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Sutter Decarbonization Project Sutter County, California

Cultural Resources Assessment

Final

May 2023



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Cultural Resources Assessment for the Sutter Decarbonization Project, Sutter County, California

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Type of Study: Literature Search and Sensitivity Assessment
Sites Present: One previously recorded cultural resource – Sutter Bypass Collecting Canals (P-51-000330);
Isolates Present: None
USGS Quadrangles: Gilsizer Slough, Kirkville, Sutter Causeway, Tisdal Weir, California
Approximate Acreage: 20,388
Level of Investigation: CEQA

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Acronyms and Abbreviations

AB 52	Assembly Bill 52
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
DCC	Direct contact cooler
NGCC	Natural gas combined cycle
HRSR	Heat recovery steam generator
Jacobs	Jacobs Engineering Group Inc.
MW	Megawatt
MYA	Million years ago
NAHC	Native American Heritage Commission
NEIC	Northeast Information Center
NOx	Reduce nitrogen oxide
NRHP	National Register of Historic Places
PG&E	Pacific Gas and Electric Company
PRC	Public Resources Code
Project	Sutter Decarbonization Project
RD 1500	Reclamation District 1500
RPA	Register of Professional Archaeologists
SEC	Sutter Energy Center
SLF	Sacred Lands File
SMUD	Sacramento Municipal Utility District
SPRR	Southern Pacific Railroad
SRFCP	Sacramento River Flood Control Project
USACE	United State Army Corps of Engineers
USGS	United States Geological Survey

1. Management Summary/Abstract

Jacobs Engineering Group Inc. (Jacobs) completed a cultural resources assessment in support of the Sutter Energy Center (SEC) Sutter Decarbonization Project (project) proposed by CCFC Sutter Energy, LLC. The SEC is a 550-megawatt (MW) natural gas combined cycle (NGCC) power plant. The carbon capture facility will capture CO₂ with an amine-based solvent, compress the CO₂ to a critical fluid, transport the CO₂ through a pipeline, and permanently sequester the CO₂ in a geological storage location. The carbon capture facility will be located at the site of the decommissioned Greenleaf 1 Cogeneration facility.

The project can be found on the United State Geological Survey (USGS) Gilsizer Slough, Kirkville, Sutter Causeway, and Tisdale Weir, California 7.5-minute topographic quadrangles. For the purposes of this report, and to analyze the project's potential impacts to cultural resources, a project footprint was established. The project footprint encompasses all areas that may be impacted by ground-disturbing activities related to the four components of the project: (1) turbine performance improvements; (2) installation of a carbon capture facility at SEC; (3) an approximately 16-mile CO₂ pipeline; and (4) three Class VI injection wells to inject the CO₂ for permanent sequestration in a geological storage location. The cultural resource study area for this report includes a one-mile-radius zone around the project footprint, encompassing a total area of approximately 20,388 acres.

Jacobs was retained to provide cultural resource services in support of the project. Services provided include background research, California Historical Resources Information System (CHRIS) and Sacred Lands File (SLF) searches for the project footprint and the 1.0-mile-radius study area, and preparation of the present assessment report.

The CHRIS record search was completed in April 2023 and indicates that 23 cultural resources investigations have been previously conducted within the 1.0-mile-radius study area. Of these, eight included portions of the project footprint, accounting for roughly ten percent of the total area. The records search also indicates that six cultural resources have been previously recorded within the 1.0-mile-radius study area. Of these, one was recorded within the project footprint. The resource within the project footprint is the Sutter Bypass Collecting Canals (P-51-000330). A past evaluation of P-51-000330 concluded that it is ineligible for National Register of Historic Places/California Register of Historical Resources (NRHP/CRHR) listing due to a lack of historical significance. All other resources recorded in the study area are historic period resources, and all but one segment of the Southern Pacific Railroad relate to land reclamation and flood control systems. No archaeological sites have been recorded within one mile of the project. The results of the SLF search returned by the Native American Heritage Commission (NAHC) on March 30, 2023, were negative for Native American resources in the project vicinity.

