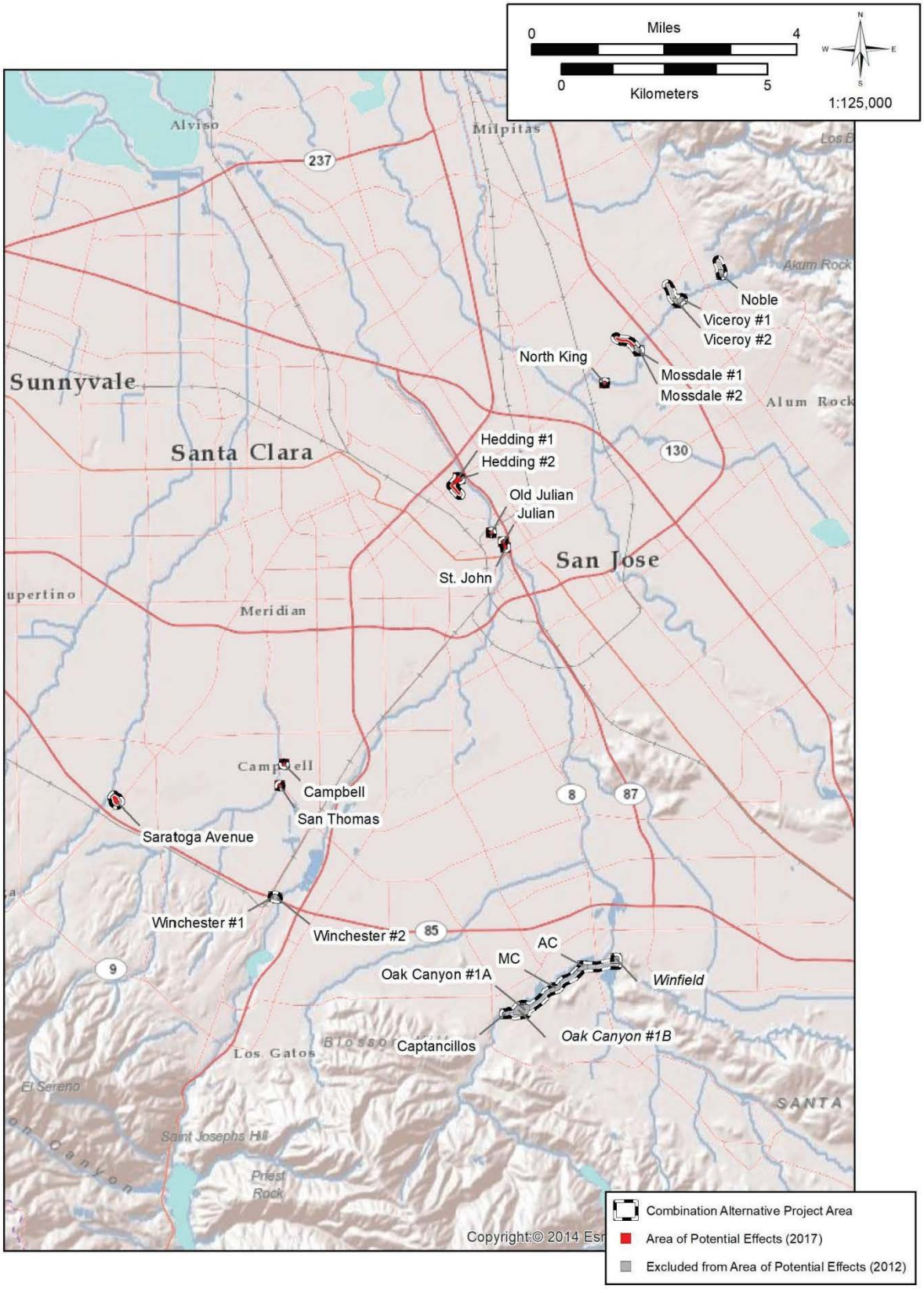

Figure 1-3. The Combination Alternative Project Area and Area of Potential Effects.

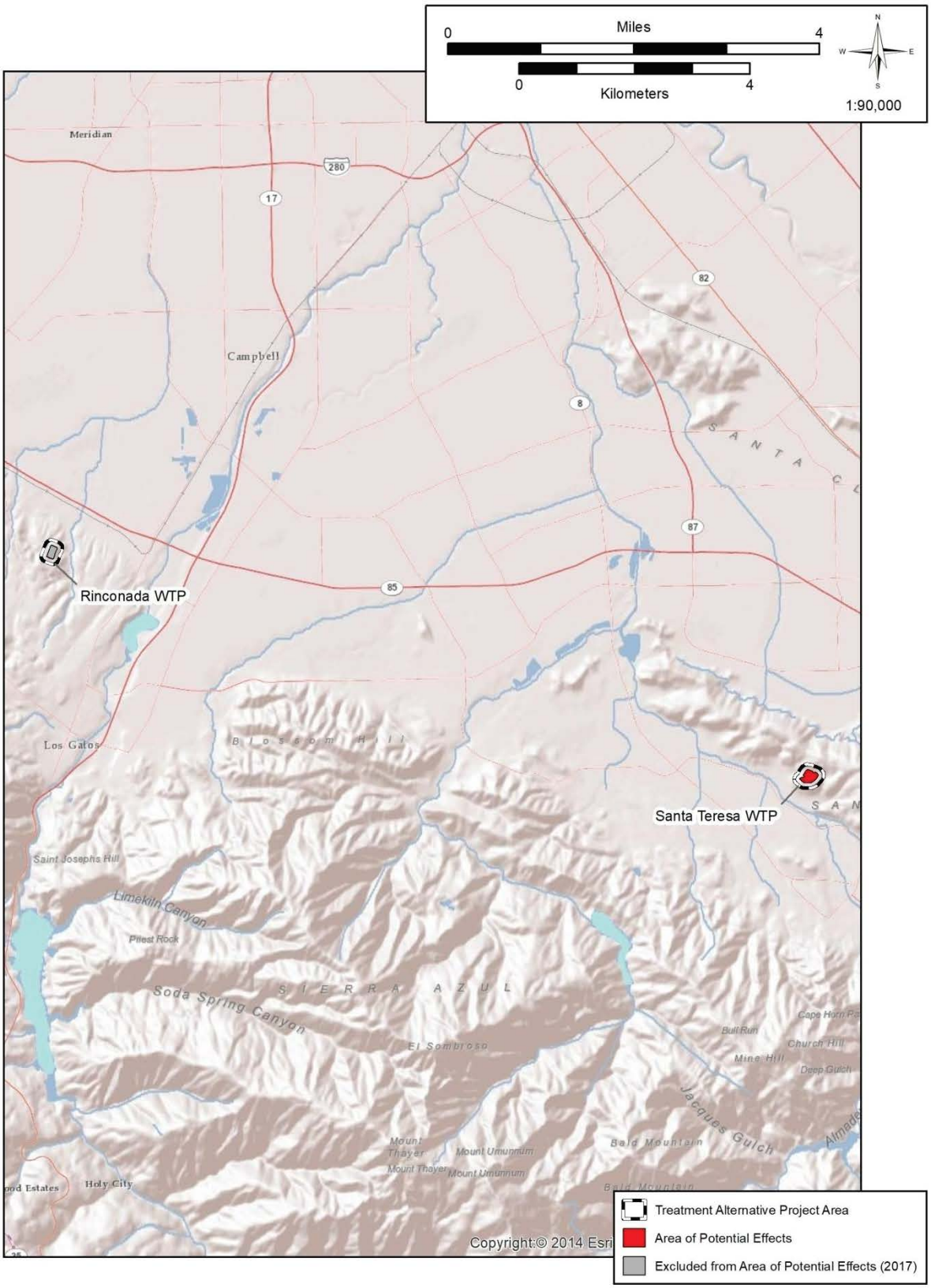

Figure 1-4. The Treatment Alternative Project Area and Area of Potential Effects.

1.3.4 San Luis Reservoir Expansion Alternative

The San Luis Reservoir Expansion Alternative comprises three alternatives that share a common APE and encompass nine main potential impact locations within and around the San Luis Reservoir. Included among these potential impact locations is the existing reservoir shoreline, which may become inundated if the storage capacity of the San Luis Reservoir is increased (*see* Figure 1-5). The San Luis Reservoir Expansion Alternative APE spans approximately 5,022 acres and partially overlaps the Lower San Felipe Intake Alternative APE. The APE includes the Basalt Hill borrow area, Borrow Area 6, the Cottonwood Bay levee modification and levee raise areas, the Dinosaur Point boat launch modification area, downstream fill impact areas, haul roads, a Highway 152 impact area, and potential construction staging areas. Ground disturbing activities within these areas may directly alter significant cultural resources as a result of construction, excavation, staging, maintenance, hauling, and other actions. Significant cultural resources also may be altered if the maximum pool level of the reservoir is increased, potentially resulting in mechanical and biochemical impacts along the expanded shoreline (*see* Section 6.4). A Project Area was defined for the San Luis Reservoir Expansion Alternative that encompasses a 0.5-mile radius surrounding the APE and includes the total extents of the reservoir. This 32,370-acre Project Area was subject to archival and records searches in advance of the 2016 inventory survey of the San Luis Reservoir Expansion Alternative APE. As was noted above, construction of the CVP Reservoir Expansion Alternative, the Shared CVP and SWP Expansion Alternative, and the Increased San Luis Reservoir Carryover Storage Alternative would share the same footprint and have the same potential for construction-related disturbance to cultural resources.

In 2018, changes were made to the extents of APE for the San Luis Reservoir Alternative with the addition of a haul route between the Basalt Hill Borrow Area and a potential construction staging area just west of the B.F. Sisk Dam. Changes also were made to the extents of the Basalt Hill borrow area, Borrow Area 6, and two additional potential construction staging areas. This resulted in the exclusion of 251 acres (including 157 acres subject to inventory survey in 2016) that were previously included in the APE and the addition of 799 acres that were not initially included in the APE. Many of the areas that were added in 2018 comprise downstream fill impact areas or potential construction staging areas.

1.4 Regulatory Context

Reclamation is the lead federal agency under NEPA for the SLLPIP and the SCVWD is the lead state agency under CEQA. As a federal undertaking, the

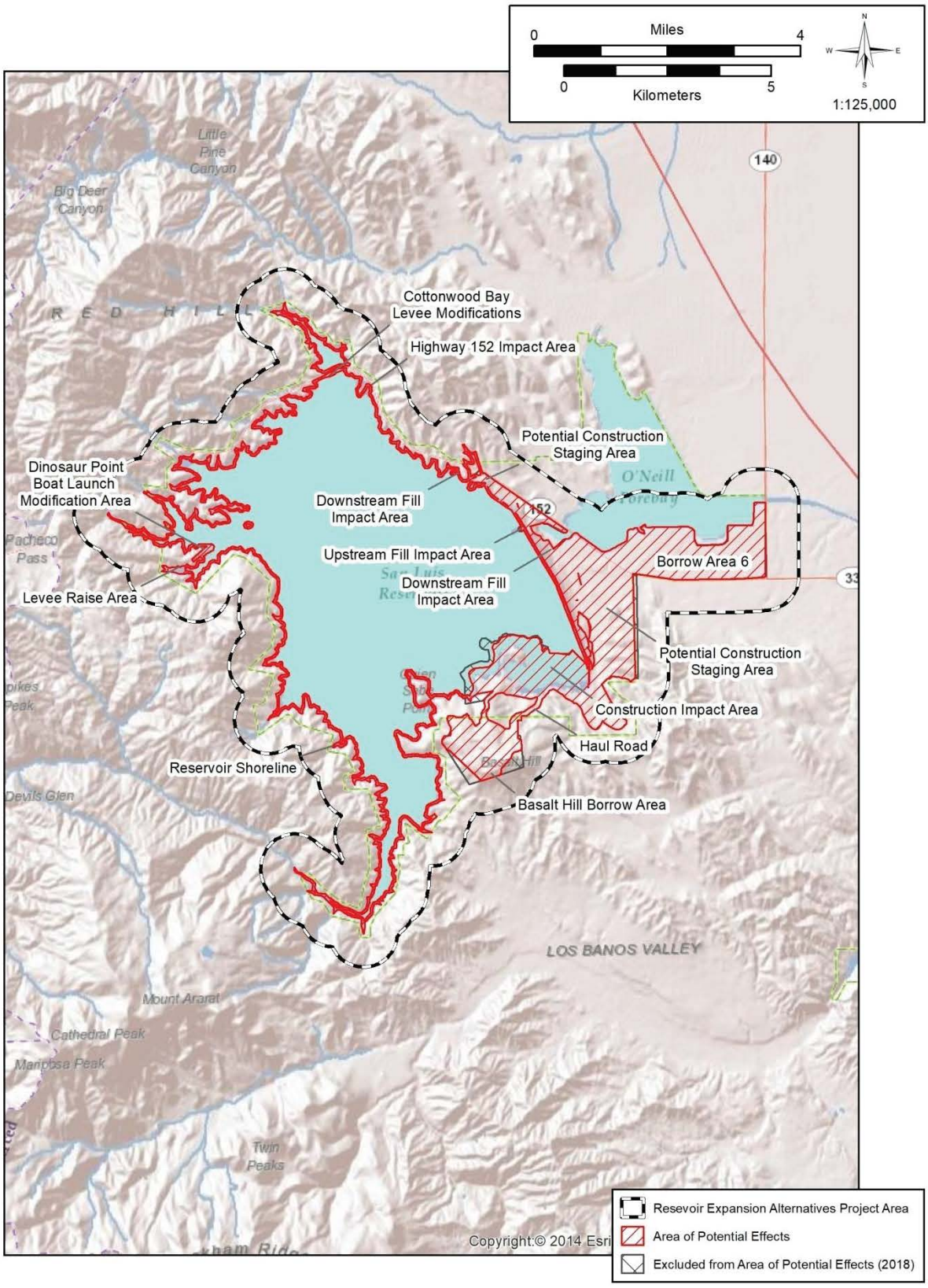

Figure 1-5. The San Luis Reservoir Expansion Alternative Project Area and Area of Potential Effects.

SLLPIP is subject to Section 106 of the NHPA[2] (54 USC 300108), which states

> The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, shall take into account the effect of the undertaking on any historic property. The head of the Federal agency shall afford the [Advisory] Council [on Historic Preservation] a reasonable opportunity to comment with regard to the undertaking.

The implementing regulations of Section 106 of the NHPA are found in 36 CFR Part 800, which identifies the steps and consultation requirements that must be taken to comply with Section 106 of the NHPA. Pursuant to 36 CFR 800.16(l)(1), a historic property is defined as

> any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

The criteria for determining NRHP eligibility are found in 36 CFR Part 60.

In the event that historic properties within the APE for an undertaking will be subject to adverse effects, the lead federal agency is required to consider ways to avoid, minimize, or mitigate ("resolve") such effects, in consultation with the Advisory Council on Historic Preservation (ACHP), the SHPO, and other Section 106 consulting parties. This often requires the development and execution of a Memorandum of Agreement (MOA) or Programmatic Agreement among the consulting parties (36 CFR 800.6).

Section 106 regulations allow federal agencies to conduct "nondestructive project planning activities before completing compliance with Section 106" (36 CFR 800.1[c]), provided any subsequent consideration of alternatives to avoid, minimize, or mitigate adverse effects is not restricted during the planning process. At this time, Reclamation does not have an undertaking with the potential to affect historic properties as the feasibility and environmental studies are planning activities. Should Congress authorize an identified SLLPIP alternative or other Project that addresses the San Luis "low point" problem,

[2] Following ACHP guidelines, "Section 106" is referred to as that section of the original public law that enacted the NHPA as opposed to its current legal citation (54 USC 306108). It is a reference that has been in constant use for almost 50 years. The provisions of the newly codified NHPA may be found under 54 USC 300101 et seq.

and a federal agency has an undertaking as defined in 36 CFR 800.14(y) and 800.3(a)(1), that federal action will then be subject to NHPA Section 106 compliance and other federal cultural resources laws as applicable.

Because two of the Project's action alternatives include lands owned and administered by Reclamation, additional cultural resource policies and procedures are also relevant. Among these is the Native American Graves Protection and Repatriation Act (NAGPRA) (Public Law 101-601; 25 USC 3001-3013), which describes the rights of Native American lineal descendants, Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, referred to collectively in the statute as "cultural items," with which they can show a relationship of lineal descent or cultural affiliation. NAGPRA also establishes procedures for the inadvertent discovery or planned excavation of Native American cultural items on federal or tribal lands.

Additional mandates applicable to Reclamation administered lands are outlined in the manuals "Policy for Cultural Resources Management" (LND P01; Reclamation 2012a), "Directives and Standards for Cultural Resource Management" (LND 02-01; Reclamation 2012b), and "Administration of the Archaeological Resources Protection Act (ARPA) on Bureau of Reclamation Land" (LND 02-04; Reclamation 2014). Reclamation is also guided by the "Policy for Museum Property Management" (LND P05; Reclamation 2012c) and "Directives and Standards for Museum Property Management" (LND 02-02; Reclamation 2012d).

1.4.1 National Register of Historic Places

The NRHP is "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). Eligibility for inclusion in the NRHP is determined by applying the following criteria, which were developed by the National Park Service in accordance with the NHPA and outlined in 36 CFR 60.4:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> A) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B) That are associated with the lives of persons significant in our past; or
>
> C) That embody 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) That have yielded, or may be likely to yield, information important in prehistory or history.

Any prehistoric or historic period district, site, building, structure, or object that meets one or more of the criteria above and possesses sufficient integrity may be eligible for inclusion in the NRHP as a historic property.

Typically, cemeteries, birthplaces, or graves of historic period figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, commemorative properties, and properties that have achieved significance within the past 50 years are not considered eligible for listing in the NRHP. Such properties may qualify, however, if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

- A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.
- A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- A property achieving significance within the past 50 years if it is of exceptional importance (36 CFR 60.4).

1.4.2 California Environmental Quality Act

State historic preservation regulations affecting the SLLPIP include the statutes and guidelines contained in CEQA. CEQA requires lead agencies to consider

carefully the potential impacts of a project on historical resources. A "historical resource" includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript that is considered historically or archaeologically significant (PRC 5020.1). Section 15064.5 of state CEQA *Guidelines* specifies criteria for evaluating the significance or importance of cultural resources as follows:

1. The resource is associated with events that have made a contribution to the broad patterns of California history;

2. The resource is associated with the lives of persons important in our past;

3. The resource embodies the distinctive characteristics of a type, period, region or method of construction, or represents the work of an important individual or possesses high artistic values; or

4. The resource has yielded, or may be likely to yield, important information in prehistory or history.

The technical advice series produced by the California Governor's Office of Planning and Research offers guidance on procedures to identify historical resources, evaluate their importance and potential for listing in the CRHR, and estimate potential impacts on historical resources. The advice series strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities including, but not limited to, museums, historical commissions, associates, and societies be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

1.4.3 California Register of Historical Resources

The CRHR, which is similar to the NRHP, is an authoritative guide that was created to identify the state's historical resources and to indicate what properties are subject to protection, to the extent prudent and feasible, from substantial adverse change. The criteria for CRHR eligibility are based upon NRHP criteria. Certain resources are determined by the statute to be automatically included in the CRHR, including California properties formally determined eligible for or listed in the NRHP, California Historical Landmarks (CHL) numbers 770 and above, and California Points of Historical Interest.

Per the CRHR, historical resources may consist of buildings, structures, objects, or archeological sites. Each of these entities is assessed for its historical, architectural, archaeological, cultural, or scientific importance. Per CEQA *Guidelines*, (Section 15064.5[b]), project activities may have a significant impact on the environment if they would cause a substantial adverse change in the significance of a historical resource. Activities that could result in a

substantial adverse change include demolition, replacement, substantial alteration, and/or relocation of the resource. Steps that must be implemented in order to comply with state CEQA *Guidelines* include the following:

- Identify cultural resources;
- Evaluate the significance of the cultural resources based on established thresholds of historical, architectural, archaeological, cultural, or scientific importance;
- Evaluate the effects of a project on all cultural resources; and
- Develop and implement measures to mitigate the effects of the project on significant cultural resources.

The State Office of Historic Preservation has broad authority under federal and state law for the implementation of historic preservation programs in California. The SHPO comments on effect determinations and eligibility for listing in the NRHP and the CRHR.

1.5 Report Organization and Project Participants

This report begins with an introduction to the SLLPIP, specifically its geographic and regulatory setting (Section 1.0), followed by an overview of the natural environment (Section 2.0) and cultural history (Section 3.0) of the SLLPIP vicinity. Archival and records search results are presented (Section 4.0) along with a discussion of the methods that were used during the inventory surveys (Section 5.0). The results of those surveys are detailed (Section 6.0), and conclusions and recommendations are offered regarding the known or potential significance of cultural resources encountered within the APE for the SLLPIP alternatives discussed in this document (Section 7.0). Maps of previously recorded cultural resources and prior cultural resource studies associated with each alternative are included (Appendix A), as are maps of cultural resources relocated or discovered within the APE for each alternative during inventory survey (Appendix B). Confidential records for cultural resources within the APE for the SLLPIP alternatives discussed in this document are provided (Appendix C), along with NAHC correspondence (Appendix D) and photographic documentation (Appendix E).

The following Pacific Legacy personnel assisted in the cultural resources investigation for the SLLPIP and/or assisted in the production of this report:

- John Holson (MA), over 35 years experience, Principal Investigator;
- Lisa Holm (PhD), over 22 years experience, Senior Archaeologist/GIS Analyst;
- Marc Greenberg (MA), 20 years experience, Field Supervisor;
- Mary O’Neill (BA), over 17 years experience, Field Supervisor;

- Christopher Peske (BA), 6 years experience, Field Supervisor;
- Elena Reese (MA), 22 years experience, Historian;
- Daniel Trout (BA), 15 years experience, Field Technician;
- Jack Sprague (BA), 9 years experience, Field Technician;
- Joshua Varkel (BA), 4 years experience, Field Technician;
- Lucian N Schrader III (MA), 17 years experience, Field Supervisor;
- Evan Elliot (MA), 14 years experience, Field Supervisor;
- Graham Dalldorf (MA), 20 years experience, Geomorphologist;
- Katherine Chao (BA), 7 years experience, Field Technician;
- Sandra Ledebuhr (BA), 4 years experience, Field Technician;
- Katey Fittingoff (BA), 2 years experience, Field Technician;
- Brian Marks (PhD), 3 years experience, Field Technician;
- Chloe Atwater (BA), 2 years experience, Field Technician;
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- Kylie Tauitavuki (BA), 2 years experience, Field Technician.

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Chapter 2
Natural Environment

The following section presents an overview of the geology and landscape history of the SLLPIP vicinity, including the area in and around the San Luis Reservoir and the Santa Clara Valley, with a focus on the potential to encounter buried cultural resources in each main area. Several geoarchaeological studies have been produced for both the Santa Clara Valley and the San Luis Reservoir area. A thorough account of late Quaternary landscape evolution within the Santa Clara Valley may be found in a geoarchaeological study by Rosenthal and Meyer (2004a), which focused on the southern portion of the valley, while a detailed geoarchaeological overview of the San Luis Reservoir area was included as part of a larger study by Rosenthal and Meyer (2004b) for Caltrans' District 10. The discussion below examines the physiography and geology of both areas and offers a brief account of recent geoenvironmental history. It concludes with an account of late Quaternary geology and soils within each Project Area so that landscape change and geomorphic processes within the APE for each alternative may be better understood.

2.1 Physiography and Geology

The San Luis Reservoir area lies within the eastern Diablo Range foothills, which area a part of the larger Coast Ranges physiographic province. These foothills generally range in elevation from 200-2,500 feet above mean sea level (amsl) and are characterized by a weakly to moderately dissected, rolling topography at the eastern extent of the range where they grade into and are buried by the deep alluvium of the Great Valley physiographic province. The western foothills are more deeply dissected, with steep slopes. The foothills are northwest trending, sub-parallel to the San Andreas Fault, and underlain by Great Valley Sequence bedrock units in the east and rocks of the Franciscan complex in the west, though several isolated outcrops of Miocene basalt are present (Lettis 1982; Wagner et al. 1991). Broad, terraced valleys generally separate the foothills, which represent sites of localized subsidence and uplift, respectively. The valleys are northwest trending and typically underlain by thick sequences of Quaternary alluvium. San Luis Reservoir is situated in one of these valleys, the San Luis Flat, which is created by a pull-apart basin in the Ortigalita Fault Zone, a major Holocene dextral strike slip fault zone that constitutes the eastern part of the larger San Andreas Fault system (Bryant and Cluett 2000).

The Santa Clara Valley is one of the many prominent northwest trending valleys in the Coast Range physiographic province. The regionally important transform plate boundary along the San Andreas Fault is situated in the Santa Cruz Mountains that border the valley to the west. The Santa Cruz Mountains have bedrock geology similar to the Diablo Range, and also are underlain by the Franciscan Complex as well as Great Valley Sequence (Wagner et al. 1991). The Santa Clara Valley is a structural basin that has been filled with Quaternary alluvium, the depth of which varies substantially depending on location. Older alluvial deposits characterize the higher elevation portions of the valley margins, while the lower elevation portions are characterized by late Quaternary alluvium, including widespread Holocene deposits from Coyote Creek and the Guadalupe River that both flow northwest through the valley and drain into the San Francisco Bay (Knudsen et al. 2000).

2.2 Late Quaternary Geology, Geomorphology, and Soils

Previous geological studies of the San Francisco Bay region indicate that the area has undergone a series of dramatic landscape-scale changes since people first inhabited the region circa 15,000 years ago. Due to lower sea levels, the San Francisco Bay did not exist during the late Pleistocene. Instead, the area was characterized by a broad inland valley intersected by well-established and incised drainages. Also during that time, the combined runoff from the Sacramento and San Joaquin rivers flowed through what is now the San Francisco Bay as a single inland drainage before reaching the Pacific Ocean near the Farallon Islands (Atwater et al. 1977). Toward the end of the Pleistocene, the melting of continental glacial ice caused a rapid rise in worldwide sea levels, known as eustatic sea level change. In response, the Pacific shoreline migrated eastward, reaching the opening near the Golden Gate about 10,000 years ago. The San Francisco Bay eventually formed as continued sea level rise drowned the low-lying inland valley areas.

By about 7,000 years ago, the rate of worldwide sea-level rise began to slow dramatically, and relatively slow submersion of more inland portions of the bay and the Sacramento-San Joaquin Delta began (Atwater 1980, 1982; Shelmon and Begg 1975; Stanley and Warne 1994; Wells and Goman 1995). The decrease allowed sedimentation to keep pace with submergence rates, causing extensive tidal flats and marshes to form around the margins of the bay (Atwater et al. 1979). About 26 feet of inundation subsequently occurred in the delta through the Middle and Late Holocene (Rosenthal and Meyer 2004b). This resulted in continued expansion of the bay and estuaries, largely in response to the decomposition, compaction, and subsidence of the intertidal deposits (Atwater 1979; Atwater et al. 1977, 1979).

At the bay margin, the combination of rising water levels and increasing sedimentation rates created higher baselines for streams that entered the Bay. As the lower channels of drainages such as Coyote Creek and the Guadalupe River became choked, sediments were pushed onto the surface of surrounding floodplains, burying exposed surfaces and slowly constructing channel margin levees (Helley et al. 1979). Concurrently, older landforms adjacent to upstream reaches in these drainages were eroded by lateral channel migration, as stream sinuosity increased to maintain equilibrium gradients in response to rising baselines. This led to the formation of an "alluvial apron around the bay plain and the extensive valleys of the region" that is graded to the present sea level (Helley et al. 1979: 18). As a result, many of the Late Pleistocene and Early Holocene land surfaces were overlain by thick deposits of younger alluvium that are generally less than 5,000 years old. These older land surfaces usually exhibit well-developed buried soil profiles (paleosols) that represent a significant stratigraphic boundary in the region. A paleosol is an "old soil" that formed because of weathering at or near the ground surface during a past interval of relative landform stability, making it available for human use and occupation in the past. Alternating periods of landform stability that produce paleosols and periods of instability and deposition that bury them have been documented throughout Central California during the Holocene (Meyer and Dalldorf 2004; Meyer and Rosenthal 2008; Rosenthal and Meyer 2004b).

Further inland from the bay margin, upland valleys of the Diablo Ranges also witnessed profound landscape changes in the late Quaternary, though likely more as a direct result of climatic changes rather than eustatic sea level change. Geological studies in Contra Costa County and the foothills of the western San Joaquin Valley demonstrate that many valleys in the region were partially filled with alluvium by several cycles of deposition in the Holocene that were separated by periods of landscape stability and soil formation (Lettis 1982; Marchand and Allwardt 1981; Pape 1978; Rogers 1988). Geoarchaeological studies in eastern Contra Costa County in the Los Vaqueros area determined that distinct episodes of deposition occurred in different valleys during the Early, Middle, and Late Holocene (Meyer 1996; Meyer and Rosenthal 1997).

During the Late Holocene, ongoing but much more gradual sea level rise caused the expansion of tidal marshes at the bay margin in newly filled valleys. By the 1850s, before Euro-American settlement and reclamation, tidal marshes had expanded in the region to cover twice as much surface area as all the inland water of the Bay and Delta combined (Atwater et al. 1979). Post Euro-American settlement land use changes, including reclamation efforts for conversion to agriculture, channelization of drainages, widespread grazing, and more recent urbanization in the Santa Clara Valley, have led to further landscape changes.

This brief review indicates that the timing, magnitude, and extent of landscape changes were sufficient to have potentially buried cultural resources both in the Santa Clara Valley as well as in the valleys of the Diablo Range, such as the San Luis Flat.

2.2.1 Late Quaternary Surficial Geology

Late Quaternary surficial geology has been mapped for portions of the San Luis Reservoir area and for the entire Santa Clara Valley by Knudsen et al. (2000). In the San Luis Reservoir area, only the westernmost portion that lies within Santa Clara County has been mapped. That area is marked by Early to Late Pleistocene undifferentiated alluvium (Qoa) that is more than 30,000 years old. Qoa deposits are described as moderately to deeply dissected alluvial fan, stream terrace, basin, and channel deposits. For other portions of the San Luis Reservoir area, surficial geologic mapping does not appear to be available, though a study by Lettis (1982) described deposits for the western San Joaquin Valley and eastern Diablo Range. Much of the San Luis Reservoir area in Merced County appears to be situated on steeply sloping erosional hillslopes underlain by bedrock. Some now inundated portions of the San Luis Reservoir area, however, are situated in a structural basin formerly known as the San Luis Flat (*see* Figure 2-1).

Lettis (1982) describes two Holocene units, Patterson and Dos Palos alluvium, that are present in the eastern foothills of the Diablo Range and on the floor of the San Joaquin Valley, respectively. Patterson alluvium underlies present stream channels and low terraces inset into older Late Pleistocene/Early Holocene San Luis Ranch alluvium. Patterson alluvium is purported to form extensive, deep fill in valleys of the eastern Diablo Range, including Carrisalito Flat, which is located approximately 10 miles south of San Luis Reservoir. A gastropod shell obtained from a depth of 0.5 meters in a low terrace along San Luis Creek just east of O'Neill Forebay provided a Late Holocene date for Patterson alluvium (Lettis 1982: 77). Although the San Luis Reservoir had already inundated the San Luis Flat when Lettis (1982) conducted his research, thus preventing him from mapping that location, it seems likely that Holocene deposits of Patterson alluvium covered portions of San Luis Flat along Cottonwood Creek, San Luis Creek, and other unnamed drainages that were subsequently flooded.

Surficial geology in the Santa Clara Valley consists of a variety of deposits that primarily range in age from Late Pleistocene to Latest Holocene (Knudsen et al. 2000). Because surficial geologic mapping tends to be somewhat generalized and the locations that make up the Project Area for the Combination Alternative and the Treatment Alternative are so confined, only a general description of mapped Santa Clara Valley deposits that may be present in the SLLPIP footprint are provided. At the valley margin, relatively older units are exposed at the surface, including Pleistocene alluvial fan deposits (Qpf), and older undifferentiated alluvial deposits (Qoa). Valley bottom units spanning the Holocene are widespread and have buried or eroded older deposits. Valley bottom units have been mapped as channel deposits (Qhc), undifferentiated alluvial deposits (Qha), alluvial fan deposits (Qhf, Qhff, Qhfy, Qhf1), alluvial fan levee deposits (Qhl, Qhly), and stream terrace deposits (Qht, Qhty). Due to extensive urbanization, modern artificial fill (af) and artificial channel (ac) units are also present throughout the valley.

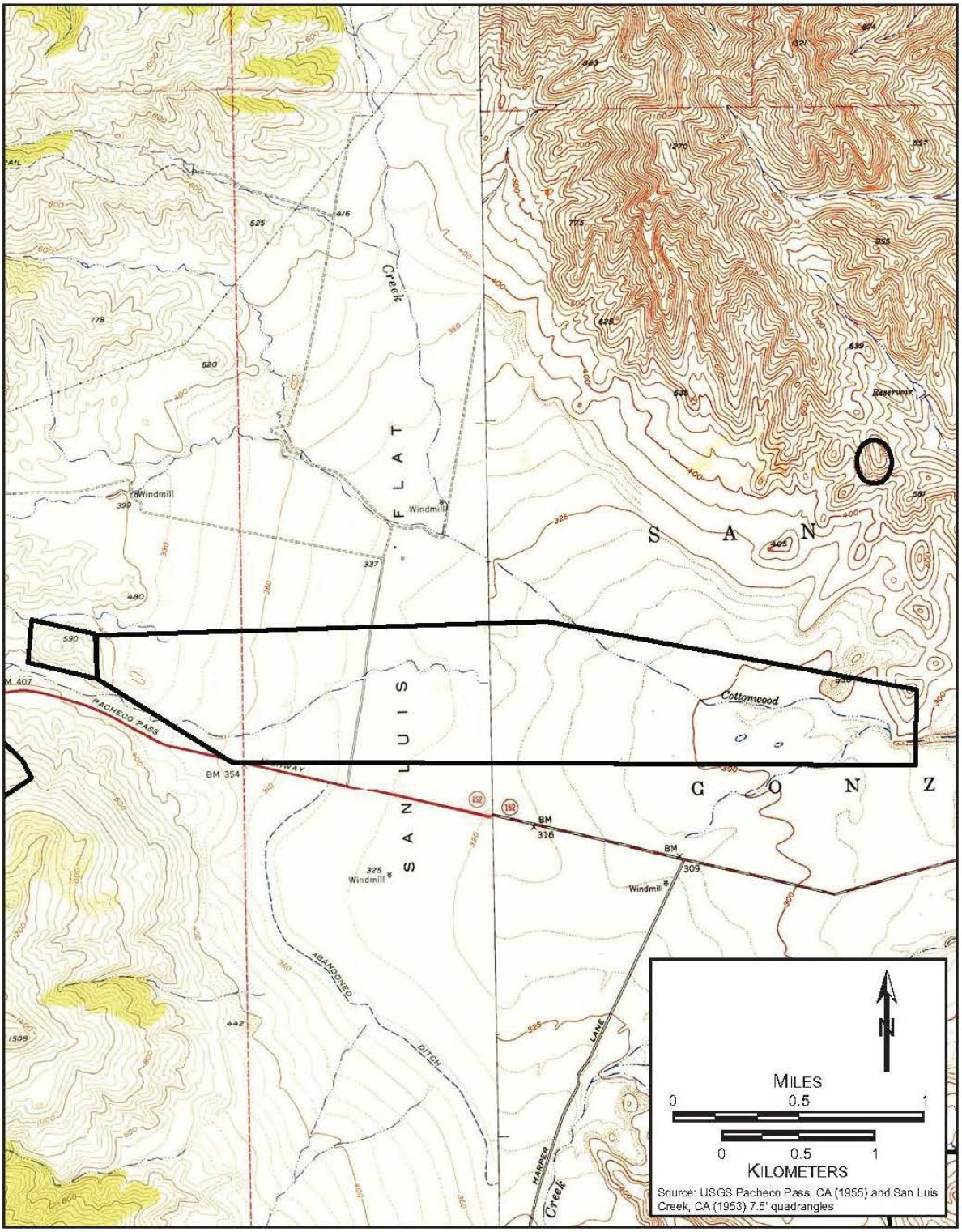

Figure 2-1. A View of the San Luis Flat Area before Dam Construction.

2.2.2 Soils

The US Department of Agriculture's Natural Resources Conservation Service (USDA-NRCS) has mapped soils for the San Luis Reservoir and Santa Clara Valley areas as a part of the Soil Survey Geographic (SSURGO) database for Merced and Santa Clara counties (USDA-NRCS 2007). SSURGO mapping does not extend to inundated areas such as the San Luis Reservoir, but otherwise covers both rural and urban areas. Due to inundation, portions of the San Luis Reservoir Expansion Alternative and roughly half of the Lower San Felipe Intake Alternative APE are not mapped as part of the SSURGO database.

With the exception of Hillgate silt loam, all of the soils found around the San Luis Reservoir are formed on erosional landforms (i.e., hillslopes) in residuum (*see* Figure 2-2 and Table 2-1). Hillgate silt loam is formed in alluvium from mixed sources, more specifically on the Qoa unit described in the preceding section on surficial geology. Its well-developed soil profile with numerous Bt horizons is a byproduct of extended subaerial weathering through time (Birkeland 1999; Birkeland et al. 1991), which suggests it has been exposed at the surface since the late Pleistocene. In addition to mapped soils, it is likely that a number of unmapped soils series were present at lower elevations, such as moderately sloped portions of San Luis Flat, including the Lost Hills, Pleasanton, and Ortigalita series (Lettis 1982). These soils are commonly mapped on San Luis Ranch alluvium and are moderately developed with A/Bt/C soil profiles. Soil series on more gently sloped areas of San Luis Flat, especially along Cottonwood Creek and San Luis Creek, would likely have been Panoche, Mocho, Orestimba, Oxalis, Clear Lake, or Levis series soils (Lettis 1982: 126). These soils are commonly mapped on Patterson alluvium, have A/C profiles, and often contain paleosols.

In the Santa Clara Valley, numerous mapped SSURGO soils are present (USDA-NRCS 2010b). Soil series mapped on the valley bottom in Santa Clara Valley include the Campbell, Botella, Elder, Hangerone, Flaskan, Still, Clear Lake, Landelspark, and Newpark series. These soils nearly all have weakly to moderately developed profiles with evidence of a buried soil, and are often mapped as intermixed with various components of urban land, xerorthents, and artificial fill. Soil series mapped at the valley margin include the Santerhill, Montara, Alumrock, and Zeppelin series. Valley margin soils typically have well-developed soil profiles or weakly developed ones on erosional landforms such as hillslopes.

2.2.3 Buried Cultural Resource Sensitivity

The sensitivity for buried cultural resources has been successfully modeled using ages of depositional landforms and soils as a primary variable in Central California (Meyer and Rosenthal 2008; Rosenthal and Meyer 2004a, 2004b). These models generally rely on the probability that more recent Holocene

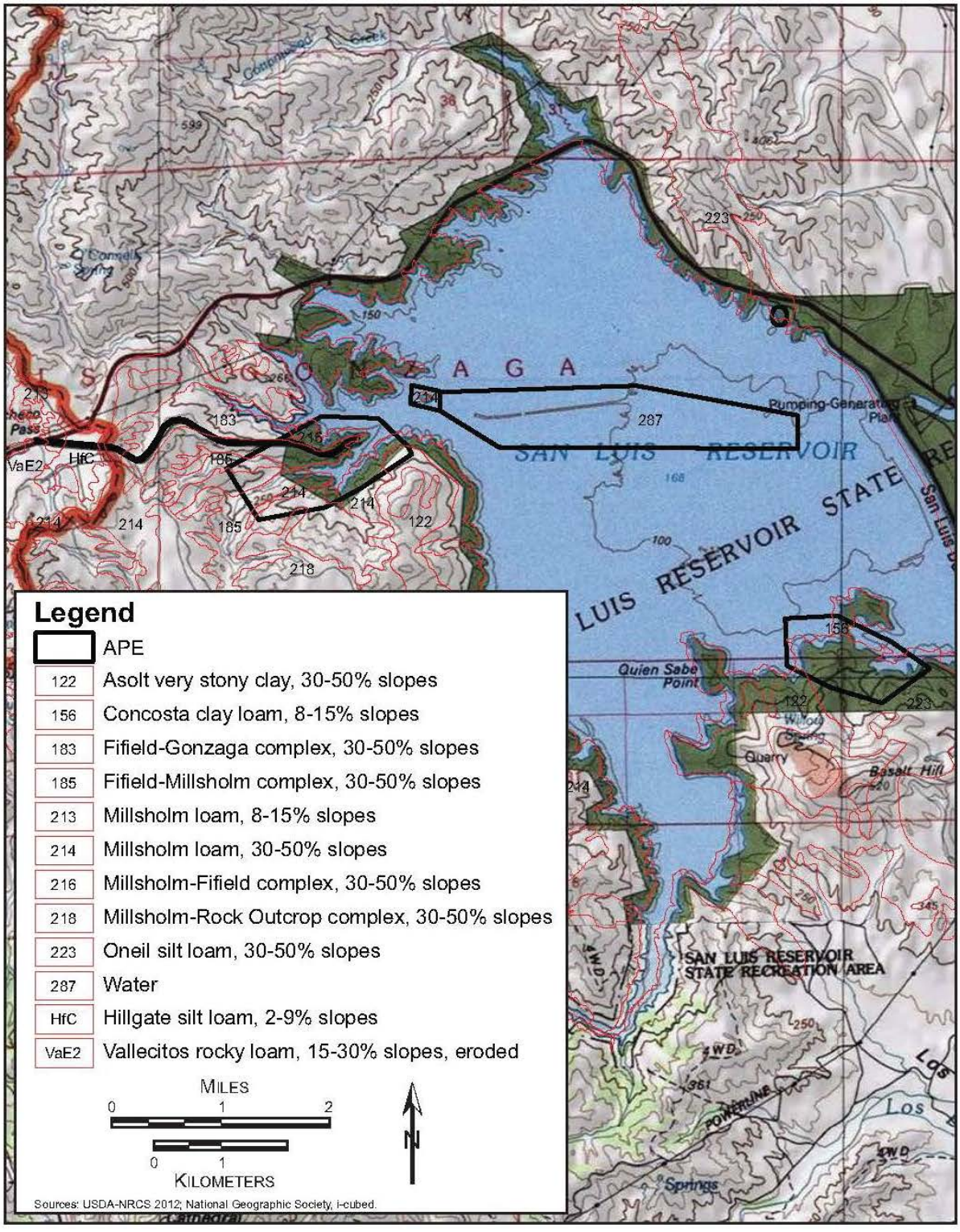

Figure 2-2. SSURGO Soil Map Units within the San Luis Reservoir Area.

Table 1-1. SSURGO Soil Units in the San Luis Reservoir Area.

Map Unit Name[1]	Soil Order	Soil Profile
Asolt very stony clay, 30-50% slopes	Vertisol	A1/A2/A3/C/R
Conosta clay loam, 8-15% slopes	Alfisol	A1/A2/Bat/Bt/BCt/Cr
Fifield-Gonzaga complex, 30-50% slopes	Mollisol	A/Bt/C1/C2/R (Fifield); A1/A2/ABt/Bt1/Bt2/R1/R2 (Gonzaga)
Fifield-Millsholm complex, 30-50% slopes	Mollisol/ Inceptisol	A1/Bt/C1/C2/R (Fifield); A1/A2/Bt/R (Millsholm)
Hillgate silt loam, 2-9% slopes	Alfisol	A1/A2/A3/2Bt1/2Bt2/2Bt3/2Bt4
Millsholm loam, 8-15% slopes	Inceptisol	A1/A2/Bt/R
Millsholm loam, 30-50% slopes	Inceptisol	A1/A2/Bt/R
Millsholm-Fifield complex, 30-50% slopes	Mollisol/ Inceptisol	A1/A2/Bt/R (Millsholm); A1/Bt/C1/C2/R (Fifield)
Millsholm-Rock Outcrop complex, 15-30% slopes	Inceptisol	A1/A2/Bt/R
Oneil silt loam, 30-50% slopes	Mollisol	A1/A2/A3/AC/Ck/R
Vallecitos rocky loam, 15-30% slopes	Alfisol	A1/A2/Bt1/Bt2/R
Water (Not Mapped)	-	-

[1] From USDA-NRCS 2007, 2010a

deposits possess a greater potential to bury cultural resources than older Holocene deposits. Because human occupation is generally thought to have occurred in the Latest Pleistocene (after 15,000 years ago), landforms that pre-date this period and remain exposed at the surface have very low buried cultural resource sensitivity. Most of the area around the San Luis Reservoir consists of erosional landforms with younger soils or depositional landforms that are Late Pleistocene in age. All of the soils listed in Table 2-1 are estimated to have a very low sensitivity for buried cultural resources, an assessment reinforced by previous regional geoarchaeological studies (Rosenthal and Meyer 2004b). Younger landforms, however, were present within the San Luis Flat prior to the inundation of the reservoir and may be exposed during drought years or periods of significant drawdown. These landforms include Holocene age terraces consisting of Patterson alluvium along drainages. Because Patterson alluvium is considered to be Late Holocene in age, such landforms are considered highly sensitive. Although they have not been mapped in detail due to inundation, the eastern half of the Lower San Felipe Intake Alternative APE encompassing the dredging area should be considered highly sensitive for buried cultural resources. The extent to which this area was graded or cut for fill material related to construction of the San Luis Dam, however, could lower this sensitivity assessment. The extent of post-inundation erosion may also influence this assessment.

Many buried cultural resources have been documented within the Santa Clara Valley (Meyer 2000, Rosenthal and Meyer 2004a). In general, the valley bottom is characterized by landforms dating to the Late or Latest Holocene, while older

landforms of Early Holocene or Late Pleistocene age are present along the valley margin. The dynamic geomorphic history of the Santa Clara Valley during the Holocene has created a mosaic of different landform types, but in general the valley has a high sensitivity for buried cultural resources. This sensitivity assessment is further bolstered by the documented presence of buried soils (paleosols) in mapped SSURGO soil series that were once available for human occupation. Recent anthropogenic landscape changes, including large scale, mechanical cutting and filling, create local areas of lower sensitivity.

2.3 Climate and Hydrology

The San Luis Reservoir and Santa Clara Valley areas are characterized by a Mediterranean climate consisting of wet, cold winters and hot, dry summers. The Western Regional Climate Center (WRCC 2013) has documented climatological data from six weather stations within the SLLPIP vicinity for roughly a century, depending on the specific weather station. Two weather stations collected data near the San Luis Reservoir. From 1963 to 2007, the San Luis Dam weather station reported annual temperatures from 38° F in January to 92° F in July while the average was 74° F. Data also was collected at the Pacheco Pass weather station from 1949 to 1977, but it generated insufficient data for temperature generalizations. Four weather stations collected data within the Santa Clara Valley near the Combination Alternative Project Area and Treatment Alternative Project Area. The San Jose weather station and San Jose International Airport weather station collected data from 1893 to 2012 and 1998 to 2012, respectively and reported annual temperatures of 41° F in January to 82° F in July with an average temperature of 68° F. Between 1893 and 2012, the Santa Clara University weather station reported annual temperatures of 38° F in January to 82° F in July with an average of 67° F. During the same period, the Los Gatos weather station reported annual temperatures ranging from 39° F in January to 85° F in July with an average of 70° F. The growing seasons in the San Luis Reservoir and Santa Clara Valley areas range from 215 to 260 days per year. This season is defined as the period between the last freezing temperature of the spring and the first freezing temperature of the fall. The last freezing temperature generally occurs in March, while the first occurs in November or December.

Precipitation in the SLLPIP vicinity varies considerably from year to year and based on microclimate. Generally, the average amount of precipitation decreases from the northwest to the southeast. The average precipitation at San Luis Dam is 10.45 inches and 12.77 inches at Pacheco Pass. The average precipitation at San Jose is 14.66 inches, 12.72 inches at San Jose International airport, 14.04 inches for Santa Clara University, and 24.78 inches for Los Gatos.

San Luis Reservoir comprises the largest water body in Merced County. As an off-stream storage reservoir, it does not block any major river drainages to

obtain water. Instead, water is pumped into the reservoir during wetter months via the California Aqueduct and Delta-Mendota Canal for later use. The reservoir has a catchment area of 84.6 square miles. San Luis Creek is considered the main tributary to San Luis Reservoir, though Cottonwood Creek also empties into the reservoir. The San Luis Reservoir has a storage capacity of 2,041,000 acre feet (Autobee 2011). The high point of the reservoir pool is at 544 feet amsl. The low point of the reservoir pool varies over the year in part due to demand, supply, and water allocation guidelines. The base of the dam rests at 225 feet amsl.

The main drainage for the Santa Clara Valley is the Guadalupe River. Coyote Creek is a major drainage in the Diablo Range that feeds into the Guadalupe River. Other tributaries to the Guadalupe River include Penitencia Creek, Guadalupe Creek, Los Gatos Creek, Smith Creek, and Saratoga Creek. Stevens Creek drains the western portion of the Santa Clara Valley and from the Santa Cruz Mountains to the west.

2.4 Vegetation and Fauna

A range of vegetation communities exists within the SLLPIP vicinity, in large part a product of the diverse topography and hydrology of the two main areas. The varied vegetation communities support a wide variety of fish, mollusks, waterfowl, and large and small mammals. At least five distinct natural communities occur within the San Luis Reservoir and Santa Clara Valley areas. These communities include Valley and Foothill Grassland, Oak Woodland, Northern Mixed Chaparral, Coast Range Mixed Coniferous Forest, and Riparian Forest.

The Valley and Foothill Grassland occur primarily on hill slopes that are barren of trees or brush growth as well areas of the valley floor not subsumed by the San Luis Reservoir. Most of the plant species within this community are non-native grass species such as wild oat (*Avena barbata*) and rip-gut brome (*Bromus diandrus*). This community is generally associated with Oak Woodland that tends to occur on areas downslope from ridgelines. Oak Woodlands mark the transition between savannah-like grassy plains in the lowlands and forest-like stands of trees at higher elevations. This community is dominated by coast live oak (*Quercus agrifolia*) and valley oak (*Q. lobata*). Other species may include poison oak (*Toxicodendron diversilobum*) and non-native grass species.

Oak Woodland communities were an important part of the Native American subsistence economy, and acorns comprised a staple food item. It has been suggested that acorn procurement was critical in encouraging more sedentary lifeways among California Native Americans. In addition to acorns, Oak Woodlands also provide habitat for species of fauna that were an important part of the prehistoric diet. These animals included mule deer (*Odocoileus*

hemionus), Roosevelt elk (*Cervus canadensis*), ground squirrel (*Citellus* sp.), rabbit (*Sylvilagus* spp.), and Black-tailed Jackrabbit (*Lepus californicus*).

Oak Woodlands often replace areas of chaparral that have been cleared. Clearing and other modern activities have most likely removed much of the chaparral communities from the North Coast Ranges (Fredrickson 1973: 141), yet Northern Mixed Chaparral communities continue to exist within the SLLPIP vicinity. These communities are dominated by such plants as chamise (*Adenostoma fasciculatum*), scrub oak (*Quercus dumosa*), Manzanita (*Arctostaphylos* sp.), and buckbrush (*Ceanothus cuneatus*). Chaparral communities provide habitat for mule deer (*Odocoileus hemionus*), Roosevelt elk (*Cervus canadensis*), and small mammals such as striped skunk (*Mephitis mephitis*) and badger (*Taxidea taxus*). Many bird species such as California quail (*Lophortyx californicus*) and mourning dove (*Lenaidura macroura*) find refuge in the chaparral.

Mountain slopes on the western side of the Santa Clara valley continue to be dominated by Coast Range and mixed Coniferous Forest communities. Species in these communities include Douglas fir (*Pseudotsuga menziesii*), California buckeye (*Aesculus californica*), big leaf maple (*Acer macrophyllum*), and madrone (*Arbutus menziesii*). The ground cover in these areas often includes Manzanita (*Arctostaphylos* sp.) and Christmas berry (toyon or *Heteromeles arbutifolia*). This community provided habitat for many large mammals such as grizzly bear (*Ursus californicus*), black bear (*Euarctos americanus*), mountain lion (*Felis concolor*), mule deer (*Odocoileus hemionus*), and Roosevelt elk (*Cervus canadensis*). Many species of birds, such as the golden eagle (*Aquila chrysaetos*) and red-tailed hawk (*Buteo jamaicensis*), and small mammals thrived in these forests.

Along the riparian corridors, Riparian Forest flourishes with black walnut (*Juglans californica*), white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), and red willow (*Salix laevigata*). Although not riparian obligates, California buckeye (*Aesculus californica*), elderberry (*Sambucus mexicana*), and valley oak (*Quercus lobata*) also occur along the banks of drainages. The San Luis Reservoir pool elevation fluctuates a great deal, preventing the establishment of riparian vegetation typically associated with lake edges such as sedges (*Carex* sp.), bulrush (*Scirpus fluviatilis*), and cattail (*Typha latifolia*).

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Chapter 3
Cultural Setting

3.1 Archaeological Background

3.1.1 Central California Archaeology and the Development of Cultural Sequences

The archaeological investigation of the San Francisco Bay Area began in earnest in 1902 with Max Uhle's excavation of the Emeryville Shellmound. At Emeryville, Uhle (1907: Plate 4) recognized ten strata in the mound, though his profile drawings indicate many more strata that he grouped together. From an analysis of burials, artifacts and stratigraphy, Uhle (1907) concluded "there is some support for the suggestion that cultural differences are expressed in the history of the mound." Further investigations by Nels Nelson (1996 [1906]) affirmed much of Uhle's original analysis of the deposit. Nelson (1996 [1906]) identified eleven strata on the opposite side of the mound from where Uhle had originally trenched, though he did not reach a conclusion as to possible cultural differences represented by these strata.

Nelson (1909, 1910) continued his investigations of Bay Area prehistory with a survey of shellmound locations and a more extensive excavation of the Ellis Landing Shellmound near Richmond. At Ellis Landing, Nelson (1910) recognized a distinction between the upper and lower parts of the mound, but he relied heavily on evolutionary principles of cultural development, which obscured the more subtle indications of culture change evident in California shellmounds. Nelson ultimately concluded that no major cultural breaks were present and that the people living at the mound throughout its occupation "were all essentially of the same type of culture" (Nelson 1910: 402).

Alfred Kroeber (1909: 4) drew upon the work of Nelson and Uhle to assert "in California … neither archaeology nor ethnology has yet been able to discover either the presence or the absence of any important cultural features in one period that are not respectively present or absent in the other." With his control of the Department of Anthropology at the University of California and his belief that the archaeology of the Bay Area could lead to few insights concerning the historical development of Native American culture, Kroeber shifted the resources of the Department away from archaeology and more towards salvage ethnography (Gerow with Force 1968: 2). The scattered archaeological work that was conducted in the Bay Area during the pre-war period—such as at the Emeryville Shellmound—further undermined Uhle's early observations of culture change in the archaeological sequence of the region.

While California archaeology in general, and Bay Area archaeology specifically, suffered from assumptions regarding lack of culture change, a breakthrough for the discipline was made with the publication of *Prehistoric Man of the Santa Barbara Coast* (Rogers 1929) and "Chumash Prehistory" (Olson 1930). These publications were the first studies in California prehistory to recognize and name cultural sequences based on archaeological materials. It was not until the publication of *The Archaeology of the Deer Creek-Cosumnes Area* (Lillard and Purves 1936), however, that Central California had a stratigraphically based cultural sequence equivalent to that of Rogers (1929) and Olson (1930). This important publication laid the groundwork for what would become known as the "Central California Taxonomic System," or the CCTS (Gerow with Force 1968: 5).

While these publications sparked a reappraisal of the earlier work done in the Bay Area, the archaeological investigations that led to the creation of the CCTS were primarily focused on the Central Valley where the sites, due to the presence of rich and abundant grave lots, were considered much more productive for discovering evidence of cultural change. In general terms, the CCTS was a cultural sequence divided into three successive cultural periods: the Early, Middle (also called Transitional), and Late Horizons (Heizer and Fenenga 1939; Lillard and Purves 1936; Lillard et al. 1939). The creation of a cultural sequence for Central California marked a turning point for California archaeology, leading Heizer and Fenenga (1939) to conclude that traditional views of California prehistory as uniform and stable were no longer tenable and that culture change had been ongoing and pronounced.