A recent United States Army Corps of Engineers (USACE) evaluation of flood control systems in Sacramento, Sutter, and Yolo Counties concluded that standard upkeep and modernization of historical flood control features such as levees make them very difficult to distinguish from modern ones, considerably reducing their ability to convey historical significance (Lemke and Clinton-Selin 2021). Hence, resources of the kind are rarely determined eligible for NRHP/CRHR listing. As historical land uses and past cultural resource investigations in the study area suggest that any previously unrecorded resources in the project footprint are likely to fall into this category, the likelihood that the project will impact significant built environment or other historic period resources is estimated to be low.

Geoarchaeological analysis finds that the project footprint is underlain by Quaternary alluvium and basin deposits (Qha/Qhb) with soils of the Clear Lake, Oswald, and Shanghai Series formed at their surface. These soil units all date to the Late Holocene (4,000 to 150 years ago). Given several site-specific variables, including the age and instability of underlying landform, gentle slope, distance from major

freshwater sources, absence of known archaeological sites in the study area, extent of past disturbance, and relatively shallow depth of anticipated ground-disturbance for the project, the potential for discovery of intact archaeological deposits by implementation of the project is estimated to be low-to-low-moderate, with sensitivity increasing nearer to the Sacramento River to the south and west of the project alignment.

The Project Owner will be conducting additional cultural resources surveys in support of the Sutter Decarbonization Project, including an intensive pedestrian survey of at least 50 percent of the project footprint and a 200-foot-radius study area. The remaining 50 percent will be subject to a reconnaissance level survey. Based on current drawings, the archaeological survey area encompasses a total of approximately 777 acres.

For built environment resources, a 0.5-mile-radius area around the project footprint will be surveyed employing a mixed strategy. Surveys will target areas where architectural features are visible on aerial photographs and historical maps for focused field investigation and resource documentation. All previously recorded built environment resources in the survey area will be revisited and existing resource records updated. All other areas will be surveyed at a reconnaissance level. The built environment survey area encompasses a total of approximately 10,025 acres based on current project drawings.

2. Introduction

Jacobs Engineering Group Inc. (Jacobs) completed an initial cultural resources assessment in support of the Sutter Energy Center (SEC) Sutter Decarbonization (project) proposed by the CCFC Sutter Energy, LLC. The SEC is a 550 megawatt (MW) natural gas combined cycle (NGCC) power plant. The carbon capture facility will be located at the site of the decommissioned GreenLeaf 1 Cogeneration facility.

This report was completed in compliance with the California Environmental Quality Act (CEQA) Section 21083.2 of the statute and Section 15064.5 of the CEQA Guidelines. The format of this report follows the Archaeological Resource Management Reports: Recommended Contents and Format prepared by the Office of Historic Preservation (1990).

2.1 Project Location

The project can be found on the United State Geological Survey (USGS) Gilsizer Slough, Kirkville, Sutter Causeway, and Tisdale Weir, California 7.5-minute topographic quadrangles (Appendix A, Figure 1). A cultural resource study area including a one-mile-radius zone around the potential CO₂ pipe alignments is the focus of this report and encompasses a total area of approximately 20,388 acres.

2.2 Project Description

The project will include four primary components: (1) turbine performance improvements; (2) installation of a carbon capture facility at SEC; (3) an approximately 16-mile CO₂ pipeline; and (4) three Class VI injection wells to inject the CO₂ for permanent sequestration in a geological storage location. The carbon capture facility will consist of two 225-foot absorber columns, a wet sac cooling unit, chemical delivery tanks and supporting pumps and diagnostic equipment. The carbon capture facility will draw flue gas from the SEC heat recovery steam generator (HRSG) stack. This flue gas will be withdrawn after the air pollution control equipment but prior to discharge from the stack. The flue gas will move through the CO₂ capture process with no potential effects on the criteria pollutants in the cleaned flue gas, i.e., emissions in the flue gas slip stream will pass through the process with no further abatement by the process (except for CO₂ capture).

2.3 Project Footprint and Study Area

For the purposes of this report, and to analyze the project's potential impacts to cultural resources, a project footprint was established. The project footprint encompasses all areas that may be impacted by ground-disturbing activities related to project, including the NGCC power plant, carbon capture facility, CO₂ pipe alignment, and CO₂ Storage Complex which will contain three injection wells. The cultural resources study area includes a one-mile radius around the project footprint, encompassing a total of approximately 20,388 acres (Appendix A, Figures 1 and 2).