One of the primary goals of this new paradigm in Central California archaeology was to integrate the culture history of the Central Valley and Bay Area (Beardsley 1948, 1954; Heizer and Fenenga 1939: 396; Lillard et al. 1939: 61). This task was complicated, however, by the advent of radiocarbon dating and an increase in the amount of data available for analysis. Rapid development of the Bay Area meant that more sites and cultural materials were being discovered, which in turn led to an increasing appreciation for the diversity and variation in regional assemblages. The CCTS could not account for these new discoveries without significant revision (Gerow with Force 1968: 5), as the system was based on the belief that "the Bay constituted a local marginal and culturally backward area into which outside influences either failed to spread or spread slowly or halfheartedly" (Heizer 1949: 39).

Being based on the diffusionist notion of "climax" areas or regions (Kroeber 1920, 1939), the CCTS considered the Central Valley as the area in which dominant cultural trends developed and later spread into surrounding areas. In contrast, Gerow with Force (1968) proposed that several different early cultures existed in Central California and that these cultures later converged to create the cultures of the Middle Horizon. Even though this proposition demanded a thorough revision of the CCTS, Gerow with Force (1968) did not offer an alternative to the existing system. Instead, the authors worked within the

confines of the CCTS to integrate the new data within the old system, though other archaeologists were also growing dissatisfied with the status quo (Bennyhoff and Fredrickson 1994; Fredrickson 1973, 1994a).

Fredrickson's (1994a) undertook to overhaul the CCTS and began by separating the cultural and temporal dimensions of the system. "The three-part Central California cultural sequence proved to be implicitly unilineal, fostered by the deliberate linking, through the concept of the horizon, of the cultural and the temporal dimensions" (Fredrickson 1994a: 5-6). Fredrickson's revision of the sequence for California eventually produced three major chronological periods: Paleo-Indian, Archaic, and Emergent. For the cultural dimensions of the revised taxonomic framework, Fredrickson's most important contribution was the concept of the "pattern" (Bennyhoff and Fredrickson 1994: 20-22; Fredrickson 1994b: 40-43). An archaeological pattern, as typically defined, represents a basic adaptation generally shared by a number of separate cultures over an appreciable period within a given geographic area. The pattern is characterized by similar technological skills and devices (specific cultural items); similar economic modes (production, distribution, consumption), including trade and wealth practices (often inferential); and similar mortuary and ceremonial practices (Bennyhoff and Fredrickson 1994: 21).

The increasing complexity of the revised CCTS reflected the increasing diversity of the archaeological record. Yet with the rise of the "New Archaeology" in the 1960s and 1970s, interest in archaeological taxonomy waned. The new paradigm emphasized the primacy of the environment as the regulating force for culture change at the expense of historical and social factors that may have helped to shape human history (Fredrickson 1992 in Hughes 1994: 92). Classification systems like the CCTS grouped archaeological cultures in such a way to be able to study their historical and social relationships. With the lack of interest in these relationships, the program of classification was largely abandoned. In addition to the shift in paradigm, the sociopolitical tenor of the discipline also began to change. Grave lots, which were the traditional source of data for taxonomic questions, were less accessible to researchers due to avoidance during archaeological projects or out of respect for the wishes of Native American communities. Both the interest in taxonomy and the data necessary for its study became increasingly rare.

3.1.2 Archaeological Background for the San Luis Reservoir Area

Within Fredrickson's revised CCTS, the Windmiller, Berkeley, and Augustine patterns are particularly relevant to the Central Valley area. Best known from archaeological manifestations in the Delta and nearby grasslands, Windmiller Pattern sites (ca. 3000 BC to 1000-500 BC) are also recognized in the Sacramento Valley north of Sacramento, the Sierra Nevada foothills, and the Coast Ranges. The artifact assemblages include a variety of flaked and ground stone, baked clay, and shell items, implying a diverse subsistence base and exchange or trade relationships with distant areas. Most of the non-obsidian rock sources (e.g., quartz crystals, calcite, alabaster, and schist) for Windmiller

Pattern artifacts are from Sierra Nevada sources (Moratto 1984), whereas much of the obsidian used for chipped stone artifacts is from the western Great Basin and North Coast Ranges (Jackson 1974). The Windmiller burial pattern is unique in that virtually all of the interments are ventrally extended with the head oriented to the west. Artifacts associated with burials are common and imply social stratification, with males generally having higher status than females. It has been suggested that Windmiller people lived in small, highly mobile groups and that some Windmiller groups occupied the Sierra Nevada foothills during the summer and the Sacramento Valley during the winter. A riverine-marshland orientation is generally recognized for the Windmiller Pattern (Moratto 1984: 206, 552). Windmiller deposits in the Central Valley and Delta are typically situated on low, broad mounds and some are known to underlie complex archaeological deposits (e.g., villages or permanent habitation sites) dating to subsequent periods. Windmiller assemblages have also been identified in cave settings in the Sierra foothills.

The Berkeley Pattern (ca. 1000-500 BC to AD 500) represents a gradual subsistence shift to increased reliance on acorns, fish, and birds. Stone bowl mortars and pestles are found in large quantities. An extensive bone tool kit was also developed along with unique knapping techniques and particular types of shell beads and pendants. Burial practices also differed from Windmiller sites, with flexed burials in variable orientations. Large shell heaps have been the focus of study in the Delta and San Francisco Bay regions, and many of these sites show subsequent occupation during Augustine Pattern times (Moratto 1984).

Augustine Pattern (ca. AD 500-1800) artifact assemblages reflect an intensification of hunting, gathering, and fishing necessitated by an expanding population (Moratto 1984). Acorns, freshwater and anadromous fish, and waterfowl were principal subsistence foods. Mortuary practices showed significant variability and included cremation. Trade networks became more regularized, with serrated obsidian points, black steatite pipes and beads, magnesite cylinders and beads, charmstones, clam shell disk beads, and other durable goods traded into the Central Valley from the North Coast Ranges.

Between 1962 and 1968, several archaeological studies were conducted in the SLLPIP vicinity prior to the construction of the San Luis, Los Banos, and Little Panoche reservoirs (Moratto 1984). Olsen and Payen (1969) and Moratto (1984) defined a series of four cultural complexes (Positas Complex, ca. 3300-2600 BC; Pacheco Complex, ca. 2600 BC-AD 300; Gonzaga Complex, ca. AD 300-1000; and Panoche Complex, ca. AD 1500-1850) based on artifact types and burials at 4-MER-S94 (also known as CA-MER-94, which lies within the Lower San Felipe Intake Alternative APE) and other sites in the western Central Valley. The Positas Complex is represented by artifacts recovered from the base of CA-MER-94 consisting of perforated flat cobbles, small shaped mortars, short cylindrical pestles, a few flake scrapers, milling slabs and mullers, and spire-lopped *Olivella* shell beads.

The Pacheco Complex is represented by artifacts recovered from CA-MER-94 B and C components and is divided into two phases. Phase B (ca. 2600-1600 BC) is marked by large leaf-shaped bifaces, thick rectangular *Olivella* beads, and rare rectangular *Haliotis* ornaments. Phase A (ca. 1600 BC-AD 300) artifacts include various bead types (spire-ground, saucer, and split-drilled *Olivella* beads, *Macoma* clam disc beads, *Haliotis* disc beads, *Haliotis cracherodii* shell ornaments, and stone beads); perforated canine teeth; bird bone awls; scapula grass cutters; polished stone rings, pins, and flat pebble pendants; abundant millingstones, mortars, and pestles; and large to medium projectile points, often stemmed or side-notched. The beads and ornaments relate to the Middle Period in Central California. Coastal influences are reflected in the form and material of some of the projectile points, the presence of *Mytilus* and clamshell in middens, and flexed burials at a time when extended burials were prevalent in the area (Olsen and Payen 1969).

The Gonzaga Complex is represented by CA-MER-3B, CA-MER-14, and CA-MER-94 (Schulz 1970a, 1970b). The majority of diagnostic artifacts from this period have been recovered in association with both extended and flexed burials. Diagnostic artifacts include various bead types (whole spire-ground, thin centrally-perforated rectangular, split-punched, oval, and thin rectangular *Olivella* beads; freshwater mussel shell disc beads and whole limpet shells; and a variety of *Haliotis* ornaments), rare square stem, tapered stem, and serrated projectile points; some bone awls, bone pins, incised mammal bone tubes, bird bone whistles, and scapulae grass cutters; polished stone spool-shaped ear ornaments and small cylindrical plugs; and abundant milling tools such as bowl mortars, shaped pestles, and rarer slab mortars. A single house was discovered with two superimposed floors, a circular basin and a basin with a mud rim and firepit but no postholes. The Gonzaga Complex is similar to Phase I of the "Late Horizon" in the San Joaquin Delta (Moratto 1984).

The Panoche Complex is represented by several sites, including CA-MER-94, CA-MER-27, CA-MER-119, CA-MER-3A, CA-FRE-128, and CA-FRE-129. Diagnostic artifacts include several bead types (clamshell disc beads; steatite disc beads; side-ground, spire-ground, disc, and lipped *Olivella* beads; and *Haliotis* epidermis disc beads and circular and rectangular *Haliotis* ornaments); small side-notched and serrated projectile points; many flaked stone scrapers; bone awls, scapulae grass cutters, bird bone whistles and tubes, and bone beads; polished stone ear spools, conical pipes, and pins; and a variety of mortals and pestles. Flexed burials as well as primary and secondary cremations were noted at Panoche Complex sites. Larger circular assembly houses as well as smaller circular dwellings also were discovered. The Panoche Complex resembles the San Joaquin Delta "Late Horizon" Phase 2 and shows parallels with tribes from the southern coast (Moratto 1984).

3.1.3 Archaeological Background for the Santa Clara Valley

Until recently, the cultural history of the Central California coast and inland region has been poorly documented. Over the past 30 years, however, this has changed as hundreds of inventory surveys and excavations have been conducted in the area. The majority of this work was undertaken to comply with CEQA, NEPA, and Section 106 of the NHPA.

Three key investigations have addressed models of cultural change for the southern Santa Clara Valley (Bergthold 1982; Hildebrand and Mikkelson 1993; King and Hickman 1973) that are particularly relevant to the SLLPIP vicinity. Research in the central Santa Clara Valley near Coyote Creek (Cartier et al. 1980; Dietz 1977; Hall et al. 1988; Hildebrandt 1983; Stickel 1981) is relevant as well. King and Hickman (1973) developed a model of subsistence and settlement change based on a 12,000-acre survey area containing 50 prehistoric sites. They proposed a diachronic sequence beginning with a Millingstone Horizon (7,000-4,000 BP), continuing with a Middle Horizon (4,000-1,500 BP), and concluding with a Protohistoric Period (1,500-400 BP). According to the model, adaptive change involved a slow process of initial settlement, increasingly permanent or sedentary settlement, and eventual overpopulation and overexploitation of resources.

Though older sites may remain undiscovered, archaeological evidence suggests that initial settlement of the southern Santa Clara Valley took place during the Millingstone Horizon. Sedentary settlement peaked during the Middle Horizon, with reliance on a subsistence economy characterized by the storage of food (primarily acorns), inter-regional exchange, warfare, and population pressure. These elements eventually reached a threshold that resulted in a shift to a more mobile settlement pattern and the dispersal of population concentrations during the Protohistoric Period. Hildebrandt and Mikkelson (1993) reevaluated previous research in the area as a background for their test excavation of 14 sites in the San Felipe Sink area, and developed a general sequence of culture change for the vicinity. Again divided into three periods (Early Period, 4,500-2,500 BP; Middle Period, 2,500-850 BP; and Late Period, post-850 BP), the sequence described decreasing mobility through time due to population pressure and the subsequent limitation of resource access.

The Early Period was characterized by a high degree of mobility, with sites in the San Felipe Sink containing a wide array of faunal remains from both the immediate area and the coast. These faunal remains suggest that the area was occupied from spring through fall, with a possible complementary winter settlement pattern noted on the coast (Dietz et al. 1988). In the Middle Period, mobility appears to have decreased, as sites with faunal constituents indicate possible year-round occupation. Marine shell became less prevalent, structures more substantial, and the variety of tools much greater. Residential mobility was all but gone in the Late Period, as the lack of marine shell and predominance of local flora and fauna in the sites suggests. This reduction in territorial bases and increased emphasis on local resources appears consistent

with the Spanish explorers' accounts of California Native American settlement patterns.

Jones et al. (2007) acknowledged the importance of issues of subsistence, settlement, and ecology in developing models of culture change, but employed a chronological system that reflected the significant variability and stylistic/typological transitions seen in artifact assemblages from the Central Coast and adjacent inland areas. The system relied on six periods Paleo-Indian (pre-8,000 cal BC); Millingstone or Early Archaic, (8,000-3,500 cal BC); Early, (3,500-600 cal BC); Middle, (600 cal BC - cal AD 1000); Middle/Late Transition, (cal AD 1000 - 1250; and Late, (cal AD 1250–1769). Three cultures (the Millingstone Culture, the Hunting Culture, and the Late Period) are used to reflect broader patterns.

Evidence of occupation during the Paleo-Indian Period in the region is limited to isolated fluted projectile points. The Millingstone Culture, which dates to the Millingstone or Early Archaic Period, is defined by the presence of large numbers of handstones, milling slabs, and crude core tools with lesser numbers of flaked stone tools and large side-notched projectile points (Jones et al. 2007). Contracting stemmed points, lanceolate points, and crescents have been recovered from Millingstone contexts. Millingstone occupations have been located in a variety of settings from the coast to the near shore interior valleys. Faunal remains indicate a varied diet that included shellfish, fish, birds, and mammals, particularly deer and rabbits.

The Hunting Culture spans the Early and Middle periods and is defined by an abundance of stemmed and notched projectile points and large bifaces. The Early Period is marked by the presence of contracting stemmed, Rossi square-stemmed, and large side-notched projectile points. Groundstone assemblages include handstones, pitted stones, and portable mortars and pestles. Bipointed bone gorges used for line fishing and Class L rectangular *Olivella* beads also appear in the Early Period. Middle Period sites include contracting-stemmed and large-stemmed points, but no square-stemmed or large side-notched points. Groundstone artifacts consist of slabs, handstones, portable mortars, and pestles. *Olivella* G2 saucer beads replace earlier Class L beads. Bone gorges are still present along with circular shell fishhooks. Pitted stones and grooved stone net sinkers are common. Hunting Culture sites have been found mainly in coastal areas but have also been identified in nearby valleys as well. Faunal remains typically include deer, rabbits, sea otters, birds, and fish with preferences dependent on locale. Acorns may also have been part of the Hunting Culture diet.

Middle/Late Transition Period sites exhibit increasing numbers of arrow points and decreasing numbers of stemmed points. This transition seems to have occurred at different times in different areas. The Late Period is generally defined by an abundance of Desert side-notched and Cottonwood projectile points. Small, serrated points and contracting-stemmed points are present at

some sites. Other artifacts include bedrock mortars, hopper mortars, several bead types (Class E lipped, Class K cupped, steatite disk, and Class M rectangular), small bifacial bead drills, and circular fishhooks. Unlike sites from earlier periods, Late Period sites are more frequently encountered in the interior than on the coast.

3.2 Ethnographic Background

The crest of the Diablo Range is generally regarded as the dividing line between the ethnographic territories of the Northern Valley Yokuts in the Central Valley and the Costanoan, or Ohlone, to the west in the Santa Clara Valley (Kroeber 1925). This section discusses both groups.

3.2.1 Northern Valley Yokuts

Territory

The San Luis Reservoir area lies within the traditional territory of the Northern Valley Yokuts, which extended south from the confluence of the Calaveras and San Joaquin Rivers to the point at which the San Joaquin River turns abruptly east. It encompasses the central San Joaquin Valley east from the Diablo Range to the Sierra Nevada. Linguistically, the Northern Valley Yokuts are relative newcomers to the central San Joaquin Valley. They were pushed north by the Numic-speaking Monache beginning about 500 years ago (Kroeber 1959). Approximately 50 linguistically identifiable tribes were known to exist under the umbrella of "Yokuts" (Kroeber 1976). The Kahwatchwah Yokut tribe lived in the San Luis Reservoir area (Latta 1949).

The pre-contact Yokuts population has been estimated as three to four hundred people in each tribe, with 15,000-20,000 people for the entire group (Kroeber 1976). Another estimate, based on available food resources, suggests that the population was as high as 31,000 or more (Baumhoff 1963: 221). The Northern Valley Yokuts territory included riparian woodlands, freshwater marshes, valley grasslands, oak woodlands, open river channels, lakes, and sloughs (Schulz 1981). Little ethnographic information exists for the Northern Valley Yokuts. The rapid spread of disease and the Euro-American invasion of their territory for mining and related activities in the early to mid-19th century led to rapid population declines and displacement of the Northern Valley Yokuts (Wallace 1978).

Subsistence

The Northern Valley Yokuts relied heavily on fishing in rivers, sloughs, and streams throughout their territory in the central San Joaquin Valley. Salmon spawned during the fall in the San Joaquin River and its tributaries, and sturgeon was also an important food resource. Dragnets, stone sinkers, and antler-tipped harpoons were used for fishing. Aquatic birds, such as duck and

geese, and plant foods were an integral part of the subsistence base. Fire was commonly used to encourage seed-bearing grasses and plants.

Food processing implements included the mortar and pestle, hand and milling stones, and wood mortars. Baskets were also used in seed winnowing and acorn storage. The bow and arrow were the primary means for hunting mammals such as tule elk, deer, and pronghorn antelope. Projectile points or arrowheads were made of local chert, jasper, and chalcedony. Obsidian was rare, and only available through trade. In terms of volume, acorns were the single most important food in Native Central California. During the winter months, when hunting and fishing could be difficult and fresh plant foods were unavailable, consumption of acorn products may have exceeded that of all other foods combined (Schulz 1981).

Settlement

Most Northern Valley Yokut houses were circular or oval semi-subterranean single-family dwellings of tule mats over pole frames. Large communal residences sheltering ten or more families also were constructed (Moratto 1984). Sweathouses and larger ceremonial chambers have been documented ethnographically (Gayton 1936, 1948). Settlements were reported on mounds above permanent waterways, likely because these elevated ground surfaces were safe from flooding and contained abundant food resources.

Trade

Trade occurred north and south along the San Joaquin River. Tule rafts were used for transportation as well as trade (Gayton 1936). Baskets, blankets, and flaked stone were traded from the Miwok in exchange for dogs (Barrett and Gifford 1933). Trade between the Yokuts of the San Luis Reservoir area and the Ohlone occurred along routes through what would later become "Pacheco Pass." Abalone and mussel shells were imported from the coast. Obsidian was most commonly acquired from sources on the eastern slopes of the Sierra Nevada Range.

3.2.2 Ohlone

Territory

The inhabitants of the Santa Clara Valley were known ethnographically as the Ohlone, or as the Costanoan after the Costanoan language group. The Costanoan languages belong to the Utian family of the Penutian language stock (Shipley 1978) and were spoken from the San Francisco Bay Area southward along the coast to Point Sur and inland to the Diablo Ranges and portions of the northern San Joaquin Valley (Milliken 1995). The designation Costanoan derives from the Spanish word *Costaños*, or "coast people." The term is misleading, however, as it amalgamates and homogenizes 10,000 or more people who lived in the region into a single ethnolinguistic unit. In reality, the term "Costanoan" subsumes as many as forty or fifty politically independent groups—some of which spoke mutually unintelligible but genetically related

languages—under a single umbrella. Many present-day descendants of the area's Native peoples prefer the term Ohlone, which is said to have derived from the name of a coastal village in San Mateo County (Levy 1978).

Knowledge of Ohlone culture is largely based on information gathered from Spanish expeditions between 1769 and 1776, documents maintained at missions, the works of ethnographers and linguists, and from Native descendants. Primary ethnographic sources include Harrington (1933, 1942) and Kroeber (1925). Overviews are provided in Heizer (1974), Levy (1978a), Margolin (1978), and Milliken (1983, 1991, 1995), among other texts. Galvan (1968) and Williams (1890) offer Native accounts of Ohlone history, and an excellent example of contemporary ethnohistory can be found in Cambra et al. (1996).

Political Organization

As defined by Kroeber (1925) the basic Ohlone political unit was the "tribelet," an autonomous, self-governing, territorially defined unit over which recognized authority was given to one person, in most instances the leader or chief. Each tribelet would be composed of one or more villages and a number of camps within its recognized and protected resource exploitation zone. Studies by C.D. King and others suggest that over time several of these tribelets amalgamated into larger tribal units (Breschini et al. 1983). Due to geographic barriers and distance between Ohlone tribelets, however, the integration of smaller political units into larger ones was the exception rather than the rule.

Recent scholarship has questioned Kroeber's interpretation of the Ohlone political system. According to Milliken, socio-political groups were essentially clusters of unrelated family groups that formed loose cooperative communities in the event of ceremonial festivals, group harvesting efforts, and inter-family conflict resolution (Milliken 1995). These disparate multi-family communities joined for the majority of the year to form a large village centrally located between their lands. In other instances, rather than forming a single village, these family units distributed themselves into as many as five semi-permanent villages.

The nature of political authority among Central California tribes has been differentially characterized by early explorers and missionaries as both egalitarian and hierarchical. Records from Mission San Juan Bautista for example attempted to fit local Native Americans into a Spanish system, and described tribal leadership by *capitanes*, or male village leaders. Paradoxically, Father Arroyo de la Cuesta, also of Mission San Juan Bautista, described in his correspondence with Spanish officials a primarily egalitarian, leaderless society in which social control was embedded within the dynamics of deep-seated inter-family feuds. It is evident from Arroyo de la Cuesta's observations that he did not view these divisions in Native leadership as comparable with the hierarchical ranks of bureaucratic Spanish society. He did note, however, that though the "pagan state" lacked distinguished *capitanes*, distinct male

leadership roles did arise in battles, banquets, and ceremonies (Arroyo de la Cuesta in Geiger and Meighan 1976).

Spiritual Practices

Early accounts of the Ohlone suggest that they practiced a religion based on sun worship. According to these accounts, the Ohlone often greeted the sun with gestures, demonstrations, and offerings (Kroeber 1925). Sun worship, however, was probably a small part of a much broader pattern of interacting with the natural environment, and early interpretations of sun worship were probably due to the early explorers' cultural misunderstanding of the ceremonies they observed.

Merriam's ethnographic accounts of the late 19th and early 20th centuries describe references to bear shamanism, a practice also observed among other Native American groups. Within shamanistic cultures, shamans serve as spiritual and physical healers, ritual leaders, and as powerful channels of supernatural power. Merriam, having observed shamanistic ritual, described the use of poisons by shamans, including deadly substances like the venom of rattlesnakes, extracts from the lungs of turtles and frogs, and less caustic substances such as human saliva (Merriam 1966).

Subsistence, Trade, and Material Culture

The Ohlone were hunter-gatherers who occupied semi-permanent camps and villages from which they could take advantage of seasonal changes in resource availability. Dwellings at these habitation sites were dome-shaped, with pole frameworks and thatch roofs and walls. Other structures that could be found in an Ohlone village included acorn granaries; sweat houses for the men, often along stream banks; menstrual houses for women; and dance houses and assembly houses, generally in the center of a village (Broadbent 1972). From these villages the Ohlone visited the mountains, valleys, and sloughs to collect resources.

The early explorer Vizcaíno noted a diverse diet among the Ohlone people, which included seeds (dock, tarweed, and chia), nuts (pine nuts, buckeye, hazel, and pepper/bay nuts), berries (Manzanita), grasses, roots, and insects that were gathered locally. The single most important food item among the Ohlone was the acorn, at least four species of which were collected and processed into meal or flour (Breschini et al. 1983). *Pinole* is a ground meal or flour derived from the processed seeds of several plants, including tarweed (Merriam 1966). Tobacco was prepared in a mortar and used as an emetic substance or, more rarely, smoked in the manner of Europeans (Merriam 1966). Tea was commonly prepared from the flowers, leaves, and bark of the Manzanita, elderberry, coffeeberry, toyon, and nettles.

Terrestrial animals formed a large portion of the Ohlone diet, and included birds and small mammals, which were hunted, clubbed, trapped, and snared. Fish were hooked or caught by hand, and explorers reported that sea otters were

often clubbed in the water or snared if encountered on land. Shellfish provided an important seasonal food resource, and it is likely that the Ohlone dove for certain prized species, such as *Mytilus edulis,* freshwater mussel (*Gonidea sp.*), marine clams (*Protothaca* sp.), and snails (*Tegula* sp.). Broadbent (1972) reported that frogs, toads, and owls were specifically forbidden from consumption among the Ohlone, a taboo that may have been embedded in socio-cultural beliefs or may simply have reflected cultural preferences.

To promote the growth of seed-bearing annuals and to control the growth of rampant chaparral species, the Ohlone periodically burned vegetation in areas surrounding village sites or in areas of food gathering and hunting. As noted by historical and ethnographic observers, these operations were extremely efficient in controlling vegetation and involved considerable skill and foresight. Gordon states that the burning sequences had the overall effect of bringing to the open "an increased supply of food plants and game" (Gordon 1974: 27), and by the time of initial European settlement in the San Francisco Bay Area, regional vegetation had already been altered considerably by controlled burning.

An abundance of information exists on the material culture of the Ohlone. Mission-era accounts of clothing worn by Rumsen Ohlone neophytes at the Carmel Mission note that women often wore "a short apron of red and white cords twisted and worked as closely as possible, which extends to the knee" (Breschini et al. 1983: 299). According to these accounts, men typically went naked except for the few who covered themselves with a small cloak of rabbit skin above the waist. Other materials employed in the manufacture of clothing were green and dry tule, sea otter furs, and deerskin. Personal ornamentation included black and white face and body paint, which was created from mined cinnabar and typically worn by men. Red ochre was worn as body paint by Ohlone warriors in battle. In daily life, the Ohlone wore ornaments created from abalone shell.

Shell beads were widely used by the Ohlone as a form of currency. *Olivella* shells, mussels, abalone shells, salt, dried abalone, woven baskets, and other items were traded for prized goods with nearby villages and with more distant villages located in other environmental zones. Among the items received by the Ohlone in such transactions were stores of the prized piñon nut and obsidian for tool making. Regional interaction among the Ohlone, and with neighboring cultures such as the Salinan and Yokuts, took place through trade, ceremonies, warfare, and intermarriage. Group exchange and "gifting" occurred at feasts of seasonal resources and at seasonal ceremonial dances and festivals (Milliken 1991: 70). Intermarriage usually occurred between adjacent groups and was rare between those at greater distances (Milliken et al. 1993). Both marital and trade issues were affected by and effected warfare between the tribes (Amoros in Heizer 1974), which has been described as common at the time of Spanish contact (Fages 1937). These well-documented animosities often flared because of territorial disputes and infringements, frequently associated with resource

access and control (e.g., Broadbent 1972; Fages 1937; Mason 1912; Langsdorff 1968).

3.3 Historic Period Background

3.3.1 The Spanish Period

Although European contact with Native Americans in California commenced as early as 1542 with the explorations of Juan Rodriguez Cabrillo (Erlandson and Bartoy 1995), the historic period in Central California began in earnest with the expansion of the Spanish frontiers northward from Mexico into Alta California during the 18th century. In 1769, Sergeant José de Ortega, the scout for the expedition of Gaspar de Portolá, discovered the entrance to the San Francisco Bay. The interior of the Bay Area was first explored in 1775 by Juan Mañuel de Ayala and José Cañizares (Hoover et al. 1990: 330). These expeditions were partially focused on the identification of sites for the establishment of missions. Using a tripartite system of military presidios, religious missions, and civilian pueblos, the Spanish government rapidly established a network of settlements from San Diego to San Francisco. One of the first colonizing parties in northern Alta California, under José Joaquín Moraga and Padre Francisco Palou, arrived in San Francisco in 1776 and founded the Presidio of San Francisco and *Misión San Francisco de Asís* (also known as Mission Dolores) (Hoover et al. 1990: 333). The following year, *Misión Santa Clara de Asís* and *El Pueblo de San José* were established in the South Bay (Hoover et al. 1990: 400).

Exploration from the central coast into the San Joaquin Valley began with the Gabriel Moraga expeditions of 1806, 1808, and 1810. The 1806 expedition started in San Juan Bautista, probably entered the valley along San Luis Creek in Merced County, and explored portions of the San Joaquin and Merced Rivers. During the 1810 expedition, Moraga's route brought him back to San Juan Bautista by way of San Luis Creek and Pacheco Pass (Hoover et al. 1990: 198). It has been suggested that the route through Pacheco Pass may have originally been a Yokut or Miwok trade route between the Santa Clara and San Joaquin Valleys (Marschner 2000).

At about the same time as Moraga's explorations, Russia started colonizing coastal lands southward from Alaska into California. The Russians established Fort Ross in 1812 near the modern town of Jenner. The Spanish countered this incursion by establishing *Misión San Rafael Arcangel* and *Misión San Francisco de Solano* in Sonoma to establish a northern frontier.

By the beginning of the 19th century, the Spanish had established an interior road called *El Camino Viejo*. The route ran from the Los Angeles coast north along the western edge of the San Joaquin Valley to the Patterson Pass (near Tracy) and then west to San Antonio (current East Oakland) (Hoover et al. 1990). One of the stopping points for water along the route was at *El Arroyo de San Luis Gonzaga* at *Rancho Centinela* just east of the San Luis Reservoir area

(Hoover et al. 1990: 199). Little is known of *Rancho Centinela*, however it is thought to have been a Spanish-era outpost for *vaqueros*, or stockmen, who drove livestock across Pacheco Pass to the Santa Clara Valley. An adobe, which may have dated to as early as 1810, stood at the *vaquero* camp location until it was demolished in 1900 (Latta 1936: 14-15; Snoke 2010).

3.3.2 The Mexican Period

Mexico gained independence from Spain in 1822, and Alta California became a part of the Mexican frontier. The newly established Mexican government attempted to colonize their northern frontier by secularizing mission lands in 1834 and by granting large tracts of land to *Californio* citizens as a reward for loyal service. These ranchos were meant to stake the Mexican claim to the area and halt the possibility of further Russian incursion into Mexican territory (Hoover et al. 1990).

Secularization brought an influx of Mexican settlers to California and allowed for the emergence of a new class of wealthy landowners known as *rancheros*. This led to an emphasis on ranching and agricultural activities in California that became known as the "hide and tallow trade" (Hoover et al. 1990). By the 1840s, there were an estimated 150,000 to 200,000 hides exported annually from Alta California (Burcham 1982: 126-127). During the 1830s and 1840s, there were a series of raids and counter expeditions between the Miwok and Yokut tribes and the Mexican colonists. Although never constructed, Governor Alvarado proposed in 1843 that a fort or stockade be built in Pacheco Pass to secure the route from raiding parties (Beck and Haase 1974: 23).

In 1843, Juan Pérez Pacheco and José María Mejía were granted *Rancho San Luis Gonzaga*, which comprised the eastern Pacheco Pass region, including much of the San Felipe Intake Alternative and San Luis Reservoir Expansion Alternative Project areas, as well as the former *Rancho Centinela* property. The land had previously been granted in 1841 to Francisco Rivera, but was revoked when Rivera did not establish a residence on the land (Hoover et al. 1990: 200). The grant was bounded by the San Joaquin River to the east; Los Banos Creek to the south; and *Rancho Ausaymas y San Felipe* to the west, which was held by Juan's father Francisco Pérez Pacheco (Beck and Haase 1974). Juan Pérez Pacheco built a one-story adobe house near the route through the pass and raised cattle for the hide and tallow trade. Over the years, the Pacheco family built a second adobe that collapsed during the 1868 earthquake (Hoover et al. 1990: 200; Marschner 2000: 259). The original 1840s adobe survived intact until 1962 when it was unsuccessfully moved in advance of dam construction (Hoover et al. 1990: 200) (*see* Section 3.3.3).

When Juan Pérez Pacheco died in 1855, the property reverted to his father Francisco, who died just five years later in 1860. Francisco's property, including *Rancho San Luis Gonzaga* and half of *Rancho Ausaymas y San Felipe*, passed first to his wife and then to his only surviving child Ysidora after his wife died in 1892. Ysidora married Mariano Malarin in 1850 and had two

daughters. One married Dr. Ramon Roca while the other married Dr. Luis Fatjo. The Fatjos and their children inherited the Merced portion of *Rancho San Luis Gonzaga* (Hoover et al. 1999: 200). In 1949, Paula Fatjo, the great-great granddaughter of Francisco Pérez Pacheco, moved to the *rancho* and remodeled the original 1843 adobe (Pierce 1977: 107). *Rancho San Luis Gonzaga* remained an operating cattle ranch during Paula Fatjo's time, though she also bred and boarded Arabian horses there until her death in 1992 (Pierce 1977: 107-111, Bissonnette 2007).

At the west end of Pacheco Pass, was *Rancho San Ysidro* (Old Gilroy), granted in 1810 to Ygnacio Ortega. Ortega died in 1833, and the *rancho* was divided among his heirs, Ysabel Ortega, Quentin Ortega, and María Clara de la Asunción (wife of John Gilroy). The resulting *Rancho Ysidro* and *Rancho La Polka* lay to the west and southwest of the San Luis Reservoir vicinity.

In the 1840s, relations between Mexico and the US became strained as the US expanded westward toward the Pacific Ocean. Political stresses erupted into the Mexican-American War of 1846-1848. At the close of the war, Alta California became part of the US with the signing of the Treaty of Guadalupe Hidalgo.

3.3.3 The American Period

In 1848, at the close of the Mexican-American War, James Marshall discovered gold on the American River and the California Gold Rush began. The discovery brought tens of thousands of immigrants from around the world that pushed further into the California interior than the Spanish or Mexican settlers that had come before. The wealth and expanding population of California curtailed the usual territory phase, and California became a state in 1850 (Hoover et al. 1990).

Due to the rapid influx of settlers into the state, legal determination of ownership of lands awarded by Spanish or Mexican authorities was often disputed. The new American government passed the Land Act of 1851, which placed the burden of proof-of-ownership on the grantees so that the few Native Americans who had received grants lost their titles, as did many Hispanic landowners. By congressional action, grant claims were heard by a board of Land Commissioners and then appealed in federal courts. By 1885, 97% of the claims had been decided. In some instances, however, land ownership was not decided until after a claimant's death. Such was the case with Juan Pérez Pacheco's claim to *Rancho San Luis Gonzaga.* Though he died in 1855, the land was not patented in his name until 1871.

As gold mining in California declined in the 1860s, agriculture and ranching, which had been established to feed the miners, expanded to become important industries for the state economy. Farming in the American Period was characterized by three types of pursuits: cattle and sheep ranching, grain farming, and irrigation agriculture. Cattle and sheep ranching were dominant until the 1880s. During that time, free-ranging, comparatively wild Spanish

cattle were replaced by American breeds of livestock and dairy cows. Sheep breeds were also improved in the late 1850s and 1860s by breeding with merino sheep (Burcham 1982).

During the American Period, ranching and dairying activities expanded in the Pacheco Pass region as the *ranchos* were subdivided and portions sold off or leased. General information regarding American Period ranches within and near the San Luis Reservoir vicinity is presented below. Water conveyance and transportation, two other key factors that guided the development of the region, are also discussed below.

Ranches and Agriculture in the San Luis Reservoir Project Area

Rancho San Luis Gonzaga became known as San Luis Ranch during the American Period. With the onset of the Gold Rush, Juan Pérez Pacheco realized that selling beef to miners was more lucrative than selling hides, and thus he shifted the economic focus of his *rancho*. The Pachecos also partnered with the Butterfield Overland Stage Company and provided a stopover station for the stage route. Due in part to these strategies, and unlike many *Californio* ranchers, the Pachecos were able to retain most of their lands (Marschner 2000: 259; Wood 2005: 46). During the 1930s and 1940s, the 1840s adobe was used as a restaurant, the Old Adobe Inn (Wood 2005: 47). The adobe survived until 1962 when Paula Fatjo attempted to move the adobe to a location west of the proposed San Luis Reservoir in advance of its construction (Hoover et al. 1990: 200; Wood 2005: 46). The remains of the adobe currently lie within Pacheco State Park (Bissonnette 2007).

During the 1850s, Pedro and Bernardo Altube, Spanish Basque immigrants, herded cattle from Southern California and pastured them at the abandoned *Rancho Centinela* adobe prior to their sale (Ziesing et al. 1997: 51). They and their partners, Juan Bautista Arambide, Bernardo Ohaco, and Carlos Garat, acquired the property during the 1860s and 1870s, raised cattle and sheep, and built a second adobe (Snoke 2010; Ziesing et al. 1997: 52). The Bascos, as they were known, came into direct competition with the expanding Miller and Lux cattle empire in the San Joaquin Valley during the 1860s. By 1871, the Altube brothers sold their holdings and moved to Nevada to start their Spanish Ranch in Elko County. The Arambide and Garat families followed them later in the decade (Ziesing et al. 1997: 53).

Henry Miller and Charles Lux came to California during the 1850s as butchers and formed a partnership in 1858 to buy cattle for slaughter (Pierce 1977: 174). From these beginnings, they expanded to become one of the largest cattle ranching corporations on the west coast with land holdings in California, Oregon, and Nevada. When Lux died in 1887, Miller bought out Lux's heirs and continued to expand the empire, which lasted through the 1920s before financial debts curtailed the company's growth (Igler 2001: 180; Pierce 1977: 183). In the San Joaquin Valley, Miller and Lux leased Pacheco lands for grazing and in the 1870s or 1880s built a wood frame-line cabin and corrals

near the Pacheco adobe. The line cabin was standing as of 2004 (Wood 2005: 47).

The remains of the Domengine Sheep Ranch are located on the southern shore of current San Luis Reservoir. John Domengine, a French Basque, immigrated to California during the Gold Rush, ranched cattle near Santa Clara until 1865, and then worked for Miller and Lux as a sheep ranch foreman until 1867. Around 1867, he started his own sheep ranch on the San Luis Ranch and ran it until 1873 when he sold his holdings to Simon Camy. In 1872, John's son, Adolph Domengine, joined his father at the sheep ranch and continued to work for the new owner until 1874, when Camy's ranching enterprise moved to Fresno (Vandor 1919: 2181-2182).

John Dowdy came to California from North Carolina in 1854 (Thompson and West 1876: 109). US Census records suggest John Dowdy and other family members were residing in the Gilroy Township by 1870, and may have been there by 1860 (US Census Bureau 1860: 246, 1870: 99A). An 1882 General Land Office (GLO) plat map shows a "Dowdy Barn and House" northeast of Pacheco Creek near the Stanislaus-Santa Clara County border (BLM 2016). By 1898, the Dowdys had patented 1,144 acres of land in the area (Parkman and McGuire 1984: 108). The current Dowdy Ranch Headquarters complex in Henry W. Coe State Park west of Pacheco Creek was built from ca. 1910 to the 1950s by Franklin, George, and John Dowdy (Parkman and McGuire 1984: 203; US Census Bureau 1910: 9B).

The O'Connor Dairy Ranch was established by 1882 along Pacheco Creek (BLM 2016). No O'Connors are noted in the 1876 directories for Santa Clara County, which suggests that they may not have moved to the area before the late 1870s (Thompson and West 1876). The O'Connor Ranch was shown on the 1921 and 1947 Gilroy Hot Springs 15-minute US Geological Survey (USGS) topographic maps as well as the 1955 Pacheco Peak 15-minute USGS topographic map (USGS 1921, 1947, 1955). US Census data for 1910 and 1920 show that the Timothy O'Connor family along the Pacheco Pass toll road were raising stock on a cattle ranch and were likely associated with the dairy (US Census Bureau 1910: 9B, 1920: 9B). By 1989, the ranch was owned by the Andresen family of Pacheco Land and Cattle, Inc. (Hylkema 1989: 1).

Water Conveyance

During the late 19th century, the aridity of the western San Joaquin Valley began to pose problems for agricultural production. Wells were initially used for irrigation, but as groundwater was depleted canal projects were undertaken to move water from the San Joaquin River to the west. Henry Miller was involved in early attempts to develop irrigation within the western Central Valley. He organized the San Joaquin & Kings River Canal and Irrigation Company and, in 1871, built a canal from the San Joaquin River to the town of Los Banos (Outcalt 1925:221). In 1874, Miller extended the canal to Los Banos Creek and then to the town of Newman four years later (Outcalt 1925:222). The canals

provided much of the irrigation for Miller's properties and for local agriculture. Upon Miller's death in 1916, his daughter and son-in-law inherited the bulk of his vast land holdings along with his water rights (Outcalt 1925:402).

In 1887, the California Legislature passed the Wright Act, which formed irrigation districts across California (Stene 2011:3). The Wright Act was amended in 1897 to ensure that there was sufficient bond funding for irrigation projects (Stene 2011:4). The Merced Irrigation District was established during the 1870s and 1880s for the eastern side of Merced County and developed many miles of canals (Merced Irrigation District 2014). In 1902, the U.S. government passed the Reclamation Act, which established the U.S. Reclamation Service (within the U.S. Geological Survey), which later became the U.S. Bureau of Reclamation. The Reclamation Act encouraged the occupation of previously undeveloped lands through the construction of irrigation systems and the distribution of water through reclamation. The construction of irrigation systems led to an increase in homesteading, which in turn fostered economic development.

By the 1920s, the depletion of groundwater reservoirs was a widely recognized problem within the western San Joaquin Valley. During the 1930s, the federal government began the CVP, a massive irrigation scheme that involved building dams and canals throughout California. In 1939, Henry Miller's heirs agreed to exchange their San Joaquin River riparian water rights, which would be impacted by the construction of Friant Dam and its diversion of the river through the Madera and Friant-Kern Canals, for substitute water diverted from the Sacramento River. They did not abandon their riparian water rights, but agreed not to exercise them as long as the government could provide substitute water through "exchange contracts." These contracts are still in effect, and some of Miller and Lux's original canals continue to convey irrigation water today (San Joaquin River Exchange Contractors 2014).

During the early 1940s, America's entry into World War II increased demand for agricultural products and further depleted groundwater in the western Central Valley (US Bureau of Reclamation 2011). By the 1950s, the west side of the Central Valley had become the focus of both the federal CVP and the newly formed SWP (Stene 2011:10). A 1954 federal investigation identified the area along Pacheco Pass in the Diablo Mountains as the ideal site for the San Luis Reservoir (Reclamation 2011). Despite opposition from a variety of regional factions, a state bond measure to fund irrigation in the western Central Valley was narrowly passed in 1960. To avoid the unnecessary expense of parallel aqueducts, the State of California agreed to partner with the federal government in the creation of the San Luis Unit in 1961 (Stene 2011:13-14). The San Luis Reservoir in the Diablo Mountains west of Los Banos would be filled with water supplied by the federal Delta-Mendota Canal and the state's California Aqueduct (Stene 2011:14). A ground-breaking ceremony officiated by John. F. Kennedy marked the start of construction in 1962, and all construction was completed for the project by 1967. Typically, water from the

Delta is pumped into the reservoir in winter and early spring, and released in summer when water supplies are low (Department of Water Resources 1974:276).

The 117-mile long Delta-Mendota Canal, completed by Reclamation in 1951, was built to convey water diverted from the Sacramento River to the Mendota Pool, for exchange contract delivery. The canal transports water from the Tracy Pumping Plant (C.W. Bill Jones Pumping Plant) along the western side of the San Joaquin Valley for irrigation and potential storage at San Luis Reservoir, then travels east across the valley for delivery to Mendota Pool, where it is conveyed through various private canals to exchange contract irrigators. At its Mendota Pool terminus, the water conveyed through the Delta-Mendota Canal is also used to recharge the San Joaquin River, which is diverted upstream at Friant Dam by the Madera and Friant-Kern canal systems (Stene 1994:13-14).

The California SWP was first envisioned in 1919 by Lt. R.B. Marshall who proposed conveying water from the Sacramento River watershed to the San Joaquin Valley and then over the Tehachapi Mountains to Southern California. A State Water Plan was introduced in 1931, however funding remained unavailable during the Great Depression. After World War II, the SWP was reintroduced and finally passed in 1960. In 1963, construction was begun on the California Aqueduct, a series of canals, tunnels, and pipelines that implement Marshall's early 20th century vision. The main line of the canal was completed in 1971, with subsequent branches or extensions completed as late at 1997 (California Department of Water Resources 2014).

The aqueduct begins at the San Joaquin-Sacramento River Delta at the Banks Pumping Plant, which pumps from the Clifton Court Forebay. Water is pumped by the Banks Pumping Plant to the Bethany Reservoir, which serves as a forebay for the South Bay Aqueduct via the South Bay Pumping Plant. From the Bethany Reservoir, the aqueduct flows by gravity to the O'Neill Forebay at San Luis Reservoir. From the O'Neill Forebay, it flows to the Dos Amigos Pumping Plant and then on for roughly 95 miles before it diverges in Kings County into a main line and a Coastal Branch. In southern Kern County, the main line splits into a West Branch and an East Branch, which together serve Los Angeles, San Bernardino, and Riverside counties. The Department of Water Resources operates and maintains the Gianelli Power Plant, a pumped-storage hydroelectric plant at the base of the B.F. Sisk Dam, which impounds San Luis Reservoir. The San Luis Canal portion of the California Aqueduct comprises the federally built portion of the SWP and delivers both federal and state water to the San Luis Reservoir.

Transportation Development

In 1856 to 1857, a toll road was built through Pacheco Pass by Andrew D. Firebaugh, and two stations (Bell Station and one near Mountain House) were added to collect tolls. The road was used by the Butterfield Overland Stage from 1858 through 1861, and *Rancho San Luis Gonzaga*, also known as the San Luis

Station, became a prominent stopping place (Hoover et al. 1990: 199). A telegraph line followed the toll route through the pass (BLM 2016). The ranch complex expanded during the 1850s through the 1880s to include a hotel, a post office, a store, a tavern, and a blacksmith shop. In 1894, the San Luis Ranch also became a station for the short-lived Bicycle Mail Route that existed for two weeks while the American Railway Union went on strike (Wood 2005: 46). By 1878, Merced and Santa Clara counties had purchased the toll road and replaced it with a new road built as a public highway, a portion of which is now a segment of the Whiskey Flat Trail in Pacheco State Park.

In 1915, the Pacheco Pass road became a part of the state highway system, and the state built a third road through the pass (Hoover et al. 1990: 199). Finished in 1923, SR 152 between Bell Station and Pacheco Pass had a number of curves and steep grades. In 1939, beginning roughly 1 mile east of Bell Station, a 2.6-mile realignment was established that improved the accessibility and safety of the route (CAhighways.org 2010). A 3.3-mile long segment of the road was rebuilt in 1950 as a four-lane expressway, spanning the 1939 alignment and the Merced County border. In 1963 through 1965, a 12-mile long, 4-lane expressway was established from the County border eastward to bypass the San Luis Reservoir, which by then was under development. Whereas the 1940s-era alignment of SR 152 cut through the San Luis Flat, the 1960s-era reroute bypassed it to the north before curving to pass to the south of what would become the San Luis Forebay. A portion of SR 152, the “Highway 152 Tree Row” west of Gilroy between Santa Theresa Boulevard and the Uvas Creek Bridge, was listed in the NRHP in 2007.

Chapter 4
Background Research Methodology and Findings

4.1 Archival and Records Searches

Archival and records searches for the SLLPIP were conducted at the Central California Information Center (CCIC) of the California Historical Resources Information System in November 2009 (CCIC File number 75541), August 2012 (CCIC File number 8330I), and May 2016 (CCIC File number 9765I). Archival and records searches also were conducted at the Northwest Information Center (NWIC) in December 2009 (NWIC File number 09-0584), October of 2012 (NWIC File number 12-0279), March 2013 (NWIC File number 12-0938), and October 2016 (NWIC File number 16-0652). The full Project Area extents for each alternative were subject to archival and records searches, including a 0.5-mile radius surrounding the APE for the Lower San Felipe Intake and San Luis Reservoir Expansion alternatives and a 300-foot radius encompassing the APE for the Combination and Treatment alternatives. The locations and unique identifiers[3] for all prior studies and previously recorded cultural resources were obtained from nine 7.5-minute USGS topographic reference maps on file with the CCIC or NWIC. They included the Calaveras Reservoir (1980), Crevison Peak (2015), Cupertino (1991), Los Banos Valley (2015), Mariposa Peak (2015), Pacheco Pass (1971), San Jose East (1980), San Jose West (1980), San Luis Dam (1969), and Santa Teresa Hills (1981) California maps.

The CCIC and NWIC also provided listings of properties in the following historic registers maintained by the State of California:

- NRHP Directory of Determinations of Eligibility (California Office of Historic Preservation, Volumes I and II 1990);
- Historic Property Data File for Merced and Santa Clara counties (California Department of Parks and Recreation 2012);
- California Inventory of Historic Resources (California Department of Parks and Recreation 1976); and

[3] Unique identifiers for prior studies within Santa Clara County begin with “S-” to indicate “Study” while unique identifiers for prior studies within Merced County begin with “ME-” for Merced. Previously recorded cultural resources may or may not be assigned a state Trinomial number, which begins “CA-“, but will have a Primary number. Primary numbers consist of a “P-” followed by a two-digit numeric county code (“43-“ for Santa Clara and “24-” for Merced) followed by a six digit number indicating the order in which it was assigned (e.g., P-24-000116, etc.).

- California Historical Landmarks (California Office of Historic Preservation 1996);
- California Points of Historical Interest (California Department of Parks and Recreation 1992).

In addition, the CCIC and NWIC provided further ancillary information, which included the following:

- Caltrans State and Local Bridge Survey (California Department of Parks and Recreation 2011);
- Caltrans Statewide Historic Bridge Inventory (California Department of Transportation 2013), which includes listings of bridges previously evaluated for listing in the NRHP and determined eligible for listing be not re-evaluated, bridges that remain unevaluated, and local agency bridges;
- Historic Highway Bridges of California (California Department of Transportation 1990);
- Historic American Landscapes Survey (HALS) Inventory – Northern California (California Office of Historic Preservation 2009);
- Linear Resource Concordance List for Canals, Ditches, Levees, Railroads, Roads, Trails, and Transmission Lines (California Office of Historic Preservation 2013);
- List of Railroads by County (California Office of Historic Preservation 2013);
- List of Historic Survey Reports (Bibliography) (California Office of Historic Preservation 1994); and
- Survey of Surveys: A Summary of California's Historical and Architectural Resource Surveys (Department of Parks and Recreation 1989).

The archival and records searches included a review of all relevant 7.5-minute and 15-minute USGS topographic maps encompassing the Project Area for each alternative on file with the CCIC and NWIC. In general, reports for prior studies conducted within the Project Area for each alternative were copied in full if they resulted in positive findings (i.e., if they reported on the discovery of cultural resources) or in part if they yielded negative findings (i.e., they reported on no newly discovered cultural resources). Cultural resource records for archaeological sites, built environment resources, and isolated finds were copied in full. Those materials were collated by county and entered into a geographic information system (GIS) database depicting the spatial extents and basic attributes of each previously recorded cultural resource or prior study. These materials were also scanned and archived for later submission as a part of the administrative record for the SLLPIP EIS/EIR (Reclamation and SCVWD 2018). Materials available online such as historic period topographic maps and GLO plat maps were not copied at the CCIC and NWIC. Instead, they were

downloaded and analyzed as necessary to aid in the identification of potential but unrecorded historic period resources.

4.2 Prior Studies and Previously Recorded Cultural Resources

4.2.1 Lower San Felipe Intake Alternative

Archival and records searches revealed that 28 prior cultural resource studies have been carried out within the Lower San Felipe Intake Alternative Project Area (*see* Table 4-1 and Appendix A, Figures A-1a through A-1d). Of those 28 studies, 17 intersected portions of the Lower San Felipe Intake Alternative APE. The most expansive of these was an overview completed by the California Department of Parks and Recreation (2005) for the San Luis Reservoir Recreation Area EIS/EIR; it encompassed the proposed aeration facility, the Basalt Point use area, the intake area, and Gate Shaft Island and included portions of both Dinosaur Point and Dinosaur Point Road.

Table 4-1. Previous Cultural Resource Studies Conducted within the Lower San Felipe Intake Alternative Project Area.

Study Number	Study Type	Author	Date	Results	Intersects APE
ME-000603	Reconnaissance	Foster	1982	Negative	No
ME-000604	Reconnaissance	Foster	1984	Negative	Yes
ME-000605	Inventory Survey	Foster	1985	Negative	No
ME-000655	Site-specific Study	Nissley	1975	Positive	Yes
ME-000657	Site-specific Study	Olsen	1968c	Positive	Yes
ME-000709	Reconnaissance	Wren	1987	Positive	No
ME-001462	Site-specific Study	Olsen and Payen	1969	Positive	Yes
ME-001954	Reconnaissance	Thornton	1993	Positive	No
ME-003228	Site-specific Study	Jensen	1976	Positive	Yes
ME-003263	Reconnaissance	Price	1998	Negative	No
ME-003345	Site-specific Study	Stoppini	1975	Positive	Yes
ME-004312	Reconnaissance	Jensen	2001	Negative	No
ME-005590	Inventory Survey	Wulzen	2004	Negative	Yes
ME-005777	Inventory Survey	Wulzen	2005	Negative	Yes
ME-005844	Reconnaissance	Losee	2005	Negative	No
ME-005908	Reconnaissance	Bonner	2005	Positive	No
ME-006017	Inventory Survey	Whatford	1996a	Positive	Yes
ME-006474	Inventory Survey	Wulzen	2008a	Positive	Yes
ME-006535	Inventory Survey	Wulzen	2007a	Negative	No
ME-006834	Geotechnical Testing	Fry	2008	Negative	No
ME-006882	Overview (EIS/EIR)	California Department of Parks	2005	Positive	Yes

Study Number	Study Type	Author	Date	Results	Intersects APE
		and Recreation			
ME-007007	Inventory Survey	Chotkowski	2009	Negative	Yes
ME-007015	Inventory Survey	Wulzen	2003a	Negative	Yes
ME-007269	Reconnaissance	Chotkowski	2010a	Negative	No
ME-007405	Management Plan	Chotkowski	2010b	Negative	Yes
ME-007933	Inventory Survey	GANDA	2010	Positive	Yes
ME-008185	Inventory Survey	Wulzen	2009	Positive	Yes
NA	Built-Environment Inventory	ICF International	2013	Positive	Yes

Forty-two cultural resources have been previously recorded within the Lower San Felipe Intake Alternative Project Area (*see* Table 4-2). Eleven of those resources intersect the Lower San Felipe Intake Alternative APE, including six prehistoric archaeological sites (CA-MER-8, CA-MER-17, CA-MER-26, CA-MER-27, CA-MER-94, and CA-MER-437); one prehistoric district (P-24-000489); three historic period resources (P-24-000643, P-24-001818, and P-24-001822); and one historic period district or *rancho* (P-24-001856). Two have been evaluated for listing in the NRHP and/or the CRHR. One resource, the San Luis Gonzaga Archaeological District (P-24-000489), has been listed in the NRHP and the CRHR. The Californian Inventory of Historic Resources (1976) described the San Luis Gonzaga Archaeological District as comprising prehistoric midden sites of the Panoche Complex representing permanent or semi-permanent base camps and special use areas that likely contain cemeteries. The district boundary is arbitrarily defined on records and basemaps archived at the CCIC, but its spatial extents are not characterized by features that would be recognizable during inventory survey. The second resource (P-24-000643), a commemorative plaque marking Lieutenant Gabriel Moraga's 1805 exploration of the region, is listed as CHL-829. All California Historical Landmarks No. 770 and above are considered automatically eligible for listing in the CRHR; the resource has not been evaluated for listing in the NRHP. Figures A-1a through A-1d in Appendix A depict all previously recorded cultural resources within the Lower San Felipe Intake Alternative Project Area.

Table 4-2. Previously Recorded Cultural Resources within the Lower San Felipe Intake Alternative Project Area.