2.4 Regulatory Framework

2.4.1 California Environmental Quality Act

This assessment was completed pursuant to the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations [CCR] Sections 15000–15387); Public Resources Code (PRC) Chapter 2.6, Section 21083.2 and 21084.1; and CCR Title 14, Chapter 3, Article 5, Section 15064.5.

According to the CEQA Guidelines, impacts on cultural resources may be considered potentially significant if the project would result in any of the following:

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

A historical resource is a cultural resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR). Historical resources, as defined in subdivision (k) of Section 4020.1, and included as such in a local register, or deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, are presumed to be historically or culturally significant, unless the preponderance of the evidence demonstrates that the resource is not historically or culturally significant. The fact that a resource is not listed in, or determined to be eligible for listing in, the CRHR, not included in a local register, or not deemed significant pursuant to criteria set forth in subdivision (g) of Section 5024.1, does not preclude a lead agency from determining whether the resource may be a historical resource.

Pursuant to Section 15064.5, a cultural resource is considered to be historically significant if it meets the criteria for listing in the CRHR (PRC Section 5024.1, Title 14 CCR, Section 4852):

- 1) Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the U.S.; or
- 2) Associated with the lives of persons important to local, California, or national history; or
- 3) Embodies the distinctive characteristics of a type, period, region, or method of construction; or represents the work of an important creative individual; or possesses high artistic values; or
- 4) Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Similar to the federal regulations, resources that are listed in or eligible for listing in the CRHR must also possess sufficient historic integrity as defined by National Park Service to be considered significant.

CEQA Guidelines also define significant impacts on archaeological and historical resources as follows:

- Demolition or material alteration of those physical characteristics of a historical resource that convey its significance and that justify its inclusion in, or eligibility for inclusion in, the CRHR, or inclusion in a local register, as defined in Section 15064.5

2.4.2 Mitigation of Adverse Impacts

Mitigation of adverse impacts is required if a proposed project will cause substantial adverse change to a historical resource (14 CCR Section 15064.5[b]). Mitigation measures must be enforceable through permit conditions, agreements, or other legal means and are proportional to the expected impacts. The measures seek to reduce impacts entirely or to a level considered not significant (14 CCR Section 15126.4). As such, the examples of mitigation measures provided may not satisfy CEQA requirements in every circumstance. Mitigation measures for historical resources may include but are not limited to:

- 1) Altering a proposed project to avoid damaging effects on any historical resource in a significant manner, such as by not taking a certain action or parts of an action.

- 2) Rectifying impacts through maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, or reconstruction of the historical resource in a manner consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties.
- 3) Documentation of the historical resource, by way of historic narrative and photographs or architectural drawings meeting California OHP recommendations prior to demolition.
- 4) Deeding the site into a permanent conservation easement.
- 5) Abandonment of the proposed project.

CEQA Section 15064.5(b)(3) states that a project that follows the *Secretary of the Interior's Standards for the Treatment of Historic Properties (SOI Standards)* shall be considered as mitigated to a level of less than a significant impact on the historical resource.

2.4.3 Assembly Bill 52

Signed into law in September 2014, California Assembly Bill 52 (AB 52) created a new class of resources – tribal cultural resources – for consideration under CEQA. Tribal cultural resources may include sites, features, places, cultural landscapes, sacred places, or objects with cultural value to a California Native American tribe that are listed or determined to be eligible for listing on the CRHR, included in a local register of historical resources, or a resource determined by the lead CEQA agency, in its discretion and supported by substantial evidence, to be significant and eligible for listing on the CRHR. AB 52 requires that the lead CEQA agency consult with California Native American tribes that have requested consultation for projects that may affect tribal cultural resources. The lead CEQA agency shall begin consultation with participating Native American tribes prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Under AB 52, a project that has potential to cause a substantial adverse change to a tribal cultural resource constitutes a significant effect on the environment unless mitigation reduces such effects to a less than significant level.