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
CA-MER-8[1] P-24-000109	Prehistoric lithic scatter with one handstone	Treganza	1960	NEV	Yes (Intake Area)
CA-MER-9[1] P-24-000110	Prehistoric house-pits with lithic scatter and one mortar	Treganza	NA-b	NEV	No
CA-MER-15 P-24-000116	Prehistoric village site with bedrock mortars and flaked stone	Riddell	1962b	NEV	No

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
CA-MER-16 P-24-000117	Prehistoric village site with two burials	Riddell	1963	NEV	No
CA-MER-17 P-24-000118	Prehistoric house-pits and midden deposit	Olsen	1963	NEV	Yes (Basalt Point Use Area)
CA-MER-19 P-24-000120	Prehistoric midden deposit with pestle and flaked stone	Olsen	1964b	NEV	No
CA-MER-20 P-24-000121	Prehistoric midden deposit with pestle	Olsen	1964c	NEV	No
CA-MER-21 P-24-000122	Prehistoric midden deposit with bedrock mortar	Olsen	1964d	NEV	No
CA-MER-22 P-24-000123	Prehistoric midden deposit	Olsen	1964e	NEV	No
CA-MER-23 P-24-000124	Prehistoric midden deposit with pestle fragment	Olsen	1964f	NEV	No
CA-MER-24 P-24-000125	Prehistoric village site with mortars and pestles	Riddell	1964	NEV	No
CA-MER-26 P-24-000126	Prehistoric midden deposit with flaked stone	Olsen	1965a	NEV	Yes (Dinosaur Point)
CA-MER-27 P-24-000128	Prehistoric midden deposit with flaked stone and groundstone	Olsen	1965b	NEV	Yes (Dinosaur Point)
CA-MER-28 P-24-000129	Prehistoric “occupation” deposit with flaked stone	Olsen	1965c	NEV	No
CA-MER-41 P-24-000142	Prehistoric midden deposit with fire-affected rock fragments, flaked stone and groundstone	Olsen	1966a	NEV	No
CA-MER-42 P-24-000143	Prehistoric midden deposit with flaked stone	Olsen	1966b	NEV	No
CA-MER-56/H[1] P-24-000157	Site of historic period San Luis Ranch Adobe	Latta	1950	NEV	No
	Prehistoric site with lithic scatter, handstones, mortars, and burials	Treganza	1960	NEV	No
CA-MER-82 P-24-000182	Prehistoric occupation deposit with flaked stone and fire-affected rock	Olsen	1966c	NEV	No
CA-MER-83 P-24-000183	Prehistoric midden deposit	Olsen	1966d	NEV	No
CA-MER-94 P-24-000194	Prehistoric village site with sandstone bowl and flaked stone	Riddell	1962c	NEV	Yes (Dinosaur Point)
CA-MER-99 P-24-000199	Prehistoric village site with groundstone and flaked stone tool	Riddell	1962d	NEV	No
CA-MER-130 P-24-000220	Prehistoric midden deposit with “pitted boulder”	Olsen	1968b	E (code 1D)	No
CA-MER-134 P-24-000224	Prehistoric midden deposit with bedrock mortars	Payen and Olsen	1969c	E (code 1D)	No
CA-MER-135 P-24-000225	Prehistoric midden deposit with pestle fragment	Olsen and Pritchard	1970	E (code 1D)	No
CA-MER-138 P-24-000228	Prehistoric midden deposit	Olsen	1973	NEV	No

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
CA-MER-96 P-24-000196	Prehistoric midden with groundstone pieces and possible house-pits	Olsen	1964g; 1968a	NEV	No
CA-MER-261H P-24-000351	Two historic period rock alignments and one rock pile with ceramic artifacts	Wulzen	2007b	NEV	No
CA-MER-433 P-24-001806	Prehistoric bedrock milling features and petroglyphs	Whatford	2004		No
CA-MER-437 P-24-001859	Two prehistoric milling stations	Wulzen	2003b, 2007c	NEV	Yes (Basalt Point)
CA-MER-451H P-24-001876	Historic period ranch complex	Wulzen	2008b	NEV	No
P-24-000078	Historic period fire watch tower	Thornton	1991	AE (code 4CM)	No
P-24-000489	San Luis Gonzaga Archaeological District comprised of five prehistoric midden sites (CA-MER-107, CA-MER-126 CA-MER-130, CA-MER-134, and CA-MER-135)	Olsen	1970	E (code 1S)	Yes (Dinosaur Point/ Dinosaur Point Road)
P-24-000643 CHL-829	California State Historical Landmark plaque commemorating Moraga's 1805 exploration of Pacheco Pass	Arbuckle	1979	NEV (NRHP); E (CRHR)	Yes (Aeration Facility)
P-24-001818	Historic period linear feature comprising a 2.5-mile long fence	Whatford	1996b	NEV	Yes (Dinosaur Point Road)
P-24-001819	Prehistoric bedrock milling station	Whatford	1996c	NEV	No
P-24-001820	Prehistoric bedrock milling station	Whatford	1996d	NEV	No
P-24-001821	Prehistoric rock cairn	Whatford	1996e	NEV	No
P-24-001822	Historic period linear features comprising road cuts and retaining walls associated with SR 152 and a stage road	Whatford	1996f	NEV	Yes (Dinosaur Point/ Dinosaur Point Road)
	Historic period linear feature consisting of a 3,455-foot long segment of the old Pacheco Pass Highway	Barnes	2009		
P-24-001823	Historic period linear feature comprising a 4 mile-long fence	Whatford	1996g	NEV	No
P-24-001824	Historic period windmill	Whatford	1996h	NEV	No
P-24-001827	Historic period linear resource comprising four rock cairn/ wooden post monuments	Whatford	1996i	NEV	No
P-24-001856	San Luis Gonzaga Rancho-Paula (Pacheco) Fatjo Ranch Historic District	Bissonnette	2007	NEV	Yes (Dinosaur Point/ Dinosaur Point Road)

[1] Note CA-MER-8, CA-MER-9 and CA-MER-56/H are not plotted on maps provided by the CCIC, however they appear in a 1960 report by A. Treganza (ME-000694) on file with the CCIC that notes their approximate locations and basic constituents.
NRHP/CRHR: AE – appears eligible; DNE – determined not eligible; E – eligible; NE – not eligible; NEV – not evaluated

4.2.2 Combination Alternative

As originally proposed, the Combination Alternative Project Area encompassed a 300-foot radius surrounding 21 groundwater production wells, 18 associated pipeline segments, and one recharge pond. Due to changes in engineering, 12 groundwater production wells and their associated pipeline segments were removed from consideration. Ultimately, the Project Area encompassed just eight groundwater production wells, three pipeline segments, and one recharge pond in seven discontinuous areas. Archival and records searches revealed that the final Project Area was intersected by 48 prior cultural resource studies and that 35 of those studies encompassed some portion of the Combination Alternative APE. Many comprised linear inventory surveys associated with modern infrastructural development for roads, sewage lines, and telecommunication routes (*see* Table 4-3 and Appendix A, Figures A-2a through A-2e).

Table 4-3. Previous Cultural Resource Studies Conducted within the Combination Alternative Project Area.

Study Number	Study Type	Author	Date	Results	Intersects APE
Final Project Area					
S-004173	Regional Overview	Carrell and Edwards	1975	Positive	Yes
S-004193	Inventory Survey	Edwards	1974	Negative	Yes
S-004730	Inventory Survey	Winter	1975	Negative	Yes
S-004772	Inventory Survey	Jackson et al.	1973	Positive	Yes
S-005195	Inventory Survey	Garaventa and Busby	1982	Positive	No
S-005234	Reconnaissance	Holman	1974	Negative	Yes
S-005901	Inventory Survey	Garaventa and Harmon	1983	Negative	No
S-006168	Inventory Survey	Cartier	1983	Negative	No
S-006617	Inventory Survey	Garaventa and Anastasio	1984	Negative	Yes
S-007199	Inventory Survey	Cartier	1985	Negative	Yes
S-007207	Inventory Survey	Flynn	1985	Negative	Yes
S-007619	Inventory Survey	Cartier et al.	1984	Positive	Yes
S-007844	Inventory Survey	Anastasio	1985	Negative	No
S-007901	Survey/Architectural Evaluation	Dietz	1986	Negative	Yes
S-008387	Inventory Survey	Chavez	1980	Positive	No
S-008883	Overview	Laffey	1986	Negative	Yes
S-008955	Inventory Survey	Cartier and Laffey	1986	Positive	Yes
S-009378	Historic study	Laffey	1987	Negative	Yes
S-009728	Inventory Survey	Archaeological Resource Management	1988	Negative	No
S-010578	Overview	Cartier and Laffey	1989	Positive	Yes
S-011642	Inventory Survey	Anastasio et al.	1988	Positive	Yes
S-011879	Inventory Survey	Garaventa et al.	1989	Positive	Yes

Study Number	Study Type	Author	Date	Results	Intersects APE
S-011927	Archival and Records Search	Holman	1987	Negative	Yes
S-013894	Inventory Survey	Garaventa et al.	1991	Positive	Yes
S-018541	Overview	Busby et al.	1996a	Positive	Yes
S-018975	Monitoring Report	Cartier and Morgan	1996	Positive	Yes
S-019072	Overview	Busby et al.	1996b	Positive	Yes
S-020186	Monitoring Report	Busby	1997a	Positive	Yes
S-020855	Inventory Survey	Laffey and Duval	1998	Negative	No
S-021162	Inventory Survey	Busby	1997b	Negative	Yes
S-021170	Inventory Survey	Corbett et al.	1997	Negative	Yes
S-021576	Overview	Hill et al.	1998	Positive	Yes
S-022179	Inventory Survey	Archaeological Resource Management	1999	Negative	No
S-023051	Inventory Survey	Basin Research Associates, Inc.	1998	Positive	Yes
S-023080	Monitoring Report	Busby	1999a	Positive	Yes
S-023105	Overview	Busby	1999b	Positive	Yes
S-023382	Inventory Survey	Basin Research Associates, Inc.	2000	Positive	Yes
S-024128	Inventory Survey	Archaeological Resource Management	2000	Negative	No
S-025552	Archival and Records Search	Busby	2002	Positive	Yes
S-027102	Inventory Survey	Archaeological Resource Management	2003	Negative	No
S-027196	Inventory Survey	Holman	2002	Negative	No
S-031898	Monitoring Report	Busby	2005	Positive	Yes
S-032563	Excavation/Study	Psota et al.	2006	Positive	No
S-033543	Archival and Records Search	US Department of Transportation	1981	Positive	Yes
S-033544	Mitigation	Basin Research Associates, Inc.	1984	Negative	Yes
S-034188	Inventory Survey	Holman	2006	Negative	Yes
S-036714	Inventory Survey	Basin Research Associates, Inc.	2009	Positive	Yes
S-037032	Inventory Survey	Ruby et al.	2010	Positive	No

Five cultural resources were previously recorded within the Combination Alternative Project Area as it was initially proposed. Due to engineering changes in the alternative, however, two resources (CA-SCL-186 and CA-SCL-187) were excluded from the Project Area. Of the three previously recorded cultural resources that remained, only one (CA-SCL-799H) intersected the final extents of the Combination Alternative APE (*see* Table 4-4). That resource, a modern and historic period surface debris scatter with a subsurface component,

was discovered along Hedding Street between Guadalupe Parkway and Spring Street in San Jose. The site was not formally evaluated but was found to contain domestic and building materials dating from the 1880s through the 1970s, with the majority of the site's constituents dating to the 1880s through the 1930s. The site was found to be heavily disturbed, though subsurface portions of the site were believed to be intact (Morgan et al. 1996). Figures A-2a through A-2e in Appendix A depict previously recorded cultural resources present within the Combination Alternative Project Area.

Table 4-4. Previously Recorded Cultural Resources within the Combination Alternative Project Area.

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
CA-SCL-588H P-43-000583	Historic period subsurface feature comprising redwood fence posts surrounding a perimeter foundation with ceramics	Cartier	1984	NEV	No
CA-SCL-744/H P-43-000642	Historic period debris pit with bottles, saw cut bone, shell, fish, ceramics, metal car parts, battery parts, wood, and clock parts	Sidhu	1993	DNE (code 6Y)	No
CA-SCL-799H P-43-000966	Historic period surface debris scatter with subsurface lens of debris observed 2 meters below the ground surface consisting of domestic items (ca. 1880s-1970s)	Morgan et al.	1996	NEV	Yes (Hedding Street #1 and #2 Well Piping)

NRHP/CRHR: DNE – determined not eligible; NEV – not evaluated

4.2.3 Treatment Alternative

The current Treatment Alternative Project Area comprises a 300-foot radius surrounding the existing SCVWD Santa Teresa WTP, which was built in 1989. As originally conceived, the Treatment Alternative included a second facility, the Rinconada WTP, which was excluded from Project consideration in mid-2017. The Santa Teresa WTP was developed to serve Santa Clara Valley customers and has been heavily developed to accommodate plant facilities and infrastructure. An archival and records search revealed that the current Treatment Alternative Project Area was intersected by four prior cultural resource studies and that three of those studies encompassed some portion of the APE (*see* Table 4-5 and Appendix A, Figures A-3a through A-3b). One 2002 study (S-034611) in particular fully subsumed the Treatment Alternative APE. It included an archival and records search of a 0.5-mile buffer surrounding the Santa Teresa WTP and as well as a reconnaissance survey of the facility. Two other facilities, the Penitencia and Rinconada WTPs, also were examined. No cultural resources were documented as a result as a result of the study.

One cultural resource was previously recorded within the Treatment Alternative Project Area, though it did not intersect the APE. That resource (CA-SCL-377) is a prehistoric site located roughly 275 feet northwest of the Santa Teresa WTP. It includes one chert flake as well as possible midden soils and possible bedrock mortars that may or may not be cultural features (Whitlow and Harris 1978) (*see* Figure A-3b in Appendix A).

Table 4-5. Previous Cultural Resource Studies within the Treatment Alternative Project Area.

Study Number	Study Type	Author	Date	Results	Intersects APE
S-004574	Inventory Survey, Historic Study	Whitlow	1978a	Positive	Yes
S-004690	Resource Evaluation	Cartier	1979	Negative	Yes
S-026184	Inventory Survey and Evaluation	Cartier	2002	Negative	Yes
S-034611	Resource Evaluation	Cartier	2006	Negative	No

4.2.4 San Luis Reservoir Expansion Alternative

Archival and records searches revealed that 52 prior cultural resource studies have been carried out within the San Luis Reservoir Expansion Alternative Project Area and that 33 of those intersected some portion of the APE (*see* Table 4-6 and Appendix A, Figures A-4a through A-4g). Among the most extensive was an overview completed by the California Department of Parks and Recreation (2005) for the San Luis Reservoir Recreation Area EIS/EIR. Another was the Luis Reservoir Recreation Area Draft Resource Management Plan/General Plan and Draft EIS/EIR by Reclamation and the California Department of Parks and Recreation (2012). Particularly relevant to the SLLPIP was the draft "Built-Environment Inventory for the B.F. Sisk Dam Corrective Action Study, Merced County, California" (ICF 2013). It included an inventory of built environment resources within the San Luis Reservoir Expansion Alternative APE, including the B.F. Sisk Dam and San Luis Reservoir, the O'Neil Dam and Forebay, the William R. Gianelli Pumping-Generating Plant, and the San Luis Operation and Maintenance Center. The study was never finalized, but its author concluded that the dam, the reservoir, the pumping-generating plant, and the forebay were eligible for listing in the NRHP and CRHR under Criterion A/1 for their importance to the development of the CVP and SWP as well as state and federal partnerships regarding water infrastructure (ICF 2013).

More recently, JRP Historic Consulting re-examined the key elements of the B.F. Sisk Dam System during an architectural field inventory in support of the B.F. Sisk Dam Safety of Dams Modification Project. They recommended the B.F. Sisk Dam and San Luis Reservoir, the O'Neil Dam and Forebay, the William R. Gianelli Pumping-Generating Plant, and the San Luis Operation and Maintenance Center eligible for listing in the NRHP and CRHR under Criterion

A/1 as contributing elements to the "B.F. Sisk Dam/San Luis Reservoir Historic District" (JRP 2018). Elements of the district were recommended not eligible for individual listing in the NRHP or the CRHR, but taken together were found to be significant within the context of water resource development in California and an integral part of both the CVP and SWP (JRP 2018). Two ancillary facilities used in construction of the dam, the Basalt Hill Quarry (CA-MER-509H) and a rip-rap separation plant (CA-MER-492H), were recommended as non-contributing elements of the district.

Table 4-6. Previous Cultural Resource Studies Conducted within the Reservoir Expansion Alternative Project Area.

Study Number	Study Type	Author	Date	Results	Intersects APE
ME-000581	Inventory Survey	Adams	1988	Negative	Yes
ME-000602	Site-Specific	Follett	1983	Positive	Yes
ME-000603	Reconnaissance	Foster	1982	Negative	Yes
ME-000605	Inventory Survey	Foster	1985	Negative	No
ME-000618	Inventory Survey	Littlefield	1984	Negative	Yes
ME-000645	Sensitivity Study	Napton	1990	Positive	Yes
ME-000655	Excavation	Nissley	1975	Positive	Yes
ME-000657	Site-Specific	Olsen	1968c	Positive	No
ME-000666	Inventory Survey	Peak & Associates, Inc.	1979	Negative	Yes
ME-000683	Site-Specific	Riddell	1968	Positive	Yes
ME-000695	Overview	Varner	1975	Negative	No
ME-000699	Inventory Survey	Weber	1978	Negative	No
ME-000709	Reconnaissance	Wren	1987	Positive	No
ME-001462	Site-Specific	Olsen and Payen	1969	Positive	No
ME-001746/1747	Excavation	Schulz	1970a; 1970b	Positive	Yes
ME-001954	Reconnaissance	Thornton	1993	Positive	No
ME-001975	Sensitivity Study/EIR	Peak & Associates, Inc.	1991a	Negative	No
ME-001976	Inventory Survey	Peak & Associates, Inc.	1992	Negative	Yes
ME-003228	Excavation	Jensen	1976	Positive	Yes
ME-003345	Site-Specific	Stroppini	1975	Positive	Yes
ME-004287	Reconnaissance	Runnings and Haversat	2001	Negative	No
ME-004424	Inventory Survey	Napton	2001	Negative	No
ME-004578	Inventory Survey	Peak & Associates, Inc.	1991b	Indeterminate	No
ME-004688	Inventory Survey	Jensen	2002	Negative	No
ME-005221	Survey	Hector et al.	2003	Positive	No
ME-005378	Reconnaissance	Wren	2004	Negative	No

Study Number	Study Type	Author	Date	Results	Intersects APE
ME-005498/ 005499/005500	Inventory Survey	Leach-Palm, Mikkelsen, King, and Hatch	2004a; 2004b; 2004c	Positive	Yes
ME-005590	Inventory Survey	Wulzen	2004	Negative	Yes
ME-005758	Inventory Survey	Jones & Stokes	2003	Negative	No
ME-005777	Inventory Survey	Wulzen	2005	Negative	Yes
ME-005908	Reconnaissance	Bonner	2005	Positive	No
ME-005926	Inventory Survey	Maslonka & Associates	2005	Positive	No
ME-006017	Inventory Survey	Whatford	1996a	Positive	No
ME-006099	Master Plan	EDAW	2006	Positive	No
ME-006474	Inventory Survey	Wulzen	2008a	Positive	Yes
ME-006535	Inventory Survey	Wulzen	2007a	Negative	Yes
ME-006834	Geotechnical Testing	Fry	2008	Negative	Yes
ME-006836	Site-Specific	Zaugg	2008	Negative	Yes
ME-006882	Overview (EIS/EIR)	California Department of Parks and Recreation	2005	Positive	Yes
ME-006984	Reconnaissance	Chotkowski	2009a	Negative	Yes
ME-007007	Inventory Survey	Chotkowski	2009b	Negative	Yes
ME-007015	Inventory Survey	Wulzen	2003a	Negative	Yes
ME-007119	Overview	Romoli and Ruby	1963	Positive	Yes
ME-007120	Overview	Olsen	1974	Positive	Yes
ME-007269	Reconnaissance	Chotkowski	2010a	Negative	Yes
ME-007405	Management Plan	Chotkowski	2010b	Negative	Yes
ME-007933	Survey	Siskin et al.	2010	Positive	Yes
ME-008185	Reconnaissance	Wulzen	2009	Positive	Yes
ME-008283	Inventory Survey	Johnston and Brewer	2015	Positive	Yes
---	Built-Environment Inventory	ICF International	2013	Positive	Yes
---	Inventory Survey	Holm, Reese, Ballard, Streich, Kovak, Sanchez and Holson	2014	Positive	Yes
---	Built-Environment Inventory	JRP Historical Consulting	2018	Positive	Yes

Fifty cultural resources have been previously recorded within the San Luis Reservoir Expansion Alternative Project Area (*see* Table 4-7). Of those, 19 intersect the San Luis Reservoir Expansion Alternative APE. Fifteen (CA-MER-14, CA-MER-15, CA-MER-20, CA-MER-21, CA-MER-22, CA-MER-23, CA-MER-27, CA-MER-28, CA-MER-29, CA-MER-41, CA-MER-82, CA-MER-130, CA-MER-136, CA-MER-137, and CA-MER-437) comprise prehistoric archaeological sites; one is a prehistoric district (P-24-000489); two are historic period resources (CA-MER-451H and CA-MER-521H); and one encompasses the B.F. Sisk Dam System. Five of the 19 cultural resources

within the APE have been previously evaluated for listing in the NRHP and/or the CRHR. Two prehistoric sites, one a prehistoric midden deposit with a "pitted boulder" (CA-MER-130, Olsen 1968b) and the other a prehistoric midden deposit with pestle fragments (CA-MER-136), are listed in the NRHP and CRHR. CA-MER-130 is regarded as a contributing element to the San Luis Gonzaga Archaeological District (P-24-000489), a prehistoric district with five known midden deposits that is also listed in the NRHP and CRHR (*see* Section 4.2.1). A fourth resource, a historic period water tank and trough, was recommended not eligible for listing in the NRHP and CRHR (Holm et al. 2014). Finally, the B.F. Sisk Dam and its key features were recommended eligible for listing in the NRHP and CRHR as a part of the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018). Figures A-4a through A-4g in Appendix A show all previously recorded cultural resources within the San Luis Reservoir Expansion Alternative Project Area.

Table 4-7. Previously Recorded Cultural Resources within the San Luis Reservoir Expansion Alternative Project Area.

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
B.F. Sisk Dam System	Historic period B.F. Sisk Dam and facilities	ICF International	2013	RE (NRHP/ CRHR)	Yes (Expanded Embankment, Downstream Stability Berms, Construction Staging Areas, and Reservoir Shoreline)
		JRP Historical Consulting	2018		
CA-MER-8[1] P-24-0001091	Prehistoric lithic scatter with one handstone	Treganza	1960	NEV	No
CA-MER-9[1] P-24-0001101	Prehistoric house-pits with lithic scatter and one mortar	Treganza	NA-b	NEV	No
CA-MER-14[2] P-24-000115	Prehistoric lithic scatter with groundstone, burials, and rock cairn; destroyed	Olsen	1962	NEV	Yes (Expanded dam embankment)
		Riddell	1962a		
		Glassow	1962, 1963		
CA-MER-15 P-24-000116	Prehistoric village site with bedrock mortars and flaked stone	Riddell	1962b	NEV	Yes (Reservoir Shoreline – South of Dinosaur Point Boat Ramp)
CA-MER-16 P-24-000117	Prehistoric village site with two burials	Riddell	1963	NEV	No
CA-MER-17 P-24-000118	Prehistoric house-pits and midden deposit	Olsen	1963	NEV	No
CA-MER-18 P-24-000119	Prehistoric small, dark, rocky deposit with flakes, a shell, and possibly a human bone	Olsen	1964a	NEV	No
CA-MER-19 P-24-000120	Prehistoric midden deposit with pestle and flaked stone	Olsen	1964b	NEV	No
CA-MER-20 P-24-000121	Prehistoric midden deposit with pestle	Olsen	1964c	NEV	Yes (Reservoir Shoreline – South Highway 152)

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
CA-MER-21 P-24-000122	Prehistoric midden deposit with bedrock mortar	Olsen	1964d	NEV	Yes (Reservoir Shoreline – North of Dinosaur Point Boat Ramp)
CA-MER-22 P-24-000123	Prehistoric midden deposit	Olsen	1964e	NEV	Yes (Reservoir Shoreline – North of Dinosaur Point Boat Ramp)
CA-MER-23 P-24-000124	Prehistoric midden deposit with pestle fragment	Olsen	1964f	NEV	Yes (Reservoir Shoreline – North of Dinosaur Point Boat Ramp)
CA-MER-24 P-24-000125	Prehistoric village site with mortars and pestles	Riddell	1964	NEV	No
CA-MER-26 P-24-000127	Prehistoric Midden and small lithic scatter	Olsen	1965a	NEV	No
CA-MER-27 P-24-000128	Prehistoric midden deposit with flaked stone and groundstone	Olsen	1965b	NEV	Yes (Reservoir Shoreline – Near Dinosaur Point Boat Ramp)
CA-MER-28 P-24-000129	Prehistoric occupation deposit with flaked stone	Olsen	1965c	NEV	Yes (Reservoir Shoreline – South of Dinosaur Point Boat Ramp)
CA-MER-29 P-24-000130	Prehistoric Midden with silicate flakes and a scraper and mortar	Olsen	1965d	NEV	Yes (Reservoir Shoreline – East side of San Luis Creek Inlet)
CA-MER-31 P-24-000132	Prehistoric midden with two silicate scrapers	Olsen	1965e	NEV	No
CA-MER-32 P-24-000133	Prehistoric Midden with flakes and a hammerstone	Olsen	1965f	NEV	No
CA-MER-41 P-24-000142	Prehistoric midden deposit with fire affected rock fragments, flaked stone and groundstone	Olsen	1966a	NEV	Yes (Reservoir Shoreline – South of Dinosaur Point Boat Ramp)
CA-MER-42 P-24-000143	Prehistoric midden deposit with flaked stone	Olsen	1966b	NEV	No
CA-MER-56/H[1] P-24-0001571	Site of historic San Luis Ranch Adobe	Latta	1950	NEV	No
	Prehistoric site with lithic scatter, handstones, mortars, and burials	Treganza	1960		
CA-MER-82 P-24-000182	Prehistoric occupation deposit with flaked stone and fire affected rock	Olsen	1966c	NEV	Yes (Reservoir Shoreline – West side of San Luis Creek Inlet)
CA-MER-83 P-24-000183	Prehistoric midden deposit	Olsen	1966d	NEV	No
CA-MER-94 P-24-000194	Prehistoric village site with sandstone bowl and flaked stone	Riddell	1962c	NEV	No

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
CA-MER-96 P-24-000196	Prehistoric midden with groundstone pieces and possible house-pits	Olsen	1964g, 1968a	NEV	No
CA-MER-99 P-24-000199	Prehistoric village site with groundstone and flaked stone tool	Riddell	1962d	NEV	No
CA-MER-130 P-24-000220	Prehistoric midden deposit with “pitted boulder”	Olsen	1968b	E (code 1D)	Yes (Reservoir Shoreline – North of Dinosaur Point Boat Ramp)
CA-MER-131 P-24-000221	Prehistoric midden site with one rimmed housepit	Payen and Olsen	1969a	NEV	No
CA-MER-132 P-24-000222	Prehistoric midden site with one small housepit	Payen and Olsen	1969b	NEV	No
CA-MER-134 P-24-000224	Prehistoric midden deposit with bedrock mortars	Payen and Olsen	1969	E (code 1D)	No
CA-MER-135 P-24-000225	Prehistoric midden deposit with pestle fragment	Olsen and Pritchard	1970	E (code 1D)	No
CA-MER-136 P-24-000226	Prehistoric midden deposit with pestle fragments	Olsen	1971a	E (code 1D)	Yes (Reservoir Shoreline – Cottonwood Bay)
CA-MER-137 P-24-000227	Prehistoric large occupation site on knoll with pestle fragments	Olsen	1971b	NEV	Yes (Reservoir Shoreline – Cottonwood Bay)
CA-MER-138 P-24-000228	Prehistoric midden deposit	Olsen	1973	NEV	No
CA-MER-261H P-24-000351	Two historic rock alignments and one rock pile with ceramic artifacts	Wulzen	2007b	NEV	No
CA-MER-433 P-24-001806	Prehistoric bedrock milling features and petroglyphs	Whatford	2004	NEV	No
CA-MER-437 P-24-001859	Two prehistoric milling stations	Wulzen	2003b, 2007c	NEV	Yes (Construction Impact Area – West of Goosehead Point)
CA-MER-451H P-24-001876	Ranch complex	Wulzen	2008b	NEV	Yes (Construction Staging Area – South of B.F. Sisk Dam)
CA-MER-477H P-24-001822	Historic linear features comprising road cuts and retaining walls associated with State Route 152 and a stage route	Whatford	1996f	NEV	No
	Historic linear feature consisting of a 3,455-foot long segment of the old Pacheco Pass Highway	Barnes	2009		
CA-MER-521H P-24-002173 SLTP-B-11	Elevated water tank and water trough	Fuerstenberg	2014	NE (NRHP)	Yes (Borrow Area 6 - South of O’Neill Forebay)
Harris Ranch vicinity	Harris Ranch vicinity per the 1955 USGS Pacheco Pass 7.5-minute topographic map	---	---	NEV	No

Resource Designation	Description	Author	Date	NRHP/CRHR	Intersects APE
P-24-000078	Historic Basalt Hill Fire Lookout Station	Thornton	1991	AE (code 4CM)	No
P-24-000489	San Luis Gonzaga Archaeological District comprised of five prehistoric midden sites (CA-MER-107, CA-MER-126 CA-MER-130, CA-MER-134, and CA-MER-135)	Olsen	1970	E (code 1S)	Yes (Reservoir Shoreline – Dinosaur Point Area; Cottonwood Bay Levee Modification and Levee Raise Areas)
P-24-000643 CHL-829	California State Historical Landmark # plaque commemorating Lt. G. Moraga's 1805 traversal of Pacheco pass	Arbuckle	1979	NEV (NRHP); E (CRHR)	No
P-24-001729	The site consists of a very light scatter of historic ironstone fragments	Peak and Gerry	1991	NEV	No
P-24-001823	Historic linear feature comprising a 4-mile long fence	Whatford	1996g	NEV	No
P-24-001856	San Luis Gonzaga Rancho-Paula (Pacheco) Fatjo Ranch Historic District	Bissonnette	2007	NEV	No
P-24-001931	California Aqueduct	Ambacher	2011	RE (NRHP)	No

[1] Note CA-MER-8, CA-MER-9 and CA-MER-56/H are not plotted on maps provided by the CCIC, however they appear in a 1960 report by A. Treganza (ME-000694) on file with the CCIC that notes their approximate locations and basic constituents.

[2] Note CA-MER-14 appears in a study (ME-07119) by Romoli and Ruby (1963) but is not mapped by the CCIC. NRHP/CRHR: AE – appears eligible; DNE – determined not eligible; E – eligible; NE – not eligible; NEV – not evaluated; RE recommended

4.3 Native American and Organizational Contact

Pacific Legacy first requested a search of the Sacred Lands Inventory maintained by the Native American Heritage Commission (NAHC) in support of the SLLPIP on November 30, 2012. A revised request was submitted to the NAHC on December 12, 2012. A partial response from the NAHC was received on December 19, 2012, which indicated that a search of the Sacred Lands Inventory did not result in the identification of Native American cultural resources in the Combination Alternative Project Area in Santa Clara County. The NAHC provided a list of Native American individuals who may have knowledge of or interest in cultural resources in Santa Clara County. Requests for contact and further information were sent via certified letter to Jakki Kehl (Ohlone/Costanoan), Jean-Marie Feyling (Amah/Mutsun Tribal Band), Katherine Erolinda Pérez (Northern Valley Yokuts Tribe), Ann Marie Sayers (Chairperson, Indian Canyon Mutsun Band of Costanoan), Valentin Lopez (Chairperson, Amah Mutsun Tribal Band), Rosemary Cambra (Chairperson, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area), Edward Ketchum (Amah Mutsun Tribal Band), Andrew Galvan (The Ohlone Indian Tribe), Irene Zweirlein (Chairperson, Amah/Mutsun Tribal Band), and Ramona Garibay (Representative, Trina Marine Ruano Family).

At the suggestion of Ms. Pilas-Treadway, Pacific Legacy resubmitted its request to the NAHC on January 10, 2013 for Merced County. A response was received on January 11, 2013, indicating that no Native American cultural resources had been identified through a search of the Sacred Lands Inventory within a 0.5-mile radius surrounding the San Felipe Intake Alternative APE. The NAHC provided a list of Native American individuals who may have knowledge of or interest in cultural resources in Merced County. Requests for contact and further information were sent via certified letter to Valentin Lopez (Chairperson, Amah Mutsun Tribal Band), Lorrie Planas (Choinumni Tribe), Katherine Erolinda Pérez (Northern Valley Yokuts Tribe), Les James (Spiritual Leader, Southern Sierra Miwuk Nation), Edward Ketchum (Amah Mutsun Tribal Band), and Anthony Brochini (Chairperson, Southern Sierra Miwuk Nation).

As a part of the environmental review process, Reclamation will engage in consultation with Native American tribal representatives as well as other potential stakeholders regarding the SLLPIP action alternatives. In compliance with CEQA and Assembly Bill 52, the SCVWD also will consult with Native American tribal representatives regarding the Project. Recently, both Reclamation and the SCVWD have conducted outreach to the Native American community on behalf of other proposed projects that overlap the SLLPIP. These include the Pacheco Reservoir Expansion Project and geotechnical studies supporting the B.F. Sisk Dam Safety of Dams Modification Project. Documentation provided by the SCVWD for the Pacheco Reservoir Expansion Project is included in the cultural resources technical report for the New Pacheco Reservoir Alternative (Pacific Legacy 2018) while documentation provided by Reclamation for the B.F. Sisk Dam Safety of Dams Modification Project is provided in a forthcoming cultural resources technical report (Pacific Legacy 2018b). Pacific Legacy's correspondence with the NAHC from 2012 and 2013 is included in Appendix D.

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Chapter 5
Survey and Recording Methodology

5.1 Inventory Survey Methods

Pacific Legacy personnel conducted an inventory survey of the APE for the Lower San Felipe Intake Alternative, the Combination Alternative, and the San Luis Reservoir Expansion Alternative in 2012 and 2016. The Lower San Felipe Intake Alternative APE was examined over the course of 12 days beginning on November 13, 2012 and ending December 6, 2012. An inventory survey of the Combination Alternative APE was completed on September 25, 2012. The San Luis Reservoir Expansion Alternative APE was examined over the course of 34 days beginning on June 22, 2016 and ending August 11, 2016. The full extents of the Treatment Alternative APE were subject to an inventory survey in 2002 (Cartier 2002). Because the existing Santa Teresa WTP that makes up the Treatment Alternative APE will not be expanded beyond its current footprint, and because it has not been substantially altered or upgraded since 2002, it was not subject to re-examination in 2012 or 2016.

Qualified personnel from Pacific Legacy familiar with the prehistoric and historic period archaeology of California carried out inventory surveys of all accessible areas within the APE for the three action alternatives noted above. Personnel were divided into teams of two to six professional archaeologists, each led by a field director or crew chief. Pedestrian surveys were performed using systematic transects in which team members were spaced no more than 12-15 meters apart. No artifacts were collected and no subsurface testing or excavation was undertaken. Within areas of particularly dense vegetation or poor surface visibility, field personnel conducted judgmental surface scrapes to expose the ground surface. The main objective of the inventory surveys was to identify previously recorded cultural resources, discover previously undocumented resources, and to note the potential of surveyed areas to contain buried cultural materials.

All previously recorded and newly identified prehistoric and historic period cultural resources were documented using global positioning system (GPS) receivers with sub-meter accuracy (e.g., Trimble GeoXT or GeoXH). A standardized data dictionary was used with each unit to ensure cross-compatibility. All location and attribute data collected via GPS receiver were compiled into a geospatial database to aid in record and report production and to facilitate future management.

Prior to the start of the inventory surveys, personnel were supplied with records for previously recorded cultural resources as well as copies of relevant historic period maps. Personnel also received information regarding the identification and anticipated age range of prehistoric and historic period cultural resources within the APE for each action alternative as well manuals regarding landforms, soil types, and floral and faunal resources to ensure that standardized recording nomenclature was used.

During inventory survey, every effort was made to relocate and document previously recorded sites and isolated finds in accessible areas. Personnel were provided with location information on GPS receivers and on field inventory maps of the APE for each action alternative. They were also provided with information on potential resources noted but not formally recorded through prior cultural resource studies and through information obtained from historic period map research. If a resource could not be located, field personnel examined nearby locations based on the resource description and using maps from the original records. For those previously recorded cultural resources that were relocated, field personnel noted the condition of the resource, documented any materials not previously observed, created new sketch and location maps as necessary, and updated other pertinent information on Department of Parks and Recreation (DPR) Forms 523.

When a cultural resource was newly discovered during inventory survey, personnel conducted a careful inspection of the vicinity, assigned the resource a temporary number, plotted its location using a GPS receiver and topographic maps, and documented its nature and extents. All resources were fully documented at the time of their discovery. Modern, structures, objects, or materials were only recorded if they represented a modification, intrusion, or disturbance to a prehistoric or historic period cultural resource. Resources that were indistinguishable as historic period or modern were fully recorded by field personnel and subject to further investigation through archival research. For instance, several road alignments were not immediately distinguishable as historic period travel routes but were documented in the field and examined using historic period topographic maps and aerial photographs.

Generally, recording efforts were limited to the APE for a given action alternative. There were several instances, however, in which cultural resources, particularly linear features, extended beyond the APE or encompassed areas not accessible to pedestrian survey (e.g., inundated areas, areas of extreme slope, etc.). In the case of certain road alignments (e.g., CA-MER-519H), accessible segments were recorded in the field but also were documented digitally with the aid of georeferenced true color orthophotographs. Given its great size and scale, similar methods were used to record the Basalt Hill Quarry (CA-MER-509H).

5.2 Vegetation, Terrain and Other Access Limitations

The Lower San Felipe Intake Alternative APE and the San Luis Reservoir Expansion Alternative APE fall almost entirely within the San Luis Reservoir State Park and are largely undeveloped except for roads and facilities associated with the maintenance of the B.F. Sisk Dam and San Luis Reservoir. The vast majority of the San Luis Reservoir vicinity is covered with dense, knee-high to waist-high grasses that severely limit (5%) visibility away from the shoreline. Relatively few woodland areas are present, and are limited mostly to riparian corridors bordering existing drainages. Wave action and lake currents have eroded a series of step-like benches parallel with the active reservoir shoreline. This has limited vegetation growth along the shoreline, which does offer better (25-50%) average ground surface visibility. Wave action has likely eroded, displaced, or buried many cultural materials that were present along the active shoreline, particularly those exposed to the prevalent northeast-southeast winds, which can average 25 miles per hour in the month of May (Windfinder.com). The terrain in the eastern portion of the reservoir area, particularly near the O'Neill Forebay, is generally flat and open with a gentle (1-2°) north-facing or east-facing slope. In contrast, the southern reservoir shoreline and the Basalt Hill area are dissected rolling foothills and narrow valleys and canyons with slopes that exceed 30° in some areas.

Counter to the San Luis Reservoir vicinity, the Combination Alternative APE was dominated by areas of urban infrastructural and private residential development. Few areas of native vegetation remained extant, but mostly occurred along riparian corridors (e.g., Mossdale #1 and #2 and pipeline area). Most proposed well locations and pipeline alignments followed existing utility routes or were located proximate to them and lay beneath paved areas (e.g., asphalt roads, concrete lined curbs, gravel lots) or modern landscaping (e.g., parks or recreational lands, residential landscaping).

Certain areas within APE for the Combination Alternative and the San Luis Reservoir Expansion Alternative could not be examined due to a lack of access permissions. The northernmost portion of the San Luis Reservoir Expansion Alternative APE was one such area. The reservoir shoreline encompassing Cottonwood Bay just north of SR 152 could not be safely accessed from the highway, nor could it be accessed from private roads without landowner permissions that were unavailable during the 2016 inventory survey. Limited portions of the Combination Alternative APE also lay on private property (e.g., single-family residences, an apartment complex) and could not be examined fully. In general, however, access permissions presented little barrier to the inventory surveys conducted in 2012 and 2016.

5.3 Cultural Resource Documentation

All cultural resources encountered during field inventory were documented on DPR Forms 523 and on supplemental records in keeping with procedures identified in the *Instructions for Recording Historical Resources* (California Office of Historic Preservation 1995). At a minimum, resource documentation was completed on DPR Form 523(a) (a Primary form) and DPR Form 523(j) (a 1:24,000-scale map depicting the cultural resource location). Sites were defined as three or more artifacts discovered within 30 meters of each other. Isolated finds were defined as a single artifact, two artifacts located less than 30 meters apart, or as isolated discrete features within the landscape (e.g., a historic period well head or trough or a prehistoric lithic flake and tested cobble).

Isolated finds were recorded via GPS receiver, photographed, and briefly described. Prehistoric sites and historic period resources were recorded via GPS receiver, photographed, described, documented on a sketch map drawn to an appropriate scale, and supplemented with additional forms as necessary. Sketch maps were prepared that depicted the resource boundary, its constituent elements, and its relationship to other resources or natural features in the vicinity. As appropriate, some cultural resource sketch maps were rendered against true color orthophotographs to depict the surrounding environment more clearly and to provide a better sense of scale (e.g., the Basalt Hill Quarry/CA-MER-509H). Datum locations, chosen for durability and the potential to remain unaffected by future impacts, were marked temporarily and recorded via GPS receiver. These receivers were used to record location and attribute data; they were downloaded and corrected using GPS Pathfinder Office software and converted to GIS coverages for use with ESRI ArcGIS software. All sites were photographed to capture their landscape setting, internal features, and diagnostic artifacts; all photographs were logged using image numbers that included information on photograph orientation, content, and date.

In addition to the standard DPR Forms 523, additional data sheets were included as necessary to document each cultural resource. Diagnostic and unusual, rare, or unique artifacts were assigned artifact numbers and recorded via GPS receivers and on site sketch maps. The potential for buried cultural deposits was noted through inspection of natural or artificial exposures of soil stratigraphy (e.g., vertical soil exposures, areas of bioturbation, etc.). Daily field notes documenting inventory efforts were kept on standardized forms and archived at the Berkeley office of Pacific Legacy. DPR Forms 523 were regularly checked for completeness and consistency during inventory survey. Copies of new and updated records for cultural resources recorded in 2012 and 2016 were submitted to the CCIC and received permanent designations through the CHRIS (*see* Section 4.1), and these permanent number assignments have been used throughout this document.

Chapter 6
Inventory Survey Results

6.1 Lower San Felipe Intake Alternative

6.1.1 Inventory Survey Coverage

Pacific Legacy personnel conducted an inventory survey of the Lower San Felipe Intake Alternative APE over the course of 12 days beginning on November 13, 2012 and ending December 6, 2012. All accessible areas within the 2,097.5-acre APE were examined using a survey interval of no more than 12-15 meters, and all previously recorded and newly identified cultural resources were documented as they were encountered. The alternative circumscribes six main potential impact areas: an aeration facility, the Basalt Point use area, Dinosaur Point, Dinosaur Point Road, an intake area, and Gate Shaft Island. Conditions and findings for each area are presented below. Very steep portions of the APE were not surveyed due to safety concerns. Approximately 510 acres within the Dinosaur Point area were surveyed; 320 acres within the Basalt Point use area were examined; and roughly 21 acres on Gate Shaft Island were inventoried (*see* Table 6-1). Almost all of the dredging area was inundated at the time of survey, and only 2 acres within the 972-acre area were accessible. Much of the aeration facility was very steep or was paved, so less than 1 acre of the 13-acre area was surveyed.

Table 6-1. Lower San Felipe Intake Alternative Inventory Survey Coverage.

Potential Impact Area	Area Surveyed (Full Coverage)	Area Unsurveyed (Terrain/Access)	Total Area
Aeration Facility	1	12	13
Basalt Point Use Area	320	102	422
Dinosaur Point	510	110	620
Dinosaur Point Road	31.5	7	38.5
Intake Area	2	972	974
Gate Shaft Island	21	9	30
Total	855.5	1,212	2,097.5

6.1.2 Inventory Survey Results

Twenty-four cultural resources were encountered during the inventory survey of the Lower San Felipe Intake Alternative APE (*see* Table 6-2). Six previously recorded districts, archaeological sites, or built environment resources were relocated. Records for three of those resources (CA-MER-26, CA-MER-94, and

CA-MER-477H) were updated. No new documentation was generated for the remaining three resources; two represent arbitrarily defined district boundaries (P-24-000489 and P-24-001856) while the third consists of a commemorative plaque (P-24-000643, CHL-829). One resource was previously recorded as a prehistoric site with two milling stations (CA-MER-437), but was found to be non-cultural and was documented accordingly. Twelve archaeological sites or built environment resources (CA-MER-484H, CA-MER-485H, CA-MER-486H, CA-MER-487H, CA-MER-488H, CA-MER-489H, CA-MER-490H, CA-MER-491H, CA-MER-492H, CA-MER-493H, CA-MER-494H, and CA-MER-495H) were newly identified within the Lower San Felipe Intake Alternative APE in addition to six isolated finds (P-24-001973, P-24-001981, P-24-001982, P-24-001983, P-24-001990, and P-24-001991).

Table

6-2. Previously Recorded and Newly Identified Cultural Resources within the Lower San Felipe Intake Alternative APE.

Resource Designation	Description	Author	Date	APE Location
Previously Recorded Cultural Resources				
CA-MER-26/H P-24-000127 (updated)	Multi-component site featuring a prehistoric midden with lithic scatters and a historic period earthen dam with stock pond	Ledebuhr et al.	2012	Dinosaur Point
CA-MER-94 P-24-000194 (updated)	Prehistoric midden and lithic scatter	Elliott and Atwater et al.	2012	Dinosaur Point
CA-MER-477H[1] P-24-001822 (updated)	Fourteen historic period road segments	Elliott, Ledebuhr, Fittinghoff, Atwater	2012c	Dinosaur Point; Dinosaur Point Road
P-24-000489[1] (not updated) Listed in the NRHP/ CRHR	San Luis Gonzaga Archaeological District comprised of five prehistoric midden sites (CA-MER-107, CA-MER-126 CA-MER-130, CA-MER-134, and CA-MER-135)	Olsen	1970	Dinosaur Point; Dinosaur Point Road
P-24-000643 CHL-829 (not updated) Listed in the CRHR	California State Historical Landmark plaque commemorating Moraga's 1805 exploration of Pacheco Pass	Arbuckle	1979	Aeration Facility
P-24-001856 (not updated)	San Luis Gonzaga Rancho-Paula (Pacheco) Fatjo Ranch Historic District	Bissonnette		oad

Resource Designation	Description	Author	Date	APE Location
Newly Discovered Archaeological Sites or Built Environment Resources				
CA-MER-484H[1] P-24-001974 PL-SLLP-A-001	Historic period transmission poles and debris scatter	Trout and Atwater et al.	2012a	Dinosaur Point
CA-MER-485H P-24-001975 PL-SLLP-A-003	Historic period debris scatter	Elliott and Fittinghoff et al.	2012a	Dinosaur Point
CA-MER-486H P-24-001976 PL-SLLP-A-004	Historic period earthworks dam	Elliott and Fittinghoff et al.	2012b	Dinosaur Point
CA-MER-487H P-24-001977 PL-SLLP-A-005	Historic period road segment	Trout, Elliott, Atwater et al.	2012	Dinosaur Point
CA-MER-488H P-24-001978 PL-SLLP-A-009	Historic period road segment	Trout and Atwater et al.	2012b	Dinosaur Point
CA-MER-489H[1] P-24-001979 PL-SLLP-A-013	Historic period road segment	Elliott and Trout et al.	2012	Dinosaur Point
CA-MER-490H P-24-001980 PL-SLLP-A-019	Historic period debris concentration	Elliott and Fittinghoff et al.	2012c	Dinosaur Point Road
CA-MER-491H[1] P-24-001985 PL-SLLP-A-010	Historic period road segment	Trout and Atwater et al.	2012c	Basalt Point Use Area
CA-MER-492H[1] P-24-001986 PL-SLLP-A-011	Historic period industrial site used in construction of the B.F. Sisk Dam	Elliott, Ledebuhr, Fittingoff, Atwater	2012a	Basalt Point Use Area
CA-MER-493H[1] P-24-001987 PL-SLLP-A-014	Historic period road segment	Elliott, Ledebuhr, Atwater, Fittingoff	2012a	Basalt Point Use Area
CA-MER-494H[1] P-24-001988 PL-SLLP-A-015	Historic period road segment	Elliott, Ledebuhr, Fittingoff, Atwater	2012b	Basalt Point Use Area
CA-MER-495H[1] P-24-001989 PL-SLLP-A-016	Historic period road segment	Elliott, Ledebuhr, Atwater, Fittinghoff	2012b	Basalt Point Use Area
Newly Discovered Isolated Finds				
P-24-001973 PL-SLLP-B-ISO-001	Isolated historic period bottle base	Elliott and Fittingoff	2012	Dinosaur Point Road
P-24-001981 PL-SLLP-A-ISO-002	Isolated historic period bronze statue remnant	Trout and Atwater et al.	2012d	Dinosaur Point
P-24-001982 PL-SLLP-A-ISO-003	Isolated historic period vehicle remnants	Trout, Elliott, Ledebuhr et al.	2012	Dinosaur Point
P-24-001983 PL-SLLP-A-ISO-008	Decorative fencing used as bridge	Elliott and Trout	2012	Dinosaur Point
P-24-001990[1] PL-SLLP-A-ISO-010	Isolated prehistoric utilized core	Elliott, Ledebuhr, Atwater, Fittinghoff	2012c	Basalt Point Use Area

Resource Designation	Description	Author	Date	APE Location
P-24-001991[1] PL-SLLP-A-ISO-011	Isolated prehistoric biface fragment	Elliott, Ledebuhr, Atwater, Fittinghoff	2012d	Basalt Point Use Area

Note: Author and Date reflect most recent recording
[1] Resource also occurs within the San Luis Reservoir Expansion Alternative APE

One resource was found within the aeration facility, seven within the Basalt Point use area, 11 within the Dinosaur Point area, two within the Dinosaur Point Road area, and three within both the Dinosaur Point and Dinosaur Point Road areas. All are depicted in Figures B-1a through B-1d of Appendix B. Four previously recorded cultural resources that were believed to intersect the APE could not be relocated during the 2012 inventory survey (*see* Table 6-3).

Table 6-3. Previously Recorded Cultural Resources Not Relocated during Inventory Survey of the Lower San Felipe Intake Alternative APE.

Resource Designation	Description	Author	Date	APE Location
Archaeological Sites or Built Environment Resources				
CA-MER-8 P-24-000109	Prehistoric lithic scatter with one handstone	Treganza	1960	Intake Area
CA-MER-17 P-24-000118	Prehistoric house-pits and midden deposit	Olsen	1963	Basalt Point Use Area
CA-MER-27 P-24-000128	Prehistoric midden deposit with flaked stone and groundstone	Olsen	1965b	Dinosaur Point
P-24-001818	Historic period linear feature comprising a 2.5-mile long fence	Whatford	1996b	Dinosaur Point Road

Note: Author and Date reflect when resource was last located

Aeration Facility

The aeration facility comprises 13 acres that are dominated by a graded hilltop and steep hillslope (*see* Appendix B, Figure B-1b). The hilltop features a parking lot and visitor center, which is situated next to CHL-829 (P-24-000643), a plaque commemorating Gabriel Moraga's 1805 exploration of Pacheco Pass. Because much of the aeration facility was subsumed by modern disturbance or slopes exceeding 40º, less than 1 acre was subject to inventory survey.

Basalt Point Use Area

The Basalt Point use area encompasses 422 acres along Basalt Road beginning just east of Willow Point and proceeding west to the Basalt Point boat ramp and reservoir shoreline (*see* Appendix B, Figure B-1d). It includes roughly 25 acres that were inundated during the 2012 inventory survey as well as 42 acres that are typically inundated but were exposed. Surface visibility within that 42-acre area was very high (90-100%), as it featured little vegetation; visibility

throughout the remainder of the Basalt Point use area was poor (10-20%) due to dense non-native grasses that covered the flat valleys and low hills of the inland areas. Areas featuring slopes in excess of 30º were not subject to survey for safety reasons, and areas along the northwestern shoreline that had eroded away to bedrock also were omitted. A total of 320 acres were subject to inventory survey within the Basalt Point use area.

During inventory survey, five historic period resources were newly identified and two prehistoric isolated finds were discovered. One site (CA-MER-437) previously recorded as a prehistoric bedrock milling location was determined to be non-cultural in 2012. CA-MER-17, another previously known site within the Basalt Point use area, could not be relocated as its position was inundated at the time of inventory survey. The five newly discovered resources included four historic period road segments (CA-MER-491H, CA-MER-493H, CA-MER-494H, and CA-MER-495H) and one historic period industrial site (CA-MER-492H). Two of the road segments (CA-MER-494H and CA-MER-495H) were large and well constructed; both included substantial hill cuts and earthen causeways. The largest site discovered within the Basalt Point use area was CA-MER-492H, a historic period industrial resource that marked the receiving end of a riprap separation plant or production facility. It lies at the base of a long grade that once featured a conveyor belt that transported rock from the Basalt Hill Quarry (CA-MER-509H) downslope to CA-MER-492H for transport and construction of the B.F. Sisk Dam. The two isolated prehistoric artifacts (P-24-001990 and P-24-001991) were discovered along a historic period road segment (CA-MER-493H) and were likely not *in situ*.

Dinosaur Point

The Dinosaur Point area consists of 620 acres to the north and south of the eastern end of Dinosaur Point Road and encompasses the existing Pacheco Pumping Plant (*see* Appendix B, Figure B-1a). It includes approximately 20 acres that were inundated at the time of the 2012 inventory survey; it also includes 80 acres that are typically inundated but were exposed during the 2012 inventory survey due to low water levels. Surface visibility within that 80-acre area was very high (90-100%), though visibility throughout the remainder of the Dinosaur Point area was generally poor (10-20%) due to dense ground cover. Exposed portions of the Dinosaur Point area included one major valley, several smaller valleys, and a number of ridges and steep drainages covered in low grasses, oak woodlands, and patches of sparse chaparral. Areas featuring slopes in excess of 30º were not subject to inventory survey for safety reasons. Approximately 510 acres were surveyed within the Dinosaur Point area; roughly 205 of those acres lay to the north of Dinosaur Point Road, while 305 acres lay to the south.

Two previously known sites were relocated within the Dinosaur Point area, including a prehistoric village site (CA-MER-94) and a prehistoric midden site with a lithic scatters that was also found to contain a historic period earthen dam and impound pond (CA-MER-26/H). The location of a third previously known

site, a prehistoric midden deposit (CA-MER-27), was found to be covered by imported fill material, likely associated with the Pacheco Pumping Plant. Its location could not be confirmed. A historic period road (CA_MER-477H) that had been recorded outside of the Dinosaur Point area was found to intersect it. The resource represents portions of three different historic period road alignments, including the 1920s-era and 1940s-era alignments of SR 152. The San Luis Gonzaga Archaeological District (P-24-000489) and the San Luis Gonzaga Rancho Historic District (P-24-001856) also intersected the Dinosaur Point area but were not re-recorded in 2012.

Six newly discovered historic period sites or built environment resources were documented during the inventory survey, including a historic period utility pole alignment (CA-MER-484H), a historic period debris concentration (CA-MER-485H), an earthworks dam (CA-MER-486H), and three historic period road alignments (CA-MER-487H, CA-MER-488H, and CA-MER-489H). Three historic period isolated finds (P-24-001981, P-24-001982, and P-24-001983) also were discovered (*see* Table 6-2).

Dinosaur Point Road

Dinosaur Point Road consists of a 3.28-mile long paved road segment that stretches between SR 152 and the San Luis Reservoir; approximately 0.77 miles of the road intersect the Dinosaur Point area (*see* Appendix B, Figure B-1a). Dinosaur Point Road follows the north side of a ridgeline; it is cut into the hill slope in several areas and is significantly built up in others. A 15-meter wide buffer was surveyed on either side of the road, however due to the nature of the terrain two 0.5-mile long segments could not be accessed along the north side of the road and two 0.6-mile long segments could not be accessed along the south side of the road. Thus, approximately 7 acres of the 38.5-acre Dinosaur Point Road corridor were not subject to inventory survey. Due to ground cover that was dominated by non-native grasses, surface visibility was generally poor (15-30%).

The route followed by the modern Dinosaur Point Road has been used to cross the Diablo Range through Pacheco Pass for more than a century. It was the route of the Pacheco Pass Stage Road, which was part of the Andrew Firebaugh Toll Road and the Butterfield Overland Mail route. Prior to the construction of SR 152 in 1923, this stage road was the only one that crossed Pacheco Pass. In the early 1940s, the highway was rebuilt and re-graded. Portions of these roads were previously recorded (CA_MER-477H) and were relocated during the 2012 inventory survey; additional segments were recorded and added to an updated resource record. Eight concrete posts used by the California Highway Commission to mark highway right-of-way (ROW) between 1914 and 1934 also were located and added to the record for CA-MER-477H. In addition to previously known resource CA-MER-477H, one newly discovered site (CA-MER-490H) was documented during the inventory survey of Dinosaur Point Road: a historic period debris scatter of cans, glass, and ceramics that was deposited between a historic period roadbed and Dinosaur Point Road in an area

of light chaparral. An isolated historic period bottle base (P-24-001973) also was found. A previously recorded historic period fenceline (P-24-001818) believed to intersect the Dinosaur Point Road area was found to lie outside the Lower San Felipe Intake Alternative APE and so was not re-recorded. Resource records for the San Luis Gonzaga Archaeological District (P-24-000489) and the San Luis Gonzaga Rancho Historic District (P-24-001856) were not updated.

Intake or Dredging Area

The intake or dredging area encompasses approximately 974 acres surrounding the proposed tunnel or pipeline intake segments; it lies within the north-central portion of San Luis Reservoir and is typically inundated year-round. Approximately 2 acres of the intake area are located along the eastern edge of Gate Shaft Island (*see* Appendix B, Figures B-1a and B-1b). Those areas remained accessible and were subject to inventory survey in 2012, though the remaining 972 acres were fully inundated and remained inaccessible.

No cultural resources were identified within the intake or dredging area, though one resource (CA-MER-8) is believed to intersect it. That resource was discovered during a 1960 reconnaissance survey conducted in advance of construction for the B.F. Sisk Dam. Although it was never formally recorded and does not appear on basemaps maintained by the CCIC, CA-MER-8 was depicted in an early reconnaissance report and was described as a lithic scatter with one handstone (Treganza 1960: 6). The location of CA-MER-8 could not be confirmed, as it was fully inundated during the 2012 inventory survey and is likely to remain so during construction of the Lower San Felipe Intake Alternative.

Gate Shaft Island

The Gate Shaft Island area consists of 30 acres centered on Gate Shaft Island, which is located within the San Luis Reservoir approximately 1 mile southeast of SR 152 (*see* Appendix B, Figure B-1a). During the 2012 inventory survey, the island was pedestrian-accessible due to low water levels. Surface visibility was very good (60-70%), though much of the soil below the typical waterline had eroded to bedrock. Approximately 9 acres within the Gate Shaft Island area remained inundated and could not be surveyed, but the remaining 21 acres were examined. No cultural resources were identified.

6.2. Combination Alternative

6.2.1. Survey Coverage

All accessible areas within public or SCVWD ROW were examined within the Combination Alternative APE on September 25, 2012 by Pacific Legacy personnel. As originally proposed, the APE encompassed a 100-foot radius surrounding 21 groundwater production wells, 18 associated pipeline segments, and one recharge pond. Subsequent to archival and records searches and the

inventory survey, 12 groundwater production wells and their associated pipeline segments were removed from consideration due to changes in engineering. The final Combination Alternative APE included just eight groundwater production wells, three pipeline segments, and one recharge pond spanning seven discontinuous areas. Two proposed well sites (Campbell and San Thomas) were not surveyed as no ground disturbance was anticipated at either location. The proposed Saratoga Avenue area (3.66 acres) was not surveyed as landowner permissions to access the property could not be obtained. Approximately 107.9 acres were subject to inventory or reconnaissance survey, including 23.4 acres that remained part of the final APE and 85.2 acres that were subsequently excluded (*see* Table 6-4).

6.2.2 Survey Results

No previously recorded or newly identified cultural resources were encountered within the Combination Alternative APE during the 2012 inventory survey. One historic period archaeological site (CA-SCL-799H) was documented within the APE along West Hedding Street and excavated in 1996 during the replacement and extension of the Hedding Street Bridge. That resource was recorded as a surface debris scatter (ca. 1880s-1930s) with a subsurface component observed at a depth of 2 meters below the ground surface and centered within the Hedding Street ROW. The site was severely impacted by flood control modifications, utility trenching, and grading activities (Morgan et al. 1996). No surface manifestations of the site were noted in 2012, however it was anticipated that ground disturbing activities associated with well piping within the vicinity of Hedding #1 and Hedding #2 could result in the discovery of subsurface materials associated with the resource. CA-SCL-799H has not been evaluated for listing in the NRHP or the CRHR.

Ground surface visibility throughout much (70%) of the Combination Alternative APE was poor (20-30%), as many of the proposed well sites and pipelines were covered by paved roads, curbs, landscaping, or other infrastructural development. Areas that remained undeveloped, such as those surrounding proposed groundwater wells Viceroy #1 and Viceroy #2 in Penitencia Creek County Park; North King northwest of North King Road; Julian, Old Julian, and St. John near the Guadalupe River Trail; and Oak Canyon #1A, Oak Canyon #1B, and Captancillos north of Captancillos Drive and Oak Canyon Place, were generally dominated by dense vegetation or ground cover and offered similarly limited (30-40%) ground surface visibility. Unless otherwise stated, all areas within the final and abandoned portions of the Combination Alternative APE were subject to archival and records searches and to inventory survey.

Table 6-4. Combination Alternative Inventory Survey Coverage.

Potential Impact Area[1]	Area Surveyed (Full Coverage)	Area Unsurveyed (Terrain/Access)	Total Area
Potential Impact Area (2017)			
Mossdale #1 (with pipeline)	11	0	11
North King	0.7	0	0.7
Hedding #1 and #2 (with pipeline)	9.6	0	9.6
Julian	0.7	0	0.7
Old Julian #1 and #2	0.7	0	0.7
St. John	0.7	0	0.7
Campbell	0	0.7	0.7
San Thomas	0	0.7	0.7
Saratoga Avenue	0	3.7	3.7
Subtotal	*23.4*	*5.1*	*28.5*
Areas Removed from the Project (2012)			
Noble (with pipeline)	6.35	0	6.35
Viceroy #1 and #2 (with pipeline)	10.7	0	10.7
Mossdale #2 (with pipeline) (falls within Mossdale #1 and pipeline area)	0	0	0
Winchester #1 and Winchester #2 (with pipeline)	2.7	0	2.7
MC, Oak Canyon #1A, Oak Canyon #1B, and Winfield (with pipeline)	60.8	0	60.8
AC (with pipeline)	1.4	0	1.4
Captancillos	2.5	0	2.5

Potential Impact Area[1]	Area Surveyed (Full Coverage)	Area Unsurveyed (Terrain/Access)	Total Area
Subtotal	*85.2*	*0*	*85.2*
Total	107.9	5.1	113

[1] Note that the 100-foot APE buffer areas for some locations overlapped/were continuous and are lumped for area calculations

The Final Combination Alternative APE

The final Combination Alternative APE included the following areas and proposed groundwater wells (*see* Appendix B, Figures B-2a through B-2e): North Jackson Avenue from south of Berryessa Road to north of Mossdale Way to west of Toiyabe Way (Mossdale #1); northwest of North King Road and southeast of Commodore Drive (North King); West Hedding Street southwest of Guadalupe Parkway and southeast along Spring Street (Hedding #1 and Hedding #2); near the Guadalupe River Trail north of West Julian Street (Julian) and north (Old Julian) and south of West St John Street (St. John); east of the San Tomas Expressway and south of Latimar Circle (Campbell); east of the San Tomas Expressway and north of Sobrante Drive (San Thomas); and west of Saratoga (Saratoga Avenue). The conditions within each area at the time of the 2012 inventory survey are described below.

Mossdale #1

The Mossdale #1 Well Site lay in an open area bounded by North Jackson Avenue to the west and Mossdale Way to the south and east (*see* Appendix B, Figure B-2a). The well site was sited just east of a small drainage. Two pieces of rusted farm equipment were noted just north of the 100-foot APE buffer, which was fully examined. Ground visibility was poor (20%), with much of the area covered by trees and duff.

North King

The North King Well Site lay within a small open area in a drainage between two large housing developments bounded by North King Road to the west (*see* Appendix B, Figure B-2a). Portions of the 100-foot APE buffer encompassed a modern housing development. The open area was very disturbed, with a raised berm along the northern portion of the survey area. Ground visibility was good (60-80%), and the area was moderately (50%) exposed.

Hedding #1

The Hedding #1 Well Site lay in a park-like setting just north of an employment office and southeast of the San Jose Airport (*see* Appendix B, Figure B-2b). It was bounded by West Hedding Street to the southeast, Ruff Drive to the southwest, Interstate 880 to the northwest, and SR 87 to the northeast. Surface visibility was poor (0-10%), with much of the area obscured by tall grasses. A portion of the survey area was subsumed by an office complex, while another portion of the survey area crossed the Guadalupe River Trail. That area was mostly (70%) exposed and sloped gently (0-3º) to the east.

Hedding #2

The Hedding #2 Well Site is located southeast of the San Jose Airport (*see* Appendix B, Figure B-2b). It is bounded by West Hedding Street to the northwest, Ruff Drive to the southwest, Interstate 880 to the northwest, and SR 87 to the northeast. Surface visibility was poor (0-20%) as much of the area was obscured by tall grasses. A portion of the area was subsumed by an office complex while another portion encompassed a segment of the Guadalupe River Trail. As with the Hedding #1 Well Site, much (75%) of the area was exposed and sloped gently (0-3º) to the east.

Old Julian

The Old Julian Well Site lay in an open area bounded by a railroad to the north, the Guadalupe River to the East, West Julian Street to the south, and a large commercial shopping complex to the west (*see* Appendix B, Figure B-2b). Roughly 33% of the area was covered by pavement and was heavily developed. The rest of the area was characterized by a riparian zone along the Guadalupe River Trail, which sloped gently (3º) to the east. Ground surface visibility was generally good (50-80%) and much (85%) of the area was exposed.

Julian

The Julian Well Site was located in a gated area in an empty lot (*see* Appendix B, Figure B-2b). It was bounded by West Julian Street to the north, North Almaden Boulevard to the east, and West Saint John Street to the south. Part of the 100-foot APE buffer area had been developed, but the western half of the area lay within a public park. The proposed well location was found to be heavily disturbed, subsumed by modern debris, and located near a modern, broken concrete foundation.

St. John

The St. John Well Site lay within a park bounded by West St. John Street to the north, SR 87 to the east, West Santa Clara Street to the south, and the Guadalupe River to the west (*see* Appendix B, Figure B-2b). Most of the area had been developed or landscaped with a grass field, trails, and tennis courts. The area was almost fully exposed (95%), offered poor ground surface visibility (0-15%), and sloped generally (0-3º) towards the west.

Campbell

The Campbell Well site comprised an existing SCVWD facility bounded by San Tomas Expressway to the west, Latimar Circle to the north, Llewllyn Avenue to the east, and West Campbell to the south *(see* Appendix B, Figure B-2d). The area was not surveyed as no ground disturbing activities were proposed at the well location; instead, the existing facility was simply scheduled for reactivation.

San Thomas

The San Thomas Well site comprised an existing SCVWD facility bounded by San Tomas Expressway to the east, a concrete-lined drainage to the west, and

Sobrante Drive to the south (*see* Appendix B, Figure B-2d). The area was not surveyed as no ground disturbing activities were proposed at the well location; instead, the existing facility was to have been reactivated.

Saratoga Avenue

The Saratoga Avenue Recharge Area was located on privately owned land bounded by Saratoga Avenue to the east and Vineyard Lane to the southwest (*see* Appendix B, Figure B-2c). The recharge area was not examined, as permission to access the parcel could not be obtained from the landowner at the time of the 2012 inventory survey.

Abandoned Locations within the Combination Alternative

Several proposed groundwater wells and pipeline segments were abandoned after the 2012 inventory survey was completed, including Grossmont Drive to south of Noble Avenue (Noble); Summerdale Drive to south of Penitencia Creek Road north of Stonecrest Way (Viceroy #1 and Viceroy #2); west of Toiyabe Way (Mossdale #2); north of SR 85, east of Winchester Boulevard, and west of the Los Gatos Creek Trail (Winchester #1 and Winchester #2); Coleman Road from Oak Canyon Place to Winfield Boulevard turning north on Winfield Blvd between Coleman Road the Guadalupe Park Trail (MC, Oak Canyon #1A, Oak Canyon #1B, and Winfield); north of Oak Canyon Place and west of Coleman Road (AC); and north of Captancillos Drive and south of Guadalupe Creek Trail (Captancillos). No cultural resources were encountered in any of these areas, which are described below.

Noble

The Noble Well Site was located approximately 0.5 miles northeast of the proposed Viceroy #1 well pad. It lay within an open area with two ponds bounded by Noble Avenue to the north and east, Penitencia Creek Road to the south, and Mira Vista Circle to the west (*see* Appendix B, Figure B-2a). The area had been graded but featured patches of dense, dry grasses. Ground surface visibility was generally good (80-100%) but limited (0-20%) by vegetation in certain areas. The well site is fully exposed and slopes gently (<2º) to the south.

Viceroy #1

The Viceroy #1 Well Site lay in an open area bounded by Penitencia Creek Road to the north, Stonecrest Way to the south and east, and Viceroy Way to the west (*see* Appendix B, Figure B-2a). The entire survey area was found to be disturbed when it was examined in 2012. There was a man-made berm running parallel to Stonecrest Way, and ground surface visibility was very limited (0-20%).

Viceroy #2

The Viceroy #2 Well Site was in an open area bounded by Penitencia Creek Road to the north, Stonecrest Way to the south, and Viceroy Way to the east (*see* Appendix B, Figure B-2a). This well site lay within the northeast corner of Penitencia Creek County Park, and the entire 100-foot APE buffer appeared to

have been disturbed. There was a man-made berm running parallel to Stonecrest Way, and ground surface visibility was very limited (0-20%).

Mossdale #2

The Mossdale #2 Well Site is in an open area bounded by North Jackson Avenue to the west and Mossdale Way to the south and east (*see* Appendix B, Figure B-2a). The well site lies just east of a small drainage. The area offers poor (20%) ground surface visibility, as much of the area is covered by trees and leaf liter. The well site slopes gently to the northwest.

Winchester #1

The Winchester #1 Well Site was in an open, disturbed area bounded by Winchester Boulevard to the west, Winchester Circle to the north, and SR 85 to the south (*see* Appendix B, Figure B-2d). The well site lay within a graded lot covered by gravels. Surface visibility was extremely poor (0-10%). The area was almost fully exposed (95%) and sloped gently (<2º) to the north.

Winchester #2

The Winchester #2 Well Site was in an open, disturbed area bounded by Winchester Boulevard to the west, Winchester Circle to the north, and SR 85 to the south (*see* Appendix B, Figure B-2d). The well site lay in a graded lot covered by gravels that offered extremely poor (0-10%) ground surface visibility. The area was almost fully exposed (95%) and sloped gently (<2º) to the north.

Winfield

The Winfield Well Site lay within a developed area bounded by Winfield Way to the east, an unnamed road to the south, and Lake Almaden to the west (*see* Appendix B, Figure B-2e). The area had been developed with a shopping center, apartment complexes, and roads. Ground surface visibility was extremely limited (0-10%). The area was largely exposed (90%) and sloped gently (<2º) to the west.

AC

The AC Well Site was bounded by Lake Almaden to the north and Coleman Road to the south (*see* Appendix B, Figure B-2e). A large apartment complex was located immediately east of the well site. The area outside of the apartment complex and north of Coleman Road was open and flat but obscured by low, dry grasses that offered poor to fair (20-30%) ground surface visibility. The area was mostly (90%) exposed and sloped gently (<2º) to the north. Modern debris was noted throughout the area.

MC

The MC Well Site lay within an open area bounded by Guadalupe Creek to the north, Coleman Avenue to the south, and Meridian Avenue to the west (*see* Appendix B, Figure B-2e). The well site was in a fenced area with low, dry

grasses that limited (20-30%) ground surface visibility. The ground surface sloped gently (2º) to the north and was mostly exposed (90%).

Oak Canyon #1A

The Oak Canyon #1A Well Site is in a large open area underneath power lines that is bounded by Coleman Avenue to the east and Guadalupe Creek to the north (*see* Appendix B, Figure B-2e). The well site was fully exposed but subsumed by tall grasses that severely limited (0-10%) ground surface visibility. The surrounding area sloped slightly (1-2º) to the north.

Oak Canyon #1B

The Oak Canyon #1B Well Site lay within an open area bounded by Coleman Avenue to the east and Guadalupe Creek to the north (*see* Appendix B, Figure B-2e). The well site was positioned beneath a series of power lines but was fully exposed. The area featured a slight (1-2º) northern aspect and was covered by tall grasses that almost fully obscured (0-10%) ground surface visibility.

Captancillos

The Captancillos Well Site was in a large open area underneath power lines that was bounded by Coleman Avenue to the south and Guadalupe Creek to the north (*see* Appendix B, Figure B-2e). The area was subsumed by tall grasses that severely limited (10%) ground surface visibility. The site had been previously disturbed by the construction of underground utilities.

6.3 Treatment Alternative

6.3.1 Inventory Survey Coverage

In 2002, Archaeological Resource Management undertook a cultural resources study for the Santa Teresa, Rinconada, and Penitencia WTPs in advance of SCVWD improvement projects at each facility (Cartier 2002). The study was conducted to comply with NEPA and CEQA requirements and included the inventory survey of all accessible areas within the three WTPs. Survey boundaries were defined by existing fence lines surrounding each property, which fully enveloped the current 11.8-acre Treatment Alternative APE. Although each WTP was dominated by existing plant facilities, particular attention was paid to areas of exposed soils (e.g., rodent burrows, inclines, or earthen banks) that might reveal cultural materials. The study's author noted that full coverage survey was achieved for all "open land surfaces" (Cartier 2002: 7) (*see* Table 6-5 and Appendix B, Figures B-3a and B-3b). No prehistoric or historic period cultural materials were observed. Because the 2002 inventory survey encompassed the Santa Teresa and Rinconada WTPs in their entirety and used methods comparable to those used by Pacific Legacy for the other action alternatives, the Treatment Alternative APE was not re-examined.

Table 6-5. Treatment Alternative Inventory Survey Coverage

Potential Impact Area	Area Surveyed (Full Coverage)	Area Unsurveyed (Terrain/Access)	Total Area
Potential Impact Area (2018)			
Santa Teresa Water Treatment Plant	11.8	0	11.8
Areas Removed from the Project (2018)			
Rinconada Water Treatment Plant	6.5	0	6.5
Total	*18.3*	*0*	*18.3*

6.3.2 Survey Results

Ground surface visibility throughout the Treatment Alternative APE was poor (20-30%), as much of the area was covered by existing infrastructure. Exposed soils, where noted, comprised medium brown silty loam with sandstone gravels and cobbles. Although chert cobbles were noted in the Rinconada WTP, they were absent at the Santa Teresa WTP. Each of the facilities examined in 2002 were found to be highly disturbed by prior development (Cartier 2002).

No previously recorded or newly identified cultural resources were encountered within the Treatment Alternative APE during the 2002 inventory survey. As noted above, the Santa Teresa WTP was built in 1989 (*see* Section 4.2). All of the infrastructural elements within the facility are less than 50 years old and thus would not typically be regarded as elements of the historic period built environment. As described in the 2002 study by Archaeological Resource Management, none of the infrastructural elements at the Santa Teresa WTP facility appeared distinctive or exceptional in construction or design.

6.4. San Luis Reservoir Expansion Alternative

6.4.1. Survey Coverage

Pacific Legacy personnel conducted an inventory survey of the San Luis Reservoir Expansion Alternative APE over the course of 34 days beginning on June 22, 2016 and ending August 11, 2016. All accessible areas within the APE were examined using a survey interval of no more than 12-15 meters, and all previously recorded and newly identified cultural resources were documented as appropriate. A portion of the reservoir shoreline and a potential construction staging area within the San Luis Reservoir Expansion Alternative APE overlapped the Dinosaur Point and Basalt Point areas within the Lower San Felipe Intake Alternative APE. Areas of overlap subject to inventory survey in 2012 generally were not revisited in 2016 unless resources were found to span both alternatives (e.g., historic period roads) and recording efforts necessitated some level of re-examination.

The Reservoir Expansion Alternative encompasses nine major potential impact areas: the Basalt Hill borrow area, Borrow Area 6, the Cottonwood Bay levee modification and levee raise areas, the Dinosaur Point boat launch modification area, downstream stability berm and fill impact areas, haul roads, a Highway 152 impact area, potential construction staging areas, and the reservoir shoreline (*see* Table 6-6). Several of these areas overlapped. For instance, the Cottonwood Bay levee modification and levee raise areas, the Dinosaur Point boat launch modification area, and Highway 152 impact area are all located along the reservoir shoreline. Similarly, the proposed haul roads overlap the Basalt Hill borrow area, Borrow Area 6, and each of the potential construction staging areas.

Cumulatively, 3,888
acres were subject to inventory survey within the Reservoir Expansion Alternative APE in 2012 or 2016. Due to safety or accessibility issues, areas of extreme terrain within the Basalt Hill borrow area, a roughly 3.4-mile long stretch of the reservoir shoreline fronting the B.F. Sisk Dam, and a 4.4-mile stretch of reservoir shoreline as it encompasses Cottonwood Bay were not examined (*see* Table 6-6). The Cottonwood Bay area could not be safely accessed from SR 152, and access permissions to the area through private property could not be obtained during the 2016 field season. Portions of the potential construction staging area west of the dam were inundated during the 2016 inventory survey and were not accessible. Most of the fill impact and stability berm areas could not be accessed as they are located along or immediately adjacent to the dam. A portion of Borrow Area 6 and a potential construction staging area were examined by Pacific Legacy personnel in 2013 as a part of the San Luis Transmission Line Project for the Western Area Power Authority (Holm et al. 2014). These areas were slated for avoidance in 2016 but were essentially re-examined as a part of larger, block survey areas.

In 2018, changes to the design and extents of the Reservoir Expansion Alternative removed approximately 251 acres from the APE and added 799 acres. Roughly 157 acres removed from the APE were subject to full coverage inventory survey in 2016. These alterations were concentrated around the Basalt Hill borrow area, potential construction staging areas, haul roads, and fill impact areas or stability berms. A recent inventory survey conducted in support of a proposed solar array east of the dam encompassed 195 acres within the expanded APE (Johnston and Brewer 2015). The study relied on methods directly comparable to those used by Pacific Legacy personnel in 2012 and 2016, and coverage totals for that effort are included as previously surveyed areas in Table 6-6. Conditions specific to each of the main potential impact areas within the San Luis Reservoir Expansion Alternative APE are discussed below, along with a summary of findings for each.

Table 6-6. San Luis Reservoir Expansion Alternative Inventory Survey Coverage

Potential Impact Area	Area Surveyed (Full Coverage)	Area Unsurveyed (Terrain/Access/ Recently Added)	Previously Surveyed	Total Area
Potential Impact Area (2018)				
Basalt Hill Borrow Area	183	309	0	492
Borrow Area 6	662	12	195	869
Expanded Embankment, Fill Impact/Stability Berm, and Haul Road Areas	38	303	0	341
Potential Construction Staging Areas	1,968	248	0	2,216
Cottonwood Bay Levee Modification and Levee Raise, Dinosaur Point Boat Launch Modification, Highway 152 Impact, and Reservoir Shoreline Areas	1,037	67	0	1,104
Total	3,888	939	195	5,022

6.4.2 Survey Results

Thirty-seven cultural resources intersect the San Luis Reservoir Expansion Alternative APE (*see* Table 6-7), including 28 newly discovered and nine previously recorded districts, archaeological sites, built environment resources, or isolated finds. Records for seven previously recorded resources were updated by Pacific Legacy personnel in 2012 or 2016. They included five prehistoric sites (CA-MER-15, CA-MER-28, CA-MER-82, CA-MER-83, and CA-MER-130), most with midden, lithics, and groundstone; one historic period water tank and trough (CA-MER-521H); and one historic period road (CA-MER-477H). Two of these resources, a prehistoric site with midden, lithics, and groundstone (CA-MER-83) and a historic period road (CA-MER-477H), were previously reported outside of the APE but were found to intersect it (*see* Tables 4-7 and 6-7). Two additional resources were noted but not re-recorded in 2012 or 2016. These included the San Luis Gonzaga Archaeological District (P-24-000489), which lacks any physical boundary distinguishable through inventory survey, and the B.F. Sisk Dam System. The B.F. Sisk Dam and two of its key features, the San Luis Reservoir and the San Luis Operation and Maintenance Center, lie within the San Luis Reservoir Expansion Alternative APE while other associated facilities (i.e., the O'Neill Dam and Forebay and the Gianelli Pumping-Generating Plant) lie outside of the APE. On behalf of Reclamation and the California Department of Water Resources, ICF International (2013) recorded and evaluated these structures in support of the B.F. Sisk Dam Corrective Action Study. JRP Historical Consulting (2018) completed an in-

depth revision to that study, which included an architectural field survey and the evaluation of the dam and its key features as elements of a historic period district.

Eleven previously recorded resources in the San Luis Reservoir Expansion Alternative APE were not relocated. Seven were prehistoric archaeological sites originally noted along the reservoir shoreline (CA-MER-20, CA-MER-21, CA-MER-22, CA-MER-23, CA-MER-27, CA-MER-29, and CA-MER-41) that may have been mis-plotted during prior recording efforts, impacted geomorphic processes, or subject to modern disturbance. One prehistoric site (CA-MER-14) lay within the dam footprint and was presumed destroyed. Two prehistoric sites (CA-MER-136 and CA-MER-137) lay along the Cottonwood Bay shoreline, which was inaccessible during the 2016 inventory survey. One historic period ranch complex (CA-MER-451H) lay within an area that was added to the San Luis Reservoir Expansion Alternative APE after the 2016 inventory survey was completed. Finally, one previously recorded archaeological site (CA-MER-437) was determined to be non-cultural by Pacific Legacy archaeologists in 2012 and 2016.

Resources newly discovered within the San Luis Reservoir Expansion Alternative APE in 2012 or 2016 included a series of historic period transmission poles with a debris scatter (CA-MER-484H); two industrial sites (CA-MER-492H and CA-MER-509H) associated with construction of the B.F. Sisk Dam; seven historic period road segments (CA-MER-489H, CA-MER-491H, CA-MER-493H, CA-MER-494H, CA-MER-495H, CA-MER-513H, and CA-MER-519H); a concrete equipment pad (CA-MER-510H); a water tank on railroad ties (CA-MER-511H); a helicopter pad (CA-MER-512H); a ditch segment (CA-MER-514H); three earthen dams with impound ponds (CA-MER-515H, CA-MER-516H, and CA-MER-518H); a prehistoric midden site with lithics and groundstone (CA-MER-517); and a series of survey markers and monitoring wells (CA-MER-520H) associated with the construction and maintenance of the B.F. Sisk Dam. Three prehistoric (P-24-001990, P-24-001991, and P-24-002168) and six historic period (P-24-002166, P-24-002167, P-24-002169, P-24-002170, P-24-002171, and P-24-002172) isolated finds also were discovered within the APE 2012 or in 2016 (*see* Table 6-7). All of these resources are depicted in Figures B-4a through B-4g of Appendix B.

Two resources were identified within the Basalt Hill borrow area, five within Borrow Area 6, one within the Cottonwood Bay levee modification and levee raise areas, one within the Dinosaur Point boat launch modification area, two within the downstream stability berms/fill impact areas, two within the haul road impact areas, ten within the potential construction staging areas, and 19 along the reservoir shoreline. Several resources (e.g., CA-MER-477H, CA-MER-494H, and CA-MER-520H) spanned more than one proposed impact area.

Table 6-7. Previously Recorded and Newly Identified Cultural Resources within the Reservoir Expansion Alternative APE

Site Number	Description	Author	Date	APE Location
Previously Recorded Archaeological Sites or Built Environment Resources				
B.F. Sisk Dam System (not updated)	Historic period B.F. Sisk Dam and facilities	JRP Historical Consulting	2018	Downstream Stability Berms/Fill Impact Areas; Expanded Embankment; Reservoir Shoreline – Fronting the B.F. Sisk Dam
CA-MER-15 P-24-000116 (updated)	Prehistoric pictographs, bedrock mortars, cupules, cleared areas midden soil, lithic scatter	Greenberg, O'Neill, Sprague, Walton et al.	2016	Reservoir Shoreline – South of Dinosaur Point Boat Ramp
CA-MER-28 P-24-000129 (updated)	Prehistoric occupation site with lithic scatter	Greenberg, O'Neill, Sprague, Varkel et al.	2016a	Reservoir Shoreline – South of Dinosaur Point Boat Ramp
CA-MER-82 P-24-000182 (updated)	Prehistoric lithic scatter with groundstone	Greenberg, Sprague, and Wiant	2016b	Reservoir Shoreline – West side of San Luis Creek Inlet
CA-MER-83 P-24-000183 (updated)	Prehistoric midden soil with lithic scatter and groundstone	O'Neill and Walton	2016a	Reservoir Shoreline – South of Dinosaur Point Boat Ramp
CA-MER-130 P-24-000220 (updated)	Prehistoric midden soil with two bedrock mortar features with five mortars and groundstone	O'Neill and Walton et al.	2016	Reservoir Shoreline – North of Dinosaur Point Boat Ramp (not previously inundated)*
CA-MER-477H P-24-001822[1] (updated 2012)	Fourteen historic period road segments	Elliott, Ledebuhr, Fittinghoff, Atwater	2012c	Dinosaur Point Boat Launch Modification Area; Reservoir Shoreline – Dinosaur Point Area
CA-MER-521H P-24-002173 SLTP-B-11 (updated)	Historic water tank and trough	Greenberg, O'Neill, Sprague, Trout, and Wiant	2016a	Borrow Area 6 - South of O'Neill Forebay
P-24-000489[1] (not updated) Listed in the NRHP/CRHR	San Luis Gonzaga Archaeological District comprised of five prehistoric midden sites (CA-MER-107, CA-MER-126 CA-MER-130, CA-MER-134, and CA-MER-135)	Olsen	1970	Cottonwood Bay Levee Modification and Levee Raise Areas; Reservoir Shoreline – Dinosaur Point Area
Newly Discovered Archaeological Sites or Built Environment Resources				
CA-MER-484H[1] P-24-001974 PL-SLLP-A-001 (not updated)	Historic period transmission poles and debris scatter	Trout and Atwater et al.	2012a	Reservoir Shoreline – Dinosaur Point Area (not previously inundated)*
CA-MER-489H[1] P-24-001979 PL-SLLP-A-013 (not updated)	Historic period road segment	Elliott and Trout et al.	2012	Reservoir Shoreline – Dinosaur Point Area

Site Number	Description	Author	Date	APE Location
CA-MER-491H[1] P-24-001985 PL-SLLP-A-010 (not updated)	Historic period road segment	Trout and Atwater et al.	2012c	Potential Construction Staging Area – West of Goosehead Point
CA-MER-492H[1] P-24-001986 (not updated)	Historic period industrial site used in construction of the B.F. Sisk Dam	Elliott, Ledebuhr, Fittingoff, Atwater	2012a	Potential Construction Staging Area – West of Goosehead Point
CA-MER-493H[1] P-24-001987 PL-SLLP-A-014 (updated)	Historic period road segment	Greenberg and Beckett	2016b	Potential Construction Staging Area – West of Goosehead Point
CA-MER-494H[1] P-24-001988 PL-SLLP-A-015 (updated)	Historic period road segment	Greenberg and Beckett	2016c	Basalt Hill Borrow Area; Potential Construction Staging Area – West of Goosehead Point; Haul Road Area
CA-MER-495H[1] P-24-001989 PL-SLLP-A-016 (updated)	Historic period road segment	Greenberg and Beckett	2016d	Potential Construction Staging Area – West of Goosehead Point
CA-MER-509H P-24-002154 PL-SLLPIP-16-01	Historic period Basalt Hill Quarry, part of the industrial complex used in construction of B.F. Sisk Dam system	Greenberg, Juelch, Beckett	2016	Basalt Hill Borrow Area; Haul Road Area
CA-MER-510H P-24-002155 PL-SLLPIP-16-02	Historic concrete equipment pad near O'Neill Forebay	Greenberg, O'Neill, Sprague, and Trout	2016	Borrow Area 6 - South of O'Neill Forebay
CA-MER-511H P-24-002156 PL-SLLPIP-16-03	Historic metal water tank on railroad ties in a corral area near O'Neill Forebay	Greenberg, O'Neill, Sprague, Trout, and Wiant	2016b	Borrow Area 6 - South of O'Neill Forebay
CA-MER-512H P-24-002157 PL-SLLPIP-16-05	Historic helicopter pad located east of the BF Sisk Dam	Greenberg, O'Neill, Sprague, Trout, and Wiant	2016c	Potential construction staging areas – block east of B.F. Sisk Dam
CA-MER-513H P-24-002158 PL-SLLPIP-16-06	Historic asphalt road segment	Greenberg, Sprague, and Wiant	2016c	Potential construction staging areas – block east of B.F. Sisk Dam
CA-MER-514H P-24-002159 PL-SLLPIP-16-07		**erg, O'Neill, Sprague, Trout, and Wiant**	**2016d**	**Potential construction staging areas – block east of B.F. Sisk Dam**
CA-MER-515H P-24-002160 PL-SLLPIP-16-09	Historic period earthen dam with impound pond	O'Neill and Walton	2016b	Reservoire
CA-MER-516	Historic period earthen dam with impound pond	Sprague and Wiant	2016	Reservoir Shoreline – South of SR 152
6-11	**Prehistne**	**Greenberg, O'Neill, Sprague, Varkel et al.**	**2016b**	**Reservoir Shoreline – South of Dinosaur Point Boat Ramp**
CA-MER-518H P-24-002163 PL-SLLPIP-16-12	Historic period earthen dam with impound pond			servoir Shoreline – South side of San Luis Creeet

Site Number	Description	Author	Date	APE Location
CA-MER-519H P-24-002164 PL-SLLPIP-16-13	Historic period dirt road segments	Greenberg, Sprague, and Wiant	2016e	Reservoir Shoreline – San Luis Creek Inlet
CA-MER-520H P-24-002165 PL-SLLPIP-16-14	Historic period survey markers and monitoring wells associated with construction and maintenance of the B.F. Sisk Dam	Greenberg, O'Neill, Sprague, Trout, and Wiant	2016e	Downstream Stability Berms/Fill Impact Areas; Potential Construction Staging Areas
Newly Discovered Isolated Finds				
P-24-001990[1] PL-SLLP-A-ISO-010 (not updated 2016)	Isolated prehistoric utilized core	Elliott, Ledebuhr, Atwater, Fittingoff	2012c	Construction Impact Area – West of Goosehead Point
P-24-001991[1] PL-SLLP-A-ISO-011 (not updated 2016)	Isolated prehistoric biface fragment	Elliott, Ledebuhr, Atwater, Fittingoff	2012d	Construction Impact Area – West of Goosehead Point
P-24-002166 PL-SLLPIP-ISO-16-01	Isolated historic well head	Greenberg, O'Neill, Sprague, Trout, and Wiant	2016f	Borrow Area 6 - South of O'Neill Forebay
P-24-002167 PL-SLLPIP-ISO-16-02	Isolated historic metal fuel can	Greenberg	2016	Potential construction staging areas – block east of B.F. Sisk Dam
P-24-002168 PL-SLLPIP-ISO-16-05	Isolated prehistoric tested chert cobble and flake	Greenberg, Sprague, and Wiant	2016f	Reservoir Shoreline – East side of San Luis Creek Inlet
P-24-002169 PL-SLLPIP-ISO-16-06	Isolated historic water trough	O'Neill and Sprague	2016	Reservoir Shoreline – South of Dinosaur Point Boat Ramp
P-24-002170 PL-SLLPIP-ISO-16-07	Isolated historic galvanized water trough	Greenberg, Sprague, and Wiant	2016g	Reservoir Shoreline – South of Dinosaur Point Boat Ramp
P-24-002171 PL-SLLPIP-ISO-16-08	Isolated historic soda bottle	Greenberg, Sprague, and Wiant	2016h	Reservoir Shoreline – North of Dinosaur Point Boat Ramp
P-24-002172 PL-SLLPIP-ISO-16-09	Historic concrete pad foundations near O'Neill Forebay	O'Neill and Sprague et al.	2016	Borrow Area 6 - South of O'Neill Forebay

Note: Author and Date reflect most recent recording. [1]Resource also occurs within the Lower San Felipe Intake Alternative APE.
* Indicates resource above the current reservoir pool level that could be newly affected by the action alternative

Table 6-8. Previously Recorded Cultural Resources Not Relocated during Inventory Survey of the San Luis Reservoir Expansion Alternative APE.

Site Number	Description	Author	Date	APE Location
Archaeological Sites or Built Environment Resources				
CA-MER-14* P-24-000115	Prehistoric lithic scatter with groundstone, burials, and rock cairn; destroyed	Riddell and Olsen	1962	Expanded dam embankment
CA-MER-20 P-24-000121 (updated)	Prehistoric midden deposit with pestle	Olsen	1964c	Reservoir Shoreline – South of SR 152

Site Number	Description	Author	Date	APE Location
CA-MER-21 P-24-000122 (updated)	Prehistoric midden deposit with bedrock mortar	Olsen	1964d	Reservoir Shoreline – North of Dinosaur Point Boat Ramp
CA-MER-22 P-24-000123 (updated)	Prehistoric midden deposit	Olsen	1964e	Reservoir Shoreline – North of Dinosaur Point Boat Ramp
CA-MER-23 P-24-000124 (updated)	Prehistoric midden deposit with pestle fragment	Olsen	1964f	Reservoir Shoreline – North of Dinosaur Point Boat Ramp
CA-MER-27 P-24-000128 (not updated)	Prehistoric midden deposit with flaked stone and groundstone; reported covered by imported fill in 2012	Olsen	1965b	Reservoir Shoreline – Near Dinosaur Point Boat Ramp
CA-MER-29 P-24-000130 (updated)	Prehistoric Midden with silicate flakes and a scraper and mortar	Olsen	1965d	Reservoir Shoreline – East side of San Luis Creek Inlet
CA-MER-41 P-24-000142 (updated)	Prehistoric midden deposit with fire-affected rock fragments, flaked stone and groundstone	Olsen	1966a	Reservoir Shoreline – South of Dinosaur Point Boat Ramp
CA-MER-136 P-24-000226 (not updated)	Prehistoric midden deposit with pestle fragments	Olsen	1971a	Reservoir Shoreline – Cottonwood Bay (location not previously inundated)*
CA-MER-137 P-24-000227 (not updated)	Prehistoric large occupation site on knoll with pestle fragments	Olsen	1971b	Reservoir Shoreline – Cottonwood Bay
CA-MER-451H P-24-001876	Historic period ranch complex	Wulzen	2008b	Construction Staging Area – South of B.F. Sisk Dam

Note: Author and Date reflect when resource was last located

* Indicates mapped resource location above the current reservoir pool level that could be newly affected by the action alternative

Basalt Hill Borrow Area

The APE for the Basalt Hill Borrow Area spans approximately 492 acres on the western shoulder of Basalt Hill, a prominent peak that flanks the southern reservoir shoreline. An existing haul road extends northeast from the borrow area to a potential construction staging area and then to Borrow Area 6 while another haul road spans the borrow area and a potential construction staging area just west of the dam. The Basalt Hill Borrow Area ranges in elevation from roughly 700 feet along its western margin to 1,707 feet at the summit near the eastern side of the borrow area. Approximately 183 acres were subject to inventory survey within the borrow area while a visual reconnaissance was conducted for areas of unsafe or extreme terrain surrounding Basalt Hill. Approximately 87.5 acres within the Basalt Hill Borrow Area were identified as a part of the APE following the 2016 investigation and so were not examined.

Two historic period resources were relocated or newly recorded within the Basalt Hill Borrow Area in 2012 or 2016. The most prominent was the Basalt Hill Quarry (CA-MER-509H), which was documented within a 150-acre area made up of a series of terraces that incorporated the improved areas of the mine on the northern shoulder of Basalt Hill. When it was recorded, the quarried area

was covered by sparse grasses while the more heavily disturbed areas were marked by invasive weeds. The quarry area as a whole offered fair to good (50-80°) ground surface visibility, though the slopes surrounding the quarry area offered very limited (5-10°) ground surface visibility in areas subsumed by dense, knee-high grasses. Two natural springs were noted on the northern slope of Basalt Hill, but no cultural materials were observed in either location. An improved dirt road (CA-MER-494H) extending northeast from the Basalt Hill Quarry identified for use under the Lower San Felipe Intake Alternative was first recorded as a historic period resource in 2012. An additional segment of the road was recorded in 2016 as it extended west towards the quarry.

Borrow Area 6

Borrow Area 6 consists of approximately 869 acres south of the O'Neill Forebay, east of SR 33, and north of SR 152 (*see* Appendix B, Figure B-4d). Roughly 857 acres were subject to inventory survey while 12 acres were identified as a part of the San Luis Reservoir Expansion Alternative after inventories had been completed and so were not examined. Borrow Area 6 is relatively flat with a slight (1-2°) slope to the north and is crossed by several shallow, unnamed drainages. During the 2016 inventory survey, vegetation throughout the borrow area consisted of thick knee-high to waist-high grasses that offered very limited (0-10°) ground surface visibility.

The record for one previously recorded historic period resource was updated and four newly identified historic period resources were recorded in 2016. One resource (CA-MER-521H) was first recorded by Pacific Legacy personnel in 2014, though the site record and accompanying report have not yet been filed with the CCIC pending permission from the Western Area Power Authority (Holm et al. 2014). It was documented as a livestock watering locale with an elevated cylindrical water tank and a circular trough surrounded by fencing. In 2016, the resource appeared as described in the original 2014 cultural resource record. Two newly identified sites included a concrete equipment pad and a large boulder from the Basalt Hill Quarry that were found near the northwest corner of Borrow Area 6 (CA-MER-510H) and a corral complex with a large welded water tank, a loading chute, a livestock access gate, fencing, and two circular metal water troughs (CA-MER-511H). Two isolated finds also were discovered and included a pair of concrete pad foundations (P-24-002172) and a 6-inch diameter iron well head (P-24-002166) along an access road leading to the corral complex.

Potential Construction Staging Areas

Three potential construction staging areas totaling 2,216 acres were examined in 2012 and 2016 (*see* Appendix B, Figures B-4d and B-4f). Two were located to the east of the B.F. Sisk Dam while the third was located along the southern margin of the San Luis Reservoir on the northern flanks of Basalt Hill to the west of the dam. A portion of that third construction staging area was inundated at the time of the 2016 inventory survey, and approximately 21 acres remained inaccessible. A further 227 acres within the same construction staging area were

identified as a part of the San Luis Reservoir Expansion APE subsequent to the 2016 inventory survey and were not investigated. The remaining 1,968 acres were subject to intensive pedestrian inventory survey.

The terrain within the construction staging areas varied greatly. The southern third of the construction staging area to the west of the dam was marked by heavily vegetated hills and slopes while the northern portion of the staging area was characterized by largely denuded, gentle slopes where inundation, wave action, and recent recreational activities had altered the landscape. Mechanical impacts along the reservoir shoreline in the northern portion of the staging area were evident in the form of a series of shallow, stepped, cut terraces. Human activities, particularly recreational fishing, also left behind hundreds of rock features, including fishing rod supports that appeared as cairns or rock piles, rock alignments in linear or semi-circular shapes, and other rock accumulations. None of these features was identified as prehistoric, and all were presumed to post-date the filling of the San Luis Reservoir. During the 2012 and 2016 inventory surveys, eight resources were identified within the construction staging area to the west of the B.F. Sisk Dam. These included segments of four historic period roads (CA-MER-491H, CA-MER-493H, CA-MER-494H, and CA-MER-495H) that were first documented in 2012. Two (CA-MER-493H and CA-MER-495H) were updated in 2016 to include additional segments (*see* Table 6-2). The northern portion of a historic period industrial resource that was used to support construction of the B.F. Sisk Dam (CA-MER-492H) and two isolated prehistoric finds (P-24-001990 and P-24-001991) also were encountered within the potential construction staging area.

The two potential construction staging areas just east of the B.F. Sisk Dam were examined in 2016. One was a smaller northern block of roughly 113 acres and the other was a much larger block to the south encompassing approximately 1,102 acres. The northern staging area spans a narrow stretch of land at the northern end of the B.F. Sisk Dam just southwest of SR 152 that extends from the north side of the inlet to the O'Neill Forebay to just south of Romero Overlook. The landform includes level to slightly east-facing flats with two prominent hills. Elevations range from 240 feet at the O'Neill Forebay to over 600 feet at the northern end of the area. In 2016, the vegetation was mostly high grass with spotty juniper, which yielded very poor (0-10°) ground surface visibility. The larger, southern construction staging area is marked by fairly level terrain and elevations of approximately 300 feet in the northern portion of the block that becomes increasingly steep to the southeast where elevations exceed 600 feet. As with the northern construction staging area, the area to the south was characterized by thick, high grasses that offered very limited (0-10°) ground surface visibility. Sixteen features associated with CA-MER-520H, all historic period survey markers or observation wells, were recorded in the construction staging areas to the east of the dam. Four additional historic period resources were encountered in the southern block in addition to the CA-MER-520H features. These included a helicopter landing pad (CA-MER-512H), an

asphalt road segment (CA-MER-513H), an excavated earthen irrigation ditch (CA-MER-514H), and an isolated metal can (P-24-002167).

Cottonwood Bay Levee Modification and Levee Raise, Dinosaur Point Boat Launch Modification, and Highway 152 Impact Areas

The Cottonwood Bay levee modification and levee raise areas comprise two areas: a 9.4-acre linear tract in the northern portion of the San Luis Reservoir south of SR 152 where Cottonwood Creek would empty into the reservoir and a 14.1-acre area within Dinosaur Point south of Dinosaur Point Road (*see* Appendix B, Figure B-4a). The Cottonwood Bay levee modification area is characterized by imported fill and riprap to form the levee supporting SR 152. Only sparse invasive plants are present. The levee raise area was subsumed by the 2012 inventory survey for the Lower San Felipe Intake Alternative APE and was not re-examined in 2016. No previously recorded or newly identified cultural resources were encountered in either area, though the arbitrarily defined extents of the San Luis Gonzaga Archaeological District (P-24-000489) intersect the levee raise area.

The 15.4-acre Dinosaur Point boat launch modification area was subsumed (*see* Appendix B, Figure B-4c) by the 2012 inventory survey for the San Felipe Intake Alternative APE and was not re-examined in 2016. A series of 14 historic period road segments (CA-MER-477H) were noted within the area extending west outside of the APE.

The Highway 152 Impact Area is adjacent to an existing paved parking area on the southwestern side of SR 152 to the north of the Romero Overlook and to the south of a turn east of Cottonwood Creek. It is a relatively flat, west-facing bench cut by a west-flowing drainage that supports trees and bushes along its banks. The remaining area is covered in dense grasses. No previously recorded or newly identified cultural resources were noted in the Highway 152 impact area, which overlaps the area examined along the reservoir shoreline.

Expanded Embankment, Downstream Fill Impact, and Haul Road Areas

The proposed expanded embankment areas and downstream stability berm or fill impact areas largely overlap. They also intersect the two potential construction staging areas east of the B.F. Sisk Dam. The haul roads intersect the potential construction staging areas, Borrow Area 6, and the Basalt Hill Borrow Area. Collectively, these areas total 341 acres (Appendix B, Figure B-4a, B-4d, and B-4f). Approximately 38 acres were accessible to inventory survey in 2016 while the remaining portions of these areas were inaccessible due to terrain or safety considerations. Eleven features associated with CA-MER-520H were detected in areas that could be safely accessed. All of these features consisted of brass Reclamation elevation markers or observation wells used for measuring ground water levels and potential dam seepage.

Accessible portions of the expanded embankment areas and downstream stability berm or fill impact areas appeared largely disturbed by previous dam

and facility construction. Vegetation consisted mostly of dense knee-high grasses, thistle, and a few areas with sparse tree cover, yielding very poor (0-10°) ground surface visibility. Areas surveyed along one proposed haul route began at the northwest corner of Borrow Area 6 near the O'Neill Forebay, crossed SR 152 at the inlet to the O'Neill Forebay, and proceeded south along the eastern side of the B.F. Sisk Dam before turning west towards the Basalt Hill Quarry (CA-MER-509H). Another haul route that was added to the alternative after the 2016 inventory links a potential construction staging area to the west of the dam with the Basalt Hill Borrow Area to the south. The haul routes range in elevation from roughly 240 feet to more than 1,200 feet and pass through rugged, variable terrain. Segments of one of the existing haul routes were recorded as a historic period resource (CA-MER-494H) in 2012, and an additional segment of the same road was recorded in 2016 as it intersected the Basalt Hill Quarry.

Reservoir Shoreline

The reservoir shoreline spans roughly 65.1 miles around the circumference of the reservoir from the 560-foot elevation contour downslope for roughly 50 meters, with the lower extents varying based on terrain steepness (*see* Appendix B, Figures B-4a through B-4f). Approximately 47.3 linear miles of the reservoir shoreline were subject to inventory survey in 2016. Areas that were not examined included the western face of the B.F. Sisk Dam and the Cottonwood Bay shoreline north of SR 152. An area near Dinosaur Point that was a part of the 2012 inventory survey of the Lower San Felipe Intake Alternative APE was not re-examined in 2016. The reservoir shoreline crosses each of the potential construction staging areas, with the greatest overlap occurring within the potential construction staging areas west of the dam. Since the shoreline is below the reservoir high waterline, the majority of the area is relatively flat and clear of vegetation, with ground surface visibility ranging from 30-75° along the wave-eroded margins of the San Luis Reservoir.

Eight districts, archaeological sites, or built environment resources were previously recorded along the reservoir shoreline and noted within the San Luis Reservoir Expansion Alternative APE in 2012 or 2016. Resource records updated during inventory survey included those for a prehistoric site with petroglyphs, milling features, cleared areas, midden, and lithic tools (CA-MER-15); two prehistoric midden sites with lithic and artifact scatters (CA-MER-28 and CA-MER-83); a prehistoric lithic scatter with groundstone (CA-MER-82); a midden deposit with associated bedrock milling features and groundstone (CA-MER-130); and a historic period road (CA-MER-477H) (*see* Table 6-7). The arbitrarily defined San Luis Gonzaga Archaeological District (P-24-000489) and the B.F. Sisk Dam System also intersected the reservoir shoreline. As noted above, they were not re-recorded in 2012 or 2016.

Seven archaeological sites or built environment resources and four isolated finds were newly identified along the reservoir shoreline, including a series of historic period transmission poles with a debris scatter (CA-MER-484H); three

earthen dams with impound ponds (CA-MER-515H, CA-MER-516H, and CA-MER-518H); a prehistoric lithic and groundstone artifact scatter (CA-MER-517); and two historic period roads (CA-MER-489H and CA-MER-519H) (*see* Table 6-7). The four isolated finds included a prehistoric chert cobble and flake (P-24-002168), two isolated water troughs (P-24-002169 and P-24-002170), and one isolated bottle (P-24-002171).

Nine previously recorded prehistoric sites (CA-MER-20, CA-MER-21, CA-MER-22, CA-MER-23, CA-MER-27, CA-MER-29, and CA-MER-41) that lay within areas examined in 2012 or 2016 could not be relocated along the reservoir shoreline, and updated site records were generated accordingly. It is possible that these sites were mis-plotted during initial recording, mis-plotted later by the CCIC, impacted by wave action, geomorphic processes, and/or human activities. Three additional resources associated with the reservoir shoreline could not be relocated. One prehistoric site (CA-MER-27) lay within an area that was found to be covered by imported fill, and no traces of the site were observed. Two other prehistoric sites (CA-MER-136 and CA-MER-137) were previously reported in areas that could not be examined in 2016 (*see* Table 6-8).

All of the previously recorded or newly discovered cultural resources along the reservoir shoreline within the San Luis Reservoir Expansion Alternative APE may be subject to impacts if the maximum pool level of the reservoir is increased. These potential impacts have been studied in other lake and reservoir settings (Lenihan et al. 1981:18), and can include *mechanical impacts* from persistent wave action and nearshore currents that shape, abrade, erode, cover, and reveal shoreline topography and cultural resources as well as *biochemical impacts* to site soils and contextual relationships that can lead to the differential preservation of archaeological materials. These mechanical and biochemical impacts would be in addition to any direct effects to cultural resources that might result from construction activities associated with implementing the action alternative. In particular, it is anticipated that two archaeological sites (CA-MER-130 and CA-MER-484H) that were relocated in 2016 will be newly affected by an increase in the maximum pool level of the San Luis Reservoir. One previously recorded site (CA-MER-136) that could not be examined also is mapped on existing site records as being above the current reservoir pool level. Additional inventory survey and/or subsurface testing would be required to determine if and how these resources would be affected by the expansion of the reservoir.

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Chapter 7 Cultural Resource Evaluations, Conclusions, and Recommendations

The cultural resources investigation for the SLLPIP revealed that 24 cultural resources are present with the Lower San Felipe Intake Alternative APE, none is evident within the APE for the former Combination Alternative or the Treatment Alternative, and 37 lie within the San Luis Reservoir Expansion Alternative APE. These totals do not include cultural resources that were previously recorded but not relocated. Due to the spatial overlap between the Lower San Felipe Intake Alternative APE and the San Luis Reservoir Expansion Alternative APE, 11 cultural resources were found to intersect both, including the San Luis Gonzaga Archaeological District (P-24-000489), eight archaeological sites or built environment resources (CA-MER-477H, CA-MER-484H, CA-MER-489H, CA-MER-491H, CA-MER-492H, CA-MER-493H, CA-MER-494H, and CA-MER-495H), and two isolated finds (P-24-001990 and P-24-001991) (*see* Tables 6-2 and 6-7).

Inventory surveys completed for each action alternative fulfilled three main objectives that will assist Reclamation and the SCVWD in managing cultural resources. First, a nearly complete inventory of cultural resources within the APE for each action alternative was achieved, limited only by topographic constraints or access permissions. Second, inventory surveys provided for the recording of highly accurate cultural resource boundaries that may be used to locate, manage, and potentially avoid cultural resources within the APE of each action alternative. Finally, inventory surveys provided important baseline data in the form of detailed records for previously recorded and newly identified archaeological sites and built environment resources that can be used to evaluate and manage these resources for the SLLPIP and future projects.

In the sections that follow, data collected during inventory surveys for the SLLPIP will be used in conjunction with resource-specific documentary research to offer NRHP/CRHR eligibility recommendations for archaeological sites and built environment resources within the APE for the Lower San Felipe Intake Alternative and the San Luis Reservoir Expansion Alternative. These evaluations are prefaced by a brief discussion of the criteria and methods that were used in assessing eligibility, the research themes and questions that were explored when examining prehistoric and historic period resources, and the resource types and attributes that were used to classify archaeological sites and built environment resources within the SLLPIP vicinity. Evaluations were based surface evidence, natural subsurface exposures (e.g., bioturbation, drainage profiles, hillslope erosion exposures, etc.), and archival research as appropriate. No subsurface excavation was undertaken during inventory surveys for the SLLPIP.

7.1 Cultural Resource Evaluation Criteria and Methods

Criteria for formally evaluating cultural resources under the NRHP and the CRHR were introduced in Sections 1.4.1 and 1.4.2. Using those criteria, evaluations will be based on an approach that assesses the integrity or condition of cultural resources and their significance in relation to the four criteria outlined under 36 CFR Part 60.4 and under Section 15064.5 of state CEQA *Guidelines*.