The CEC has developed a tribal consultation policy to fulfill the requirements of AB 52, Gatto, Chapter 532, Statutes of 2014. This policy ensures effective consultation between the CEC and California tribes in order to further the CEC's mission and provide meaningful tribal input into the development of regulations, rules, policies, plans, and activities that may affect invested tribal groups. The policy aims to avoid or mitigate potential impacts to tribal resources by ensuring that tribal consultation occurs early and often and is meaningful, respectful, and inclusive. The CEC will make all reasonable efforts to accommodate tribal requests to modify schedules when deadlines are established. The CEC and its staff will consider and document tribal input and communicate to tribes when a specific consultation has concluded. The CEC will adhere to the procedures set forth in the AB 52 amendments to CEQA and further clarified in the Governor's Office of Planning and Research *Technical Advisory AB 52 and Tribal Cultural Resource in CEQA* (CEC 2021).

2.5 Project Personnel

This cultural resources assessment report was prepared by Tim Spillane, M.A., RPA, and Jenna Tanner, B.A. Mr. Spillane has more than twelve years of experience working with agencies in the public and private sectors on cultural resource management projects, developing particular expertise in the historic and prehistoric archaeology of the San Francisco Bay and Sacramento metropolitan areas, and larger Northern California region. He has extensive experience in Section 106 and CEQA compliance. He has an extensive background in all phases of archaeological work, including assessment, evaluation, and mitigation, regularly authoring technical reports, including treatment plans, data recovery reports, and historical contexts.

Ms. Tanner also has over 12 years of professional experience conducting archaeological investigations in California including research, fieldwork, analysis, and reporting. Her experience includes conducting and leading all phases of fieldwork which includes archaeological monitoring, archaeological survey, faunal and human skeletal remains identification, and paleontological vertebrate and invertebrate identification. She has been involved in supporting reconstruction of utility infrastructure, vegetation management, and debris clean up following catastrophic wildfire disaster events and aided with all phases of projects.

Additional background information on cultural resources staff is included in Appendix B of this report.

3. Setting

3.1 Natural Setting

3.1.1 Geology and Soils

The project is located at an elevation of between 0 and 50 feet above mean sea level in the Sacramento Valley, on the north side of the Great Valley geomorphic province. Slope throughout the study area is mostly level, averaging 0.5 percent. The maximum slope is gentle, ranging from 7.5 percent on the west side of the project, to 9.4 percent on the northeast side (Google 2021a).

The sedimentary geologic formations in the Great Valley province vary in age from Jurassic (199 to 144 million years ago) to Quaternary (200 million years ago to present; Norris and Webb 1990). The older deposits are primarily marine in origin, while the continentally derived, younger sediments, which are mainly sourced from the Sierra Nevada Range, were typically deposited in fluvial, alluvial, and lacustrine environments. There is great variation in the thickness of the sedimentary deposits that fill the Sacramento and San Joaquin valleys to their present elevations. Along the eastern valley edge, the deposits are relatively thin, but range to more than 20,000 feet (6,096 meters) in the south central portion of the valley (Page 1986).

Review of recent geologic mapping published by California Geological Survey (Burnett and Jennings 1962; Gutierrez 2011; Jennings et al. 2010; Wagner et al. 1981) finds the project is underlain by Late Holocene-aged (4,000 to 150 years ago) alluvium and basin deposits. The alluvium (Qha) occurs on fans, terraces, and in basins and consists of poorly sorted sand, gravel, and silt. Separate types of alluvial deposits are not delineated in these areas. The basin deposits (Qhb) are slightly older and consists of fine grained sediments with horizontal stratification deposited by standing or slow moving water in topographic lows (Helley and Harwood 1985; Gutierrez 2011).

The State Soil Geographic Database (STATSGO2) maintained by the United States Department of Agriculture (USDA) and National Resource Conservation Service (NRCS) indicates that the Project Area is underlain primarily by soils of the Clear Lake, Oswald, and Shanghai Series (USDA-NRCS 2021). The Clear Lake Series consist of very deep, poorly drained soils that occur in flood basins, flood plains and in swales of drainageways. They have been dated to the recent Holocene (1,000 to 150 years ago). The Oswald Series consists of moderately deep, poorly drained soils that occur in basins and on basin rims. They are slightly older, dating to the Late Holocene (4,000 to 2,000 years ago). Lastly, the Shanghai Series consists of very deep, somewhat poorly drained soils that are found on flood plains. These soils are the youngest, dating to the historical period (<150 years ago). Given their age, these materials are generally considered sensitive for buried archaeological deposits (Meyer and Rosenthal 2008; Meyer et al. 2011a).