Assessments of integrity are based upon the integrity of location, design, setting, materials, workmanship, feeling, and association for each resource examined. Integrity of location refers to whether a resource has been displaced from its original position. It may apply to standing structures or infrastructural elements, or it may apply to archaeological sites or cultural resource deposits that have been moved or displaced from where they originated. Cultural resources that lack integrity of location will generally have lost their depositional or historic context and would be expected to provide little significant information important to the study of prehistory or history. Integrity of setting, feeling, and association are particularly relevant when assessing historic period buildings, structures, objects, and sites for which the physical setting and its degree of preservation are important (e.g., a historic period irrigation ditch that is part of a larger intact site or district, a canal or aqueduct that remains in use and has not been substantially altered, or a historic period farmstead that retains its rural agricultural setting). In contrast, archaeological sites, particularly prehistoric cultural deposits, can be significant if undisturbed even if they are encountered in a developed setting incongruent with the context of their original deposition. Integrity of design, materials, and workmanship may be pertinent to prehistoric sites or historic period resources, though integrity of design and workmanship are most often examined with reference to historic period built environment resources.

In order to evaluate prehistoric or historic period cultural resources for their potential eligibility for listing in the NRHP/CRHR, it is necessary examine them with reference to a historic context. Information regarding the natural environment and cultural history of the SLLPIP vicinity was included in Sections 2.0 and 3.0, while Section 4.2 outlined many of the most common types of cultural resources that have been previously documented within each action alternative Project Area. Research themes and questions relevant to the specific resource types likely to be encountered in each alternative Project Area are offered below in Sections 7.2 and 7.3. Contextual information specific to individual cultural resources is presented in Section 7.4. This information was developed largely through an examination of archival documents and records and was particularly critical to the evaluation of historic period sites and structures within the APE for the Lower San Felipe Intake Alternative and the San Luis Reservoir Expansion Alternative. A variety of sources, many available online, were consulted including previous site records; historic period topographic maps; federal land patents; GLO survey plats and mineral survey

plats; federal manuscript and agricultural census records; mining bulletins and journals; historical newspapers and photographs; and local county histories, tax documents, and voter registers. Online materials were accessed through the following locations:

- *USGS* (http://nationalmap.gov/) for topographic maps;
- *BLM* (http://www.glorecords.blm.gov/) for land patent data and cadastral survey maps;
- *USGS, The National Map: Historic Topographic Map Collection* (http://nationalmap.gov/historical/);
- *Historic Map Works* (http://www.historicmapworks.com/Browse/United_States/California/);
- *David Rumsey Map Collection* (http://www.davidrumsey.com/) for historical maps;
- *Library of Congress: American Memory Map Collection* (http://memory.loc.gov/ammem/gmdhtml/gmdgeogindex1.html) for historical maps;
- *UC Berkeley Map collection* (http://sunsite.berkeley.edu/histopo/) for historical topographic maps;
- *University of Alabama Historical Maps of California* (http://alabamamaps.ua.edu/historicalmaps/us_states/california/index_Before1875.html) for maps;
- *The Meriam Library Special Collections at California State University, Chico* (http://cricket.csuchico.edu/spcfotos2/photos6.html) for historical photographs and maps;
- *Historic Aerial photographs by NETR Online* (http://www.historicaerial photographs.com/) for historic aerial photographs,
- *UC Santa Barbara Library, Map and Imagery Laboratory* (http://www.library.ucsb.edu/mil/airs) for aerial photographs,
- *California Digital Newspaper Collection*, UC Riverside (http://cdnc.ucr.edu);
- *Online Archive of California* (http://www.oac.cdlib.org/);
- *USGS Publications Warehouse* (http://pubs.er.usgs.gov/browse/usgs-publications) for water supply papers and well data;
- *Ancestry.com* (http://www.ancesty.com) for federal census data, county voter registers and tax data bases, California newspaper collection, local newspapers, city/town directories, military records, and vital statistics; and,
- Google books for county histories and other government publications.

The aim in constructing resource-specific contexts was to identify potential associations with events that made a significant contribution to the broad patterns of our history (NRHP Criterion A/CRHR Criterion 1) and to identify potential associations with one or more individuals who were significant to our past (NRHP Criterion B/CRHR Criterion 2). The distinctive physical characteristics—the construction, style, or artistic values (NRHP Criterion C/CRHR Criterion 3) of cultural resources—were most evident through their material aspects, but were also considered in light of their historic context. Finally, resource specific contexts were used to evaluate the potential of sites or structures to yield information important to the study of prehistory or history (NRHP Criterion D/CRHR Criterion 4).

7.2 Potential Research Themes and Questions for Evaluating Prehistoric and Historic Period Cultural Resources

A series of research themes and questions that might be addressed during the evaluation of cultural resources within the San Luis Reservoir vicinity, specifically within the Lower San Felipe Intake Alternative and San Luis Reservoir Expansion Alternative Project areas, are presented below. Research themes and questions that are more pertinent to the Combination Alternative and Treatment Alternative Project areas are not presented, as inventory surveys of the Combination Alternative APE and Treatment Alternative APE revealed no cultural resources requiring evaluation for NRHP eligibility. Should previously unidentified cultural resources be encountered in the Combination Alternative APE or the Treatment Alternative APE as a part of the SLLPIP, research themes and questions similar to those below would be applicable.

Most of the themes and questions presented below are relevant to both prehistoric and historic period resources, though the manner in which they are addressed will vary greatly based on the specific resource type under assessment.

- *Chronology* is a fundamental research theme central to the study of both prehistoric and historic period cultural resources. A focus on chronology allows researchers to examine sites and/or structures as representative of (or anomalous within) a particular time and place, relate sites and/or structures to one another and to broader regional landscapes or patterns in prehistory or history, and better understand change through time as expressed through a given resource. Questions relating to chronology might include the following:

  – Does the resource contain dateable or temporally sensitive materials such as charcoal, other organic remains, obsidian, diagnostic projectile point types, or dateable historic period glass, metal, or ceramic artifacts?

  - Does the historic period structure exhibit details in its fabrication or construction that would render it dateable?

  - What do dateable materials or structures reveal about when the site was used, how it was related to other sites in the vicinity, and how use or occupation of the resource may have changed through time?

- *Economy* comprises another key research theme that is relevant to the study of prehistoric and historic period cultural resources. For historic period resources, the theme of economy has much to do with how products or materials were produced, sold, purchased, and consumed. For prehistoric sites, the theme of economy is closely related to subsistence, though it also may relate to how raw materials or finished goods were obtained or traded. The theme of economy is closely aligned to other research themes such as settlement or community organization, technology, trade and exchange, and cultural identity. Questions relating to economy or economic subsistence might include the following:

  - Does the resource contain evidence of the subsistence economy such as macrofloral or faunal remains? Do those materials represent seasonally or more permanently available foods? If seasonal materials are represented, what might they reveal about when or how a given site was used (e.g., temporary versus long-term habitation)? Is there evidence of food storage present?

  - Are non-local resources represented, perhaps indicating trade or exchange?

  - What do the floral or faunal remains reveal about the use of technology at the site?

  - Within historic period resources, is there evidence that food was grown for household consumption and/or grown as an economic commodity? Is there evidence for the consumption of non-local or mass produced goods?

- *Settlement or Community Organization* refers to how people occupied the landscape—how they moved through space, where they established their settlements or communities, how those settlements or communities were structured and organized, and how those settlements or communities were related to others within the same region or territory. Questions relating to settlement or community organization might include the following:

  - How is space structured within the boundaries of the resource? Is there evidence for different activity areas? What might that reveal about aspects of cultural identity such as gender, race, or ethnicity?

  - How does a particular resource relate to the larger settlement landscape or community? What cultural or environmental factors might have influenced the choice of one locale versus another?

  - Was a given resource area used temporarily or permanently? On a seasonal or year-round basis?

  - What might the resource reveal about social or economic structures at the local or regional level?

- *Technology* refers to the tools or methods that are used during the course of daily activities such as procuring or processing foods, building dwellings or other structures, and manufacturing utilitarian or non-utilitarian items. Questions relating to technology might include the following:

  - What kinds of tools were being used or manufactured by the people accessing or inhabiting the resource area?

  - Do they shed light on how the resource area was used or what activities may have been carried out there?

  - Do the artifacts present represent finished or unfinished items and what might that reveal about trade, exchange, and/or commerce?

  - What does the technology represented at a given resource location reveal about cultural chronology, the economy, and/or trade and exchange?

- *Trade and Economic Exchange* relate to how finished goods and raw materials were obtained through direct or indirect interactions between social groups. At prehistoric sites, it is possible to discover marine shell from the coast at sites within the San Joaquin Valley interior or non-local lithic materials procured from other regions. At historic period sites, it is even more common to find goods or materials of non-local manufacture that were acquired through commercial activity. Questions relating to trade and exchange might include the following:

  - Does the site contain non-local materials or goods? How and from whom were those materials obtained?

  - What do those items reveal about the spatial extent and stability of trade networks? What might those items reveal about technology,

community organization, cultural identity, or the priorities and values of a given site's occupants?

  - How do non-local materials at a resource location relate to the broader cultural landscape and environmental region?

- *Cultural History and Identity* pertain to the ways in which groups developed and formed shared identities based on social organization, political affiliation, religious practices, and/or gender, race, and ethnicity. Questions relating to cultural history and identity might include the following:

Does the resource area contain materials that can be linked to a particular social group that may shed light on the cultural history or identity of its inhabitants?

- What do those materials or the ways in which they were structured, used, or organized reveal about gender, race, or ethnic identity?

- Are particular ethnographic or linguistic groups represented?

- For late prehistoric or historic period resources, how do the materials or remains within a given site support or refute other lines of evidence such as oral history or documentary records?

The research themes and questions above are not exhaustive, but provide a basic framework for examining cultural resources within the San Luis Reservoir vicinity and for evaluating the potential NRHP/CRHR eligibility of those resources within the APE for the Lower San Felipe Intake Alternative and the San Luis Reservoir Expansion Alternative.

7.3 Site Types and Attributes

An integral part of conducting cultural resource evaluations includes defining and documenting the site types represented by a given group of cultural resources. This was noted in Section 6.0 when discussing the types of cultural resources that were encountered during the inventory surveys. Defining and documenting general site types is important because it can guide the construction of contexts for historic period sites and structures or suggest fruitful research themes or questions for prehistoric sites. A brief outline of site types and attributes representative of those typically found within the San Luis Reservoir vicinity is presented below. Several of these site types were encountered during inventory surveys while others were noted during archival and records searches of the Lower San Felipe Intake Alternative and San Luis Reservoir Expansion Alternative Project areas.

7.3.1 Prehistoric Site Types and Attributes

Typical prehistoric site types might include permanent or temporary habitation sites or activity-specific sites such as lithic scatters or food processing areas.

- *Permanent habitation sites* comprise residential sites that were occupied on a permanent or nearly permanent basis. Such sites are often distinguished by their size and by evidence for long-term occupation and material deposition. Permanent habitation sites frequently contain stratified midden deposits or mounds. Midden deposits consist of black or very dark, organic-rich soils that accumulate through intensive or long-term and repeated deposition. Permanent habitation sites might also be expected to feature evidence of house-pit depressions or the remains of other habitation structures. House-pit depressions are typically round, measure between 2-20 meters in diameter, and feature a low berm around their periphery. Given the effects of environmental forces and modern development, house-pit depressions are rarely encountered in the archaeological record but can provide valuable information about daily activities and the use of space in prehistory. The presence of bedrock milling features may also be indicative of long-term habitation. Frequently encountered in the foothills and in areas with bedrock outcrops, bedrock milling features contain mortars or slicks—rounded, cup-like depressions or shallower, elongated depressions that were formed by and used for grinding hard seeds such as acorns and other materials. Although many bedrock milling features have been associated with long-term habitation, they also frequently occur in isolation or independent of other archaeological deposits. The evaluation of a site's physical setting or context is critical in examining such features. In addition to midden soils, house-pit depressions, and bedrock milling features, the archaeological assemblage at permanent habitation sites might be expected to include an array of groundstone and lithic tools as well as floral and faunal remains.

- *Temporary or seasonal habitation sites* include those that were occupied for a short duration or those that were occupied repeatedly, though on a seasonal or short-term basis. Typically smaller than permanent habitation sites, temporary or seasonal habitation sites usually lack accumulated midden deposits or formal house-pit depressions. An array of activities may be evident at temporary or seasonal habitation sites, though materials would be expected to be less diverse than encountered at permanent habitation sites. Bedrock milling features, groundstone, lithic tools, and floral and faunal remains may all be present at temporary or seasonal habitation sites, though the assemblage would likely be less varied, and materials would be expected to be fewer in number when contrasted with permanent habitation sites.

- *Activity-specific sites* include those that were used for one purpose or for a very limited range of purposes. Lithic scatters, lithic quarry areas, or food processing locales are all examples of such sites. Typically used once or for a short duration, these sites are often characterized by limited assemblages that represent the narrow range of activities that would have occurred there.

7.3.2 Historic Period Site Types and Attributes

Historic period site types that have been encountered or might be anticipated within the APE for the Lower San Felipe Intake Alternative and San Luis Reservoir Expansion Alternative would include intact or remnant farmstead or ranch sites, agricultural sites, transportation infrastructure, water conveyance features, prospect pits or mining sites, foundations or structure pads, and debris scatters or deposits. Historic period site types are usually based on functional categories, and such sites are typically easy to distinguish based on their physical attributes. Cultural constituents often encountered at historic period sites include pits, privies, fences, ditches, water features, other structural elements, and domestic or industrial debris.

- *Farmstead or ranch sites* frequently include a residence and one or more outbuildings or structures clearly associated with ranching or agricultural activity (e.g., barn, corral, livestock watering locale, and/or shed). They may feature associated historic period debris deposits or scatters and may contain pits, privies, fences, ditches, and livestock watering locales marked by troughs, windmills, and/or water pumps.

- *Agricultural sites* typically include features that are functionally related to the cultivation, production, and harvesting of crops. Such sites are often distinguished by irrigation ditches and canals, fencelines, modified or landscaped hedgerows or tree lines, and berms or mounded soil areas meant to aid water retention or abatement.

- *Transportation infrastructure* consists of historic period features such as paved or unpaved roads and railroad lines or grades. Railroad lines or grades generally feature a relatively level grade, typically on a constructed berm that may or may not include rails, ties, or spikes. Former railroad lines are often dismantled and repurposed as roads and can be difficult to distinguish in the form of berms that have been converted into unpaved roads. Roads are usually easier to distinguish and are sometimes associated with bridges, culverts, and/or secondary debris deposits or scatters left casually or deliberately by passing vehicles.

- *Water conveyance features* include infrastructural elements such as canals, ditches, dams, and dykes and are generally easy to distinguish in form and function, though they can be hard to discern or differentiate when encountered as a part of a larger water conveyance system. For instance, an agricultural canal and ditch system may contain hundreds of elements that have been added, removed, or transformed through time, and it can be difficult to distinguish the precise date or period when certain elements were altered.

- *Foundations or structure pads* include the material remains of a building's base and are generally constructed of stone, concrete, or wood. Structure pads are areas that have been leveled, typically for the placement of small, less permanent structures, and do not contain foundation elements.

- *Prospect pits or mining sites* typically comprise excavated pits or quarry areas made to test for or extract rocks, gravels, minerals or metals. Spoils piles, or areas of mounded soils or stones removed from prospect pits, are often found in conjunction with them.

- *Debris scatters or deposits* are typically composed of domestic and/or industrial materials that have been scattered or deposited in the area in which they were used (i.e., a primary deposit) or in an area unassociated with their use (i.e., a secondary deposit). A farmstead or ranch site for instance might feature one or more primary debris scatters containing domestic items such as glass, metal, and ceramics and might contain debris associated with ranching or farming activities such as barbed wire, fencepost remnants, and horseshoes. A historic period road might feature a secondary scatter of domestic or industrial items representing one or more roadside discard events.

7.4 Cultural Resource Evaluations

Not all of the cultural resources encountered during the SLLPIP inventory surveys will be eligible for listing in the NRHP and/or the CRHR, and not all will require protection, avoidance, or mitigation per Section 106 of the NHPA or CEQA. Until all appropriate consultation efforts have been completed, however, Reclamation and the SCVWD will avoid impacts to cultural resources that have not been previously evaluated for listing in the NRHP and/or the CRHR.

7.4.1 Lower San Felipe Intake Alternative

Preliminary NRHP and CRHR evaluations are offered below for three cultural resources that were previously recorded and relocated within the Lower San Felipe Intake Alternative APE in 2012. These include one multi-component site (CA-MER-26/H) comprised of prehistoric midden and a historic period earthen dam and impound pond, one large prehistoric site (CA-MER-94) that was excavated in 1966-1967, and one historic period built environment resource made up of a series of road segments (CA-MER-477H). Three other previously recorded cultural resources within the Lower San Felipe Intake Alternative APE are listed in the NRHP and the CRHR (P-24-000489), listed in the CRHR (CHL-829, P-24-000643), or were found to contain no surface expression within the APE that might be evaluated (P-24-001856) (*see* Table 6-2). One previously recorded resource (CA-MER-437) was found to be non-cultural during the 2012 field inventory and is not evaluated below.

Twelve archaeological sites or built environment resources that were newly identified within the Lower San Felipe Intake Alternative APE also are evaluated below. These resources include a historic period utility pole alignment (CA-MER-484H), two historic period debris scatters (CA-MER-485H and CA-MER-490H), a historic period earthen dam (CA-MER-486H), seven historic period road segments (CA-MER-487H, CA-MER-488H, CA-MER-489H, CA-MER-491H, CA-MER-493H, CA-MER-494H, and CA-MER-495H), and an industrial resource that was a part of the larger Basalt Hill Quarry (CA-MER-509H) and separation plant complex built in 1963 to process basalt into riprap for construction of the B.F. Sisk Dam (CA-MER-492H) (*see* Table 6-2). The six isolated finds that were newly discovered within the Lower San Felipe Intake Alternative APE are not evaluated.

Of the 15 archaeological sites or built environment resources discussed below, one prehistoric resource (CA-MER-94) is recommended eligible for listing in the NRHP/CRHR based on findings from prior excavations. An evaluation for one resource (CA-MER-26/H, prehistoric component) remains pending further investigation. One historic period industrial site (CA-MER-492H) is recommended not eligible for individual listing in the NRHP/CRHR; it is also regarded as a non-contributing element of the recently defined B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018). Twelve other resources are recommended not eligible for listing in the NRHP and the CRHR, either as individual resources (CA-MER-484H; CA-MER-485H; CA-MER-486H; CA-MER-487H; CA-MER-488H; CA-MER-489H; CA-MER-490H; CA-MER-491H; CA-MER-493H; CA-MER-494H; and CA-MER-495H; P-24-001822) or as elements of a larger complex.

Previously Recorded Cultural Resources

CA-MER-26/H ***P-24-000127***	***Description*** CA-MER-26/H was originally recorded in 1965 by W.H. Olsen who described the site as prehistoric midden

Prehistoric Component Pending Evaluation for Listing in the NRHP/CRHR under Criterion D/4

Historic Period Component Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix A, Figure A-1a; Appendix B, Figure B-1a

Lower San Felipe Intake Alternative APE (Dinosaur Point)

deposits eroding from either side of a drainage (Olsen 1965a). As recorded during the 2012 inventory survey, CA-MER-26 comprises a multi-component site that measures 100 meters N/S by 40 meters E/W. It contains three prehistoric features: a low-density lithic concentration (Feature A); two midden deposits and a lithic concentration (Feature B); and a midden deposit (Feature C). These features are situated to either side of a historic period impound pond created by a large earthen dam, with Features A and B located to the north and Feature C located to the south of the pond.

Feature A lies on a bank to the north of the dam and measures 12 meters N/S by 6 meters E/W. The lithic concentration consists of five pieces of cryptocrystalline (CCS) angular shatter (1-3 centimeters diameter), two obsidian tertiary flakes (1-centimeter diameter), and one piece of quartz angular shatter (1-centimeter diameter). The Feature B midden deposits are visible in the eroding bank above the pond and drainage and are separated by an alluvial deposit. Taken together, the scatters measure 55 meters N/S by 5 meters E/W and contain a lithic concentration consisting of one chalcedony core tool (5-x-6-x-3 centimeters), one obsidian and two basalt tertiary flakes (1-centimeter diameter), and approximately 15 pieces of angular and non-angular CCS shatter (1-2 centimeters diameter). Feature C consists of a midden deposit measuring 18 meters NE/SE by 10 meters NW/SE on a steep bank south of the historic period impound pond.

The historic period component of CA-MER-26/H consists of an east-west trending earthen dam that forms a small pond to the south of Dinosaur Point Road. The dam was constructed before the reservoir inundated the area in 1967, and it lies below the high waterline. The dam stands approximately 12 feet high on the downslope (northeast) side and 3 feet above the waterline for the pond on the up-slope (southwest) side. It spans 6 feet in width at the top, approximately 40 feet in width at the base, and measures 110 feet in length. No historic period artifacts or cultural materials associated with the dam or impound pond were noted, though a historic period road (CA-MER-489H) is located immediately to the south.

Sedges, reeds, and small willows edge the historic period stock pond, while low, invasive grasses and cockleburs

cover the dam and the surrounding site area. The spillway lies on the southeast side of the dam and runs through a series of bedrock outcrops. The site is situated at the confluence of a major and a minor unnamed drainage that was once a tributary of San Luis Creek and now flows directly into the San Luis Reservoir. CA-MER-26/H lies approximately 60 feet below the average waterline and is often fully submerged beneath the reservoir. Soils are a light tan-brown sandy silt. The resource area is fully exposed, offers excellent (80-90%) ground surface visibility, and is marked by a variable slope of 10-20°. The site has been impacted by periodic inundation but otherwise remains in fair condition.

Archival Research Summary – Historic Period Component

CA-MER-26/H is located in Township 10 South, Range 7 East in the unsectioned San Luis Gonzaga Land Grant. The resource area was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map shows only the area not covered by the land grant. A later 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga depicts a stage route through the rancho but no features near the resource location. The 1920 Pacheco Pass 15-minute USGS topographic map[4] does not portray the site's historic period component but does depict the early SR 152 alignment to the north of its location (USGS 1920). The 1940 Pacheco Pass 15-minute USGS topographic map[5] also shows the road as well as an early telegraph alignment, but no earthen dam, impound pond, or other similar features (USGS 1940a). CA-MER-26/H first appears on the 1955 Pacheco Pass 7.5-minute USGS topographic map[6], which shows the pond or possibly the dam at the approximate site location (USGS 1955). Thus, based on historic period map evidence, CA-MER-26/H was likely constructed by 1953. A 1946 aerial photograph shows what appears to be a pond and possible earthen dam at the site location with possible outbuildings or structures located to the north (Fairchild Aerial Surveys 1946).

[4] The 1920 Pacheco Pass 15-minute USGS topographic map was surveyed in 1916 and 1918.
[5] The 1940 Pacheco Pass 15-minute USGS topographic map was revised through aerial photography in 1939.
[6] The 1955 Pacheco Pass 7.5-minute USGS topographic map was surveyed in 1955; aerial photographs were taken in 1953.

Francisco Pérez Pacheco, who inherited the San Luis Gonzaga Rancho upon the death of his son Juan, had one daughter, Lola. She married Mariano Malarin, and they in turn had two daughters; one married Dr. Ramon Roca, while the other married Dr. Luis Fatjo. The Fatjos and their children inherited the Merced portion of the rancho. In 1949, Paula Fatjo, the great-great granddaughter of Francisco Pérez Pacheco, moved to the rancho and remodeled the original 1843 adobe that once stood on the property (Pierce 1977: 107). San Luis Gonzaga was an operating cattle ranch during Paula Fatjo's tenure, though she also bred and boarded Arabian horses (Pierce 1977: 107-111). The historic period component of CA-MER-26/H may have been used during Fatjo's time, though the site appears to have been constructed prior to her receipt of the property. While it is likely that the earthen dam and impound pond supported ranching and/or farming, the features could have been erected any time after Juan Pérez Pacheco was first granted the land and before 1946 (Hoover et al. 1990: 200).

NRHP/CRHR Evaluation – Prehistoric Component

The prehistoric component of CA-MER-26/H consists of three features, including a low-density lithic concentration, two midden deposits with a lithic concentration, and a third midden deposit. These features are separated and have likely been disturbed by a historic period stock pond and earthen dam that was likely constructed by 1946. The prehistoric component of the site may represent a short-term or permanent habitation site (*see* Section 7.3.1). Although the site features midden deposits, the paucity of artifacts present coupled with the lack of groundstone or bedrock mortars, habitation areas, fire-affected rock, or other markers of long-term habitation signal that it has likely been disturbed or was not used over a long duration. The resource is evaluated under the themes of *Economy* and *Settlement* (*see* Section 7.2).

A search of the Sacred Lands Inventory by the NAHC did not reveal any information about the CA-MER-26/H vicinity, and the resource does not appear to have been associated with any significant events in local or regional Native American history. The prehistoric component of the site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No definitive association with one or more individuals could be established for CA-MER-26/H, and a literature review did not identify any prominent individuals who may have been associated with the site during the ethnographic period. The site's prehistoric component is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-26/H does not contain structurally or artistically unique features and does not exemplify distinctive characteristics of a type, period, or method of construction. The prehistoric component of the site is thus recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

Given that CA-MER-26/H includes midden soils and multiple features, it may have the potential to yield subsurface materials and/or vertical stratigraphy. The data potential of the site (e.g., its depth, integrity, age, and artifact diversity) thus has not been fully explored. Subsurface testing at CA-MER-26/H may reveal information regarding its potential to address important research questions about chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Based on the limited data acquired during inventory survey, an informed recommendation regarding the eligibility of the site's prehistoric component for listing in the NRHP/CRHR under Criterion D/4 cannot be offered. If construction activities associated with the Lower San Felipe Intake Alternative may affect the site, subsurface testing is recommended to determine if CA-MER-26/H offers the potential to address important research questions such as those outlined in Section 7.2.

NRHP/CRHR Evaluation – Historic Period Component
The historic period component of CA-MER-26/H consists of an earthen dam and impound pond that appear to have been constructed by 1946 (Fairchild Aerial Surveys 1946). It lies to the south of SR 152 within the San Luis Gonzaga Rancho, along a drainage, and adjacent to a historic period road (CA-MER-489H) (Fairchild Aerial Surveys 1946; USGS 1955). The historic period component of CA-MER-26/H appears to pre-date Paula Fatjo's arrival at the ranch in 1949, though the property may have been leased to other unknown ranchers or farmers who built the dam and impound pond. Although the resource was likely used for

ranching or farming, it could not be tied to a specific time period or function and could not be linked to events of local or regional importance. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

The historic period site component could not be clearly associated with one or more historically significant individuals. It is therefore recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

The historic period site component consists of an earthen dam and impound pond—features that are very common throughout the San Joaquin Valley. The features are not unusual or distinctive in terms of engineering, architecture, or construction. The historic period site component of CA-MER-26/H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-26/H includes no historic period artifacts or stratified vertical deposits. It does not offer sufficient research potential to address important research questions regarding ranching, agriculture, or other major research themes. CA-MER-26/H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

Overall, the historic period component of CA-MER-26/H retains integrity of location, design, materials, and workmanship. Its integrity of setting, feeling, and association have been somewhat compromised, however, by the lack of any clear functional or temporal association for the resource, its inundation following the construction of the B.F. Sisk Dam and San Luis Reservoir, and the construction of a boat ramp and Dinosaur Point Road, which are visible to the north. The historic period component of CA-MER-26/H retains poor integrity. It is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-94
P-24-000194

Description

CA-MER-94 was originally recorded by F.A. Riddell in 1962 as a small prehistoric village site with a sandstone bowl mortar and lithics (Riddell 1962c). In 1966 and 1967, W.H. Olsen and L.A. Payen revisited CA-MER-94 and conducted extensive excavations at what they dubbed the “Grayson Site.” As recorded by Olsen and Payen, the site spanned an area measuring 240 meters N/S by 180

Recommended Eligible for Listing in the NRHP/CRHR under Criteria A/1 and D/4

Appendix A, Figure A-1a; Appendix B, Figure B-1a

Lower San Felipe Intake Alternative APE (Dinosaur Point)

meters E/W on a low stream terrace remnant with the long axis paralleling the drainage. Excavations were conducted by hand, though a bulldozer was also used in several areas in 1967 to expose more deeply buried deposits. Those investigations revealed midden to a depth of 1.8 meters as well as 41 burials; four round, hard-packed house floors (Feature 1, 2, 6, and 7); bedrock mortars; groundstone artifacts such as handstones, pestles, mortars, hammerstones, "perforated flat cobbles," and milling stones; chert, jasper, chalcedony, and quartz flaked stone tools and debitage, including 14 projectile point types, bifaces, "knives," drills, cores, and an atlatl spur; *Olivella* and *Haliotis* shell beads and other shell ornaments; stone beads and polished stone artifacts such as incised stone rings, a perforated "gorget," stone pendants, and one charmstone; worked bone artifacts such as beads, incised fragments, a whistle, drilled animal teeth, and bone or antler awls and tools; and baked clay artifacts (Olsen and Payen 1969: 5-39). In addition to the house floors, four additional features were found: four large, flat stone slabs at a depth of 1.1 meters (Features 3 and 4); a concentration of flat, perforated cobbles at a depth of 2.0-2.3 meters (Feature 5); and a large sandstone bedrock mortar with four mortars (Feature 8) that lay exposed but below the average drainage waterline (Olsen and Payen 1969: 35-36).

Based on their findings, Olsen and Payen determined that the site contained protohistoric or Panoche complex materials within the upper 40-50 centimeters of the deposit, "essentially homogenous" Middle Period or Pacheco Complex A and B materials to a depth of 1.8 meters, and limited Positas Complex materials at the base of the deposit (Olsen and Payen 1969: 38). Radiocarbon dates obtained for CA-MER-94 ranged from approximately 645 ± 90 BP to 450 BP (AD 1305 to 1500). One date of 2,400 ± 100 BP (450 BC) was derived from the base of the deposit, but Olsen and Payen (1969: 41) believed it to be erroneous.

When CA-MER-94 was revisited in 2012, the site's midden deposit was found to span an area measuring 57 meters E/W by 62 meters N/S with traces of the excavated trenches apparent in the northwest portion of the site and the spoils visible along the northeast and southwest edges. Considerable rodent disturbance had brought a number of artifacts to the surface, including one CCS edge-modified

flake and several pieces of shatter as well as groundstone fragments such as a handstone fragment, a milling slab fragment, and a nearly complete pestle. The bedrock mortars noted by Olsen and Payen in 1966 were not relocated.

CA-MER-94 is located at the base of a steep-sided valley just before it opens to the San Luis Reservoir. The site is bordered to the south and east by a small drainage, and it sits on a small, flat rise or bench of light tan-brown sandy silt. The site area is characterized by sparse, non-native grasses and cockleburs that afford good (70-80%) ground surface visibility. The site is fully exposed but is bounded by slopes of 10-20° except as it fronts the drainage. There are areas of exposed sedimentary bedrock around the site, as well as round to sub-angular sedimentary cobbles and boulders. Olsen and Payen (1969: 1) noted that "several springs, near which are sites, are located in the upper end of the flat. One of these [CA-MER-26/H], now dammed up for use as a stock reservoir, is only about 100 meters upstream from 4-Mer-S94."

NRHP/CRHR Evaluation

CA-MER-94 is an extensive site that was excavated in 1966-1967. It revealed 41 burials, four hard-packed house floors, bedrock mortars, diverse groundstone artifacts, flaked stone tools and debitage, shell beads and ornaments, worked bone adornments and tools, stone ornaments and implements, four additional intact features, and a well developed, stratified midden deposit to a depth of 1.8 meters below the ground surface. Those cultural constituents and features indicate that CA-MER-94 likely functioned as a permanent habitation site (*see* Section 7.3.1). Permanent habitation sites typically feature accumulated midden deposits, indicating long-term occupation; diverse, numerous cultural constituents; and defined house-pits or living areas. The resource is evaluated under the themes of *Economy, Settlement,* and *Cultural History and Identity* (*see* Section 7.2), particularly as they relate to prehistoric settlement practices, foodways, and group identity.

A search of the Sacred Lands Inventory by the NAHC did not reveal any information about the site locale, and the resource is not known to have been associated with any significant events in local or regional Native American history. The presence of Native American remains at the

site, however, suggests that CA-MER-94 is a culturally sensitive location that may have significance to the descendent Native American community. The presence of human remains suggests repeated and habitual use of the site as a part of the prehistoric ritual and social landscape. As expressed through ritualized interment over time, CA-MER-94 represents a significant place that was invested with meaning by its inhabitants—a place that embodied wider social practices and observances that would have been more important than many other locations that hosted more ephemeral activities. Despite the excavations conducted by Olsen and Payen in 1966-1967, much of CA-MER-94 remains unexcavated, and it may be assumed that the site contains additional, potentially intact human remains. CA-MER-94 is recommended eligible for inclusion in the NRHP/CRHR under Criterion A/1 for its significance in prehistory at the local or regional level.

No definitive association with one or more individuals could be established for CA-MER-94, and no prominent individuals were identified who may have been associated with the site during the ethnographic period. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

Despite the presence of several hard-packed floors or housepits at CA-MER-94, the site did not reveal structurally or artistically unique features and did not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

The potential for CA-MER-94 to reveal subsurface components and vertical stratigraphy was proven through excavations conducted by Olsen and Payen in 1966-1967. The data potential of the site (e.g., its depth, integrity, age, and artifact diversity) has been previously tested but has not been exhausted. Further subsurface excavations at CA-MER-94 and a re-examination of previously collected materials may reveal additional information that could be used to address important research questions about chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Given the quantity and diversity of materials excavated in 1966-1967 and the analytic advancements in archaeology that have been achieved in the past 50 years, particularly

with respect to absolute and relative dating methods, CA-MER-94 offers significant further data potential. CA-MER-94 is thus recommended eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-94 retains integrity of location, but its integrity of setting, feeling, and association have been somewhat compromised by the development of the San Luis Reservoir, which dramatically altered the surrounding landscape. The site has also been disturbed by alluvial erosion, prior archaeological excavations and, to a lesser extent, rodent activity—all of which have likely led to the horizontal dispersion and vertical mixing of soils at the site. Despite these impacts, CA-MER-94 appears to retain sufficient integrity to convey its significance. The resource is recommended eligible for listing in the NRHP/CRHR under Criteria A/1 and D/4.

CA-MER-477H
P-24-001822

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix A, Figure A-1a; Appendix B, Figure B-1a

Lower San Felipe Intake Alternative APE (Dinosaur Point; Dinosaur Point Road)

San Luis Reservoir Expansion Alternative APE (Dinosaur Point Boat Launch Modification Area; Reservoir Shoreline)

Description

CA-MER-477H was first recorded by J.C. Whatford in 1996 as three segments (Features A, B, and C) of three separate road alignments. Feature A is located on a contour below the paved access road to Dinosaur Point. Feature B is a road cut situated on a contour above the paved access road to Dinosaur Point that includes the remains of an asphalt surface and occasional dry-laid stone retaining walls. Feature C comprises the road cut along which the paved Dinosaur Point access road is oriented (Whatford 1996a). The modern four-lane alignment of SR 152 is located roughly 0.3 miles to the northwest of Feature C.

During the 2012 field inventory, the three road segments originally recorded as CA-MER-477H by Whatford were relocated along with 11 additional road segments. All of these segments comprise three separate road alignments that together span 3.5 miles E/W on the western side of San Luis Reservoir. Features A, B, and C, originally noted by Whatford in 1996, were re-designated Segments A, B, and C in 2012, while the remaining segments were designated Segments D through N. All represent travel routes that spanned Pacheco Pass before 1967. They begin in the wide valley at the top of Pacheco Pass near the modern alignment of SR 152 and cross the summit of the pass before following a ridgeline down into the former San Luis Valley. The features consist primarily of roadbeds cut into the hillsides, with some segments

exhibiting asphalt paving and built-up roadbeds and causeways. A series of "C" blocks—concrete posts with a "C" stamped into one side—were noted along one of the road alignments and designated as Features 1 through 5. Posts of this type were used to delineate highway ROW between 1914 and 1934 (Windmiller 2007).

The three historic period road alignments include the 1920s-era route of SR 152. Construction of the route was completed in 1923, and it is represented by Segments B, D, E, F, G, H, I, J, and K as well as Features 1 through 5. Segments C and L represent two discontinuous portions of the improved 1940s-era route of SR 152. Finally, Segments A, M, and N represent the earliest alignment, which may mark the route of the 1856 Andrew Firebaugh Toll Road, the Pacheco Pass Stage Road, and/or a portion of the Butterfield Overland Mail route.

The main disturbances to CA-MER-477H include the construction and maintenance of Dinosaur Point Road and a pumping plant access road. Inundation of the reservoir has affected road Segments L, K, and M, and erosion has affected most of the resource segments. CA-MER-477H generally follows the course of a northwest-southeast trending ridgeline, first on the north side and then crossing to the south, with the exception of Segments M and N that continue on the north side. The resource passes through three vegetation communities: low to medium density chaparral with Manzanita, California sagebrush, coyote bush, chamise, and blue oaks; oak savanna blue oaks and non-native grasses; and open non-native grassland with cockleburs and other herbaceous plants. The resource descends below the reservoir's high-water mark in several locations, which are marked only by sparse grasses and cockleburs.

Archival Research Summary

CA-MER-477H is located in Township 9 and 10 South, Range 7 East and in Township 10 South, Range 8 East in the unsectioned San Luis Gonzaga Land Grant. The land grant was patented to Juan Pérez Pacheco on May 16, 1871 (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho, but it is unclear if the stage route depicted corresponds to one or more of the CA-MER-

477H road alignments (BLM 2016). The 1920 Pacheco Pass 15-minute USGS topographic map depicts Segments B, D, E, F, G, H, I, J, and K (USGS 1920). The 1940 Pacheco Pass 15-minute USGS topographic map shows Segments C and L. The 1955 Pacheco Pass 7.5-minute map portrays the San Luis Reservoir while the "Boat Ramp" road appears to represent portions of the 1940s-era alignment of SR 152. Two segments of the 1920s-era alignment of SR 152 are also shown (USGS 1955). A 1946 aerial photograph of the resource area shows numerous braided road alignments to the west of the reservoir near Dinosaur Point (Fairchild Aerial Surveys 1946). The 1920s-era SR 152 alignment is clearly visible, as is the later 1940s-era route. Several road segments that may represent the 19th century stage road are also visible. Two of the 1920s segments of SR 152 (Segments B and N) are most clearly discernible, as is one of the 1940s segments (Segment C).

Based on aerial photograph and historic period map evidence, CA-MER-477H represents the remains of three separate roads that traversed Pacheco Pass prior to 1967. One is the original 1920s-era route of SR 152, which was the first paved road over the pass and the one that included the distinctive "C" blocks. A second is the improved 1940s-era SR 152, a portion of which was repaved as Dinosaur Point Road after the flooding of the San Luis Reservoir in 1967 (Beck and Haase 1974: 52; Hoover 1990: 199; Whatford 1996: 1-2). Finally, the 1856 Andrew Firebaugh Toll Road, which later became the Pacheco Pass Stage Road and part of the Butterfield Overland Mail route, may be represented. Its correlation with early historic period maps is more tenuous, however, and it lacks associated features, such as the later 1920s-era "C" blocks that might support its link with a specific period and function.

NRHP/CRHR Evaluation

CA-MER-477H comprises 14 segments of three separate historic period road alignments that spanned Pacheco Pass. Each of the three alignments is evaluated under the historic context of *Transportation Development* in the American Period (*see* Section 3.3.3). Pacheco Pass is a part of a historically significant transportation corridor that was used by Native Americans as well as Spanish, Mexican, and American explorers, soldiers, and settlers. A commemorative plaque marking Gabriel Moraga's 1805

exploration of Pacheco Pass has been designated as CHL-829 (P-24-000643) and installed at the Romero Overlook on the northeastern edge of San Luis Reservoir.

Segments A, M, and N of CA-MER-477H may represent portions of the 1856 Andrew Firebaugh Toll Road that later became the Pacheco Pass Stage Road and part of the Butterfield Overland Mail route. Given the imprecision of the 1909 GLO map of the diseño of Rancho San Luis Gonzaga, the braided nature of the roads that cross the area, and the lack of associated materials that might confirm the age of the three recorded alignments, however, it is not possible to definitively link the road segments to the 19th century toll, stage, or mail route. Segments B, D, E, F, G, H, I, J, and K, which represent the 1920s-era alignment of SR 152, can be more securely linked to early historic period topographic maps (USGS 1920, 1955), as can the two segments (Segments C and L) that represent the improved 1940s-era alignment (USGS 1955).

Mere association with historical events or trends is not enough to qualify a resource for listing in the NRHP/CRHR under Criterion A/1. The resources' association with particular historical events or trends must be considered important as well. For instance, a historic period commercial building must be shown to have been significant in commercial history. Similarly, the three road alignments that make up CA-MER-477H may be considered potentially eligible for listing in the NRHP/CRHR under Criterion A/1 if they played a significant role in local or regional transportation development or history. As noted above, Segments A, M, and N of CA-MER-477H cannot be securely linked to their use as a part of the Andrew Firebaugh Toll Road, the Pacheco Pass Stage Road, or the Butterfield Overland Mail Route. Segments B, D, E, F, G, H, I, J, and K, which represent the 1920s-era alignment of SR 152, and Segments C and L, which represent the 1940s-era one, can be more firmly linked to a specific period through historical map and aerial photographic evidence. As remnant road alignments that played a significant role 1920s and 1940s-era transportation in Central California, 11 of the 14 road segments may be regarded as potentially eligible for listing in the NRHP/CRHR under Criterion A/1.

None of the road alignments that make up CA-MER-477H could be definitively linked with one or more historically significant individuals. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-477H comprises 14 segments of three separate road alignments that could not be clearly linked to any other buildings, structures, or sites within the vicinity. The road segments are not structurally unique and do not exemplify distinctive characteristics of a type, period, or method of construction. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As a series of isolated road segments, there is little potential to encounter subsurface components or vertical stratigraphy along CA-MER-477H. As a physical entity, the resource offers little potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). Thus, CA-MER-477H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

The overall condition of CA-MER-477H in 2012 was described as fair, with impacts from construction and maintenance of the Dinosaur Point Road and a pumping plant access road, reservoir inundation, and erosion. Generally, the road segments retain integrity location and materials, though vegetation growth has diminished their aspect of workmanship and materials. Integrity of design has been diminished by modern construction and development, while the aspect of setting has been impacted by later road, pumping station, and boat ramp construction and by the San Luis Reservoir. Aspects of association and feeling also have been impacted by access road, reservoir, and boat ramp construction, which resulted in the re-routing of SR 152 in its current alignment. Some of the CA-MER-477H road segments have lost any clear historic period association. For instance, Segment G is described as being potentially "mistaken for a wide shoulder" (Elliot et al. 2012c). The integrity of CA-MER-477H is poor to fair.

The potential 19th century road alignment of CA-MER-477H could not be securely linked to a specific time period or function and may represent portions of a toll

road, stage road, and/or overland mail route. The 1920s and 1940s-era alignments of CA-MER-477H can be more securely fixed in time and space. Both served an important role in historic period transportation development, however both lack sufficient integrity to convey their significance in local or regional history. Portions of these alignments have been paved, inundated, and/or severely eroded. The recorded road segments are discontinuous and frequently limited in scale. Overall, the resource retains poor integrity. CA-MER-477H is recommended not eligible for listing in the NRHP/CRHR.

Newly Identified Cultural Resources

CA-MER-484H
P-24-001974
PL-SLLP-A-001

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1d

Lower San Felipe Intake Alternative (Dinosaur Point)

Description

CA-MER-484H is a historic period utility pole alignment or telegraph line set into a series of drainages, ridge tops, and slopes. The resource consists of 15 pole bases, three fallen poles, several wood crossbeams, and a large number of glass insulators. The alignment is depicted on the 1940 Pacheco Pass 15-minute USGS topographic map (USGS 1940), but absent from earlier or later maps. It is aligned almost due east-west at a bearing of 178° for approximately 1,680 feet and terminates as it reaches a modern road. The posts are placed between 120-130 feet apart with the exception of the westernmost three posts that are placed 65 feet apart. All poles have been cut close to the ground surface. Pole Location 1 consists of a single cut pole on the flat surface of a finger ridge. It measures 7¼ inches in diameter and is made of treated wood; it is cut at 4½ inches above the ground surface. A northeast-southwest trenching dirt road that eventually connects with Dinosaur Point Road lies approximately 60 feet to the west of the poles. A modern power pole is located 111 feet to the south, which marks the point from which a modern power line continues southward. Modern trash lies scattered across the ridge top close to the dirt road. Historic period glass insulators and fragments were noted at four pole locations, but no other historic period artifacts were noted.

CA-MER-484H is located on the northwestern side of San Luis Reservoir to the west of a boat ramp and to the north of the 1920s-era alignment of SR 152. Steep-sided, flat-topped finger ridges surround CA-MER-484H. Vegetation along the utility pole alignment includes dry grasses, blue oaks, and seasonal shrubs. Ground surface

visibility ranges from 20-35%, and the alignment is roughly 30% exposed.

Archival Research Summary

CA-MER-484H is located in Township 10 South, Range 7 East in the unsectioned San Luis Gonzaga Land Grant. The site area was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227). An 1879 GLO plat map shows only the area not covered by the land grant. A later 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga depicts a stage route through the rancho but no utilities or similar features. The 1920 Pacheco Pass 15-minute USGS topographic map does not portray the utility pole alignment but does depict a road to the north of its location. The utility pole alignment appears on the 1940 Pacheco Pass 15-minute USGS topographic map, but is missing from the later 1955 Pacheco Pass 7.5-minute USGS topographic map (USGS 1940, 1955). Thus, based on historic period map evidence, CA-MER-484H was constructed and removed within a span of less than 37 years. Based on marks noted on the glass insulators, the site was likely constructed between 1921 and 1939 (Meier 2016; Whitten 2016a, 2016b).

NRHP/CRHR Evaluation

CA-MER-484H, which comprises 15 cut pole bases, three fallen poles, and several glass insulators, represents the fragment of a larger utility pole alignment that was likely constructed between 1921 and 1939. The first telegraph line across Pacheco Pass was built in 1859 (Mountain-charlie1850.org 2016), and there is no evidence that CA-MER-484H was connected with that early alignment. CA-MER-484H was not the first utility alignment to bridge Pacheco Pass, nor did it appear to be a historically significant one tied to events of local or regional importance. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

This utility pole alignment could not be linked to one or more individuals, historically significant or otherwise. CA-MER-484H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

The site features 15 cut telegraph poles and 3 fallen poles. These features and the alignment they were once a part of are not unusual or distinctive in terms of engineering,

architecture, or artistry. CA-MER-484H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-484H includes approximately 25 scattered glass insulator fragments representing five insulators that were associated with several of the utility poles. Two manufacturing marks were noted on these insulator fragments that indicated the alignment was likely constructed between 1921 and 1939 (Meier 2016; Whitten 2016a, 2016b). No other artifacts or features were recorded in conjunction with the utility pole alignment. The resource does not offer sufficient research potential to contribute to our knowledge of communications, the economy, technology, or other potential research themes and questions. CA-MER-484H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

The utility pole alignment retains integrity of location and materials. Its integrity of design, materials, and workmanship has been diminished by the removal of the poles, wires, and insulators that would have been integral to its function and appearance. Aspects of setting and feeling have been diminished by the construction of the boat ramp, Dinosaur Point Road, and the San Luis Reservoir, which truncates the utility pole alignment. Association and feeling are also diminished by the lack of any clear association with a specific utility company, which may have provided further context for the resource prior to the rerouting of SR 152. The remnant alignment no longer carries any clear historic period association and, overall, it has poor integrity. CA-MER-484H is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-485H
P-24-001975
PL-SLLP-A-003

Recommended Not Eligible for Listing in the NRHP/CRHR

Description

CA-MER-485H is a historic period debris scatter that lies within in a seasonal drainage below a sharp curve just north of Dinosaur Point Road. The scatter is spread across an area measuring 100 feet N/S by 25 feet E/W and includes ten exposed or partially buried items. Among these items are several eroding gas cans, drainage pipes, and a 2-foot diameter metal drum containing glass bottle fragments and metal canisters. One glass fragment features an Illinois “I [in a circle]” maker’s mark that post-dates 1954 (Toulouse 1972). The debris scatter

Appendix B, Figure B-1d

extends along the drainage to the north, which skirts the north-facing slope of a low ridgeline.

Lower San Felipe Intake Alternative (Dinosaur Point)

The site area is characterized by non-native grasses, blue oaks, and small canyon scrub oaks that allow moderate ground surface visibility. The drainage slopes slightly (5°) to the north and feeds into the San Luis Reservoir, which lies 300 feet distant. CA-MER-485H is in fair condition, though items within the debris scatter have likely been displaced and/or partially buried by alluvial and colluvial erosion.

Archival Research Summary

CA-MER-485H is located in Township 10 South, Range 7 East in the unsectioned San Luis Gonzaga Land Grant. The site area was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of Rancho San Luis Gonzaga shows a stage route through the rancho as well as two alternate stage routes (BLM 2016), though it is unclear if either of those two alternate routes correspond to the SR 152 alignment depicted in the later 1920 Pacheco Pass 15-minute USGS topographic map and the 1940 Pacheco Pass 15-minute USGS topographic map that passes to the south of the site location (USGS 1920, 1940). A 1946 aerial photograph corresponds with these earlier topographic maps (Fairchild Aerial Surveys 1946). The 1955 Pacheco Pass 7.5-minute USGS topographic map shows the San Luis Reservoir as well as a boat ramp to the north of Dinosaur Point Road, which is shown as an unimproved dirt road just south of the site location (USGS 1955).

Based on the map evidence and the single artifact bearing a maker's mark noted among the site's constituents, CA-MER-485H may post-date 1954. The debris scatter does not appear to be related to the 1920s-era road during its original period of use. The site may represent discard associated with mid-20th century ranching or recreational activities; it may also represent opportunistic discard from the abandoned 1920s-era road located upslope or from the 1940s-era road. No structures were noted in proximity to the debris scatter on any historic period map, and CA-MER-485H does not appear to have been associated with any other recorded site.

NRHP/CRHR Evaluation

CA-MER-485H is a historic period debris scatter made up of metal cans, drainage pipes, and a small metal drum containing glass bottle fragments and metal canisters. A single diagnostic artifact indicates that the debris scatter may post-date 1954 (Toulouse 1972). The site appears to represent the opportunistic discard of materials from a convenient roadside location. CA-MER-485H could not be linked to any other historic period sites in the vicinity through map evidence or field inventory, thus it could not be linked to a particular historic context. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

This historic period debris scatter could not be linked to one or more individuals, historically significant or otherwise. CA-MER-485H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

As a historic period debris scatter, CA-MER-485H contains no engineered, designed, or artistic features. The site is thus recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-485H includes ten exposed or partially buried historic period artifacts, only one of which bears a diagnostic maker's mark. Although the site may retain some level of vertical stratigraphy, it likely retains little horizontal stratigraphy given its location within a drainage and its exposure to alluvial and colluvial erosion. The exposed artifact assemblage lacks any functional association with a particular historic context, and the assemblage does not retain a sufficient quantity or diversity of materials to address important research themes relating to transportation, ranching, recreation or other American Period developments (*see* Section 3.3.3). Thus, the site is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-485H retains integrity of location and setting, though its position in a drainage suggests that artifacts have been transported downslope or partially buried through alluvial and colluvial erosion. The aspect of design implies an intentional site layout, which is typically lacking in historic period debris scatters. Aspects of materials and workmanship are not relevant, since there are no built features or structural remains

present. Integrity of feeling and association are diminished by the lack of any clear functional association for the site. CA-MER-485H thus retains little integrity. CA-MER-485H has poor overall integrity and is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-486H
P-24-001976
PL-SLLP-A-004

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1a

Lower San Felipe Intake Alternative (Dinosaur Point)

Description

CA-MER-486H is a historic period earthen dam that was likely constructed to support cattle ranching. The resource measures 8 feet in width at the top, 20 feet in width at the base, and approximately 60 feet in length. The dam stands roughly 3 feet high on its western side (upslope) and 8 feet high on its eastern side (downslope). No artifacts or other features were found in association with the dam. A spillway is located at the northern end of the dam, which has contributed to the erosion of the feature. No artifacts or other features were found at CA-MER-486H, and the next closest resource is a historic period dirt road (CA-MER-487H) approximately 450 feet to the west.

CA-MER-486H is located in a dry drainage with seasonal grasses and a very large, old cotton wood tree just below the dam. Above the dam are sedges and marsh plants. The drainage is steep, with an approximate 20° slope to either side. The resource area is roughly 70-80% exposed and features moderate ground surface visibility, obscured mostly by dense, low grasses.

Archival Research Summary

CA-MER-486H is located in the unsectioned San Luis Gonzaga Land Grant in Township 10 South, Range 7 East. The resource area was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho as well as two alternate stage routes, but does not depict the earthen dam (BLM 2016). The 1920 Pacheco Pass 15-minute USGS topographic map shows the resource location to the south of the SR 152 alignment while the 1940 Pacheco Pass 15-minute USGS topographic map depicts the road alignment to the north of the resource location (USGS 1920, 1940). Neither map depicts the earthen dam. CA-MER-486H is also not depicted on the 1955 Pacheco Pass 7.5-minute USGS topographic map (USGS 1955). A 1946 aerial photograph of the resource location shows what

may be the earthen dam, though given the scale of the image its presence could not be confirmed (Fairchild Aerial Surveys 1946).

NRHP/CRHR Evaluation

CA-MER-486H is a historic period earthen dam with no other associated features, structures, or surface artifacts. The resource could not be linked to a specific time period or to other historic period resources in the vicinity, though a dirt road (CA-MER-487H) roughly 450 feet to the west was likely established by 1946 and may have been associated with CA-MER-486H. Although the resource was likely associated with ranching or farming activities, it could not be linked to particular historic period events, significant or otherwise. CA-MER-486H is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

The resource could not be linked to one or more historically significant individuals. CA-MER-486H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

As a historic period earthen dam, CA-MER-486H consists of a single engineered feature. That feature is not unique and does not exemplify distinctive characteristics of a type, period, or method of construction. The resource does not embody innovative construction techniques, or represent the work of a master. Therefore, CA-MER-486H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-486H has been impacted by erosion and appears to retain integrity of location, design, materials, workmanship, and feeling. The resource's integrity of setting and association may have been impacted by the development and inundation of the San Luis Reservoir and by the lack of any clear or current link between the dam and the activities or function for which it was intended. Overall, CA-MER-486H possesses fair integrity and is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-487H
P-24-001977
PL-SLLP-A-005

Description

CA-MER-487H consists of a dirt road segment that appears to have been cut into the north side of an east-west trending seasonal drainage embankment. The road

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1a

segment measures approximately 475 feet in length and 9 feet in width and it extends west outside of the Lower San Felipe Intake Alternative APE. The eastern portion of the road has been obscured by erosion and plant growth but may join an earthworks dam (CA-MER-486H) located approximately 450 feet to the east. No artifacts or other features were found in direct association with the road.

Lower San Felipe Intake Alternative (Dinosaur Point)

The area surrounding the dirt road segment is characterized by sparse blue oaks, live oaks, buckeye, chamise, coyote bush, California sagebrush, and non-native grasses. Ground surface visibility to either side of the road is fair (40%), the road is fully exposed, and slope varies between 2-6° with a northwestern aspect. Although the road remains in fair condition, it does not appear to have been recently used or actively maintained.

Archival Research Summary

CA-MER-487H is located in Township 10 South, Range 7 East in the unsectioned San Luis Gonzaga Land Grant. The land grant was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho, but it is unclear if the stage route may have corresponded to the CA-MER-487H dirt road segment (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not depict the dirt road segment (USGS 1920, 1940). CA-MER-487H is also absent from the 1955 and 1972[7] Pacheco Pass 7.5-minute USGS topographic maps (USGS 1955, 1972). A 1946 aerial photograph of the area, however, shows the road as an ephemeral alternative route to the SR 152 alignment shown on the 1920 Pacheco Pass 15-minute USGS topographic map (Fairchild Aerial Surveys 1946; USGS 1920).

Based on aerial photograph evidence, CA-MER-487H appears to have been established prior to 1946 and may have been roughly contemporaneous with the 1920s-era alignment of SR 152. No other structures were noted proximate to the road segment on any historic period

[7] The 1972 Pacheco pass 7.5-minute USGS topographic map was revised from aerial photographs taken in 1971.

map, and it does not appear to have been directly associated with any other known resources.

NRHP/CRHR Evaluation

CA-MER-487H is a historic period road segment that was likely constructed prior to 1946. It is evaluated under the historic context of *Transportation Development* in the American Period (*see* Section 3.3.3). Although the construction date of CA-MER-487H and its period of use remain unknown, it may correspond to 1920s-1930s era transportation development (Fairchild Aerial Surveys 1946). The road appears only on a 1946 aerial photograph and could not be securely linked to any other buildings, structures, or sites within the vicinity, though it may have been associated with an earthen dam roughly 450 feet to the east. The road segment and surrounding area were not noted in a history of Merced County (Tinkham 1923), and CA-MER-487H does not appear to have been linked to any significant local or regional events or developments. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No links could be established between CA-MER-487H and any individuals significant in local, regional, or state history. Thus, the resource is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-487H comprises an isolated road segment that could not be chronologically or geographically linked to any other buildings, structures, or sites within the vicinity. The road segment is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. CA-MER-487H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As an isolated road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-487H. CA-MER-487H offers limited potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). Thus, the resource is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-487H does not appear to be maintained or in active use. It remains in fair condition despite apparent

impacts from erosion and retains integrity of location, design, feeling, materials, and workmanship. It lacks integrity of association, however because it could not be linked to a particular time, event, individual, or purpose and could not be clearly associated with any neighboring buildings, structures, or sites. It lacks integrity of setting as the original alignment of SR 152 has been rerouted and the construction of the San Luis Reservoir has greatly altered the resource vicinity. CA-MER-487H does not meet any of the eligibility criteria for listing in the NRHP/CRHR despite possessing fair overall integrity. It is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-488H
P-24-001978
PL-SLLP-A-009

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1a

Lower San Felipe Intake Alternative (Dinosaur Point)

Description

CA-MER-488H consists of a historic period dirt road segment that is cut into the south slope of an east-west trending finger ridge. The road segment, obscured by vegetation in some areas, measures approximately 2,500 feet in length and 20 feet in width. It extends west outside of the Lower San Felipe Intake Alternative APE. No artifacts or other features were found in association with the road segment, and the closest known resource consists of a distinct historic period road segment (CA-MER-487H) roughly 950 feet to the northeast.

The resource area is characterized by steep-sided, flat-topped finger ridges with dry grasses and sparse live and blue oaks. The road segment is almost fully exposed (95%), though ground surface visibility is somewhat limited (20%). The road remains in fair condition, though it does not appear to have been recently used or actively maintained and has been impacted by erosion.

Archival Research Summary

CA-MER-488H is located in Township 10 South, Range 7 East in the unsectioned San Luis Gonzaga Land Grant. The land grant was patented to Juan Pérez Pacheco on May 16, 1871 (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho, but does not appear to depict the CA-MER-488H dirt road segment (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not portray the dirt road segment (USGS 1920, 1940), nor do the 1955 (surveyed

in 1953) and 1972 Pacheco Pass 7.5-minute USGS topographic maps (USGS 1955, 1972). A 1946 aerial photograph of the surrounding area shows the road as an ephemeral route to the south of the 1920s-era SR 152 alignment (Fairchild Aerial Surveys 1946; USGS 1920).

CA-MER-488H appears to have been established prior to 1946 and may have been constructed or used at roughly the same time as the 1920s-era alignment of SR 152 (Fairchild Aerial Surveys 1946; USGS 1920). No other structures were noted proximate to the road segment on any historic period maps, and it does not appear to have been associated with any other known resources.

NRHP/CRHR Evaluation

CA-MER-488H is a historic period road segment that was likely constructed prior to 1946. It is evaluated under the historic context of *Transportation Development* in the American Period (*see* Section 3.3.3). Although the construction date of CA-MER-488H and its period of use remain unclear, it may be contemporaneous with the early alignment of SR 152 (Fairchild Aerial Surveys 1946; USGS 1920). The road does not appear on historic period maps and appears only on a 1946 aerial photograph. It could not be linked to any other buildings, structures, or sites within the vicinity or with the closest other known resource, a historic period dirt road segment (CA-MER-487H) located to the northeast. The road segment and surrounding area were not noted in an account of Merced County history (Tinkham 1923), and CA-MER-488H does not appear to have been linked to any significant local or regional events or developments. It is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No links could be established between CA-MER-488H and any individuals significant in local, regional, or state history. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-488H is an isolated road segment that could not be linked to any other buildings, structures, or sites within the vicinity. The road segment is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. It is

recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As an isolated road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-488H. CA-MER-488H offers little potential to address important questions about Transportation or other potential research themes (*see* Section 3.3.3). Thus, the resource is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-488H does not appear to be maintained or in active use. It remains in fair condition despite apparent impacts from erosion and retains integrity of location, design, feeling, materials, and workmanship. It lacks integrity of association, however because it could not be linked to a particular time, event, individual, or purpose and could not be clearly associated with any neighboring buildings, structures, or sites. It lacks integrity of setting, as the original alignment of SR 152 has been rerouted and the construction of the San Luis Reservoir has greatly altered the surrounding area. CA-MER-488H possesses fair overall integrity and is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-489H
P-24-001979
PL-SLLP-A-013

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1a

Lower San Felipe Intake Alternative (Dinosaur Point)

Description

CA-MER-489H consists of a historic period graded dirt road segment with a hard-packed surface that crosses a steep-sided valley below Dinosaur Point Road. It then ascends a hillside to the south and continues north beyond the Lower San Felipe Intake Alternative APE into the San Luis Reservoir. There are small berms on either side of the road segment as it crosses the valley in addition to 3-foot deep cuts into the hillslopes that follow the road. The northwest side of the road (downslope) is also built up-slightly in some areas. CA-MER-489H measures approximately 2,450 feet in length and varies between 10-15 feet in width depending on the extent to which it has been eroded. It passes to the south of a historic period earthen dam and impound pond that are bordered by prehistoric deposits (CA-MER-26/H), a substantial prehistoric habitation site with surface and subsurface deposits (CA-MER-94), and another historic period road segment (CA-MER-477H).

CA-MER-489H is located along the western shore of the San Luis Reservoir below the average waterline. Soils

within the resource area have been heavily impacted by erosion and wave action, and only sparse non-native grasses and cockleburs grow in the area. Portions of the eastern end of the road segment have been destroyed by the slumping of the hillside over the road, while the western end of the resource has been washed out by an ephemeral drainage. The resource area is fully exposed, offers good (60%) ground surface visibility, and features a variable slope and aspect.

Archival Research Summary

CA-MER-489H is located in the unsectioned San Luis Gonzaga Land Grant in Township 10 South, Range 7 East. The land grant was patented to Juan Pérez Pacheco on May 16, 1871 (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of Rancho San Luis Gonzaga shows a stage route through the rancho, but it is unclear if the stage route may have corresponded to the CA-MER-489H road segment (BLM 2016).

The 1920 Pacheco Pass 15-minute USGS topographic map does not depict the road segment (USGS 1920), though the 1940 Pacheco Pass 15-minute USGS topographic map does portrays a telegraph or utility line that crossed the road location (USGS 1940). The 1955 Pacheco Pass 7.5-minute USGS topographic map depicts the road segment, which is also clearly shown on a 1946 aerial photograph of the area (USGS 1955; Fairchild Aerial Surveys 1946). The aerial photograph depicts CA-MER-489H to the south of the 1920s-era SR 152 alignment, and it may have served as an alternate, roughly parallel route. No other buildings, structures, or sites were noted proximate to the CA-MER-489H road segment on any historic period maps, and it did not appear to be associated with the historic period earthen dam and stock pond at CA-MER-26/H.

NRHP/CRHR Evaluation

CA-MER-489H is a historic period graded dirt road segment that was established by 1946. It is evaluated under the historic context of *Transportation Development* in the American Period (*see* Section 3.3.3). The construction date of CA-MER-489H and its period of use remain indeterminate, however it may have served as an alternate route associated with the 1920s-era alignment of

SR 152 (Fairchild Aerial Surveys 1946; USGS 1920). The road segment did not appear to be linked to any other buildings, structures, or sites within the vicinity, and it was not noted in association with an account of Merced County history (Tinkham 1923). CA-MER-489H does not appear to have been linked to any significant local or regional events or developments. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No links could be established between CA-MER-489H and any individuals significant in local, regional, or state history. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-489H is a graded road segment that could not be definitively linked to other known resources within the vicinity. The road segment is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. CA-MER-489H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As an isolated road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-489H. The resource offers limited potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). Thus, CA-MER-489H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-489H does not appear to be maintained or in active use. It remains in fair condition despite apparent impacts from erosion and inundation and retains integrity of location, design, feeling, materials, and workmanship. It lacks integrity of association, however because it could not be linked to a particular time, event, individual, or use and could not be clearly associated with any known resources. It lacks integrity of setting, as the original alignment of SR 152 has been rerouted and the construction of the San Luis Reservoir has greatly altered the surrounding area. CA-MER-489H possesses fair overall integrity. It is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-490H
P-24-001980
PL-SLLP-A-019

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1a

Lower San Felipe Intake Alternative (Dinosaur Point Road)

Description

CA-MER-490H is a historic period debris scatter located upslope from the modern Dinosaur Point Road and downslope from a historic period road segment (Segment D of CA-MER-477H). The scatter spans an area measuring 80 feet NE/SW by 25 feet NW/SE and consists of roughly 150 church-key opened beverage cans and larger ferrous metal cans. Fifteen have pull-tab openings, 20 are knife-opened, ten are screwdriver-opened, and the remaining cans feature church key-openings. Flat-topped cans with multi-tab seams also are present. One can bears faint markings reading "oil" and "lube." The scatter also includes non-diagnostic fragments of white improved earthenware and porcelain ceramics as well as 50 or more amber, colorless, brown, aqua, and green glass fragments. One bottle base is embossed with "WINE DALE / 23 OI [in a diamond] 52 / HA / REFILLING / PROHIBITED / 1489-W / VINYARDS CO." Two coke bottle fragments are included in the scatter: one is marked "OAKLAN/CAL" and the other is marked "LAS CRUCES/N.M." The debris scatter contains at least 210 artifacts with a total minimum number of items (MNI) equaling 159.

CA-MER-490H is in fair condition, with impacts from exposure and erosion. It is located on the northwest side of a southwest-northeast trending ridge top. The hillslope is very steep (>30°) and covered in dense chaparral with coyote bush, chamise, Manzanita, blue oaks, and non-native grasses. The site is approximately 70% exposed and features a northeastern aspect. Ground surface visibility is generally poor (20%).

Archival Research Summary

CA-MER-490H is located in the unsectioned San Luis Gonzaga Land Grant in Township 10 South, Range 7 East. The land grant was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). A GLO plat map from 1879 depicts only the area not covered by the land grant. A 1909 GLO sketch map of the rancho shows a stage route through Rancho San Luis Gonzaga (BLM 2016), though it does not appear to correspond to the historic period road segment located upslope from CA-MER-490H (Segment D of CA-MER-477H). The road segment instead corresponds to the 1920s-era alignment of SR 152 as depicted on the 1920 Pacheco Pass 15-minute USGS

topographic map (USGS 1920). Numerous other segments (Segments B, E, F, G, H, I, J, and K of CA-MER-477H) of the same road alignment were recorded along with five "C" blocks, or concrete posts with a "C" stamped into one side (Features 1 through 5), which were used to delineate highway ROW between 1914 and 1934 (Windmiller 2007). No standing buildings or structures were depicted in proximity to CA-MER-490H on the 1920 Pacheco Pass 15-minute USGS topographic map, nor were any shown on the later 1940 Pacheco Pass 15-minute USGS topographic map or 1955 Pacheco Pass 7.5-minute USGS topographic map (USGS 1940, 1955). It is likely, therefore, that the debris scatter is associated with casual historic period roadside discard rather than with a particular residence or ranch.

Based on the map evidence and the temporally diagnostic artifacts noted among the site's constituents, CA-MER-490H likely dates to the mid-1930s to the early 1960s. Church key-opened cans date to 1935 or later (Rock 1987: 112), while pull tab cans did not originate until the early 1960s (Maxwell 1993: 96). The wine bottle base dates to 1952 (Toulouse 1971: 403) while flat-topped cans with multi-tab seams date from the mid-1930s to the 1970s (Maxwell 1993: 96; Mar tells 1976: 44).

The debris scatter does not appear to be related to the 1920s-era alignment of SR 152 during its original period of use. The site may represent discard associated with 1950s-era ranching or recreation activities; it may also represent opportunistic discard from the abandoned 1920s-era road. As noted above, no structures were noted in proximity to the debris scatter on any historic period map, and it did not appear to be associated with any recorded site apart from CA-MER-477H.

NRHP/CRHR Evaluation

CA-MER-490H is a historic period debris scatter made up mostly of cans as well as lesser quantities of ceramic and glass artifacts. Temporally diagnostic items from the site indicate that the debris scatter likely dates to between the mid-1930s and the early 1960s (Toulouse 1972). The site appears to represent the opportunistic discard of materials from the 1920s-era alignment of SR 152, though it likely post-dates the main period in which the road was used. CA-MER-490H could not be linked to any other historic period sites in the vicinity through map evidence or

inventory survey, thus it could not be linked to a particular historic context. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

The site could not be linked to one or more individuals, historically significant or otherwise. CA-MER-490H is thus recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

As a historic period debris scatter, CA-MER-490H contains no engineered, designed, or artistic features. The site is thus recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-490H includes approximately 210 artifacts representing an estimated 159 items. Few revealed diagnostic maker's marks, though artifact typing provided a date range for the site spanning the mid-1930s through the early 1960s. Given its position on a steep slope and its exposure to erosion, the site likely retains little vertical or horizontal stratigraphy. The exposed artifact assemblage lacks any functional association with a particular historic context, and the assemblage does not retain a sufficient quantity or diversity of artifacts to address important research themes relating to transportation, ranching, recreation or other American Period developments (*see* Section 3.3.3). Thus, CA-MER-490H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-490H retains integrity of location and setting, though its position on a hillslope suggests that artifacts have been transported or displaced downhill. The aspect of design implies an intentional site layout, which is typically lacking in historic period debris scatters. Aspects of materials and workmanship are not relevant since there are no built features or structural remains present. Integrity of feeling and association are diminished by the lack of any clear functional association for the site. The site thus retains poor integrity. CA-MER-490H is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-491H
P-24-001985
PL-SLLP-A-010

Description

CA-MER-491H is a dirt road segment that has been cut into the western slope of a north-south trending finger

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1d

Lower San Felipe Intake Alternative (Basalt Point Use Area)

ridge. It measures approximately 600 feet in length and 10 feet in width. The cut into the ridge is approximately 2 feet high at a 32° angle. The northern end of the dirt road segment joins a maintained dirt road segment that intersects Basalt Road. A large boulder (6-x-5-x-2.5 feet) rests in the middle of the road roughly 200 feet south of its northernmost section. The south end of the road ends at a high water mark near the southeastern shore of the San Luis Reservoir.

CA-MER-491H is characterized by steep-sided, grassy finger ridges with slopes ranging from 16-22°. Sparse trees and dry, non-native grasses grow throughout the area, though most of the trees in the vicinity represent modern landscaping planted adjacent to a boat ramp parking lot. CA-MER-491H is fully exposed with fair to limited (20%) ground surface visibility. The road is in fair condition but has been impacted by erosion.

Archival Research Summary

CA-MER-491H is located in Township 10 South, Range 8 East in the southeast quarter of Section 28. Section 28 represents a half-section, with the unsectioned northern half subsumed by the San Luis Gonzaga Land Grant. Section 28 was patented to Juan Pérez Pacheco on May 16, 1871 (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). The northern half of the southeast quarter, which subsumed the resource area, and the eastern half of the southwest quarter were later patented on February 23, 1892 by Antonio Lopez (Doc #2241, BLM# CACAAA 096296) (BLM 2016). In 1895, he also patented the western half of the southwest quarter.

An 1860 GLO plat map shows the Butterfield Overland Mail route and a telegraph line as they crossed the northwest corner of Section 13, however no historic period features were depicted in Section 28. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho—the future alignment of SR 152—but does not show the CA-MER-491H road alignment (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not depict the dirt road segment (USGS 1920, 1940a). The 1953 San Luis Creek 7.5-minute USGS topographic map shows an east-west trending unimproved road spanning Section 28 that corresponds to CA-MER-491H (USGS 1953). The road segment, however, is not depicted on the

1969[8] San Luis Dam 7.5-minute USGS topographic map (USGS 1969a), likely because the area was inundated by that time. A 1946 aerial photograph of the area clearly shows the road segment as a part of a road leading west from a north-south trending road in Section 26 (Fairchild Aerial Surveys 1946).

CA-MER-491H passes approximately 760 feet to the west of a possible former homestead site (CA-MER-261H) that may have been associated with Antonio Lopez. Antonio "Antone" Lopez was born in 1844, came to California in 1851, and died in 1907 in Los Banos (Findgrave.com 2016). His obituary noted that he "worked for 40 years as Head Vaquero for Henry Miller of Miller and Lux. Antone was married to Theresa Harper and they had four children Maria Antonia, Henry Francis, Albert Henry, and Frank Henry." Early 20th century US Census records noted that Antonio Lopez resided in Township 3, was married to Theresa Lopez, had four children, and listed his occupation as "farmer" (US Census Bureau 1900a: 9A, 1910: 9A). Since CA-MER-491H features no associated artifacts and aerial photographs reveal only that it was present by 1946, the road segment cannot be clearly linked to the Lopez land grant or to the possible former homestead.

NRHP/CRHR Evaluation

CA-MER-491H consists of a historic period road segment that was constructed prior to 1946 (Fairchild Aerial Surveys 1946). It is evaluated under the historic context of *Transportation Development* in the American Period (*see* Section 3.3.3). The construction date of CA-MER-491H and its period of use remain unclear, though it may have been associated with a possible former homestead (CA-MER-261H) or with homesteaders or ranchers who required an east-west route outside of the San Luis Gonzaga Land Grant. The road segment could not be clearly linked to any buildings, structures, or sites within the vicinity, though the possible former homestead site is located just 760 feet to the west. CA-MER-491H does not appear to have been linked to any significant events or developments in local or regional history. It is

[8] The 1969 San Luis Dam 7.5-minute USGS topographic map was based on aerial photographs taken in 1967 and field checked in 1969.

recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

CA-MER-491H lay within a land grant patented to Antonio Lopez in 1892, however no links could be established between Lopez or any subsequent landowners or leasees and the construction and use of the road segment. Although the builder or builders of the road remain unknown, it is unlikely that they figured prominently in local or regional history. CA-MER-491H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-491H is an isolated road segment that could not be clearly linked to any other buildings, structures, or sites within the vicinity. The road segment is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. Thus, the resource is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As an isolated road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-491H. It offers limited potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). The resource is thus recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-491H does not appear to be maintained or in active use, though the northern end of the road joins another road segment that is maintained and leads to Basalt Road. It is in fair condition despite impacts from erosion and retains integrity of location, design, feeling, materials, and workmanship. It lacks integrity of association, however, because it could not be clearly linked to a particular time, event, individual, or purpose and could not be associated with other buildings, structures, or sites in the vicinity. It also lacks integrity of setting, as the resource has been inundated by the San Luis Reservoir to the south and truncated by a more recent road to the north. CA-MER-491H possesses fair overall integrity and is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-492H
P-24-001986
PL-SLLP-A-011

Recommended Not Eligible for Listing in the NRHP/CRHR, (Non-Contributing Element to the B.F. Sisk Dam System)

Appendix B, Figure B-1d

Lower San Felipe Intake Alternative (Basalt Point Use Area)

Description

CA-MER-492H is a historic period industrial resource measuring 1,600 feet N/S by 1,100 feet E/W. It represents a part of the larger Basalt Hill Quarry (CA-MER-509H) and separation plant complex built in 1963 to process basalt into riprap for construction of the B.F. Sisk Dam (Autobee 2011: 11-12; Berman 2012: pers. comm.; Reclamation 1974: 49). The Basalt Hill Quarry (CA-MER-509H) is located approximately 2,500 feet to the southwest and comprises the main component of the complex, which also includes two historic period access roads (CA-MER-493H and CA-MER-494H). CA-MER-492H features five main loci (Locus 1 through 5). Locus 1 is a concrete tunnel through a small hill covered with piled riprap on top of which are three concrete foundation pads, six vertically embedded I-beams, a road segment, and a large number of cuts, flats, and bulldozer ramps. Locus 2 consists of a deep road cut, a road segment, and a flat. Locus 3 comprises a number of bulldozer scrapes as well as road segments and piled riprap. Locus 4 consists of two large bulldozer scrapes and two road segments. The final main locus, Locus 5, consists of two large bulldozer scrapes.

Considerable amounts of earth were moved during the formation of CA-MER-492H, and the hill that the tunnel is built through appears to be artificial. The site is located in a wide, flat, round valley situated between Basalt Hill to the southwest and San Luis Reservoir to the northeast. The terrain surrounding the resource area is relatively flat to the north and east, with moderate ground surface visibility obscured only by non-native grasses and occasional coyote bushes. The area has a 0-5° slope, is fully exposed, and features a northeastern aspect. The relatively level nature of the site may be due to historic period earthmoving. A 6-foot deep bank runs roughly parallel to the northwest-trending segment of one access road, separating the main portion of the site from the rest of the valley. A small knoll rests between the bank and Basalt Road, with portions of the knoll exhibiting bulldozer activity. The hills to the south and west are steep (>20°), particularly Basalt Hill, which has a maximum elevation of 1,707 feet amsl. Soils within the resource area are tan-brown silty loam and have been graded away in some areas, exposing the sedimentary bedrock beneath. Large portions of the resource area are covered by riprap, either piled or strewn, that would have

arrived via a conveyor belt from the Basalt Hill Quarry (CA-MER-509H). The conveyor belt is no longer in place, but does appear in historic period photographs.

CA-MER-492H is in fair condition with few visible impacts. The main impacts relate to the decommissioning of resource—standing superstructures in Locus 1 were removed, leaving only embedded I-beams and concrete pads. Grading of an access road has also damaged or covered the historic period access road that led through the tunnel. There are very few artifacts present at CA-MER-492H, likely as a result of cleanup activities following the facility's closure (Poole 2012: pers. comm.).

Archival Research Summary

CA-MER-492H is located in Township 10 South, Range 8 East in the southwest quarter of Section 27. The southern half of Section 27 was patented to the Southern Pacific Railroad Company on April 20, 1875 (Doc #4, BLM# CACAAA 093859) (BLM 2016). No railroad was ever built through the section, however, and it was likely sold to local ranchers or other property owners. An 1860 GLO plat map depicts drainages along the northern edge of Section 27, but no historic period development (BLM 2016). The 1920 Pacheco Pass 15-minute USGS topographic map shows that the resource area was dominated by a northeast-southwest oriented drainage originating from a spring to the southwest in Section 34, but no access routes to or from the resource area are depicted (USGS 1920). The 1940 Pacheco Pass 15-minute USGS topographic map does not show CA-MER-492H but does depict a portion of a road that accesses the resource area (USGS 1940). The 1953 San Luis Creek 7.5-minute USGS topographic map shows that the resource area in Section 27 and the Basalt Hill Quarry (CA-MER-509H) area to the southwest in Section 33 remained unmodified (USGS 1953). To the south of CA-MER-492H in Section 34, the same map shows a fire lookout (P-24-000078) on the top of Basalt Hill and a south-trending access road leading away from it (USGS 1953). An access road through Section 27 to the north of the resource area is also depicted, though only a portion to the northwest currently remains on dry land. The concrete tunnel in Locus 1 of CA-MER-492H first appears on the 1969 San Luis Dam 7.5-minute USGS topographic map

(USGS 1969a), which also depicts the San Luis Reservoir and the Basalt Hill Quarry (CA-MER-509H).

Historic period map evidence supports other accounts that the Basalt Hill Quarry (CA-MER-509H) and separation plant complex were established in 1963 to support construction of the B.F. Sisk Dam and San Luis Reservoir, which were completed in 1967 (Autobee 2011: 11-12; Reclamation 1974: 49). In describing how the complex would have operated, Autobee (2011: 11) noted that Rock for zones 4 and 5 on the upstream face of the dam were extracted from a quarry at the top of nearby Basalt Hill. The quarry-run rock was excavated with a 15 cubic yard electric shovel and transported by 75-ton trucks to a separation plant. This plant separated the rock into plus-and-minus nine-inch sizes. Huge bar screens directed the larger size rock into a hopper that loaded the zone 5 material into 60-ton rear-dump trucks. The trucks had special braking systems for hauling safely down the steep access road. The smaller zone 4 rock dropped onto a 3,200-foot long conveyor belt down the hillside. This ended on a cantilevered tower over a 100-foot high stockpile at the bottom. There was a drive-through tunnel under the pile that allowed 100-ton trucks to be loaded in two minutes.

The Basalt Hill Quarry (CA-MER-509H) and separation plant complex was thus used for quarrying and separating rock fill, bedding, and riprap. CA-MER-492H would have been on the receiving end for "smaller zone 4 rock" that would have been transported from the Basalt Hill Quarry (CA-MER-509H) via the "3,200-foot long conveyor belt" (Autobee 2011: 11). Although the conveyor belt is no longer extant, the hill cut for the belt remains highly visible. The concrete footings and embedded I-beams in Locus 1 of CA-MER-492H likely represent the remains of the end of the conveyor belt and the tower. The poured concrete tunnel in Locus 1 would have been used in loading separated material onto vehicles for conveyance to the reservoir embankment and dam construction area.

After construction of the B.F. Sisk Dam was completed in 1967, the quarry and riprap separation plant were shut down, and the tunnel in Locus 1 of CA-MER-492H was reused for storage. Chain-link fencing was bolted to each tunnel entrance, and openings in the roof for loading rock were closed with metal sheeting. The conveyor belt

linking CA-MER-492H with the Basalt Hill Quarry (CA-MER-509H) was removed, and superstructures such as the cantilevered tower noted by Autobee (2011: 11) were dismantled.

NRHP/CRHR Evaluation

CA-MER-492H is a historic period resource that was associated with the Basalt Hill Quarry (CA-MER-509H) and separation plant complex. This complex was established in 1963 to support the construction of the B.F. Sisk Dam and the San Luis Reservoir and comprises a part of the larger dam system. CA-MER-492H is evaluated as a part of that larger system under the historic context of *Water Conveyance* in the American Period (*see* Section 3.3.3).

The B.F. Sisk Dam and its appurtenant features were recommended eligible for listing in the NRHP and CRHR under Criterion A/1 as a contributing element to the CVP and SWP and for their contribution to the expansion and sustainability of farmland and municipal and industrial development in the Central Valley (JRP 2018). As a feature within the B.F. Sisk Dam system, CA-MER-492H may be regarded as a contributing or non-contributing element under Criterion A/1. A connection to significant historic period events or trends is insufficient, in and of itself, to render a resource eligible for listing in the NRHP/CRHR under Criterion A/1. Rather, the role the resource played in those events or trends must be significant. The dam symbolizes the first and only state-federal collaboration in California water development to be conducted on such a large scale (Autobee 2011). The Basalt Hill Quarry and separation plant complex was created and used to support the construction of the B.F. Sisk Dam, however its role in the development of the dam and its key facilities was transitory and not sufficiently significant to render CA-MER-492H a critical part of the larger system. CA-MER-492H is thus recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion A/1.

No connection between the resource and one or more individuals significant in local, state, or national history could be established. Although the dam is named for former US Congressman Bernice Sisk, that association is commemorative and too tenuous to be regarded as significant under NRHP/CRHR Criterion B/2. CA-MER-

492H is thus recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion B/2.

The Basalt Hill Quarry (CA-MER-509H) and separation plant complex was used for quarrying and separating rock fill, bedding, and riprap. Structurally, the complex is not unusual or distinctive in engineering, or architecture. Cedar Spring Dam and Silverwood Lake in Southern California also used a gravity separation plant when quarrying rock for construction in the 1960s (California Dept. of Water Resources 1974: 328). The tunnel in Locus 1 of CA-MER-492H is lined with board-molded concrete and is not distinctive from other man-made tunnels. CA-MER-492H is recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion C/3.

As an industrial resource, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-492H, and few surface artifacts remain. Much of the research potential for the Basalt Hill Quarry (CA-MER-509H) and separation plant complex may be found through archival documents and historic period photographs rather than through the resource's physical remains. CA-MER-492H is recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion D/4.

CA-MER-492H does not appear to be actively maintained or used. It remains in fair condition despite impacts from decommissioning and retains integrity of location and workmanship. Integrity of materials is diminished because portions of the resource have been removed. It retains integrity of setting and association as the reservoir and dam are nearby, though integrity of association has been somewhat lessened by the removal of super-structures (i.e., tower and conveyor belt) that tied the site to the upper quarry area and separator plant. A current access road has damaged the historic period road system, which also diminishes its integrity of setting. The purpose of the tunnel system is no longer evident and no longer visually or physically connected to the larger complex. The aspect of feeling has been diminished, as construction of the dam and reservoir have long been completed. The overall integrity of CA-MER-492H is fair. CA-MER-492H possesses fair overall integrity. It is recommended

as a non-contributing element to the NRHP/CRHR eligibility of the B.F. Sisk Dam system, recently defined as the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018).

CA-MER-493H
P-24-001987
PL-SLLP-A-014

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1d

Lower San Felipe Intake Alternative (Basalt Point Use Area)

San Luis Reservoir Expansion Alternative (Construction Impact Area)

Description

CA-MER-493H is an earthworks road segment that measures approximately 5,400 feet or 1.02 miles in length and 15 feet in width. It is oriented roughly northeast-southwest and connects with another road (CA-MER-494H) at its midpoint that trends southwest towards the Basalt Hill Quarry (CA-MER-509H). A 3,100-foot long segment of the road was recorded during the 2012 inventory survey of the Lower San Felipe Intake Alternative APE while a 2,300-foot long segment was later recorded during the 2016 inventory survey of the San Luis Reservoir Expansion Alternative APE. The road is built up to a height of 25 feet in some sections and cut 13 feet into the hillside in others to maintain a consistent grade. The road is mostly covered by gravels, which become sparse and eventually disappear as the road continues southwest. A small southern offshoot of this road was also discovered descending due south towards a drainage. It is covered by gravels and features two metal culverts. The main alignment contains one 3-foot diameter iron culvert in the center of a built-up causeway. Roughly 80% of the main road alignment and the small southern offshoot segment lie beneath the current average waterline of the San Luis Reservoir.

An orange-white CCS core (P-24-001990) and a red CCS biface fragment (P-24-001991) were discovered along the main road alignment near where CA-MER-493H and CA-MER-494H intersect. The core was embedded in the road while the biface fragment was found lying on the surface of the road. Neither was believed to be *in situ*. CA-MER-493H was likely built to facilitate dam construction, as it leads from an industrial resource (CA-MER-492H) that was a part of the Basalt Hill Quarry (CA-MER-509H) and separation plant complex to the B.F. Sisk Dam area. The road is in fair condition despite impacts from erosion, inundation, and use by four-wheel drive vehicles.

Archival Research Summary

CA-MER-493H is located in Township 10 South, Range 8 East in the southern half of Section 27 and in the

unsectioned San Luis Gonzaga Land Grant. The land grant was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). The southern half of Section 27 was patented to the Southern Pacific Railroad Company on April 20, 1875 (Doc #4, BLM# CACAAA 093859) (BLM 2016). No railroad was ever built through the section, which was likely sold to unknown ranchers or other landholders. On February 23, 1892, Antonio Lopez patented the northern half of the southeast quarter and the eastern half of the southwest quarter in Section 28, which is just west of and adjacent to Section 27. He also patented the western half of the southwest quarter of Section 29 on Mary 30, 1895. Antonio Lopez had a homestead that was adjacent to an east-west road that crossed Sections 27 and 28, which may have included a small portion of the CA-MER-493H road alignment. That east-west road may have served as an early access route to the homestead during Lopez's tenure on the property (ca. 1890s to 1900).

An 1860 GLO plat map shows the Butterfield Overland Mail route and a telegraph line roughly 2 miles northeast of CA-MER-493H as they crossed Section 13, however no cultural features are depicted in Section 27. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho, but does not show roads to the south or southeast and does not depict a road in the CA-MER-493H location (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not depict the road segment (USGS 1920, 1940), though they depict the east-west trending road that may have crossed or just slightly overlapped the location of CA-MER-493H. Similarly, a 1946 aerial photograph of the area and the 1953 San Luis Creek 15-minute USGS topographic map depict the east-west road alignment but not CA-MER-493H (Fairchild Aerial Surveys 1946; USGS 1953). The resource first appears on the 1969 San Luis Dam 7.5-minute USGS topographic map (USGS 1969a), which depicts the inundated San Luis Reservoir and a small segment of the road as it ascends northeast towards the dam. As it would have been inundated, most of the recorded road segment is not depicted. The tunnel associated with the neighboring industrial resource (CA-MER-492H) also first appears on the 1969 map (USGS 1969a).

Based on historic period map evidence, CA-MER-493H appears to have been established prior to the inundation of the San Luis Reservoir in 1968 but after 1953 (USGS 1953, 1969). This supports the idea that the road was established to facilitate the construction of the dam and reservoir. CA-MER-493H does not appear to have been related to the east-west trending road that passed through Sections 27 and 28, though it may have slightly overlapped that earlier alignment.

NRHP/CRHR Evaluation

CA-MER-493H is a historic period road segment that was likely constructed after 1953 and prior to 1968. As recorded in 2012 and 2016, it serves as a link between an industrial resource (CA-MER-492H) associated with construction of the B.F. Sisk Dam and a point just southwest of the dam itself. It appears to have been established to support dam and reservoir construction activities. It is evaluated under the historic contexts of *Transportation* and *Water Conveyance* in the American Period (*see* Section 3.3.3).

The B.F. Sisk Dam has been recommended eligible for listing in the NRHP and CRHR under Criterion A/1 as a contributing element to the CVP and SWP and for its contribution to the expansion and sustainability of farmland and municipal and industrial development in the Central Valley (JRP 2018). There is no evidence to indicate that CA-MER-493H was the first or only road used the in the construction of the B.F. Sisk Dam. It was likely used to convey building materials to the dam construction area, but it does not contribute to the importance of the B.F. Sisk Dam system or the wider CVP and SWP. CA-MER-493H is thus recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion A/1.

There is no evidence indicating that CA-MER-493H was developed or used during the 19th century, and no evidence linking the resource to early settlers or ranchers such as Juan Pérez Pacheco or Antonio Lopez. No connection between the resource and one or more people significant in local, state, or national history could be established. CA-MER-493H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-493H is an earthworks road segment. It is not structurally unique, nor does it exemplify distinctive characteristics of a type, period, or method of construction. CA-MER-493H is recommended not eligible for inclusion in the NRHP/CRHR under Criterion C/3.

As a road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-493H. The resource offers limited potential to address important research questions about *Transportation* and *Water Conveyance* in the American Period (*see* Section 3.3.3). CA-MER-493H is recommended not eligible for inclusion in the NRHP/CRHR under Criterion D/4.

CA-MER-493H does not appear to be actively maintained or used. It remains in fair condition despite apparent impacts from erosion and inundation and retains integrity of location, design, materials, and workmanship. Physically and functionally, it lacks some integrity of association, feeling, and setting because the industrial resource (CA-MER-492H) it once supported is no longer in operation, dam construction has been completed, and the resource is largely inundated during non-drought years. Overall, CA-MER-493H retains fair integrity. CA-MER-493H is recommended not eligible for inclusion in the NRHP/CRHR.

CA-MER-494H
P-24-001988
PL-SLLP-A-015

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1d

Lower San Felipe Intake Alternative (Basalt Point Use Area)

Description

CA-MER-494H is a historic period graded dirt road that measures approximately 8,130 feet or 1.54 miles in total length and 20 feet in width. It is oriented generally northeast-southwest and bridges the Basalt Hill Quarry (CA-MER-509H) to the south and an earthworks road (CA-MER-493H) to the north. Two segments of the road (Segments 1 and 2) were recorded during the 2012 field inventory of the Lower San Felipe Intake Alternative APE to either side of Basalt Road. Segment 1, located to the south of Basalt Road, measures approximately 1,950 feet in length and 20 feet in width. It contours though the hills downslope from the quarry and includes a number of hill cuts and causeways to maintain an approximate 5% road grade. Segment 2, located north of Basalt Road, measures 830 feet in length and 20 feet in width. It consists of a built-up causeway road covered in gravels that stands approximately 20 feet high on its west side

San Luis Reservoir Expansion Alternative (Basalt Hill Borrow Area; Proposed Staging Area; Haul Road Area)

and 15 feet high on its east side. The east side is covered with riprap and basalt boulders. During the 2016 inventory survey of the San Luis Reservoir Expansion Alternative APE, a 5,350-foot long segment of the road was recorded descending southwest towards the Basalt Hill Quarry (CA-MER-509H) from Segment 1. It also measures 20 feet in width and is consistent in construction with Segment 1.

Segment 1 and the portion of the road recorded in 2016 are located above the reservoir's high waterline and both pass through a non-native grassland area with no trees or shrubs. The northern end of Segment 1 features a berm that was constructed to deny vehicle access from Basalt Road. Segment 2 is located below the reservoir's high waterline and is bordered by sparser non-native grasses, cockleburs, and the occasional willow tree. The CA-MER-494H road alignment slopes (3-5°) to the northeast and is fully exposed. It exhibits impacts from erosion, inundation, and the use of four-wheel drive vehicles.

Archival Research Summary

CA-MER-494H is located in Township 10 South, Range 8 East in the northeastern quarter of Section 33, the northwest quarter of Section 34, and the southern half of Section 27. The southern half of Section 27 was patented to the Southern Pacific Railroad Company on April 20, 1875 (Doc #4, BLM# CACAAA 093859) (BLM 2016). No railroad was built through the section, which was likely sold to unknown ranchers or other landholders. Those areas of Sections 33 and 34 that encompass the road were patented to the State of California in 1924 (BLM# CACAAA 002567, 096293, and 096298) (BLM 2016). The area includes a natural spring, and the land may have been leased for ranching or grazing.

An 1860 GLO plat map shows the Butterfield Overland Mail route and a telegraph line roughly 2 miles northeast of CA-MER-494H as they crossed Sections 12 and 13, however no cultural features are depicted in Sections 27, 33, or 34. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho, but does not show roads to the south or southeast and does not depict a road near the CA-MER-494H location (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not depict the road (USGS 1920, 1940). The 1953 San Luis Creek 15-

minute USGS topographic map depicts an east-west road alignment in Section 27 but it does not correspond to CA-MER-494H (USGS 1953). Perhaps most surprisingly, the 1969 San Luis Dam 7.5-minute USGS topographic map (USGS 1969a) does not shows the road alignment, though it does portray the inundated San Luis Reservoir and a road leading north from the Basalt Hill Mine as well as a dirt road leading southeast through Section 34. A 1946 aerial photograph of the site vicinity shows the east-west trending road through Section 27 as well as Segments 1 and 2 of CA-MER-494H (Fairchild Aerial Surveys 1946). The road segments appear to lead towards the spring in Section 34 or possibly the Basalt Hill Quarry (CA-MER-509H).

Historic period map evidence and land patent information provided few clues about when CA-MER-494H was built. In construction, it greatly resembles the historic period road (CA-MER-493H) that it intersects to the north. That road was associated with dam construction, and CA-MER-494H, which acts as a bridge between the Basalt Hill Quarry (CA-MER-509H) and the northern road, was almost certainly used during dam construction as well. Given its appearance on a 1946 aerial photograph, however, it may have originated as an earlier alignment leading to the natural spring in Section 34.

NRHP/CRHR Evaluation

CA-MER-494H is a historic period road that was likely constructed, at least in part, prior to 1946. As recorded in 2012 and 2016, it serves as a link between the Basalt Hill Quarry (CA-MER-509H) to the southwest and a historic period access road (CA-MER-493H) to the northeast that leads to the B.F. Sisk Dam area. It appears to have been established, or at least used primarily, to support the construction of the B.F. Sisk Dam and the San Luis Reservoir. It is evaluated under the historic contexts of *Transportation* and *Water Conveyance* in the American Period (*see* Section 3.3.3).

The B.F. Sisk Dam has been recommended eligible for listing in the NRHP and CRHR under Criterion A/1 as a contributing element to the CVP and SWP and for its contribution to the expansion and sustainability of farmland and municipal and industrial development in the Central Valley (JRP 2018). As a feature within the B.F. Sisk Dam system, CA-MER-494H may be regarded as a

contributing or non-contributing element under Criterion A/1. A connection to significant historic period events or trends however does not necessarily render a resource eligible for listing in the NRHP/CRHR. Rather, the role the resource played in those events or trends must be significant. There is no evidence to indicate that CA-MER-494H was the first or only road used in the construction of the B.F. Sisk Dam. It was likely used to convey stone from the Basalt Hill Quarry (CA-MER-509H) to the dam construction area, but it does not contribute in a meaningful way to the importance of the B.F. Sisk Dam system as a component within the wider CVP and SWP. CA-MER-494H is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

There is no evidence indicating that CA-MER-494H was developed or used during the 19th century, and no evidence linking the resource to early settlers or ranchers in the vicinity. No connection between the resource and one or more people significant in local, state, or national history could be established. CA-MER-494H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-494H is a graded dirt road. It is not structurally unique and it does not exemplify distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master engineer. CA-MER-494H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As a road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-494H. The resource offers limited potential to address important research questions about *Transportation* and *Water Conveyance* in the American Period (*see* Section 3.3.3). CA-MER-494H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-494H does not appear to be actively maintained or used. A berm blocks access to much of the resource from Basalt Road, and the northern portion of the resource would be inundated in non-drought years. Overall, it remains in fair condition despite impacts from erosion and inundation and retains integrity of location,

design, materials, and workmanship. Physically and functionally it lacks integrity of association, feeling, and setting because the quarry location (CA-MER-509H) it once supported is no longer in operation, dam construction has been completed, and the resource is partially inundated during non-drought years. Overall, CA-MER-494H retains fair integrity. CA-MER-494H is recommended not eligible for inclusion in the NRHP/CRHR.

CA-MER-495H
P-24-001989
PL-SLLP-A-016

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-1d

Lower San Felipe Intake Alternative (Basalt Point Use Area)

San Luis Reservoir Expansion Alternative (Construction Impact Area)

Description

CA-MER-495H consists of a dirt road that is graded into the contour above the western end of Basalt Road and below a gated access road that leads to the Basalt Hill Quarry (CA-MER-509H). It ascends the hillslope from the northeast where it intersects a steep ravine as well as the quarry access road before continuing southwest and west towards the center of Section 28 in Township 10 South, Range 8 East. The eastern portion of the resource was first recorded during the 2012 inventory survey of the Lower San Felipe Intake Alternative APE and the western portion of the alignment was mapped during the 2016 inventory survey of the San Luis Reservoir Expansion Alternative APE. The total recorded road segment measures approximately 2,955 feet in length and 15 feet in width. The road is cut approximately 3-4 feet into the south-facing slope of a hillside and is built up about 2-3 feet on the downslope side. The road is wide enough for single vehicles to pass but not wide or stable enough to have supported heavy traffic or the large vehicles that would have been used to construct the B.F. Sisk Dam.

CA-MER-495H appears infrequently used and has been built above the inundation level of the reservoir, though it has been heavily impacted by erosion. The area surrounding the resource is fully exposed and marked by slopes of roughly 20°. The San Luis Reservoir is located just 750 feet to the northwest. Non-native grasses prevail along the road alignment, and no trees or shrubs are located in the vicinity.

Archival Research Summary

CA-MER-495H is located in Township 10 South, Range 8 East in the southeast quarter of Section 28. Section 28 represents a half-section, with the unsectioned northern half subsumed by the San Luis Gonzaga Land Grant. Section 28 was patented to Juan Pérez Pacheco on May

16, 1871 (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). The northern half of the southeast quarter, which subsumed most of the resource area, and the eastern half of the southwest quarter were later patented by Antonio Lopez on February 23, 1892 (Doc #2241, BLM# CACAAA 096296) (BLM 2016). In 1895, Lopez also patented the western half of the southwest quarter.

An 1860 GLO plat map shows the Butterfield Overland Mail Stage route and a telegraph line as they crossed Sections 12 and 13 well to the northeast of the resource, however no historic period features were depicted in Section 28. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho—a future alignment of SR 152—but does not show CA-MER-495H (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not depict the road alignment (USGS 1920, 1940). The 1953 San Luis Creek 7.5-minute USGS topographic map shows an east-west trending unimproved road spanning Sections 27, 28, and 29 to the north of the resource, but it does not appear to correspond to CA-MER-495H (USGS 1953). The road segment may represent a later southwestern offshoot from the other alignment, which may indicate a 1940s-1950s date for CA-MER-495H. The 1969 San Luis Dam 7.5-minute USGS topographic map (USGS 1969a) also fails to depict the resource, though it does depict the gated road to the Basalt Hill Quarry (CA-MER-509H).

Aerial photographs from 1946 and 1956 show the more northern east-west road alignment in the resource vicinity, but do not capture CA-MER-495H (Fairchild Aerial Surveys 1946; USDA 1957). CA-MER-495H passes approximately 750 feet south of a possible former homestead site (CA-MER-261H). Since CA-MER-495H features no associated artifacts and aerial photographs and historic period maps reveal only that it may have been present by the 1940s to 1950s, the road cannot be clearly linked to the Lopez land grant, the possible former homestead, or to any specific historic context or function.

NRHP/CRHR Evaluation

CA-MER-495H is a historic period road segment that may have been constructed in the 1940s-1950s based on its proximity and likely association with an east-west trending road to the north. It is evaluated under the historic context of *Transportation Development* in the

American Period (*see* Section 3.3.3). The construction date of CA-MER-495H and its period of use remain unclear, though it may have been associated with homesteaders or ranchers who required an east-west route outside of the San Luis Gonzaga Land Grant. The road segment could not be clearly linked to any buildings, structures, or sites within the vicinity, though a possible former homestead site (CA-MER-261H), is located just 750 feet to the north. CA-MER-495H does not appear to have been linked to any significant events or developments in local or regional history. It is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

CA-MER-495H lies within a land grant patented to Antonio Lopez in 1892, however no links could be established between the construction or use of the road segment and Lopez or any subsequent landowners or leasees. Although the builder or builders of the road remain unknown, it is unlikely that they figured prominently in local or regional history. CA-MER-495H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-495H is an isolated road segment that could not be clearly linked to any other buildings, structures, or sites within the vicinity. The road segment is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. The resource is thus recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As an isolated road segment, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-495H. It offers very limited potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-495H does not appear to be maintained or in active use. Although it has been impacted by erosion, it lies above the average waterline level of the San Luis Reservoir and remains in fair condition. It retains integrity of location, design, feeling, materials, and workmanship. It lacks integrity of association, however, because it could

not be clearly linked to a particular time, event, individual, or purpose and could not be associated with other buildings, structures, or sites in the vicinity. Its integrity of setting has also likely been diminished by the inundation of the San Luis Reservoir. CA-MER-495H possesses fair overall integrity. The resource is recommended not eligible for listing in the NRHP/CRHR.

7.4.2 Combination Alternative

One historic period site, a surface debris scatter with a subsurface component dating from the late 19th century through the mid-20th century (CA-SCL-799H), was previously recorded within the Combination Alternative APE (Morgan et al. 1996). No traces of the resource were observed within the APE during the 2012 inventory survey. No cultural resources were newly discovered within the Combination Alternative APE and none were evaluated under the SLLPIP.

7.4.3 Treatment Alternative

No cultural resources were previously recorded or newly discovered within the Treatment Alternative APE (Cartier 2002), and none are evaluated as a part of the SLLPIP.

7.4.4 San Luis Reservoir Expansion Alternative

Preliminary evaluations are offered below for five previously recorded cultural resources that were encountered within the San Luis Reservoir Expansion Alternative APE. These include five prehistoric sites (CA-MER-15, CA-MER-28, CA-MER-82, and CA-MER-83), most with midden soils, groundstone, and lithic debitage, as well as a historic period ranching site (CA-MER-521H) that was recorded by Pacific Legacy in 2013 for the San Luis Transmission Line Project (Holm et al. 2014). One previously recorded resource that intersects both the San Luis Reservoir Expansion Alternative APE and the Lower San Felipe Intake Alternative APE is listed in the NRHP and the CRHR (San Luis Gonzaga Archaeological District, P-24-000489) (*see* Table 6-8). Three other previously recorded resources within the San Luis Reservoir Expansion Alternative APE include one prehistoric site (CA-MER-130) listed in the NRHP and the CRHR as a contributing element to the San Luis Gonzaga Archaeological District (P-24-000489); one historic period road network (CA-MER-477H) recommended not eligible for listing in the NRHP and CRHR; and the B.F. Sisk Dam with its appurtenant features, which have been recommended eligible for listing in the NRHP and the CRHR as the B.F. Sisk Dam/San Luis Reservoir Historic District.

Seven historic period resources (CA-MER-484H, CA-MER-489H, CA-MER-491H, CA-MER-492H, CA-MER-493H, CA-MER-494H, and CA-MER-495H) that were newly identified in 2012 within the Lower San Felipe Intake Alternative also intersect the San Luis Reservoir Expansion Alternative APE; these resources were discussed and evaluated in Section 7.4.1. Two previously

recorded isolated finds (P-24-001990 and P-24-001991) that were found within the Lower San Felipe Intake Alterative and intersect the San Luis Reservoir Expansion Alternative APE are not evaluated.

Twelve archaeological sites or built environment resources that were newly identified within the San Luis Reservoir Expansion Alternative APE in 2012 or 2016 are evaluated below. One is a prehistoric site with lithics, groundstone, and midden soils (CA-MER-517). Eleven are historic period resources and include the Basalt Hill Quarry (CA-MER-509H), two road segments (CA-MER-513H and CA-MER-519H), three earthen dams (CA-MER-515H, CA-MER-516H, and CA-MER-518H), two foundation remnants or pads (CA-MER-510H and CA-MER-512H), one ditch (CA-MER-514H), a water tank on railroad ties (CA-MER-511H), and a series of survey markers and monitoring wells (CA-MER-520H) associated with B.F. Sisk Dam construction and maintenance (*see* Table 6-8).

Of the 17 archaeological sites or built environment resources discussed below, seven have been determined not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018) and recommended not eligible for inclusion in the CRHR (CA-MER-510H, CA-MER-511H, CA-MER-512H, CA-MER-513H, CA-MER-514H, CA-MER-520H, and CA-MER-521H). An additional four historic period resources (CA-MER-515H, CA-MER-516H, CA-MER-518H, and CA-MER-519H) are recommended not eligible for listing in the NRHP or CRHR, and one (CA-MER-509H) is recommended not eligible for inclusion in either register as an individual resource or as a element of the B.F. Sisk Dam/San Luis Reservoir Historic District. The evaluation of five prehistoric sites (CA-MER-15, CA-MER-28, CA-MER-82, CA-MER-83, and CA-MER-517) remains pending further investigation.

Previously Recorded Cultural Resources

CA-MER-15
P-24-000116

Pending Evaluation for Listing in the NRHP/CRHR under Criteria A/1 and D/4

Appendix A, Figure A-4c; Appendix B, Figure B-4c

Description

CA-MER-15 is a prehistoric site that was first recorded by F.A. Riddell in 1962 as a "small village site among boulders and oaks" with a former quarry on the eastern side of the site area, "several areas cleared among boulders for homes," several bedrock mortar features, and a lithic scatter (Riddell 1962b). It was later recorded that same year as a bedrock mortar site with numerous pestles, a lithic scatter with chert and obsidian and "a few arrowheads" (Gray-MacDonald 1962). A sketch map included with the later site record indicated that some surface artifacts were collected. In 1965, the site was again recorded by W.H. Olsen as a bedrock mortar, petroglyph and occupation site with "small rock shelters," one house ring, a pitted boulder, a bowl mortar, "some chippage," and a "broken fossil bone" (Olsen 1965g). None of the site records for CA-MER-15 from the 1960s include location or sketch maps

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – South of Dinosaur Point Boat Ramp)

drawn to scale, though Riddell's map places the steep break of the hill some distance from the site, which is portrayed as a rocky outcrop among trees. A map of the site (author unknown) depicts some bedrock mortar measurements, a petroglyph, a pictograph, four living areas, and a midden area.

When CA-MER-15 was revisited during the 2016 inventory survey of the San Luis Reservoir Expansion Alternative APE, a complex of 73 rock features (Features 1 through 73) with petroglyphs, bedrock mortars, cupules, and milling surfaces was noted in addition to midden soils, six cleared areas (C1 through C6), 36 flaked stone tools, and a lithic scatter with three loci (Loci A through C). As most recently recorded, the site spans an area measuring 97 meters N/S by 116 meters E/W. The 73 features are spread across 94 modified boulders. Twenty-three boulders have bedrock mortars only; 33 boulders feature cupules but no bedrock mortars, though five also feature petroglyphs; 29 boulders feature both bedrock mortars and cupules, two with petroglyphs also; and three boulders exhibit one or more milling surfaces, two with petroglyphs also. One boulder contains only petroglyphs, though five boulders with cupules, two boulders with cupules and bedrock mortars, and two boulders with one or milling surfaces also feature petroglyphs. In all, 11 of the boulders exhibit petroglyphs. One large prominent boulder features pecked lines, areas with crosshatch lines, rows of cupules, and a few individual cupules. The 73 features were recorded in the western portion of the site furthest from the San Luis Reservoir waterline.

The eastern portion of CA-MER-15 is dominated by the lithic scatter, cleared areas, and midden soils. The lithic scatter contains three loci, and roughly 50% of the debitage in each was counted and analyzed during inventory survey. Locus A, the southernmost of the three, is spatially associated with three of the cleared areas (CL3 through CL5) and features dark, sandy sediment that may represent eroded midden. The locus sits on two relatively flat, narrow, very rocky benches that are dotted by large boulders that liter the surrounding east-facing slope. Sixty-two pieces of debitage were noted in Locus A, including seven pieces of chalcedony as well as 23 pieces of heat-treated chert; the remaining debitage included white or off-white to red, orange, or brown chert, mostly shatter. One chert core fragment was recorded within the

locus in addition to an area with ten small pieces of calcined mammal bone.

Locus B is located roughly 13.5 meters east of Locus C. At least 136 pieces of debitage were noted in the locus, which varied from Locus A in that it also contained purplish-red or blue and white cherts as well as a higher percentage of smaller interior percussion, complex, and bifacial thinning flakes. Several artifacts, including a vesicular basalt bowl fragment (Artifact 24), an obsidian biface fragment (Artifact 25), a unidirectional chalcedony core (Artifact 27), and a unifacial chalcedony scraper (Artifact 28) were found within or near the locus. Locus B rests on a moderately steep, east-facing slope studded with boulders and marked by light brown loamy sand with dense gravels and patches of darker brown soils that may represent redeposited midden or lacustrine sediment.

Locus C is located approximately 24 meters north of Locus A. At least 61 pieces of debitage were noted within the locus, including chalcedony and various colors of chert. The locus is dominated by simple and complex interior percussion flakes followed by bifacial thinning flakes and relatively few pieces of shatter or primary and secondary flakes. Artifacts noted within the locus included a pestle fragment (Artifact 1), a complete portable milling slab (Artifact 15), a complete basalt handstone (Artifact 16), a complete rhyolite mortar (Artifact 32), a rhyolite handstone fragment (Artifact 33), a late-stage rhyolite biface margin (Artifact 34), and a piece of calcined and possibly polished small mammal bone (Artifact 35). Other calcined bone fragments were found throughout Locus C. Approximately 75-100 pieces of debitage were observed outside of the three loci and were not analyzed.