3.1.2 Hydrology

The project is in the Sutter Basin, part of the Sacramento–San Joaquin River Delta which is one of the largest river deltas and estuaries in the United States. The project extends northward from the confluence of the Sacramento and Feather Rivers. The Sacramento River intersects the southwestern side of the study area, roughly one mile west of the southern end of the pipe alignment, while the Feather River flows 4.5 miles east of the north end of the alignment. The Sacramento River is the largest river in California, running for 374 miles and draining a total watershed of 21,350 square miles. It flows southward from Mount Shasta to the City of Sacramento, and from there drains into the Sacramento–San Joaquin River Delta. It extends for approximately 70 miles along the western border of Yolo County. The Feather River marks part of the eastern boundary of Sutter County and runs southward for 74 miles, or 184 miles with

the Middle Fork and its headwaters. It is the Sierra Nevada's northernmost river and by far its largest (Palmer 2012).

The Sacramento–San Joaquin River Delta encompasses approximately 1,100 square miles of land and water on the western edge of the Central Valley, at the confluence of the Sacramento and San Joaquin rivers. The main source rivers include the Sacramento River from the north, the San Joaquin from the southeast, and the Calaveras and Mokelumne Rivers from the east. The Delta consists of nearly 200 islands, 57 of which have been reclaimed with the construction of levees and dykes. Reclaimed islands have been subsiding, which has reduced elevation to as low as 30 feet below sea level. Nearly 73% of Delta land is devoted to agricultural uses. Upstream irrigation has significantly reduced inflows to the estuary and more than 50% of the water is pumped southward to supply irrigation to the San Joaquin Valley.

3.1.3 Climate, Flora, and Fauna

The project vicinity is characterized by hot, dry summers and warm, moist winters. Annual precipitation in this region averages 18.5 inches, with most of the rain falling between October and March. Winter temperature averages 46° Fahrenheit (F), and summer temperatures average 75° F with highs around 100° F. The current Mediterranean climate is dryer and hotter than the conditions present at the time of California's initial occupation (Barbour and Major 1988).

The project vicinity was historically characterized by vegetation communities near permanent drainages, including grasslands, woodlands, riparian scrub/forest along drainages, with grasslands and oak woodlands in valley foothill areas. This mosaic of ecological communities would have provided a very productive environment. Based on ethnographic descriptions of the Native American groups who historically occupied this region, their hunting-gathering economy was supported by a variety of large and small mammals, edible plant species, fish, and birds (Kroeber 1976; Wilson and Towne 1978).

Over the past 150 years, the environment within the Central Valley has been greatly altered. The construction of extensive levee systems to control the Sacramento and San Joaquin Rivers, reclamation of the Delta islands, and the introduction of agricultural practices, ranching and nonnative Mediterranean grasses are among the major historic modifications. Prior to these changes to the natural landscape, the region was covered with native annual and perennial grasses commonly found in the Valley Grassland Community, such as needlegrass (*Stipa* spp.), bluegrass (*Poa* spp.), and three awn (*Aristida divaricata*) (Munz and Keck 1973). Tule (*Scirpus* sp.) and stands of willow (*Salix* sp.), cottonwood (*Populus fremontii*), and sycamore (*Platanus racemosa*) were supported by the marshy wetlands (Wallace 1978:462). Regional oak groves would have included blue oak (*Quercus douglasii*), interior live oak (*Q. wislizeni*), and valley oak (*Q. lobata*). The plant resources utilized by populations during the prehistoric and ethnohistoric periods would have been available in this series of natural communities (Lightfoot and Parrish 2009).

The larger mammals native to the area would have included mule deer (*Odocoileus hemionus californicus*), black-tailed deer (*O. hemionus columbianus*), tule elk (*Cervus elaphus nannoides*), pronghorn (*Antilocapra americana*), mountain lion (*Felis concolor*), and black bear (*Ursus americanus*). Once common in the valley, tule elk and pronghorn are now restricted to very limited areas and the range of black bears is now limited to the Sierran foothills and mountains (Jameson and Peeters 1988). Small animals, such as rabbit (*Sylvilagus* sp.), black-tailed jackrabbit (*Lepus californicus*), gray squirrel (*Sciurus griseus*), coyote (*Canis latrans*), and gray fox (*Urocyon cinereoargenteus*) would have also been available prior to the major alterations to the landscape in the historic period (Schoenherr 1992).