The cleared areas at CA-MER-15 range in size from 10 meters N/S by 38 meters E/W (CL1) to just 5.5 meters N/S by 5 meters (E/W) (CL6). These areas correspond to flat areas within the site noted by Olsen in 1965 and the “living areas” plotted on another sketch map by an unknown author. The 36 tools include nine pestles, nine bowl mortars, five cores and/or hammerstones, four handstones, three portable milling slabs, one groundstone fragment, one portable mortar, two bifaces, one uniface, and one polished bone fragment. The nine pestles include three complete artifacts (Artifacts 19, 21, and 30) and five fragments (Artifacts 1, 2, 4, 7, 11, and 17); the nine bowl mortars are

all fragmentary (Artifacts 3, 5, 8, 9, 10, 22, 24, 29, and 31) and include two (Artifacts 3 and 24) that have been repurposed with single mortars; there are five complete cores, core tools/hammerstones (Artifact 12, 18, 23, 26, and 27); four handstones, including two complete artifacts (Artifact 13 and 16) and two fragments (Artifacts 14 and 33); one complete portable milling slab (Artifact 36) as well as two fragmentary ones (Artifacts 15 and 20); one groundstone fragment (Artifact 6); one complete portable mortar on a small boulder (Artifact 32); two bifaces fragments (Artifacts 25 and 34); one uniface fragment (Artifact 28); and one polished bone fragment (Artifact 35). Many of these artifacts were found within and around the three loci. The pictographs that were plotted on one of the early site maps could not be relocated and may have been destroyed through inundation or reservoir level fluctuations.

CA-MER-15 is located on the west side of the San Luis Reservoir on an east-facing slope within an oak grassland vegetation community. Grasses, wild oats, star thistle, and cockleburs also mark the site area. Soils range brown to grayish-brown sandy loam to light-brown or medium-brown loamy sand with dense gravels overlain with sporadic patches of dark brown sediment. The dark brown sediment may represent redeposited midden or organic, lacustrine-based sediment. Large and small boulders and angular scree are scattered throughout the site area. Portions of the site sit on narrow, relatively flat, very rocky benches formed by reservoir wave action. The site features an eastern aspect, a slope of approximately 6-8°, and is fully exposed. Ground surface visibility ranges from approximately 40-75%.

NRHP/CRHR Evaluation

CA-MER-15 is an extensive site containing 73 features with petroglyphs, bedrock mortars, cupules, and milling surfaces as well as midden soils, cleared areas or possible house-pits, flaked and groundstone tools, calcined bone, and a lithic scatter with three loci. Those features and cultural constituents indicate that CA-MER-15 likely represents a permanent habitation site or a temporary habitation site that was occupied repeatedly through time (*see* Section 7.3.1). Permanent habitation sites typically feature accumulated midden deposits, indicating long-term occupation; numerous, diverse cultural constituents; and house-pits or living areas. Temporary or seasonally occupied habitation sites typically lack some or most of

these indicators (*see* Section 7.3.1). An examination of the soils at CA-MER-15 suggests that the site likely contains subsurface deposits or buried cultural constituents. Repeated wave action may have removed, redeposited, or buried site sediments—impacts that may become clearer through subsurface testing. The resource is evaluated under the themes of *Economy, Settlement,* and *Cultural History and Identity* (*see* Section 7.2), particularly as they relate to prehistoric settlement practices, foodways, and group identity.

A search of the Sacred Lands Inventory by the NAHC for the CA-MER-15 vicinity did not reveal any information about the site locale, and the resource is not known to have been associated with any significant events in local or regional Native American history. The presence of numerous petroglyphs at the site and the reported presence of pictographs (not relocated) suggest that CA-MER-15 may have been locally significant to its inhabitants as a locus or expression of communal activity, shared identity, and/or ceremonial practice. Further research at CA-MER-15 would be necessary to make a recommendation as to the site's eligibility for listing in the NRHP/CRHR under Criterion A/1. Establishing the site's chronology, for instance, would allow for a better understanding of its use as an episodic or long-term occupation area.

No definitive association with one or more individuals could be established for CA-MER-15, and a literature review did not identify any prominent individuals who may have been associated with the site during the ethnographic period. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

Despite the presence of 11 petroglyph boulders at CA-MER-15, the site does not exhibit structurally or artistically unique features and does not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

The potential for CA-MER-15 to reveal subsurface components or vertical stratigraphy is high. The data potential of the site (e.g., its depth, integrity, age, and artifact diversity) thus has not been fully explored. Further investigation of CA-MER-15 may reveal information that could be used to address important research questions about

chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Based on the data acquired during the 2016 inventory survey, an informed recommendation regarding the eligibility of CA-MER-15 for listing in the NRHP/CRHR under Criterion D/4 cannot be offered. If activities associated with the San Luis Reservoir Expansion Alternative may affect CA-MER-15, subsurface testing is recommended at the site to determine if it offers the potential to address important research questions such as those outlined in Section 7.2.

CA-MER-28
P-24-000129

Pending Evaluation for Listing in the NRHP/CRHR under Criterion D/4

Appendix A, Figure A-4c; Appendix B, Figure B-4c

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – South of Dinosaur Point Boat Ramp)

Description

CA-MER-28 is a prehistoric site that was first recorded in 1965 by W.H. Olsen as an "occupation deposit on top of knoll" with a "few silicate flakes" (Olsen 1965c). As recorded in 2016, the site consists of midden soils with fire-affected rock, one possible heated rock feature, 31 pieces of debitage, one chert core (Artifact 1), and six groundstone artifacts (Artifacts 2-7) that span an area measuring 75 meters SE/NW by 35 meters SW/NE. The heated rock feature measures 0.5 meters N/S x 0.6 meters E/W and contains over 30 cobbles or fire-affected rocks, all of which measure 10 centimeters or less in diameter. The sediment within the feature appears to be a lighter gray and possibly hardened on the surface, which may indicate firing within an excavated pit. A single large white chert secondary flake was located along the margin of the feature.

The six groundstone artifacts include two handstones (Artifacts 5 and 6) and four groundstone fragments (Artifacts 2, 3, 4, and 7). The debitage is variable in color but is locally sourced and white to off-white and mottled with spots and bands of reddish-brown. The debitage reflects the generally poor quality of the raw material, as 17 of the 31 pieces are broken flakes or shatter. Fifteen of the 31 flakes measure 3-6 centimeters in length or more with no small (<1 centimeters) flakes identified. The single chert core is small (7.1-x-4.5-x-1.9 centimeters), and exhibits at least five flake removals. The core may have come from sandstone outcrops to the west of the site, which feature similar material embedded in the visible strata. It may also have come from the sandstone and cobble conglomerate exposed at the western end of the site near the mouth of a nearby creek. The six pieces of groundstone are all basalt. Dark to very dark gray ashy midden soils occur across the entire site area and include a deposit of eroded fire-affected

rock.

CA-MER-28 is located on a gently sloping (1-2°), southeast-facing terrace. It lies at the base of a large hill to the west and just north of an unnamed seasonal drainage that opens broadly from a narrow, V-shaped canyon. A taller, oak-studded, east-trending ridge defines the landform south of the drainage. To the east, the landscape opens up and slopes gently eastward towards the San Luis Reservoir on. The site area is fully exposed but covered in dense, knee-high grasses that offer very poor (10%) surface visibility.

CA-MER-28 contains midden soils with fire-affected rock, a possible heated rock feature, debitage, a chert core, and six groundstone artifacts. Another site, CA-MER-517, was newly discovered 35 meters to the east of CA-MER-28 and to the south of the drainage that borders it. No midden soils or fire-affected rock was observed at CA-MER-517, though the two sites may have been associated.

NRHP/CRHR Evaluation

CA-MER-28 consists of midden soils with fire-affected rock, a possible heated rock feature, 31 pieces of debitage, one chert core, two basalt handstones and four basalt groundstone fragments. CA-MER-28 may represent a short-term habitation site (*see* Section 7.3.1). Short-term habitation sites are those that were occupied for a short duration or were occupied repeatedly, though on a seasonal or short-term basis. They typically lack accumulated midden deposits, and the cultural constituents present tend to be less diverse or numerous than at permanent habitation sites (*see* Section 7.3.1). Based on the feature and artifacts observed, CA-MER-28 may have been used for short-term food processing. The presence of a possible heated-rock feature, midden, and fire-affected rock suggest that the site contains a subsurface deposit. The resource is evaluated under the themes of *Economy* and *Settlement* (*see* Section 7.2), particularly as they relate to prehistoric subsistence.

Prehistoric temporary habitation sites are relatively common in the foothills of the Diablo Range. Little is known, however, about their relationship to larger, more prominent prehistoric sites located on the western edge of the valley floor or to habitation sites located along major stream courses. A search of the Sacred Lands Inventory by the NAHC did not reveal any information about the CA-

MER-28 locale, and the resource does not appear to have been associated with any significant events in local or regional Native American history. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No definitive association with one or more individuals could be established for CA-MER-28, and a literature review did not identify any prominent individuals who may have been associated with the site during the ethnographic period. The

site is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-28 does not contain structurally or artistically unique features and does not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

Given that CA-MER-28 includes midden soils with fire-affected rock, a possible heated rock feature, groundstone, and lithic debitage, the potential for the site to reveal subsurface components or vertical stratigraphy is high. Thus, the data potential of the site (e.g., its depth, integrity, age, and artifact diversity) has not been fully explored. Further investigation of CA-MER-28 may bring to light information regarding its potential to address important research questions about chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Based on the limited data acquired during inventory survey, an informed recommendation regarding the eligibility of the site for listing in the NRHP/CRHR under Criterion D/4 cannot be offered. If any of the San Luis Reservoir Expansion Alternative are implemented, subsurface testing is recommended to determine if CA-MER-28 offers the potential to address important research questions such as those outlined in Section 7.2.

CA-MER-82 P-24-000182

Pending Evaluation for Listing in the

Description

CA-MER-82 is a prehistoric site that was first recorded in 1966 by W.H. Olsen as a small occupation deposit on a bench above a creek featuring dark, rocky midden soils as well as lithic debitage and fire-affected rock. As recorded in 2016, the site comprises one edge-modified flake (Artifact 1), eight pieces of chert debitage, and three pieces of

NRHP/CRHR under Criterion D/4

Appendix A, Figure A-4e; Appendix B, Figure B-4e

groundstone (Artifacts 2-4) along the northern margin of the previously recorded site boundary within an area that measures 30 meters N/S and 62 meters E/W. Several of the artifacts were found in a sandy area in slightly darker soil that may represent the remnants of an eroded midden deposit.

Artifact 1 consists of an edge-modified flake fashioned from dark gray chert that measures 5.2-x-3.1-x-0.8 centimeters and exhibits use wear along its margins. Artifact 2 is a vesicular basalt groundstone fragment that measures 18-x-12-x-3.6 centimeters found in a sandstone conglomerate in close proximity the main area of the site. Both Artifacts 3 and 4 consist of possible millingstone fragments fashioned from sandstone that measure 3.15-x-14.2-x-7.5 centimeters and 18.2-x-11.4-x-4.0 centimeters.

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – West Side of San Luis Creek Inlet)

CA-MER-82 is located on the western side of the San Joaquin Valley along the southwestern edge of the San Luis Reservoir. It is situated within a northeast-facing trough or swale formed by rolling hills to the south, west, and north. Several deeply entrenched seasonal drainages flow into the swale from the south, west, and southwest. The site itself rests on a relatively level, wave-eroded bench that is bordered to the southeast by an unnamed drainage. All artifacts at CA-MER-82 were recorded below the current maximum waterline at an elevation of 400-440 feet amsl and would typically be inundated in non-drought years. On-site vegetation consists of dense knee-high grass, mustard weed, and patches of cockleburs. Several artifacts were found in a sandy area with slightly darker soils and that may represent eroded midden; soils on-site generally consist of tan/orange gravelly sand. The site features a northeastern aspect, minimal slope (1-2°), and is fully exposed.

CA-MER-82 consists of one edge-modified flake, eight pieces of chert debitage, and three pieces of groundstone, including two possible milling slab fragments. Another site, CA-MER-42, was previously recorded approximately 215 meters to the northeast of CA-MER-82 and would have bordered the same seasonal drainage. As originally recorded, it included a rocky midden deposit with lithic debitage (Olsen 1966c); groundstone artifacts were also observed at the site during the 2016 inventory survey. The site may have been associated with CA-MER-82.

NRHP/CRHR Evaluation

CA-MER-82 consists of eight pieces of debitage and three pieces of groundstone as well as a possible remnant midden soils area. The site may have been a short-term habitation or activity-specific site (*see* Section 7.3.1), though given apparent effects to the site from prior inundation its function may be difficult to distinguish. Short-term habitation sites were occupied for a short duration or occupied repeatedly on a seasonal or limited basis while activity-specific sites tended to be used for a fairly narrow range of tasks (e.g., quarrying for lithic material, food processing). Based on the artifacts observed, CA-MER-82 may have been used for food processing. The presence of possible midden at the site suggests that it may retain a subsurface component. The resource is evaluated under the themes of *Economy* and *Settlement* (*see* Section 7.2), specifically as they relate to prehistoric subsistence.

Prehistoric temporary habitation and activity-specific sites are relatively common in the foothills of the Diablo Range. A search of the Sacred Lands Inventory by the NAHC for the site vicinity did not reveal any information about the CA-MER-82 locale, and the resource does not appear to have been associated with any significant events in local or regional Native American history. The site is therefore recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No definitive association with one or more individuals could be established for CA-MER-82, and a literature review did not identify any prominent individuals who may have been associated with the site during the ethnographic period. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

Based on surface evidence from an inventory survey, CA-MER-82 does not contain any unique features and does not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-82 includes surface artifacts in the form of two possible milling slab fragments, one groundstone fragment, one edge-modified flake, and eight pieces of chert debitage. It may also include the remnants of a midden deposit, evident though an area featuring darker soils as well as several artifacts. The potential for the site to reveal a

subsurface component or vertical stratigraphy is considered moderate to high, though the data potential of CA-MER-82 (e.g., its depth, integrity, age, and artifact diversity) has not been fully explored. Further investigation of the site could reveal more about its potential to address important research questions relating to chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Based on the materials observed during inventory survey, a recommendation regarding the eligibility of the site for listing in the NRHP/CRHR under Criterion D/4 cannot be made. If any of the San Luis Reservoir Expansion Alternative are implemented, subsurface testing is recommended to determine if CA-MER-82 offers the potential to address

important research questions that might render it eligible for listing in the NRHP/CRHR.

CA-MER-83 P-24-000183

Pending Evaluation for Listing in the NRHP/CRHR under Criterion D/4

Appendix A, Figure A-4e; Appendix B, Figure B-4e

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – South of Dinosaur Point Boat Ramp)

Description

W.H. Olsen first recorded CA-MER-83 in 1966 as a prehistoric "rocky midden deposit on prominence just above stream" (Olsen 1966d). In 2016, the site was recorded as an area of midden soils with fire-affected rock, eight groundstone artifacts (Artifacts 3-8 and 13-14), and six pieces of lithic debitage (Artifacts 1-2 and 9-12) distributed across an area measuring 59 meters N/S by 53 meters E/W. The midden soils are concentrated in the central portion of the site and consist of dark gray or nearly black soils with fire-affected rock. The eight groundstone artifacts include five handstone fragments (Artifacts 3-5 and 13-14), two fragments of indeterminate shape and function (Artifacts 7-8), and one possible milling slab fragment (Artifact 6). The lithic debitage includes three pieces of chert shatter (Artifacts 1, 2, and 9) as well as two chert secondary flakes (Artifacts 10-11) and one chalcedony secondary flake (Artifact 12). The chert debitage is fashioned from white or cream colored material with orange or brown inclusions and the groundstone artifacts are composed of basalt.

CA-MER-83 consists of an area of midden soils with fire-affected rock, eight groundstone artifacts, and six pieces of debitage. Another site, CA-MER-138, was previously recorded approximately 130 meters to the southwest of CA-MER-83 and would have bordered the same seasonal drainage. It was recorded as a large midden site on a knoll (Olsen 1973), and it may have been associated with CA-

MER-83. CA-MER-138 was not relocated in 2016 but lay well outside of the San Luis Reservoir Expansion Alternative APE.

CA-MER-83 is located in an open oak woodland vegetation zone with sparsely scattered oaks. The site area is densely covered with Indian rice grass, wild oats, foxtails, star thistle, and seasonal forbs and grasses that offer very poor (0-10%) surface visibility. The site lies on a flat bench on the south side of an unnamed drainage. CA-MER-83 features a northwestern aspect, a gentle (0-5°) slope, and is fully exposed. Non-midden soils are a rocky, semi-compact, light brown to brown silty clay loam.

NRHP/CRHR Evaluation

The site consists of midden soils with fire-affected rock, eight groundstone fragments, and six pieces of debitage. CA-MER-83 may have functioned as a short-term habitation or activity-specific site (*see* Section 7.3.1). Short-term habitation sites were occupied for a limited duration or occupied repeatedly on a seasonal or short-term basis while activity-specific sites would have been used for a limited range of tasks (e.g., quarrying for lithic material, food processing). The presence of midden and groundstone suggest that CA-MER-83 may have been used for food processing. The presence of possible midden at the site also suggests that it may retain a subsurface component. The resource is evaluated under the themes of *Economy* and *Settlement* (*see* Section 7.2), with emphasis on prehistoric subsistence.

A search of the Sacred Lands Inventory by the NAHC for the site vicinity did not reveal any information about the CA-MER-83 locale, and the resource does not appear to have been associated with any significant events in local or regional Native American history. The site is therefore recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No definitive association with one or more individuals could be established for CA-MER-83, and a literature review did not identify any prominent individuals who may have been associated with the site vicinity during the ethnographic period. The site is recommended not eligible

for listing in the NRHP/CRHR under Criterion B/2.

Based on surface evidence from an inventory survey, CA-MER-83 does not contain any unique features and does not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-83 includes surface artifacts in the form of one possible milling slab fragment, five handstone fragments, two indeterminate groundstone fragments, six pieces of debitage, and midden soils with fire-affected rock. The site offers moderately high potential to reveal a subsurface component or vertical stratigraphy, though its data potential (e.g., its depth, integrity, age, and artifact diversity) has not been fully explored. Further investigation of the site could reveal more about its potential to address important research questions relating to chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Based on the limited data acquired during inventory survey, a recommendation regarding the eligibility of the site for listing in the NRHP/CRHR under Criterion D/4 cannot be offered. If any of the San Luis Reservoir Expansion Alternative are implemented, subsurface testing is recommended to determine if CA-MER-83 offers the potential to address important research questions that might render it eligible for listing in the NRHP/CRHR.

CA-MER-521H
P-24-002173
SLTP-B-11

Determined Not Eligible for Listing in the NRHP

Recommended Not Eligible for Listing in the CRHR

Appendix A, Figure A-4d; Appendix B,

Description

CA-MER-521H is a historic period livestock watering locale that consists of an elevated, cylindrical water tank and a circular trough. Pacific Legacy personnel first recorded the site in 2013 during the Western Area Power Administration's San Luis Transmission Line Project (Holm et al. 2014). The final archaeological survey report for the project remains pending submission to the CCIC by Western. When the site was revisited in 2016, it was found to be unchanged and its features remained intact.

The elevated arc-welded, ferrous metal water tank sits on a railroad tie platform enclosed by an electric fence (Feature 1). It measures 6 feet in diameter and 17 feet in length. The circular trough (Feature 2) is made of corrugated metal with railroad tie and milled lumber supports. It measures 9 feet

Figure B-4d

San Luis Reservoir Expansion Alternative (Borrow Area 6 - South of O'Neill Forebay)

in diameter, stands 2 feet high, and rests on 52-inch high supports. No artifacts or other materials were observed in association with the site, which encompasses an area measuring 79 feet east-west by 66 feet north-south. CA-MER-521H is located roughly 0.5 miles to the southeast of the San Luis Reservoir on a flat floodplain that is dominated by dry seasonal grasses and mustard weed. It is located at an elevation of 259 feet amsl and is fully exposed.

Archival Research Summary

CA-MER-521H lies within Section 18 of Township 10 South, Range 9 East. An 1855 GLO plat map of Section 18 depicted no structures or cultural features within the site vicinity (BLM 2016). Records indicate that on May 20, 1869, B. Bryant obtained a land patent for Sections 18, 24, 10, and 14 through cash entry (Doc #3279, #CACAAA 097971). A later 1888 GLO plat map depicts a road trending north from Section 19 through the south-central portion of Section 18 before terminating near the center of the section. The north-south road was labeled "the Road from D[???'s] San Luis and Stockton" and passed through an area that is today dominated by the Los Banos Substation (BLM 2016). The northwest corner of Section 18 was labeled as "the old sec. corner at corner of Miller and Lux's fence" (BLM 2016). An agricultural field lay at the center of the southern Section 18 line and was crossed by the road. The closest structure to CA-MER-521H depicted on the 1888 GLO plat map was described as "J. Alamanie's house," which was sited in the northwest corner of Section 19, roughly 1 mile to the southwest of CA-MER-521H (BLM 2016). Section 18 appears to have been used as an agricultural or ranch property in the 1870s to at least 1890, but it remains unclear if the property was associated with B. Bryant, J. Alamainie, or with the landholdings of Miller and Lux (*see* Section 3.3.3). Well records dating to 1916 revealed wells in Sections 1 and 24, but none were recorded in Section 18 (Mendenhall et al. 1916: Table 45; Davis et al. 1959).

The 1920 Pacheco Pass and 1922 San Luis Creek USGS 15-minute topographic maps show no buildings, structures, or access roads within the vicinity of CA-MER-521H (USGS 1920, 1922a). The 1940 Pacheco Pass USGS 15-minute topographic map shows no roads leading to the site area, but does depict two structure complexes located approximately 0.5 miles to the northwest and southeast of

CA-MER-521H. A utility line appeared along the southern border of Section 18 by 1939 (USGS 1940a). The 1953 San Luis Creek USGS 7.5-minute topographic shows no developments in Section 18, though it does depict several wells and windmills in the surrounding sections (USGS 1953).

The 1925 *History of Merced County* did not mention B. Bradley, who was noted in 1869 land patent records in association with Section 18, though it did mention that "Sadie Bradley was born at Mustang, Merced County" to William T. and Frances Bradley (Outcalt 1925: 650). In the 1900 US Census, William T. Bradley was listed as a farmer in Newman Township, Merced County (US Census Bureau 1900b). By 1906, voter records showed that the Bradleys resided in Ingomar where William T. Bradley ran a general store and served as postmaster (Merced County 1906). No clear association between the Bradley family and Section 18 or the CA-MER-521H vicinity could be established for the early to mid-20th century period when the water tank and trough were likely constructed, however, nor could the site be clearly linked to the Miller and Lux operation or to any other specific landowner.

NRHP/CRHR Evaluation

CA-MER-521H appears to be a mid-20th century livestock watering locale. The site is evaluated under the historic context of *Ranching and Agriculture* in the American Period (*see* Section 3.3.3). Based on evidence derived from historic period maps, land patent records, a history of Merced County, and the site's material constituents, the site appears to post-date the height (the late 19th century through the 1920s) of Central Valley agricultural and ranching development. The livestock watering locale does not appear to have been associated with significant events in local or state history, thus the site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

Archival research did not identify the owners and operators of the ranch with which CA-MER-521H was associated. The property may have been associated with the Bradley family, J. Alamainie, Miller and Lux, or with another unidentified party. No firm association with any individual or individuals c

not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not

eligible for listing in the NRHP/CRHR under Criterion C/3.

ot eligible for listing in the NRHP/CRHR under Criterion D/4.

CA-MER-521H is in good condition despite the installation of an electric fence around the site. It retains integrity of location, design, setting, materials, t has likely altered the site's integrity of feeling and association.good overall integrity. CA-MER-521H is recommended not eligible for listing in the NRHP/CRHR.

In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-521H is not eligible for listing in the NRHP (Polanco 2018).

Newly Identified Cultural Resources

CA-MER-509H
P-24-002154
PL-SLLPIP-16-01

Recommended Not Eligible for Listing in the NRHP/CRHR, (Non-Contributing Element to the B.F. Sisk Dam System)

Appendix B, Figure B-4f

San Luis Reservoir Expansion Alternative (Basalt Hill Borrow Area; Haul Road Area)

Description

CA-MER-509H, or the Basalt Hill Quarry, is a historic period industrial resource that spans 3,900 feet NW/SE by 2,550 feet NE/SW. It represents the main element of a quarry and separation plant complex built in 1963 to process basalt into riprap for construction of the B.F. Sisk Dam (Autobee 2011: 11-12; Berman 2012: pers. comm.; Reclamation 1974: 49). A smaller industrial resource (CA-MER-492H) that was connected to the Basalt Hill Quarry via a conveyor belt is located approximately 2,500 feet downslope and to the northeast; it received riprap separated at the main quarry area that was then transported for construction of the dam and its appurtenant facilities. The conveyor belt was removed following construction of the dam, but the grade that supported it remains clearly visible. A historic period earthworks road (CA-MER-494H) linked the Basalt Hill Quarry to the dam area, while a second graded dirt road (CA-MER-493H) led from CA-MER-492H to the dam area.

The Basalt Hill Quarry has largely modified the entire western shoulder of Basalt Peak, which is located approximately 1,500 feet to the east and reaches a maximum elevation of 1,707 feet amsl. Descending from near the top of the hillslope, the quarry is divided into five terraces (Terraces 1-5) representing five elevations of the mining operation. Four features were identified, including a

cairn with a metal post (Feature 1); a series of concrete equipment pads (Feature 2); a large gravity separator built into the hillside (Feature 3); and a triangular equipment pad (Feature 4) that falls outside of the quarry boundary but may be associated with the operation of Feature 3. Few cultural materials were noted across the quarry area, but included a few pieces of milled lumber, heavy 3-inch diameter wire rope, nuts and bolts, heavy equipment parts, and pieces of metal grating. A single soft-top beverage can was found that dates from the late 1950s to the early 1960s (Maxwell 1993). An area near Feature 3 identified as Concentration 1 contains additional materials such as plate glass, indicating that some form of structure, potentially an operations office, once stood there. Several two-track roads provide access to much of the site, and massive rock ramps, likely for heavy equipment, link the terraces.

The features present at the Basalt Hill Quarry reflect how infrastructure within the site was likely placed and used. Most significant was Feature 3, a large (85 feet N/S by 75 feet E/W) rock and aggregate size-sorter/separator that was built into a steep, north-facing slope at the northern edge of the resource. This 80-foot tall reinforced concrete structure was used to sort larger mined materials from the quarry into various sizes for use in different locations or aspects of the dam's construction. Material from the quarry was used for rock fill, riprap, and bedding. Quarried material was pushed into the top of Feature 3 and separated at the eight-inch size, with some materials crushed to manufacture bedding materials (California Department of Water Resources 1974: 279). The smaller fraction was transported via conveyor belt to CA-MER-492H where the material was picked up by trucks.

Much of the Basalt Hill Quarry area has essentially been denuded of soils and surface vegetation, offering good (70-80%) ground surface visibility, though portions of the site are dominated by low grasses and occasional shrubs. The 1953 San Luis Creek 7.5-minute USGS topographic map shows that the site area featured a relatively gentle slope (5-6°) to the northwest, with a steep drop along the western margin of the landform. After the quarry was abandoned, the area had been leveled in five main, nearly flat terraces, with piles of rock spotting the landscape and some rock debris pushed off the steep western flank of the hillside. The area surrounding the site is dominated by waist-high and taller grasses, sparse mustard and thistle, and occasional

trees in the lower lying areas. The Basalt Hill Quarry remains in fair condition with few visible impacts. The main impacts relate to the decommissioning of the resource—standing superstructures have been removed and there are very few artifacts present, likely as a result of cleanup activities following construction of the dam.

Archival Research Summary

CA-MER-509H is located in Township 10 South, Range 8 East in Section 33. All of Section 33 was patented to the Southern Pacific Railroad Company on April 20, 1875 (Doc #4, BLM# CACAAA 093859) (BLM 2016), though no railroad was ever built through the area. An 1860 GLO plat map depicts drainages along the northern edge of the section, but no historic period development (BLM 2016).

The 1920 Pacheco Pass and 1922 San Luis Creek 15-minute USGS topographic maps do not show the quarry or any access routes at the site location, though they do show that later quarrying activates flattened much of the Basalt Hill area (USGS 1920, 1922a). Similarly, the 1940 Pacheco Pass 15-minute USGS topographic map does not show any historic period development within the site area (USGS 1940). The 1953 San Luis Creek 7.5-minute USGS topographic map shows that the resource area remained unmodified (USGS 1953), though a fire lookout (P-24-000078) and a south-trending access road had been established on the top of Basalt Hill by that time. The Basalt Hill Quarry first appears on the 1969 San Luis Dam 7.5-minute USGS topographic map (USGS 1969a), which also depicts the San Luis Reservoir and one of the features at CA-MER-492H. This supports historic period accounts that the Basalt Hill Quarry and separation plant complex were established in 1963 to support construction of the B.F. Sisk Dam and San Luis Reservoir, which were completed in 1967 (Autobee 2011: 11-12; Reclamation 1974: 49).

In describing how the complex would have operated, Autobee (2011: 11) noted that

> Rock for zones 4 and 5 on the upstream face of the dam were extracted from a quarry at the top of nearby Basalt Hill. The quarry-run rock was excavated with a 15 cubic yard electric shovel and transported by 75-ton trucks to a separation plant. This plant separated the rock into plus-and-minus nine-inch sizes. Huge bar screens directed the

> larger size rock into a hopper that loaded the zone 5 material into 60-ton rear-dump trucks. The trucks had special braking systems for hauling safely down the steep access road. The smaller zone 4 rock dropped onto a 3,200-foot long conveyor belt down the hillside. This ended on a cantilevered tower over a 100-foot high stockpile at the bottom. There was a drive-through tunnel under the pile that allowed 100-ton trucks to be loaded in two minutes.

The Basalt Hill Quarry and separation plant complex was thus used for quarrying and separating rock fill, bedding, and riprap. CA-MER-492H would have been used to receive "smaller zone 4 rock" transported from the Basalt Hill Quarry via the "3,200-foot long conveyor belt" (Autobee 2011: 11).

After construction of the B.F. Sisk Dam was completed in 1967, the quarry and riprap separation plant were shut down. The conveyor belt linking the Basalt Hill Quarry to CA-MER-492H was removed, and superstructures were dismantled as a part of site cleanup (Autobee 2011: 11). The gravity rock separator at CA-MER-509H represents a substantial structure, though it was not unique. Similar separators were built for the 1966-1971 construction of Cedar Springs Dam and Silverwood Lake in Southern California (California State Parks 2009: 8).

NRHP/CRHR Evaluation

CA-MER-509H is a historic period resource that comprised the main element of the Basalt Hill Quarry and separation plant complex. This complex was established in 1963 to support the construction of the B.F. Sisk Dam and the San Luis Reservoir and was a part of the larger dam system. CA-MER-509H is evaluated as a part of that larger system under the historic context of *Water Conveyance* in the American Period (*see* Section 3.3.3).

The B.F. Sisk Dam and its appurtenant features were recommended eligible for listing in the NRHP and CRHR under Criterion A/1 as a contributing element to the CVP and SWP and for its contribution to the expansion and sustainability of farmland and municipal and industrial development in the Central Valley (JRP 2018). As a feature within the B.F. Sisk Dam system, CA-MER-509H may be

regarded as a contributing or non-contributing element under Criterion A/1. A connection to significant historic period events or trends is insufficient by itself to render a resource eligible for listing in the NRHP/CRHR under Criterion A/1. Rather, the role the resource played in those events or trends must be significant. The dam symbolizes the first and only state-federal collaboration in California water development to be conducted on such a large scale (Autobee 2011). The Basalt Hill Quarry and separation plant complex was created and used to support the construction of the B.F. Sisk Dam, however its role in the development of the dam and its key facilities was transitory and not sufficiently significant to render CA-MER-509H a critical part of the dam complex. CA-MER-509H is recommended as non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion A/1.

No connection between the resource and one or more individuals significant in local, state, or national history could be established. Although the dam is named for former US Congressman Bernice Sisk, that association is commemorative and too tenuous to be regarded as significant under NRHP/CRHR Criterion B/2. CA-MER-509H is thus recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion B/2.

The Basalt Hill Quarry and separation plant complex was used for quarrying and separating rock fill, bedding, and riprap. Structurally, the complex is not unique or distinctive in engineering or architecture. Cedar Spring Dam and Silverwood Lake in Southern California also used a gravity separation plant when quarrying rock for construction in the 1960s (California Dept. of Water Resources 1974: 328). Similarly, other elements of CA-MER-509H such as the terraces and other features are not structurally unique or distinctive. CA-MER-509H is recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion C/3.

As an industrial resource, there is little potential to encounter a subsurface component or vertical stratigraphy at CA-MER-509H, and few surface artifacts remain. Much of the research potential for the Basalt Hill Quarry and separation plant complex may be derived from archival documents and historic period photographs rather than through the resource’s physical remnants. CA-MER-509H

is recommended as a non-contributing element to the B.F. Sisk Dam system under NRHP/CRHR Criterion D/4.

CA-MER-509H is not actively maintained or used. It remains in fair condition despite impacts from decommissioning and retains integrity of location and workmanship. Integrity of materials is diminished because portions of the resource have been removed. It retains integrity of setting and association as the reservoir and dam are nearby, though integrity of association has been somewhat lessened by the removal of superstructures (i.e., possible structure near Concentration 1, conveyor belt) that were a part of the site and that tied the site to other areas of the complex. The aspect of feeling also has been somewhat diminished as construction of the dam and reservoir have long been completed. CA-MER-509H possesses fair overall integrity. CA-MER-509H possesses fair overall integrity. It is recommended as a non-contributing element to the NRHP/CRHR eligibility of the B.F. Sisk Dam system, recently defined as the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018).

CA-MER-510H
P-24-002155
PL-SLLPIP-16-02

Determined Not Eligible for Listing in the NRHP
Recommended Not Eligible for Listing in the CRHR

Appendix B, Figure B-4d

San Luis Reservoir Expansion Alternative (Borrow Area 6 - South of O'Neill Forebay)

Site Description

CA-MER-510H consists of a concrete foundation pad (Feature 1) with four raised concrete blocks with 1-inch diameter threaded studs with nuts. Approximately 100 feet east-southeast of Feature 1 is a large basalt rock with a 5-inch diameter bore hole drilled through it that does not appear to be associated with the resource. The concrete foundation pad may have supported compressors or similar equipment, but its function is unclear. Feature 1 is shaped roughly like the Roman numeral "II" and is made from rounded aggregate; it has a smoothed surface and beveled edges. No artifacts were noted in association with the feature, and its date of construction remains indeterminate. Nearby structures depicted on historic period topographic maps of the area indicate that the foundation may date to the 1940s or 1950s.

CA-MER-510H is located on the west side of the San Joaquin Valley along the southern shore of the O'Neill Forebay in a flat, open area. Surface visibility is poor due to dense knee-high vegetation that includes grasses, foxtails, mustard weed, vinegar weed, and sticky tarweed. The site is located roughly 80 feet south of an inoperative electric fence and 100 feet south of an east-west trending access

road.

Archival Research Summary

CA-MER-510H is located in Township 10 South, Range 8 East in the northwest corner of Section 13. An 1860 GLO plat map depicts the Butterfield Overland Stage route and telegraph line in Section 13 but does not depict any structures near the resource location (BLM 2016). The Southern Pacific Railroad Company patented all of Section 13 on April 20, 1875, (BLM 2016) but did not develop the land.

The 1920 Pacheco Pass 15-minute USGS topographic map shows that the original alignment of SR 152 passed through Section 13 near the site location (USGS 1920). By 1940, three houses were depicted on the General Highway Map of Merced County within Section 13, roughly 0.25 miles to the west, south-southwest, and south-southeast of the resource location (DPW-DH 1940). The 1940 Pacheco Pass 15-minute USGS topographic map shows that SR 152 had by then been rerouted to the southern edge of Section 13; it also shows that a series of telegraph lines followed the 1920 road alignment to the western edge of Section 13 before proceeding south along the section line to follow the new road alignment (USGS 1940). The 1940 map portrays a cluster of four buildings and an access road to the northeast of the resource area. The 1953 San Luis Creek 7.5-minute topographic map shows a house and windmill to the northeast of the site area, while the 1969 San Luis Dam 7.5-minute USGS topographic map shows the resource location to the south of O'Neill Forebay and to the north of a utility line (USGS 1953, 1969). Aerial photographs from 1946 depict structures to the northeast of the site area, but no structures could be clearly discerned near CA-MER-510H (Fairchild Aerial Surveys, Inc. 1946). CA-MER-510H may have been associated with the 1940s-era structures or with the 1950s-era house and windmill to the northeast.

NRHP/CRHR Evaluation

CA-MER-510H is a historic period concrete foundation pad with no associated artifacts. The site is evaluated under the historic context of *Ranching and Agriculture* in the American Period (*see* Section 3.3.3). Based on historic period maps, land patent records, and historic period aerial photographs, the site was most likely associated with nearby structures constructed in the 1940s to 1950s-era. The site is

also located near the 1940s-era alignment of SR 152 and may be associated with it. If CA-MER-510H was associated with ranching and/or agricultural activities, it likely post-dated the height of ranching in the Central Valley (the late 19th century through the 1920s). CA-MER-510H does not appear to have been associated with events significant in local or regional history, and is therefore recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No association between CA-MER-510H and one or more individuals was revealed through archival research, so no link could be established between the feature and persons significant in local or regional history. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-510H consists of a concrete foundation that is missing its superstructure. The feature is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

The site is made up of a single foundation. A boulder with a 5-inch diameter drilled hole lies roughly 100 feet east-southeast of the foundation, but it is temporally non-diagnostic and its association with the resource remains uncertain. The site does not contain materials that might be used to address important research questions regarding ranching and agriculture, transportation, or other potential research themes. Thus, the site is recommended not eligible for listing on NRHP/CRHR under Criterion D/4.

CA-MER-510H is in poor condition; it is largely subsumed by vegetation and the concrete that forms the foundation is crumbling. Although the resource retains integrity of location, the equipment and/or superstructure that once made up a part of the site has been removed, thus affecting its integrity of design, materials, and workmanship. Its integrity of setting, feeling, and association has presumably been diminished by the construction of the reservoir and dam and, possibly, by the re-routing of SR 152. Overall, the integrity of CA-MER-510H is fair to poor. CA-MER-510H is recommended not eligible for listing in the NRHP/CRHR.

In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical

Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-510H is not eligible for listing in the NRHP (Polanco 2018).

CA-MER-511H
P-24-002156
PL-SLLPIP-16-03

Determined Not Eligible for Listing in the NRHP

Recommended Not Eligible for Listing in the CRHR

Appendix B, Figure B-4d

San Luis Reservoir Expansion Alternative (Borrow Area 6 - South of O'Neill Forebay)

Site Description

CA-MER-511H is an apparent historic period livestock corral and watering location. It consists of a large, welded water tank set atop railroad tie supports situated within a corral that features a loading chute, a livestock access gate, fencing, and two circular metal water troughs. The corral fencing is portable and constructed of a variety of materials including metal piping, barbed wire, 4-x-4 wooden posts, remnant telephone poles, and other wooden posts. The welded water tank is set atop railroad tie supports for stabilization and constructed in three sections. The tank measures 17 feet in length and stands 6 feet high. The livestock-loading chute is positioned at the far northwestern corner of the corral. The livestock access gate is situated along the northeastern side of the corral and is constructed from metal piping and sheet metal. The "W" ranch brand or logo was cut into areas of the metal gate and on the corral fencing adjacent to the gate, but could not be identified as a current California brand (CDFA 2010). One metal water trough lies within the corral; it is circular with a wood-framed float protector. An upside-down circular metal water trough lies outside and to the west of the corral. Most of the components that make up CA-MER-511H are portable and could be reconfigured.

CA-MER-511H is located 0.36 miles to the south of the O'Neill Forebay and 0.26 miles north of the current alignment of SR 152. It lies just south of a northwest-southeast oriented transmission line and north of a road and a second transmission line. A gated access road to the north extends to the east from the main road around O'Neill Forebay. The site area is fully exposed, relatively flat, and densely covered by knee-high grasses, mustard weed, vinegar weed, and sticky tar weed that limit ground surface visibility.

Archival Research Summary

CA-MER-511H is located in Township 10 South, Range 9 East in the southeast quarter of Section 13. An 1879 GLO plat map depicts the Butterfield Overland Mail route and a telegraph line crossing the northwest quarter of Section 13 but depicts nothing in the resource location (BLM 2016). The 1920 Pacheco Pass 15-minute USGS topographic map

shows the original alignment of SR 152 through the northwest quarter of Section 13 (USGS 1920). The 1940 Pacheco Pass 15-minute USGS topographic map shows that SR 152 had been rerouted to the southern edge of Section 13 and that one cluster of four buildings and another cluster of two buildings had been built in the northeast quarter of Section 13 (USGS 1940a). The 1953 San Luis Creek 7.5-minute USGS topographic map shows two wells and a windmill in the northeast quarter and a northwest-southeast trending utility line (USGS 1953). The 1969 San Luis Dam 7.5-minute USGS topographic map portrays the O'Neill Forebay to the north as well as an east-west trending utility line that follows SR 152. It also depicts a paired utility line immediately north of the resource that trends northwest-southeast and does not follow the alignment depicted on the 1953 map (USGS 1972). A 1946 aerial photograph shows the structures in the northeast quarter of Section 13, but no features are discernible in the area surrounding CA-MER-511H. A 1940 General Highway Map of Merced County depicts houses in the southwest, southeast, and northwest quarters of Section 13, and it is possible that the livestock complex is associated with the house in the southeast quarter.

The Final EIS/EIR for the San Luis Reservoir State Recreation Area mentions recent use of the resource area:

> March 19, 1996, Concession Contract, Cattle Grazing. Located at San Luis Reservoir State Recreation Area, Medeiros Area in Merced County. This is a legal contract between the State and Chet Vogt, granting Mr. Vogt the right, privilege, and duty to graze cattle on an approximately 1,000-acre tract of the Medeiros Area located south of O'Neill Forebay, for the period of 8 months. Attached to the contract is a CEQA project evaluation (Reclamation 2013: Appendix A: A-19).

The 1940 US Census noted that George Vogt, a farmer, lived north of Merced in Merced County (United States Census Bureau 1940). Although the connection is tenuous and not traceable through land patent records, it is possible that the Vogts have had ties to the area since the historic period, perhaps as lease holders and/or landowners. Ultimately, CA-MER-511H could not be tied to any specific individuals or to a particular time period. The

complex may be associated with ranching activities that pre-date the reservoir's construction (ca. 1940s-1950s) or it may be associated with San Luis Reservoir Recreation Area grazing leases (Reclamation 2013: Appendix A-19).

NRHP/CRHR Evaluation

CA-MER-511H is a livestock complex that includes a water tank, a corral with a loading chute, a livestock access gate, fencing, and two circular metal water troughs that potentially date to the historic period. The site is evaluated under the historic context of *Ranching and Agriculture* in the American Period (*see* Section 3.3.3). Based historic period maps, land patent records, county history data, and chronological markers from the site's features, the site may have been constructed between 1919 and 1940, remaining in use into the late 20th century. The site post-dates the height of Central Valley ranching (the late 19th century through the 1920s). CA-MER-511H does not appear to have been associated with events significant in local or regional history, and is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

CA-MER-511H may be associated with Chet Vogt and/or with George Vogt, though no clear link could be established between the site and any individual from the historic period. The site is thus recommended not eligible for the NRHP/CRHR under Criterion B/2.

CA-MER-511H is made up of components that are commonly used to control and maintain livestock (i.e., a water tank, a corral, a loading chute, a livestock access gate, fencing, and metal water troughs). None of these components is structurally unique, nor do they exemplify distinctive characteristics of a type, period, or method of construction. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

The resource is made up mostly of moveable livestock control features that could be reconfigured as required. No portable artifacts were noted at CA-MER-511H, and it could not be linked to a particular time period. The site does not contain materials that might be used to address important research questions concerning *Ranching and Agriculture* in the American Period (*see* Section 3.3.3). CA-MER-511H is recommended not eligible for listing on NRHP/CRHR under Criterion D/4.

CA-MER-511H is in fair condition. The resource's integrity of location is uncertain given the potential mobility of many of its components. Its potential mobility also diminishes its integrity of design and workmanship, which are diminished by uncertainties regarding what features might be missing. Aspects of setting, association, and feeling may have been impacted by the construction of the dam and reservoir during the 1960s, or by the removal of the structures noted on historic period maps from the 1940s and 1950s (USGS 1940a, 1953). Overall, the resource possesses fair integrity. CA-MER-511H is recommended not eligible for listing in the NRHP/CRHR.

In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-511H is not eligible for listing in the NRHP (Polanco 2018).

CA-MER-512H
P-24-002157
PL-SLLPIP-16-05

Determined Not Eligible for Listing in the NRHP

Recommended Not Eligible for Listing in the CRHR

Appendix B, Figure B-4d

San Luis Reservoir Expansion Alternative (Potential Construction Staging Areas – Block East of B.F. Sisk Dam)

Description

CA-MER-512H is a control center and helicopter landing pad that spans a 2-acre area atop a cut and leveled hill 0.65 miles east of the B.F. Sisk Dam and the San Luis Reservoir. Two well-developed asphalt roads provide access to the resource area from Basalt Road, which lies 300 feet to the southwest. The top of the hill that makes up the resource area was cut and leveled for the concrete landing pad and the spoils were used to expand its dimensions. Several features were identified at CA-MER-512H including two circular concrete equipment pads (Features 1 and 2), a white-painted boulder (Feature 3), two reflector posts (Features 4 and 5), two white lines painted on a portion of the landing pad (Feature 6), and an underground telecommunications/radio terminal (Feature 7).

Features 1 and 2 measure approximately 8 to 9 feet in diameter and rest at ground level. One pad has four metal pipe-lined holes in a triangular configuration with one hole in the center; the other pad has only three holes. The holes are situated in the center 12 inches of each pad and are threaded with 0.5-inch diameter pipe that likely served as attachments to equipment or former superstructures. Feature 3, the white-painted boulder, rests on the south side of the pad just west of an access road and may not be *in-situ*. It was likely used as a reflector for safety purposes. Features 4 and 5 are metal posts with orange reflectors located in the western portion of the resource area near the perimeter of

the pad. The posts are vertical pipes that stand approximately 2 feet high with protruding wires that are inserted in a 1-foot diameter circular concrete post support. Feature 7, the telecommunications/radio terminal, lies within in the far western portion of the site. It consists of an upright post with wires and cables that extend underground. The only other cultural constituents noted at CA-MER-512H include two downed and cut wood distribution line poles that likely post-date the construction and use of the landing pad.

CA-MER-512H lies within an oak woodland vegetation community with sparsely scattered oaks. The site is in poor condition with much of the concrete landing pad eroded or no longer present. The immediate area is fully exposed and dominated by tall grasses and mustard weed that cover much of the landing pad. Features 1 and 2 lack any superstructure and the remaining features appear to be broken, dismantled, heavily eroded, or displaced.

Archival Research Summary

CA-MER-512H is located in Township 10 South, Range 8 East in the unsectioned San Luis Gonzaga Land Grant. The San Luis Gonzaga Land Grant, which included much of Township 10 South, was patented to Juan Pérez Pacheco (Doc # PLC 234, BLM # CACAAA 094227) on May 16, 1871 (BLM 2016). An 1879 GLO plat map depicts the area outside of the land grant but does not show the area encompassing CA-MER-512H.

The 1940 Pacheco Pass 15-minute USGS topographic map and a 1946 aerial photograph do not depict CA-MER-512H but do portray the rise on which the helicopter landing pad would be built (USGS 1940a, Fairchild Aerial Surveys 1946). The 1950[9] San Luis Creek 7.5-minute USGS topographic map and a 1957 aerial view of the site show the headquarters of nearby San Luis Ranch but do not show the helicopter landing pad or the roads leading to it (USGS 1950, USDA-CSS 1957). The site first appears on the 1969 San Luis Dam 7.5-minute USGS topographic map (USGS 1969a). Land grant and historic period map data offer no evidence of development within the resource area prior to the establishment of the helicopter landing pad.

[9] The 1950 San Luis Creek 7.5-minute USGS topographic map was based on 1950 aerial photographs and was field checked in 1953.

An account of the groundbreaking ceremony for the B.F. Sisk Dam, which was captured in a 1962 film clip (YouTube 2016), may mention the resource area:

> The still morning of August 18, 1962 grew warm as the sun rose over 15,000 people driving the two-lane Pacheco Pass Highway leading to the site of the San Luis Dam. They gathered to view President John F. Kennedy as he presided over the dam's groundbreaking ceremonies, and at 11:30a.m., the presidential helicopter landed near
>
> the 100-foot-long speakers' platform (Autobee 1996).

The California Department of Water Resources (1974: 276) noted that the B.F. Sisk Dam, initially called the San Luis Dam, was constructed in 1963-1967. The "General Plan and Sections of San Luis Dam and O'Neill Forebay" show a "helicopter pad" cut into the hilltop at the site location. The plan does not show the helicopter landing pad's date of construction, but it almost certainly dates to the early 1960s period of dam construction and pre-dates the August 1962 groundbreaking ceremony (California Department of Water Resources 1974: 278).

NRHP/CRHR Evaluation

CA-MER-512H is a historic period helicopter landing pad and control center that includes two circular concrete equipment pads (Features 1 and 2), a white-painted boulder (Feature 3), two reflector posts (Features 4 and 5), two white lines painted on a portion of the landing pad (Feature 6), and an underground telecommunications/radio terminal (Feature 7). Historic period maps indicate that the site was built after 1957 and before 1967, though it was likely constructed shortly before the 1962 groundbreaking ceremony or during the 1963-1967 period of dam construction (California Department of Water Resources 1974: 276).

On August 18, 1962, John F. Kennedy arrived by helicopter for the San Luis Dam groundbreaking ceremony. After comparing film footage of the event and current inventory survey photographs, it remains unclear whether CA-MER-512H marks the location of the President's arrival or of any other groundbreaking event (YouTube 2016). The B.F. Sisk

Dam has been recommended eligible for listing in the NRHP and CRHR under Criterion A/1 as a contributing element to the CVP and SWP and for its contribution to the expansion and sustainability of farmland and municipal and industrial development in the Central Valley (JRP 2018). No definitive link could be made between CA-MER-512H and the 1962 groundbreaking ceremony, however, which was one of many commemorative events associated with CVP and SWP history. Any role CA-MER-512H may have played in the dam's construction or commemoration remains unclear. CA-MER-512H is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

Although CA-MER-512H lay within the San Luis Gonzaga Land Grant conferred to Juan Pérez Pacheco (Doc # PLC 234, BLM # CACAAA 094227) (BLM 2016), there is no evidence that the resource area was used or developed during the rancho period. CA-MER-512H may have been associated with President John F. Kennedy's 1962 groundbreaking ceremony for the B.F. Sisk Dam. If it was associated, its connection to the president's visit was tenuous and transitory, thus insufficient to render the site eligible for listing in the NRHP/CRHR under Criterion B/2. No other potential connection between CA-MER-512H and one or more people significant in local, state, or national history could be established. CA-MER-512H is thus recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

The site consists of a control center and helicopter landing pad on a leveled hilltop with seven internal features. CA-MER-512H does not display distinctive characteristics of a type, period, or method of construction or represent the work of a master engineer. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-512H has no associated artifact deposit and consists only of two concrete equipment pads, a white-painted boulder, two reflector posts, two white painted landing pad lines, and an underground telecommunications/radio terminal. Based on its extant features and the lack of any associated artifact deposit, the site does not offer sufficient data potential to contribute to our understanding of dam and reservoir construction, transportation systems, or other potential research themes. The resource is recommended not eligible for listing in the

NRHP/CRHR under Criterion D/4.

The resource retains integrity of location, setting, feeling, and association. Its integrity of design, materials, and workmanship have been somewhat diminished by the lack of superstructures at two of the site's features and by the condition of the site as a whole (e.g., its features have been mostly broken, dismantled, heavily eroded, or displaced).

Overall, the integrity of the site is fair. CA-MER-512H is recommended not eligible for listing in the NRHP/CRHR. In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-512H is not eligible for listing in the NRHP (Polanco 2018).

CA-MER-513H
P-24-002158
PL-SLLPIP-16-06

Determined Not Eligible for Listing in the NRHP

Recommended Not Eligible for Listing in the CRHR

Appendix B, Figure B-4d

San Luis Reservoir Expansion Alternative (Potential Construction Staging Areas – Block East of B.F. Sisk Dam)

Description

CA-MER-513H is a historic period road segment situated on a low berm. The two-lane segment is located east of the B.F. Sisk Dam, trends east-southeast from the 1940s-era alignment of SR 152, and lies just 210 feet to the south of the modern SR 152 alignment. Most of the road segment is asphalt-paved with a white-painted centerline, though an unpaved portion of the road trends to the northwest. The entire road segment measures approximately 300 feet in length and 30 feet in width. The underlying berm measures 50 feet in width and stands roughly 4.5 feet above the ground surface and slightly higher than the 1940s-era SR 152 alignment. No historic period structures or features were noted in association with the road, which has largely become overgrown with dense grasses and mustard weed. A portion of a metal Ford emblem was noted in association with the resource and likely dates to the 1960s.

CA-MER-513H is located on a broad, relatively level (1-2°) plain immediately south of Gonzaga Road and east of Basalt Road. A large engineered drainage lies immediately south of the resource. CA-MER-513H is fully exposed, though dense vegetation greatly impedes ground surface visibility.

Archival Research Summary

CA-MER-513H is located in Township 10 South, Range 8 East in the unsectioned San Luis Gonzaga Land Grant just west of Section 13. The land grant was patented to Juan Pérez Pacheco on May 16, 1871 (Doc #PLC 234, BLM #

CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts the Butterfield Overland Mail route and a telegraph line within the northwest quarter of Section 13, but does not depict the CA-MER-513H road segment. The 1920 Pacheco Pass 15-minute USGS topographic map does not depict the resource (USGS 1920), though it does show the original alignment of SR 152 through the northern half of Section 13. The 1940 Pacheco Pass 15-minute USGS topographic map also does not portray the resource (USGS 1940a), though it does show that SR 152 had by then been rerouted along the southern edge of Section 13. The 1953 San Luis Creek and 1969 San Luis Dam 7.5-minute USGS topographic maps show the 1940s-era alignment of SR 152, now Gonzaga Road, which appears to pass immediately north of the resource (USGS 1953, 1969), though CA-MER-513H itself is not depicted.

The 1940 General Highway Map of Merced County shows a house to the west of the southwest quarter of Section 13 and north of the recorded road segment but does not depict a road to the south of the 1940s-era alignment of SR 152 (DPW-DH 1940). A 1946 aerial photograph, however, shows what may be a small structure at the approximate location of the resource (Fairchild Aerial Surveys 1946). CA-MER-513H may thus represent a turnout for some sort of service structure or roadside feature that no longer remains extant.

NRHP/CRHR Evaluation

CA-MER-513H comprises a short road segment that was likely constructed prior to 1946 and may have been associated with the 1940s-era alignment of SR 152. The resource is evaluated under the historic context of *Transportation Development* in the American Period (*see* Section 3.3.3). Historic period map evidence for CA-MER-513H was inconclusive, though a 1946 aerial photograph indicates that the resources may have been associated with a small structure just south of the 1940s-era alignment of SR 152 (Fairchild Aerial Surveys 1946). Ultimately, the resource could not be clearly linked to any extant structure or feature and thus could not be tied to a specific function or period. As a remnant road segment with no clear ties to significant historic period events or trends, CA-MER-513H is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

CA-MER-513H could not be linked to any individual or

group of individuals, historically significant or otherwise. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

Although it may have been associated with the 1940s-era alignment of SR 152 and possibly with a former structure located south of the highway, CA-MER-513H could not be clearly linked to any extant buildings, structures, or sites within the vicinity. The road segment is not structurally unique and does not exemplify distinctive characteristics of a type, period, or method of construction. The resource is

recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As an isolated road segment, there is little potential to encounter subsurface components or vertical stratigraphy along CA-MER-513H. Lacking any secure context or association, the resource offers little potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). Thus, CA-MER-513H is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

The overall condition of CA-MER-513H is poor, as the road segment has become almost wholly obscured by vegetation. It retains integrity location and materials, though vegetation growth has diminished its aspects of workmanship and materials. Integrity of design has been diminished by modern construction and development within the reservoir area, which also has affected its integrity of setting. Aspects of association and feeling have presumably been impacted by reservoir construction and the re-routing of the 1940s-era alignment of SR 152. The overall integrity of CA-MER-513H is thus poor to fair. CA-MER-513H is recommended not eligible for listing in the NRHP/CRHR.