The Central Valley once held an extensive, rich, marshy wetland habitat. Among the migratory waterfowl and other birds that continue to utilize the remnants of this natural feeding ground are mallard duck

(*Anas platyrhynchos*), green-winged teal (*A. crecca*), northern pintail (*A. acuta*), great blue heron (*Ardea herodias*), belted kingfisher (*Ceryle alcyon*), red-winged blackbird (*Agelaius phoeniceus*), rock dove (*Columba livia*), northern flicker woodpecker (*Colaptes auratus*), black-shouldered kite (*Elanus caeruleus*), red-tailed hawk (*Buteo jamaicensis*), and northern harrier (*Circus cyaneus*). The region's rivers housed a variety of anadromous and freshwater fish species, such as sturgeon (*Acipenser transmontanus*), salmon (*Oncorhynchus* sp.), and rainbow trout/steelhead (*O. mykiss*), some of which are still fished today (Schoenherr 1992).

3.2 Cultural Setting

3.2.1 Prehistoric Setting

A tripartite classification scheme for cultural change in California's Sacramento Valley, Sacramento–San Joaquin Delta, and San Joaquin Valley developed as the result of efforts of a number of researchers since the 1930s and has been further refined over the succeeding decades (e.g., Bennyhoff and Fredrickson 1994; Heizer and Fenenga 1939; Heizer 1949; Fredrickson 1973; 1974; 1994; Moratto 2004). As recently summarized by Rosenthal and others (2007), and with the timeframes adjusted for modern calibration curves for radiocarbon dates, the chronological sequence for the Central Valley is: Paleo-Indian (11,500–8550 cal [calibrated] B.C.), Lower Archaic (8550–5550 cal B.C.), Middle Archaic (5550–550 cal B.C.), Upper Archaic (550 cal B.C.–cal A.D. 1100), and Emergent or Late Prehistoric Period (cal A.D. 1100–Historic Contact).

Subsequent to the Paleo-Indian and Lower Archaic periods, the cultural framework within the greater study region is further divided into three regionally based “patterns.” Specific to Central Valley prehistory and the current study region, the regionally based patterns defined by Fredrickson (1973; 1974) are the Windmill, Berkeley, and Augustine. The patterns mark changes in distinct artifact types, subsistence orientation, and settlement patterns, which began circa 5550 cal B.C. and lasted until historic contact in the early 1800s. They were initially identified at three archaeological sites: the Windmill site (CA-SAC-107) near the Cosumnes River in Sacramento County; the West Berkeley site (CA-ALA-307) on the east side of the Bay in Alameda County; and the Augustine site (CA-SAC-127) in the Sacramento–San Joaquin Delta. In general, the patterns conform to three temporal divisions: Middle Archaic Period/Windmill Pattern, Upper Archaic Period/Berkeley Pattern, Late Prehistoric Period/Augustine Pattern.

3.2.1.1 Paleo-Indian and Lower Archaic Periods (11,500–5550 cal B.C.)

There is little evidence of the Paleo-Indian and Lower Archaic periods in the Central Valley (Rosenthal et al. 2007:151; Dillon 2002). As shown by geoarchaeological studies (e.g., Meyer and Rosenthal 2004b; 2004a; 2008; White 2003), large segments of the Late Pleistocene landscape throughout the central California lowlands have been buried or removed by periodic episodes of deposition or erosion. Periods of climate change and associated alluvial deposition occurred at the end of the Pleistocene (approximately 9050 cal B.C.) and at the beginning of the early Middle Holocene (approximately 5550 cal B.C.). Earlier studies had also estimated that Paleo-Indian and Lower Archaic sites along the lower stretch of the Sacramento River and San Joaquin River drainage systems had been buried by Holocene alluvium up to 33 feet (10 meters) thick that was deposited during the last 5,000 to 6,000 years (Moratto 2004). The formation of the Sacramento–San Joaquin Delta began during the early Middle Holocene (Atwater and Belknap 1980; Goman and Wells 2000). After approximately 1,000 cal B.C. during the Late Holocene, there were renewed episodes of alluvial fan and floodplain deposition (Rosenthal et al. 2007).

The archaeological evidence that is available for the Paleo-Indian Period is comprised primarily by basally thinned, fluted projectile points. These points are morphologically similar to well-dated Clovis points found elsewhere in North America. In the Central Valley, fluted points have been recovered from remnant

features of the Pleistocene landscape at only three archaeological localities (Woolfsen Mound, CA-MER-215, in Merced County, Tracey Lake in San Joaquin County, and Tulare Lake basin in Kings County).

In the Central Valley, the Lower Archaic Period is mainly represented by isolated finds as the early landscape was buried by natural alluvial fan and floodplain deposition (Rosenthal et al. 2007). The earliest confirmed archaeological evidence for habitation of the immediate Sacramento vicinity was recovered from below 10 feet of overburden and extending to a depth of 10-22 feet below current street level with dates for occupation on a stable paleo-sandbar at CA-SAC-38 from 8,500 to 3,000 years ago (Tremaine 2008). At Lower Archaic foothill sites in eastern Contra Costa County (CA-CCO-637; Meyer and Rosenthal 1998) and Calaveras County (Skyrocket site CA-CAL-629/630; LaJeunesse and Pryor 1996), abundant milling slabs and handstones have been recovered. In Kern County on the ancient shoreline of Buena Vista Lake, stratified cultural deposits at CA-KER-116 have yielded a stemmed projectile point, chipped stone crescents, and the remains of fish, birds, and shellfish, but no milling tools or plant remains.

3.2.1.2 Middle Archaic Period/Windmill Pattern (5550–550 cal B.C.)

For the first 3,000 years of the Middle Archaic, archaeological sites on the valley floor are relatively scarce, in part due to natural geomorphic processes, unlike the foothills where a number of buried sites have been found (Rosenthal et al. 2007). On the valley floor, sites are more common after 2550 cal. B.C. The archaeological record in the valley and foothills indicates the subsistence system during this period included a wide range of natural resources (e.g., plants, small and large mammals, fish, and waterfowl) that indicate people followed a seasonal foraging strategy (Fredrickson 1973; Heizer 1949; Ragir 1972; Moratto 2004). Some researchers (e.g., Moratto 2004) suggest populations may have occupied lower elevations during the winter and shifted to higher elevations in the summer. Others (e.g., Rosenthal et al. 2007) also suggest there was increasing residential stability along Central Valley river corridors during the Middle Archaic.

Excavations at Windmill Pattern sites have yielded abundant remains of terrestrial fauna (deer, tule elk, pronghorn, and rabbits) and fish (sturgeon, salmon, and smaller fishes). Projectile points with a triangular blade and contracting stems are common at Windmill Pattern sites. A variety of fishing implements such as angling hooks, composite bone hooks, spears, and baked clay artifacts, which may have been used as net or line sinkers, are also relatively common. The points are classified within the Sierra Contracting Stem and Houx Contracting Stem series (Justice 2002). The presence of milling implements (grinding slabs, handstones, and mortar fragments) indicates that acorns or seeds were an important part of the Middle Archaic diet (Moratto 2004; Rosenthal et al. 2007). In the foothills, pine nut and acorn remains have been recovered from sites in Fresno (CA-FRE-61) and Calaveras (CA-CAL-629/630 and CA-CAL-789) counties.

The variety of artifacts recovered from Windmill Pattern sites includes shell beads, ground and polished charmstones, and bone tools, as well as impressions of twined basketry. Baked clay items include pipes, discoids, and cooking “stones” as well as the net sinkers. Burials in cemetery areas, which were separate from habitation areas, were accompanied by a variety of grave goods. The presence of an established trade network is indicated by the recovery of *Olivella* shell beads, obsidian tools, and quartz crystals. Obsidian sources during the Middle Archaic included quarries in the North Coast Ranges, eastern Sierra, and Cascades (Rosenthal et al. 2007).