In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-513H is not eligible for listing in the NRHP (Polanco 2018).

CA-MER-514H
P-24-002159
PL-SLLPIP-16-07

Description

CA-MER-514H is an excavated earthen ditch that measures approximately 0.98 miles in length, 5 to 6 feet in width at

Determined Not Eligible for Listing in the NRHP

Recommended Not Eligible for Listing in the CRHR

the top, 1 to 2 feet in width at the bottom, and varies from 2 to 4 feet in depth. The ditch originates in the southwest near a deeply entrenched drainage that is partially lined with concrete. The drainage and ditch are located adjacent to an access road associated with the B.F. Sisk Dam. The ditch head lies above the depth of the entrenched concrete ditch, which may indicate that this resource predates dam construction or that it serves as overflow for the larger concrete channel. The ditch trends to the northeast and terminates roughly 900 feet southwest of the modern alignment of SR 152.

Appendix B, Figure B-4d

San Luis Reservoir Expansion Alternative (Potential Construction Staging Areas – Block East of B.F. Sisk Dam)

CA-MER-514H loosely parallels Basalt Road to the east. It passes through a broad, gently sloping (1-2°) open flat dominated by dense, low grasses that limit ground surface visibility. The B.F. Sisk Dam is located roughly 800 feet to the southwest of the southern end of the ditch. A historic period road segment (CA-MER-513H) is located 760 feet to the east of the northern end of the ditch.

Archival Research Summary

CA-MER-514H is located in Township 10 South, Range 8 East in the unsectioned San Luis Gonzaga Land Grant. Section 24 is located to the east, and Section 13 is located to the northeast. The resource area was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho as well as two alternate stage routes, but does not depict the earthen ditch (BLM 2016). The 1920 Pacheco Pass 15-minute USGS topographic map shows the original alignment of SR 152 through the north of Section 13 while the 1940 Pacheco Pass 15-minute USGS topographic map shows that SR 152 had been rerouted to the southern edge of Section 13 (USGS 1920, 1940a). Neither map depicts the earthen ditch. The 1953 San Luis Creek and the 1969 San Luis Dam 7.5-minute USGS topographic maps show the 1940s-era and modern alignments of SR 152 respectively, but neither depict CA-MER-514H (USGS 1953, 1969). An aerial photograph from 1946 shows what appears to be the ditch to the south of SR 152 and south-southeast of the San Luis Ranch headquarters, so it appears that the resource was present by that time (Fairchild Aerial Surveys, Inc. 1946).

The San Luis Gonzaga Rancho was a Mexican land grant given in 1843 to Juan Pérez Pacheco and José Maria Mejía. The grant was bounded by the San Joaquin River to the east; Los Banos Creek to the south; and Rancho Ausaymas y San Felipe to the west, which was held by Juan Pacheco's father Francisco Pérez Pacheco (Beck and Haase 1974). When Juan Pacheco died in 1855, the property reverted to his father Francisco. Francisco died in 1860. His property, including the San Luis Gonzaga Rancho and half of Rancho Ausaymas y San Felipe, passed to his only surviving child Ysidora after Francisco's wife died in 1892. Ysidora married Mariano Malarin in 1850 and had two daughters. One married Dr. Ramon Roca while the other married Dr. Luis Fatjo. The Fatjos and their children inherited the Merced portion of San Luis Gonzaga Rancho (Hoover et al. 1999: 200). In 1949, Paula Fatjo, the great-great granddaughter of Francisco Pérez Pacheco, moved to the rancho and remodeled the original 1843 adobe that once stood on the property (Pierce 1977: 107). San Luis Gonzaga was an operating cattle ranch during Paula Fatjo's time, though she also bred and boarded Arabian horses (Pierce 1977: 107-111). If the earthen ditch was present by 1946, it may or may not have been used by Fatjo.

NRHP/CRHR Evaluation

CA-MER-514H is a historic period earthen ditch with no associated artifacts that appears to have been constructed sometime prior to 1946 (Fairchild Aerial Surveys, Inc. 1946). The purpose of the ditch remains unknown, and its possible association with other historic period features or activities remains unclear. It may have been used for agricultural or ranching activities, but it cannot be securely linked to a particular historic context. CA-MER-514H does not appear to have been associated with events significant in local or regional history, however, and is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No association between CA-MER-514H and any individuals was revealed through archival research, so no link could be established between the feature and one or more persons significant in local or regional history. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-514H consists of an earthen ditch with no associated artifacts, features, or structures. The ditch is not structurally unique and does not exemplify distinctive

characteristics of a type, period, or method of construction. CA-MER-514H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-514H contains no artifacts or materials that might be used to link the resource to a particular time period. It lacks the data potential to address important research questions regarding early farming or ranching activities, water conveyance, or other potential research themes. The resource is recommended not eligible for listing on NRHP/CRHR under Criterion D/4.

CA-MER-514H remains in fair condition. It retains integrity of location, materials, and workmanship. Aspects of design, association, and feeling are diminished because no clear functional or temporal context could be established for the resource. As it appears to predate 1946, reservoir and dam construction have likely impacted the resource's integrity of setting. Overall, the integrity of CA-MER-514H is fair to poor. CA-MER-514H is recommended not eligible for listing in the NRHP/CRHR.

In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-514H is not eligible for listing in the NRHP (Polanco 2018).

CA-MER-515H	***Description***
P-24-002160	CA-MER-515H is an earthen dam that spans a small inlet of
PL-SLLPIP-16-09	the San Luis Reservoir. The dam is oriented northeast-southwest and impounds water on the western side, forming
Recommended	a pond. The southern end of the dam is truncated by a
Not Eligible for	drainage that flows out of the impound pond; it may be an
Listing in the	intentional breach that was formed when the dam was built.
NRHP/CRHR	The dam measures 275 feet NE/SW by 140 feet NW/SE at the base. The top of the dam is approximately 15-18 feet
Appendix B,	wide. The eastern side of the dam stands roughly 35-40 feet
Figure B-4c	high from the base to the top. Including the impound pond,
San Luis	the total dimensions of the resource measure approximately
Reservoir	510 feet NW/SE by 320 feet NE/SW. The dam is flat on top
Expansion	and pedestrian accessible, though dead and dying trees
Alternative	along the western base of the dam make it less accessible.
(Reservoir	No additional artifacts or features were noted at CA-MER-
Shoreline –	515H.
South of SR 152)	

CA-MER-515H is located on the northwestern side of the reservoir to the north of a boat ramp and the original alignment of SR 152. The site area is characterized by oak woodland and riparian vegetation. Oak trees are sparsely scattered near the drainage with wild oats, cheatgrass, thistle, bursage, datura, mustard, and seasonal grasses. Willow trees, grasses, wild oats, cheatgrass, and several unidentified perennials border or are proximate to the pond. Soils, where visible, consist of light tan, rocky clay loam.

Archival Research Summary

CA-MER-515H is located in the unsectioned San Luis Gonzaga Land Grant in Township 10 South, Range 7 East. The resource area was patented on May 16, 1871 to Juan Pérez Pacheco (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho as well as two alternate stage routes, but does not depict the earthen dam or impound pond (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not show the dam or impound pond, but do depict the 1920s-era SR 152 alignment to the south (USGS 1920, 1940a). The 1940 map also depicts a 104kV PG&E line to the north of the resource location. The 1955 Pacheco Pass 7.5-minute USGS topographic map shows the San Luis Reservoir and the realigned route of SR 152. The "Boat Ramp" road depicted on the 1955 map appears to be an existing segment of the original SR 152 alignment; the dam and impound pond are shown as present but abandoned features, thus they would have been constructed by 1955 but had evidently fallen into disuse by 1971 (USGS 1955). A 1946 aerial photograph of the resource location does not shows the dam or pond, thus CA-MER-515H likely post-dates 1946 and pre-dates 1955 (Fairchild Aerial Surveys 1946).

Francisco Pérez Pacheco, who inherited the San Luis Gonzaga Rancho upon the death of his son Juan, had one daughter, Lola. She married Mariano Malarin, and they in turn had two daughters; one married Dr. Ramon Roca, while the other married Dr. Luis Fatjo. The Fatjos and their children inherited the Merced portion of the rancho. In 1949, Paula Fatjo, the great-great granddaughter of Francisco Pérez Pacheco, moved to the rancho and remodeled the original 1843 adobe that once stood on the property (Pierce 1977: 107). San Luis Gonzaga, or San Luis

Ranch, was an operating cattle ranch during Paula Fatjo's time, though she also bred and boarded Arabian horses (Pierce 1977: 107-111). If construction of the dam and impound pond do post-date 1946 and pre-date 1955, they may have been associated with Fatjo's tenure on the property. The resource was almost certainly associated with agricultural or ranching activities and could have functioned as a stock watering locale.

NRHP/CRHR Evaluation

CA-MER-515H is a historic period earthen dam and impound pond with no other associated features, structures, or surface artifacts. Based on historic period map and aerial photographic evidence, the resource appears to have been constructed prior to 1955 but after 1946 (Fairchild Aerial Surveys 1946; USGS 1955). While the resource was likely associated with ranching or farming activities, it could not be linked to particular historic period events, significant or otherwise. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

Although CA-MER-515H may be associated with Paula Fatjo's tenure at the San Luis Ranch, no clear link could be established between her or any other individual and the construction or use of the resource. CA-MER-515H could not be linked to one or more individuals significant in local, regional, state, or national history. It is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

As a historic period earthen dam and impound pond, CA-MER-515H consists of a single engineered feature. That feature is not unique and does not exemplify distinctive characteristics of a type, period, or method of construction, nor does it embody innovative construction techniques. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-515H contains no artifacts or materials that might be used to link the resource to a particular time period. It lacks the data potential to address important research questions regarding early farming or ranching activities, water conveyance, or other important research themes. The resource is recommended not eligible for listing on NRHP/CRHR under Criterion D/4.

CA-MER-515H remains in good condition and has not been greatly impacted by erosion. It retains integrity of location,

design, materials, workmanship, feeling, and association. The resource's integrity of setting has presumably been impacted by the development and inundation of the San Luis Reservoir. Overall, the resource possesses good integrity. CA-MER-515H is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-516H
P-24-002161
PL-SLLPIP-16-10

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figure B-4c

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – South of SR 152)

Description

CA-MER-516H is an earthen dam constructed across an east-flowing seasonal drainage that emanates from between two prominent hills to the west. The dam is oriented north-south, and the base measures approximately 65 feet in length and 20 feet in width. The top of the dam measures 10 feet in width and is marked by a barbed wire fence with T-posts that is in poor condition. The impound area behind the dam measures roughly 100 feet in diameter and does not retain any water due to a breach 8 feet from the northern end. As a whole, the resource measures 150 feet NW/SE by 100 feet NE/SW.

CA-MER-516H lies within an oak woodland vegetation community with sparsely scattered oaks and seasonal grasses as well as wild oats, cheatgrass, thistle, bursage, datura, and mustard. Visible soils within the resource area consist of light tan, very rocky clay loam. The resource is fully exposed and features a variable slope (0-15°). The canyon upstream from CA-MER-516H quickly narrows and contains a dense stand of oaks. The canyon opens into a narrow mouth that forms an inlet of the San Luis Reservoir.

Archival Research Summary

CA-MER-516H is located in Township 10 South, Range 7 East in the unsectioned San Luis Gonzaga Land Grant. The resource area was patented to Juan Pérez Pacheco on May 16, 1871 (Doc #PLC 234, BLM # CACAAA 094227) (BLM 2016). An 1879 GLO plat map depicts only the area not covered by the land grant. A 1909 GLO sketch map of the diseño of Rancho San Luis Gonzaga shows a stage route through the rancho but does not depict the earthen dam or impound pond (BLM 2016). The 1920 and 1940 Pacheco Pass 15-minute USGS topographic maps do not depict the dam or impound pond, though the 1940 map does show the original 1920s-era SR 152 alignment to the north (USGS 1920, 1940a). The 1955 Pacheco Pass 7.5-minute USGS topographic map shows the San Luis Reservoir and a "Boat Ramp" road to the northwest, but does not portray the dam or impound pond (USGS 1955). A 1946 aerial photograph

of the resource location does not shows the CA-MER-516H features, thus they likely post-date 1946 and pre-date 1963 when construction began for the dam and reservoir (Fairchild Aerial Surveys 1946).

Francisco Pérez Pacheco, who inherited the San Luis Gonzaga Rancho upon the death of his son Juan, had one daughter, Lola. She married Mariano Malarin, and they in turn had two daughters; one married Dr. Ramon Roca, while the other married Dr. Luis Fatjo. The Fatjos and their children inherited the Merced portion of the rancho. In 1949, Paula Fatjo, the great-great granddaughter of Francisco Pérez Pacheco, moved to the rancho and remodeled the original 1843 adobe that once stood on the property (Pierce 1977: 107). San Luis Gonzaga, or San Luis Ranch, was an operating cattle ranch during Paula Fatjo's time, though she also bred and boarded Arabian horses (Pierce 1977: 107-111). It is likely that the earthen dam and impound pond supported ranching and/or farming, but it could not be definitively associated with a specific landowner such as Paula Fatjo or with a specific function such as stock watering.

NRHP/CRHR Evaluation

CA-MER-516H is a historic period earthen dam and impound pond with no other associated features, structures, or surface artifacts. Based on historic period map and aerial photographic evidence, the resource appears to have been constructed prior to the dam and reservoir (1963-1967) but after 1946 (Fairchild Aerial Surveys 1946) and perhaps after 1955 (USGS 1955). While the resource was likely associated with ranching or farming activities, it could not be linked to particular historic period events, significant or otherwise. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

CA-MER-516H could not be linked to one or more individuals significant in local, regional, state, or national history. The resource may have been associated with Paula Fatjo and her time at the San Luis Ranch, or it may have been associated with an unknown individual or lease holder. CA-MER-516H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

As a historic period earthen dam and impound pond, CA-MER-516H consists of a single engineered feature. That feature is not unique and does not exemplify distinctive

characteristics of a type, period, or method of construction, nor does it embody innovative construction techniques. CA-MER-516H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-516H contains no artifacts or materials that might be used to link the resource to a particular time period. It lacks the data potential to address important research questions regarding early farming or ranching activities, water conveyance, or other potential research themes. The resource is recommended not eligible for listing on NRHP/CRHR under Criterion D/4.

CA-MER-516H remains in fair condition and has not been measurably impacted by erosion. The dam features a major breach, however, and the barbed wire fence that spans the top of the dam is in poor condition. CA-MER-516H retains integrity of location, design, materials, workmanship, and feeling. The resource's integrity of setting has presumably been impacted by the development of the San Luis Reservoir, while the aspect of association is impacted because the resource could not be linked to a particular landowner/ranch complex, function, or time period. The resource possesses fair overall integrity. CA-MER-516H is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-517
P-24-002162
PL-SLLPIP-16-11

Pending Evaluation for Listing in the NRHP/CRHR under Criterion D/4

Appendix B, Figure B-4c

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – South

Description

CA-MER-517 is a prehistoric site with groundstone and flaked stone artifacts that measures 35 meters N/S by 65 meters E/W. The site features four complete basalt milling slabs (Artifacts 1, 5, 9, and 10), one complete sandstone milling slab (Artifact 6), and one fragmentary basalt milling slab (Artifact 13). Seven chert cores (Artifacts 2, 3, 4, 7, 8, 11, and 12) and ten pieces of chert debitage also were noted. Six pieces of debitage consist of larger specimens (>3 centimeters diameter), including two primary and three secondary flakes, though one is a smaller (1-2 centimeter) bifacial thinning flake. Most of the debitage is white to off-white and mottled and banded with red and orange; two pieces are a light pinkish-brown and appear to represent higher quality material. CA-MER-28, a previously recorded prehistoric site with midden soils, fire-affected rock, a possible heated rock feature, groundstone artifacts, and debitage, is located just 40 meters to the northwest on the other side of a steep drainage. Its association with CA-MER-517 is unclear.

of Dinosaur Point Boat Ramp)

CA-MER-517 is situated on a broad, slightly sloping (3-4°) north and north-northeast facing terrace that overlooks a deep east-flowing creek immediately to the north of the site. Across the drainage to the north, the slope rises up towards a fenceline located mid-slope. To the east, the landform opens up out of the hills towards the San Luis Reservoir. To the south, a series of dissected hills rises steeply. To the west, the hills constrict into a narrow V-shaped canyon. A large rock outcrop is located immediately south of the site, though no evidence of grinding surfaces or other cultural materials were noted. The site is covered with relatively sparse, low grasses that offer fair to good visibility (50-60%). Tall, knee-high grasses dominate the area around the site and may obscure additional cultural materials. Two large cottonwood trees are present in the creek bottom, and oaks form dense stands upslope to the south. Soils in the site area are a very rocky, light brown sandy loam. No midden soils were observed. The majority of the surface rock in the area comprises sandstone slab fragments and rounded cobbles, likely from sandstone conglomerate outcrops located upslope.

NRHP/CRHR Evaluation

CA-MER-517 contains six whole or fragmentary milling slabs, seven chert cores, and ten pieces of chert debitage. CA-MER-517 may represent a short-term habitation site (*see* Section 7.3.1). Short-term habitation sites are those that were occupied for a short duration or were occupied repeatedly, though on a seasonal or short-term basis. They typically lack accumulated midden deposits, and the cultural constituents present tend to be less diverse or numerous than at permanent habitation sites (*see* Section 7.3.1). Based on the cultural constituents observed, CA-MER-517 may have been used for short-term food processing. Although no midden soils or fire-affected rocks were observed, the presence of groundstone milling slabs suggests that the site may contain a subsurface deposit. The resource is evaluated under the themes of *Economy* and *Settlement* (*see* Section 7.2), particularly as they relate to prehistoric subsistence.

Prehistoric temporary habitation sites are relatively common in the Diablo Range foothills. Little is known, however, about their relationship to larger, more prominent prehistoric sites located on the western edge of the valley floor or to habitation sites located along major stream courses. A search of the Sacred Lands Inventory by the NAHC for the site vicinity did not reveal any specific

information about the CA-MER-517 area, and the resource does not appear to have been associated with any significant events in local or regional Native American history. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No definitive association with one or more individuals could be established for CA-MER-517, and a literature review did not identify any prominent individuals who may have been associated with the site during the ethnographic period. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-517 does not contain structurally or artistically unique features and does not exemplify distinctive characteristics of a type, period, or method of construction. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

Although no midden soils were observed at CA-MER-517, the site includes six groundstone artifacts and may have the potential to reveal intact subsurface components and vertical stratigraphy. The data potential of the site (e.g., its depth, integrity, age, and artifact diversity) thus has not been fully explored. Further investigation of the site may yield information that can be used to address important research questions about chronology, settlement, economy, and technology in northern San Joaquin Valley prehistory (*see* Section 7.2). Based on the limited data acquired during inventory survey, an informed recommendation regarding the eligibility of the site for listing in the NRHP/CRHR under Criterion D/4 cannot be offered. If any of the San Luis Reservoir Expansion Alternative are implemented, subsurface testing is recommended to determine if CA-MER-517 offers the potential to address important research questions such as those outlined in Section 7.2. CA-MER-517 is recommended not eligible for listing in the NRHP/CRHR under Criteria A/1, B/2, and C/3 but remains pending evaluation under Criterion D/4.

CA-MER-518H
P-24-002163
PL-SLLPIP-16-12

Recommended Not Eligible for

Description

CA-MER-518H is an earthen dam constructed across a north-flowing seasonal drainage that flows into San Luis Creek. The earthen dam is oriented east-west and measures approximately 160 feet in length at the top and 30-35 feet in width at the base, forming an impound pond to the southern side of the dam. The northern side of the dam stands 25 feet

Listing in the NRHP/CRHR

Appendix B, Figure B-4g

high while the southern side stands 12-15 feet above the pond. The water impound area is roughly triangular, measuring 225 feet N/S by 100 feet E/W. A historic period dirt road (CA-MER-519H) segment is located approximately 735 feet to the north of CA-MER-518H and across the current San Luis Reservoir spillway.

CA-MER-518H lies to the north of the mouth of San Luis Creek at the far southern end of the San Luis Reservoir. It is situated within an oak woodland vegetation community with sparsely scattered oaks and seasonal grasses. The resource area features a variable slope (0-15°) and is fully exposed. Soils, where visible, are a light tan, very rocky and compact silty clay loam.

San Luis Reservoir Expansion Alternative (Reservoir Shoreline – South side of San Luis Creek Inlet)

Archival Research Summary

CA-MER-518H is located in Township 11 South, Range 8 East in the northeast quarter of Section 18, though current USGS topographic maps depict the land as unsectioned (USGS 1956, 1969). No land patent information is available for the resource area, which is approximately 1.2 miles to the south of the San Luis Gonzaga Rancho. Adjacent areas were patented to Daniel T. Haley on June 2, 1919, including the southeast quarter of the northeast quarter and the northwest quarter of the southeast quarter of Section 18 (Doc # 011232, BLM # CASF 0011232) (BLM 2016). On December 18, 1922, George Haley, Daniel's brother, patented the southeast quarter of the northwest quarter of Section 8 (Doc # 08821, BLM # CASF 0008821) (BLM 2016), which is roughly 0.75 miles to the northeast.

The *History of Merced County, California* (Outcalt 1925) notes that Daniel T. Haley was the son of Esther Byrne and William Haley, an Irish immigrant who settled in San Francisco in 1850 and started the Dairy Delivery Company. Esther and William had eight children together. Daniel was born in 1854, and he followed his father into the dairy delivery business. Daniel settled in Gustine and managed a local plant that distributed 85-100 ten-gallon cans of cream to San Francisco each day for processing. Roughly 10,000 gallons of milk were then distributed to customers throughout the San Francisco and Burlingame areas (Outcalt 1925: 762). William Haley appears to have managed distribution for the family's company while Daniel managed supply. Daniel Haley married Grace Truit and was elected mayor of Gustine when it was incorporated

in 1915. The Town of Gustine is located approximately 7 miles northeast of the site area, so it is not clear how much time Daniel may have spent in the San Luis flat area.

The 1922[10] and 1940[11] Quien Sabe 15-minute USGS topographic maps show the resource vicinity as sectioned land. Both depict a dirt road (CA-MER-519H) to the north of the resource but do not show the earthen dam or impound pond (USGS 1922b, 1940b). The 1956[12] Quien Sabe 15-minute USGS topographic map also shows the site vicinity as sectioned, and "Haley Ranch" is depicted roughly 0.75 miles to the northeast in Section 8 in the same quarter that was patented by George Haley in 1922 (USGS 1956, BLM 2016). The dirt road first depicted on the 1922 map remains unchanged (USGS 1956). The 1969[13] Mariposa Peak 7.5-minute USGS topographic map no longer depicts the road to the north of the resource but does depict a road to the south; the earthen dam and impound pond are still not shown and the site vicinity is shown as unsectioned land (USGS 1969b). Although map evidence failed to indicate a likely date range for CA-MER-518H, its construction probably predated construction of the B.F. Sisk Dam and San Luis Reservoir. No clear tie could be made between CA-MER-518H and Daniel or George Haley, though it seem likely that the resource was used as a stock watering locale, perhaps as a part of the Haley dairy operation.

NRHP/CRHR Evaluation

CA-MER-518H is an earthen dam and impound pond with no other associated features, structures, or surface artifacts. Historic period map evidence failed to indicate a date range for the resource, but it likely pre-dates the construction of the B.F. Sisk Dam and San Luis Reservoir. While the resource was likely associated with ranching or farming activities, perhaps with the Haley family dairy operation, it could not be linked to significant historic period events or trends. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

Although CA-MER-518H may be associated with Daniel and George Haley who patented nearby parcels in 1919 and

[10] The 1922 Quien Sabe 15-minute USGS topographic map was surveyed in 1917-1918.
[11] The 1940 Quien Sabe 15-minute USGS topographic map was revised using aerial photographs in 1939-1940.
[12] The 1956 Quien Sabe 15-minute USGS topographic map revised from aerial photographs taken 1949-1950; field checked 1956.
[13] The 1969 Mariposa Peak 7.5-minute USGS topographic map is based on aerial photographs taken in 1967; field checked in 1969.

1922, no clear link could be established between the Haleys and the resource location. Because the resource could not be linked to one or more individuals significant in local, regional, state, or national history, CA-MER-518H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

As a historic period earthen dam and impound pond, CA-MER-518H consists of a single engineered feature. That feature is not unique and does not exemplify distinctive characteristics of a type, period, or method of construction. The resource does not embody innovative construction techniques, nor does it represent the work of a master. CA-MER-518H is thus recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-518H contains no artifacts or materials that might be used to link the resource to a particular time period. It lacks the data potential to address important research questions regarding early farming or ranching activities, water conveyance, or other potential research themes. The resource is recommended not eligible for listing on NRHP/CRHR under Criterion D/4.

CA-MER-518H remains in good condition and has not been heavily impacted by erosion. It retains integrity of location, design, materials, workmanship, feeling, and association. The resource's integrity of setting has presumably been affected by the development and inundation of the San Luis Reservoir. Overall, the resource possesses good integrity. CA-MER-518H is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-519H
P-24-002164
PL-SLLPIP-16-13

Recommended Not Eligible for Listing in the NRHP/CRHR

Appendix B, Figures B-4e and B-4g

San Luis

Description

CA-MER-519H is a historic period dirt road that includes four discontinuous segments (Segments A-D) that were observed during the 2016 inventory survey as well as one digitized segment that was noted on historic period USGS topographic maps and is now largely inundated. The digitized segment extends south from the 1920s-era alignment of SR 152 through a broad flat and the center of what is currently a spillway for the San Luis Reservoir. The northernmost end of the digitized road segment begins roughly 1 mile west of Basalt Hill and descends south for 2.4 miles before curving northwest to follow the contour of San Luis Creek for another 0.6 miles. Most of the alignment is under water or no longer evident on the ground. A

Reservoir Expansion Alternative (Reservoir Shoreline –San Luis Creek Inlet)

historic period earthen dam and impound pond (CA-MER-518H) are located roughly 750 feet south of the southernmost point along the digitized alignment of CA-MER-519H. The four discontinuous road segments that were observed during the 2016 inventory survey begin near the southwestern end of the main alignment and continue northwest for 0.43 miles up the San Luis Creek Canyon. Each measures 375-500 feet in length and approximately 10 feet in width. These segments are bordered by steep 10-15 foot high road cuts and steep drop-offs towards the adjacent drainage, allowing passage along a narrow, single-track corridor.

CA-MER-519H is situated largely within an oak woodland vegetation community with sparsely scattered oaks and dense seasonal grasses. The road alignments themselves feature a moderate grade of 0-5°, though the areas that border them feature a variable slope of up to 45°. Soils, where visible, comprise light tan, very rocky, and compact silty clay loam. The recorded road segments border the southern side of San Luis Creek and terminate near its confluence with Portuguese Creek.

Archival Research Summary

According to current USGS topographic maps, CA-MER-519H is located in Section 32 in Township 10 South, Range 8 East and in Section 5 and unsectioned lands in Township 11 South, Range 8 East. Historic period maps, however, indicate that currently unsectioned lands encompassing the southernmost portion of the resource were previously designated as Sections 7 and 8 of Township 11 South, Range 8 East. The southernmost portion of the digitized alignment lay in both, while the four segments identified during inventory survey were noted in Section 7 (USGS 1940b). A GLO plat from 1875 for the site vicinity depicts a road from the north that descends towards northern Los Banos Valley, which may reflect portions of the CA-MER-519H alignment (BLM 2016). The 1922 Quien Sabe 15-minute USGS topographic map shows the main alignment of CA-MER-519H terminating near the confluence of San Luis and Portuguese Creeks (USGS 1922b). The 1940 Quien Sabe 15-minute USGS topographic map (USGS 1940b) shows an ephemeral road or trail segment continuing further south-southwest along Portuguese Creek to end at a structure. At least portions of the road, therefore, appear to have been in place by 1922. The 1956 Quien Sabe 15-minute USGS topographic map mirrors the 1940 map

but also appears to show the four discontinuous road segments continuing from near the southern end of the main alignment as a jeep trail (USGS 1956). The 1969 Mariposa Creek 7.5-minute USGS topographic map depicts the inundated San Luis Reservoir and no longer depicts the CA-MER-519H road segments but does depict a road from the east that skirts the southern edge of the spillway before turning southwest to border Portuguese Creek and continue west (USGS 1969b).

Land patent information for Township 11 South, Range 8 East indicates that George Haley patented the southeast quarter of the northwest quarter of Section 8 on December 18, 1922 (Doc # 08821, BLM # CASF 0008821) (BLM 2016). Neighboring areas were patented to Daniel T. Haley on June 2, 1919, including the southeast quarter of the northeast quarter and the northwest quarter of the southeast quarter of Section 18 (Doc # 011232, BLM # CASF 0011232) (BLM 2016). No information was available for lands surrounding the structure near the end of the main road alignment as it appears on the 1956 Quien Sabe 15-minute USGS topographic map (USGS 1956). It is possible that the main road alignment of CA-MER-519H was established to bridge the 1920s-era alignment of SR 152 with the Haley's lands or with the lands of other unknown ranchers or farmers. The *History of Merced County, California* (Outcalt 1925: 762) notes that Daniel T. Haley was the son of William Haley, the owner of the San Francisco Dairy Delivery Company. Daniel followed his father into the dairy business, concentrating his efforts on production and supply while his father focused on delivery within the San Francisco and Burlingame areas. Daniel settled in and became the mayor of Gustine, so it is unclear how much time he may have actually spent on lands near San Luis Creek.

NRHP/CRHR Evaluation

CA-MER-519H is a historic period dirt road that consists of one main alignment detectable mostly through historic period topographic maps and four discontinuous road segments that appear to have come into use prior to 1956. All appear to have been abandoned by the time the San Luis Reservoir was inundated. The resource was likely associated with local ranching or farming activities, perhaps with the Haley family dairy operation, though it could not

be linked to particular historic period events or uses. The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

CA-MER-519H may be associated with the Haley family dairy operation, though no clear link could be established between Daniel or George Haley and the construction or use of the main road alignment or its offshoots. The resource could not be clearly linked to one or more individuals significant in local, regional, state, or national history and CA-MER-519 H is therefore recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

The CA-MER-519H road segments could not be clearly linked to any other buildings, structures, or sites within the vicinity. They are not structurally unique and do not exemplify distinctive characteristics of a type, period, or method of construction. Thus, the resource is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

As isolated road segments, there is little potential to encounter a subsurface component or vertical stratigraphy along CA-MER-519H. It offers limited potential to address important research questions about *Transportation Development* in the American Period (*see* Section 3.3.3). The resource is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

The four visible, discontinuous portions of CA-MER-519H do not appear to be maintained or in active use, and the main alignment of the road is now inundated by the San Luis Reservoir. Despite impacts from erosion, the visible road segments are in fair condition and retain integrity of location, design, materials, and workmanship. They lack integrity of feeling and association, however because they cannot be clearly linked to a particular time or purpose, and because the main road alignment of which they were presumably a part retains only integrity of location. As a whole, CA-MER-519H possesses poor integrity. CA-MER-519H is recommended not eligible for listing in the NRHP/CRHR.

CA-MER-520H
P-24-002165
PL-SLLPIP-16-14

Description

CA-MER-520H consists of 38 historic period survey markers, elevation markers, control points, or observation wells that are associated with the construction, use, and

Determined Not Eligible for Listing in the NRHP

Recommended Not Eligible for Listing in the CRHR

Appendix B, Figures B-4d and B-4f

San Luis Reservoir Expansion Alternative (Downstream Stability Berms/Fill Impact Areas; Potential Construction Staging Areas)

maintenance of the B.F. Sisk Dam. The markers and control points include 15 stamped brass caps set in concrete pads, two 1.5-foot tall concrete markers, and four 5-foot tall concrete obelisks. Some of the markers are surrounded by piled rocks or are painted silver, presumably to aid identification and/or to offer protection from disturbance. One marker is noteworthy because the surrounding concrete pad features inscribed names, dates (1966), handprints, a child's footprint, and a stylized drawing. The 15 brass markers are stamped with "US Department of the Interior" and below that "Bureau of Reclamation" with an elevation in feet amsl. There are also 17 observation wells that consist of metal or plastic tubes that extend from the ground surface with associated marker signs; they are used to monitor ground water levels and potential dam seepage.

All of the markers and observation wells that make up CA-MER-520H are located on the eastern side of the San Luis Reservoir, and all but two are located to the east of the B.F. Sisk Dam. Thirty-six of the survey markers or observation wells are positioned between a point roughly 0.6 miles north of the Gianelli Pumping Station and below SR 152. They extend south to near the southern edge of the dam. From west to east, they are positioned between the dam and the eastern edge of the San Luis Gonzaga land grant. Two 5-foot tall concrete obelisks lie outside of that area. One is positioned near the 697-foot elevation point on a promontory 0.9 miles southwest of the dam while another is positioned near the top of Basalt Hill. The condition of these survey markers and observation wells varies. Some have fallen into disuse while others appear to be actively maintained.

The setting for these markers and observation wells differs greatly. Some, including those adjacent to the B.F. Sisk Dam, lie within heavily modified environments while others lie within undisturbed areas featuring dense, high grasses and shrubs. The survey markers likely served as benchmarks for the survey and construction of the B.F. Sisk Dam and its appurtenant features. The 5-foot tall concrete obelisks may have acted as major control points while the other markers may have fulfilled more localized survey or construction needs.

Archival Research Summary

The California Department of Water Resources (1974: 276) noted that the B.F. Sisk Dam, formerly the San Luis Dam,

was constructed between 1963 and 1967. The isolated survey markers, elevation markers, control points, and observation wells that make up CA-MER-520H were likely established shortly before to shortly after that period. The site features occur in Township 10 South, Range 8 East in the unsectioned San Luis Gonzaga Land Grant and in Section 34. The 5-foot tall concrete obelisks occur near USGS elevation benchmark locations, but do not precisely correspond to them. They and the other concrete markers are not depicted on USGS topographic maps (USGS 1920, 1940a, 1950, 1969), nor do they appear on a 1957 aerial view of the vicinity (USDA-CSS 1957).

NRHP/CRHR Evaluation

CA-MER-520H comprises a series of historic period survey markers, elevation markers, control points, and observation wells that were likely set in place prior to or shortly after the 1963 to 1967 construction period for the B.F. Sisk Dam (California Department of Water Resources 1974: 276). The dam and its associated structures have been recommended eligible for listing in the NRHP and the CRHR under Criterion A/1 as a historic district significant in the development of the CVP and SWP and important to the expansion and sustainability of farmland and municipal and industrial development in the Central Valley. CA-MER-520H would have been used for surveying and engineering in support of the dam's construction, while the observation wells have been used to measure seepage as a part of dam monitoring and maintenance. Though important in practical terms, these features played a minor role in the overall development of the B.F. Sisk Dam System. CA-MER-512H is thus recommended not eligible for listing in the NRHP/CRHR under Criterion A/1.

No connection between CA-MER-520H and one or more people significant in local, state, or national history could be established. CA-MER-520H is recommended not eligible for listing in the NRHP/CRHR under Criterion B/2.

CA-MER-520H consists of a series of isolated features that do not display distinctive characteristics of a type, period, or method of construction, nor do they represent the work of a master engineer. CA-MER-520H is recommended not eligible for listing in the NRHP/CRHR under Criterion C/3.

CA-MER-520H is made up of survey markers, elevation markers, control points, and observation wells that lack

associated artifacts or deposits. They do not offer sufficient data potential, either individually or collectively, to contribute to our understanding of water conveyance systems, dam and reservoir construction, or other potential research themes. The site is recommended not eligible for listing in the NRHP/CRHR under Criterion D/4.

The individual elements of CA-MER-520H retain integrity of location, setting, feeling, association, materials, and workmanship. Their integrity of design, however, may have been somewhat diminished because it is unclear how some markers were used or how they may have been configured when they were first put in place. Overall, CA-MER-520H possesses good integrity. CA-MER-520H is commended not eligible for listing in the NRHP/CRHR.

In support of NHPA Section 106 Consultation for the B.F. Sisk Dam Corrective Action Study Geotechnical Investigations, Merced County, California (Project # 18-SCA0-002.00 I), the SHPO concurred that CA-MER-520H is not eligible for listing in the NRHP (Polanco 2018).

7.5 Summary and Recommendations

Approximately 855.5 acres within the 2,097.5-acre Lower San Felipe Intake Alternative APE were subject to inventory survey in 2012. Twenty-four cultural resources were documented within the APE, including six previously recorded districts, archaeological sites, or built environment resources; 12 newly identified archaeological sites or built environment resources; and six newly identified isolated finds (*see* Table 6-2). One previously recorded resource is listed in the NRHP and the CRHR (P-24-000489), one is listed in the CRHR (CHL-829, P-24-000643), and one features no surface expression within the APE that might be evaluated (P-24-001856). Of the other three previously recorded resources, one is recommended eligible for listing in the NRHP and the CRHR (CA-MER-94), one remains pending evaluation (CA-MER-26/H, prehistoric component), and one is recommended not eligible for listing in the NRHP and the CRHR (CA-MER-477H). Of the 12 newly identified resources, 11 are recommended not eligible for listing in the NRHP and CRHR (CA-MER-484H, CA-MER-485H, CA-MER-486H, CA-MER-487H, CA-MER-488H, CA-MER-489H, CA-MER-490H, CA-MER-491H, CA-MER-493H, CA-MER-494H, and CA-MER-495H) while one historic period industrial site (CA-MER-492H) is recommended not eligible for individual listing in the NRHP and CRHR and also is regarded as a non-contributing element to the recently defined B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018) (*see* Table 7-1).

Within the former Combination Alternative APE, approximately 107.9 acres were subject to inventory or reconnaissance level survey in 2012, including 23.4 acres that remained a part of the final 28.5-acre APE and 85.2 acres that were excluded from consideration after the inventory survey was completed. One historic period archaeological site (CA-SCL-799H) was revealed within the Combination Alternative APE through archival and records searches. It was excavated in 1996 and found to be heavily disturbed (Morgan et al. 1996); no surface traces of the site were encountered during the 2012 inventory survey, and its reported location was centered beneath the paved ROW of West Hedding Street. No newly identified resources were recorded within the final Combination Alternative APE or within groundwater well or pipeline locations that were removed from the APE in 2012 (*see* Section 6.2.2). In 2017, the alternative was removed from consideration as a part of the SLLPIP.

Table 7-1. Evaluations Summary for Cultural Resources within the Area of Potential Effects for the Lower San Felipe Intake Alternative.

Resource Designation	APE Location	Description	NRHP/CRHR Status/ Recommendation	Additional Evaluation Measures Recommended
Lower San Felipe Intake Alternative – Previously Recorded Cultural Resources				
CA-MER-26/H P-24-000127	Dinosaur Point	Multi-component site featuring a prehistoric midden with lithic scatters and a historic period earthen dam with stock pond	Prehistoric component pending evaluation for listing in the NRHP/CRHR; historic period component recommended not eligible for listing	If resource cannot be avoided, subsurface testing is recommended to further evaluate the prehistoric site component
CA-MER-94 P-24-000194	Dinosaur Point	Prehistoric midden and lithic scatter	Recommended eligible for listing in the NRHP/CRHR under Criteria A/1 and D/4	No additional evaluation efforts recommended
CA-MER-477H[1] P-24-001822	Dinosaur Point; Dinosaur Point Road	Fourteen historic period road segments	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
P-24-000489[1]	Dinosaur Point; Dinosaur Point Road	San Luis Gonzaga Archaeological District comprised of five prehistoric midden sites (CA-MER-107, CA-MER-126 CA-MER-130, CA-MER-134, and CA-MER-135)	Listed in the NRHP and CRHR (code 1S)	No additional evaluation efforts recommended
P-24-000643 CHL-829	Aeration Facility	Historic period California State Historical Landmark plaque commemorating Moraga's 1805 exploration of Pacheco Pass	Listed in the CRHR (CHL-829); not evaluated for listing in the NRHP	No additional evaluation efforts recommended

Resource Designation	APE Location	Description	NRHP/CRHR Status/ Recommendation	Additional Evaluation Measures Recommended
P-24-001856	Dinosaur Point; Dinosaur Point Road	San Luis Gonzaga Rancho-Paula (Pacheco) Fatjo Ranch Historic District	Not evaluated/ district components not relocated for the SLLPIP	No additional evaluation efforts recommended
Lower San Felipe Intake Alternative – Newly Identified Archaeological Sites or Built Environment Resources				
CA-MER-484H[1] P-24-001974 PL-SLLP-A-001	Dinosaur Point	Historic period transmission poles and debris scatter	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-485H P-24-001975 PL-SLLP-A-003	Dinosaur Point	Historic period debris scatter	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-486H P-24-001976 PL-SLLP-A-004	Dinosaur Point	Historic period earthworks dam	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-487H P-24-001977 PL-SLLP-A-005	Dinosaur Point	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-488H P-24-001978 PL-SLLP-A-009	Dinosaur Point	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-489H[1] P-24-001979 PL-SLLP-A-013	Dinosaur Point	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-490H P-24-001980 PL-SLLP-A-019	Dinosaur Point Road	Historic period debris concentration	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-491H[1] P-24-001985 PL-SLLP-A-010	Basalt Point Use Area	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-492H[1] P-24-001986 PL-SLLP-A-011	Basalt Point Use Area	Historic period industrial site used in construction of the B.F. Sisk Dam	Recommended not eligible for listing in the NRHP/CRHR and a non-contributing element of the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018)	No additional evaluation efforts recommended
CA-MER-493H[1] P-24-001987 PL-SLLP-A-014	Basalt Point Use Area	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-494H[1] P-24-001988 PL-SLLP-A-015	Basalt Point Use Area	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-495H[1] P-24-001989 PL-SLLP-A-016	Basalt Point Use Area	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended

[1] Resource also occurs within the San Luis Reservoir Expansion Alternative APE

The existing Santa Teresa WTP, which makes up the current 11.8-acre Treatment Alternative APE, was subject to a full inventory survey in 2002 (Cartier 2002). The 6.5-acre Rinconada WTP, which was dropped from the Project in 2017, also was surveyed in 2002. No previously recorded cultural resources were noted through an archival and records search of the current Treatment Alternative APE, and no newly identified resources were recorded during the inventory survey. All infrastructural elements within the Santa Teresa WTP are less than 50 years old.

Within the current 5,022-acre San Luis Reservoir Expansion Alternative APE, approximately 3,888 acres were subject to inventory survey by Pacific Legacy personnel in 2012 or 2016. A further 195 acres were subject to a recent prior inventory and so were not revisited (Johnston and Brewer 2015). Thirty-seven cultural resources lie within the San Luis Reservoir Expansion Alternative APE (*see* Table 6-7). They include nine previously recorded districts, archaeological sites, or built environment resources; 19 newly identified archaeological sites or built environment resources; and nine newly recorded isolated finds. Two previously recorded resources are listed in the NRHP and the CRHR (CA-MER-130 and P-24-000489). Another, the B.F. Sisk Dam and its key features, has been recommended eligible for listing in the NRHP and the CRHR as the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018). One previously recorded resource (CA-MER-521H) has been determined not eligible for listing in the NRHP with SHPO concurrence and recommended not eligible for inclusion in the CRHR (Polanco 2018). Another resource (CA-MER-477H) has been recommended not eligible for listing in the NRHP and the CRHR. The four remaining previously recorded archaeological sites (CA-MER-15, CA-MER-28, CA-MER-82, and CA-MER-83) remain pending evaluation.

Of the 19 archaeological sites or built environment resources newly recorded in 2012 or 2016, six (CA-MER-510H, CA-MER-511H, CA-MER-512H, CA-MER-513H, CA-MER-514H, and CA-MER-520H) have been determined not eligible for inclusion in the NRHP with SHPO concurrence and recommended not eligible for listing in the CRHR (Polanco 2018). Two industrial resources associated with construction of the B.F. Sisk Dam system (CA-MER-492H and CA-MER-509H) are recommended not eligible for listing in the NRHP or CRHR and are considered non-contributing elements of the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018). One prehistoric archaeological site (CA-MER-517) remains pending evaluation. The remaining ten resources (CA-MER-484H, CA-MER-489H, CA-MER-491H, CA-MER-493H, CA-MER-494H, and CA-MER-495H, CA-MER-515H, CA-MER-516H, CA-MER-518H, and CA-MER-519H) have all been recommended not eligible for listing in the NRHP and the CRHR (*see* Table 7-2).

Based on the NRHP/CRHR evaluations and assessments presented above, 17 districts, archaeological sites, or built environment resources within the Lower San Felipe Intake Alternative APE should require no additional evaluation efforts while one resource may require further investigation if it cannot be

avoided by ground disturbing activities associated with the SLLPIP (*see* Table 7-1). Twenty-two districts, archaeological sites, or built environment resources within the San Luis Reservoir Expansion Alternative APE should require no further investigation while six resources may require additional research or testing if they cannot be avoided by SLLPIP activities. These include two known resources (CA-MER-130 and CA-MER-484H) that may be newly inundated by an increase in the maximum pool level of the San Luis Reservoir (*see* Table 7-2).

Table 7-2. Evaluations Summary for Cultural Resources within the Area of Potential Effects for the San Luis Reservoir Expansion Alternative

Resource Designation	APE Location	Description	NRHP/CRHR Status/ Recommendation	Additional Evaluation Measures Recommended
San Luis Reservoir Expansion Alternative – Previously Recorded Cultural Resources				
B.F. Sisk Dam System	Reservoir Shoreline – Fronting the B.F. Sisk Dam	Historic period B.F. Sisk Dam and facilities	Recommended eligible for listing in the NRHP/CRHR as the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018); key elements of the district not individually eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-15 P-24-000116	Reservoir Shoreline – South of Dinosaur Point Boat Ramp	Prehistoric pictographs, bedrock mortars, cupules, cleared areas midden soil, lithic scatter	Pending evaluation for listing in the NRHP/CRHR under Criterion D/4	If resource cannot be avoided, subsurface testing is recommended to further evaluate the site
CA-MER-28 P-24-000129	Reservoir Shoreline – South of Dinosaur Point Boat Ramp	Prehistoric occupation site with lithic scatter	Pending evaluation for listing in the NRHP/CRHR under Criterion D/4	If resource cannot be avoided, subsurface testing is recommended to further evaluate the site
CA-MER-82 P-24-000182	Reservoir Shoreline – West side of San Luis Creek Inlet	Prehistoric lithic scatter with groundstone	Pending evaluation for listing in the NRHP/CRHR under Criterion D/4	If resource cannot be avoided, subsurface testing is recommended to further evaluate the site
CA-MER-83 P-24-000183	Reservoir Shoreline – South of Dinosaur Point Boat Ramp	Prehistoric midden soil with lithic scatter and groundstone	Pending evaluation for listing in the NRHP/CRHR under Criterion D/4	If resource cannot be avoided, subsurface testing is recommended to further evaluate the site

Resource Designation	APE Location	Description	NRHP/CRHR Status/ Recommendation	Additional Evaluation Measures Recommended
CA-MER-130 P-24-000220	Reservoir Shoreline – North of Dinosaur Point Boat Ramp	Prehistoric midden soil with two bedrock mortar features with five mortars and groundstone	Listed in the NRHP/CRHR as a contributing element to the San Luis Gonzaga Archaeological District	If resource cannot be avoided, subsurface testing is recommended to further evaluate the site
CA-MER-477H P-24-001822[1]	Dinosaur Point Boat Launch Modification Area; Reservoir Shoreline – Dinosaur Point Area	Fourteen historic period road segments	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
P-24-000489[1]	Reservoir Shoreline – Dinosaur Point Area; Cottonwood Bay Levee Modification and Levee Raise Areas	San Luis Gonzaga Archaeological District comprising five prehistoric midden deposits	Listed in the NRHP/CRHR (code 1S)	No additional evaluation efforts recommended
CA-MER-521H P-24-002173 SLTP-B-11	Borrow Area 6 - South of O'Neill Forebay	Historic period water tank and trough	Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR	No additional evaluation efforts recommended
San Luis Reservoir Expansion Alternative – Newly Identified Archaeological Sites or Built Environment Resources				
CA-MER-484H[1] P-24-001974 PL-SLLP-A-001	Reservoir Shoreline – Dinosaur Point Area	Historic period transmission poles and debris scatter	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-489H[1] P-24-001979 PL-SLLP-A-013	Reservoir Shoreline – Dinosaur Point Area	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-491H[1] P-24-001985 PL-SLLP-A-010	Construction Impact Area – West of Goosehead Point	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-492H[1] P-24-001986 PL-SLLP-A-011	Construction Impact Area – West of Goosehead Point	Historic period industrial site used in construction of the B.F. Sisk Dam	Recommended not eligible for listing in the NRHP/CRHR and a non-contributing element of the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018)	No additional evaluation efforts recommended
CA-MER-493H[1] P-24-001987 PL-SLLP-A-014	Construction Impact Area – West of Goosehead Point	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-494H[1] P-24-001988 PL-SLLP-A-015	Basalt Hill Borrow Area; Construction Impact Area – West of Goosehead Point; Haul Road/Highway 152 Impact Area	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended

Resource Designation	APE Location	Description	NRHP/CRHR Status/ Recommendation	Additional Evaluation Measures Recommended
CA-MER-495H[1] P-24-001989 PL-SLLP-A-016	Construction Impact Area – West of Goosehead Point	Historic period road segment	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-509H P-24-002154 PL-SLLPIP-16-01	Basalt Hill Borrow Area; Haul Road/Highway 152 Impact Area	Historic period Basalt Hill Quarry, part of the industrial complex used in construction of B.F. Sisk Dam system	Recommended not eligible for listing in the NRHP/CRHR and a non-contributing element of the B.F. Sisk Dam/San Luis Reservoir Historic District (JRP 2018)	No additional evaluation efforts recommended
CA-MER-510H P-24-002155 PL-SLLPIP-16-02	Borrow Area 6 - South of O'Neill Forebay	Historic period concrete equipment pad near O'Neill Forebay	Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR	No additional evaluation efforts recommended
CA-MER-511H P-24-002156 PL-SLLPIP-16-03	Borrow Area 6 - South of O'Neill Forebay	Historic period metal water tank on railroad ties in a corral area near O'Neill Forebay	Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR	No additional evaluation efforts recommended
CA-MER-512H P-24-002157 PL-SLLPIP-16-05	Potential construction staging areas – block east of B.F. Sisk Dam	Historic period helicopter pad located east of the BF Sisk Dam	Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR	No additional evaluation efforts recommended
CA-MER-513H P-24-002158 PL-SLLPIP-16-06	Potential construction staging areas – block east of B.F. Sisk Dam	Historic period asphalt road segment	Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR	No additional evaluation efforts recommended
CA-MER-514H P-24-002159 PL-SLLPIP-16-07	**Potential construction staging areas – block east of B.F. Sisk Dam**	**Historic period ditch segment**	**Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR**	**No additional evaluation efforts recommended**
CA-MER-515H P-24-002160 PL-SLLPIP-16-09	Reservoir Shoreline – South Highway 152	Historic period earthen dam with impound pond	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-516H P-24-002161 PL-SLLPIP-16-10	Reservoir Shoreline – South of SR 152	Historic period e	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended

Resource Designation	APE Location	Description	NRHP/CRHR Status/ Recommendation	Additional Evaluation Measures Recommended
CA-MER-517 P-24-002162 PL-SLLPIP-16-11	Reservoir Shoreline – South of Dinosaur Point Boat Ramp	Prehistoric lithic scatter with midden and groundstone	Pending evaluation for listing in the NRHP/CRHR under Criterion D/4	If resource cannot be avoided, subsurface testing is recommended to further evaluate the site
CA-MER-518H P-24-002163 PL-SLLPIP-16-12	Reservoir Shoreline – South side of San Luis Creek Inlet	Historic period earthen dam with impound pond	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-519H P-24-002164 PL-SLLPIP-16-13	Reservoir Shoreline –San Luis Creek Inlet	Historic period dirt road segments	Recommended not eligible for listing in the NRHP/CRHR	No additional evaluation efforts recommended
CA-MER-520H P-24-002165 PL-SLLPIP-16-14	Basalt Hill Borrow Area; Construction Impact Area; Downstream and Upstream Fill Impact Areas; Potential Construction Staging Areas	Historic period survey markers and monitoring wells associated with construction and maintenance of the B.F. Sisk Dam	Not eligible for listing in the NRHP with SHPO concurrence (Polanco 2018), recommended not eligible for listing in the CRHR	No additional evaluation efforts recommended

[1] Resource also occurs within the Lower San Felipe Intake Alternative APE

Cultural resource evaluations completed for this investigation focused on archaeological sites and built environment resources that were relocated or newly identified in 2012 and 2016 within the APE for two main action alternatives. No evaluations could be offered for resources that were not relocated or that featured no physical traces within the areas examined (*see* Table 6-3, Section 6.2.2, and Table 6-8). Limited subsurface testing at the reported locations of resources that were not relocated, particularly along the reservoir shoreline, may assist in confirming their presence or absence in advance of ground disturbing activities associated with the SLLPIP.

As was noted in Section 2.2.3, Late Holocene landforms in and around the San Luis Reservoir are highly sensitive for buried cultural resources that may become exposed during drought years or periods of significant drawdown. Mechanical and biochemical impacts associated with a fluctuating reservoir shoreline also can have a pronounced effect on cultural resources and can act to cover, expose, erode, or alter both archaeological sites and built environment resources (*see* Section 6.4). If the maximum pool level of the San Luis Reservoir is increased under the San Luis Reservoir Expansion Alternative, two known resources (CA-MER-130 and CA-MER-484H) and one resource that could not be revisited (CA-MER-136) may be newly affected. Other resources

located along the existing shoreline that have been subject to prior mechanical and biochemical impacts also may be affected in new ways. For instance, additional resource areas may become inundated, subject to wave action, or buried by redeposited sediment. Based on field observations and controlled experiments, Ware (1989) formulated a model for the management of cultural resources in reservoir environments based on three major impact zones. If the SLLPIP is authorized and the San Luis Reservoir Expansion Alternative is selected, that model might provide an effective tool in managing historic properties affected by an increase in reservoir storage capacity. Given the level of prior disturbance within the Treatment Alternative APE, subsurface cultural deposits are not anticipated.

An EIS/EIR, which is currently being prepared by Reclamation and the SCVWD, addresses potential impacts of SLLPIP action alternatives to cultural resources under CEQA. Given the information available to date, the Treatment Alternative likely is expected to result in no significant impacts to cultural resources. Conversely, adverse effects to significant cultural resources (i.e., historic properties) may result from implementation of the Lower San Felipe Intake Alternative and the San Luis Reservoir Expansion Alternative.

Mitigation measures to resolve adverse effects on historic properties, pursuant to Section 106 of the NHPA, cannot be determined until all cultural resources in the APE for the undertaking have been fully evaluated for NRHP eligibility and consultations are conducted under Section 106 of the NHPA. This will not occur until after the submission of a SLLPIP Feasibility Report and EIS/EIR to the Office of Management and Budget and the authorization of a Project by Congress. When a Project is authorized, efforts to identify and evaluate historic properties would continue, a Section 106 finding of effect for the undertaking would be made, and any adverse effects on historic properties would be resolved through the Section 106 consultation process.

The resolution of adverse effects on historic properties occurs through the implementation of measures agreed to through consultation with the SHPO, ACHP, and other Section 106 consulting parties as stipulated in a formal agreement document (i.e., Memorandum of Agreement or Programmatic Agreement). Generally, significant impacts to cultural resources under NEPA would also be mitigated through the measures agreed to through the Section 106 process.

Cultural resources that are formally determined not eligible for inclusion in the NRHP or the CRHR would require no further management prior to Project implementation. It should be noted that some cultural resources may not meet NRHP eligibility criteria, but still may be CRHR eligible. Such resources would be managed per CEQA requirements.

Chapter 8
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