3.2.1.3 Upper Archaic Period/Berkeley Pattern (550 cal B.C.–cal A.D. 1100)

Better understood than any of the preceding periods (Rosenthal et al. 2007), the Upper Archaic is characterized by a shift over a 1,000-year period to the more specialized, adaptive Berkeley Pattern. Excavated archaeological sites signal an increase in mortars and pestles, as well as archaeobotanical remains, accompanied by a decrease in slab milling stones and handstones. Archaeologists generally agree mortars and pestles are better suited to crushing and grinding acorns, while milling slabs and

handstones may have been used primarily for grinding wild grass grains and seeds (Moratto 2004). The proportional change indicates a shift during the Berkeley Pattern to a greater reliance on acorns as a dietary staple (Fredrickson 1974; Moratto 2004; Wohlgemuth 2004). Innovations such as new types of shell beads, charmstones, bone tools, and ceremonial blades are additional evidence of the more specialized technology present during this period.

The artifact assemblage in Berkeley Pattern sites demonstrates that populations continued to exploit a variety of natural resources. In addition to seeds and acorns, hunting persisted as an important aspect of food procurement (Fredrickson 1973). Large, mounded villages that developed around 2,700 years ago in the Delta region included accumulations of habitation debris and features, such as hearths, house floors, rock-lined ovens, and burials (Rosenthal et al. 2007). The remains of a variety of aquatic resources in the large shell midden/mounds that developed near salt or fresh water indicate exploitation of shellfish was relatively intensive.

Berkeley Pattern artifact assemblages are also characterized by *Olivella* shell beads, *Halotis* ornaments, and a variety of bone tool types. Mortuary practices continue to be dominated by interment, although a few cremations have been discovered at sites dating to this period. Trade networks brought obsidian toolstone to the Central Valley from the North Coast Ranges and the east side of the Sierra Nevada Range.

3.2.1.4 Emergent Period/Augustine Pattern (cal A.D. 1100–Historic Contact)

The comprehensive archaeological record for the Emergent or Late Prehistoric Period in the Central Valley shows an increase in the number of archaeological sites associated with the Augustine Pattern in the lower Sacramento Valley/Delta region, as well as an increase in the number and diversity of artifacts. The Emergent Period was shaped by a number of cultural innovations, such as the bow and arrow and more elaborate and diverse fishing technology, as well as an elaborate social and ceremonial organization. Dart and atlatl technology was effectively replaced by the introduction of the bow and arrow. Additionally, the cultural patterns typical of the Augustine Pattern as viewed from the archaeological record are reflected in the cultural traditions known from historic period Native American groups (Moratto 2004; Rosenthal et al. 2007).

The faunal and botanical remains recovered at Emergent Period archaeological sites indicate the occupants relied on a diverse assortment of mammals, fish, and plant parts, including acorns and pine nuts. Hopper mortars, shaped mortars and pestles, and bone awls used to produce coiled baskets are among the variety of artifacts recovered from Augustine Pattern sites. The toolkit during this period also included bone fish hooks, harpoons, and gorge hooks for fishing, as well as the bow and arrow for hunting. Small, Gunther barbed series projectile points have been found at sites dating to the early part of the period, while Desert-side notched points appear later in the period. The Stockton serrated arrow point also appears in archaeological assemblages dating to this period and in some parts of the lower Sacramento Valley, Cosumnes Brownware is present. The appearance of ceramics during this period is likely a direct improvement on the prior baked clay industry (Rosenthal et al. 2007).

During the Emergent Period, numerous villages, ranging in size from small to large, were established along the valley floor sloughs and river channels and along the foothills sidestreams. House floors or other structural remains have been preserved at some sites dating to this period (e.g., CA-CAL-1180/H, CA-SAC-29, CA-SAC-267). The increase in sedentism and population growth led to the development of social stratification, with an elaborate social and ceremonial organization. Examples of items associated with rituals and ceremonials include flanged tubular pipes and baked clay effigies representing animals and humans. Mortuary practices changed to include flexed burials, cremation of high-status individuals, and pre-interment burning of offerings in a burial pit. Currency, in the form of clamshell disk beads, also developed during this period together with extensive exchange networks (Fredrickson 1973; Moratto 2004; Rosenthal et al. 2007).

3.2.2 Ethnohistoric Setting

The project is at the interface of the ethnographic territories of the Nisenan to the east, and the Patwin to the west (Johnson 1978; Wilson and Towne 1978). Ethnographic summaries of the Nisenan (also known as the Southern Maidu) and the Patwin are provided below.

3.2.2.1 Nisenan

Prior to European-American contact, Nisenan territory included the southern extent of the Sacramento Valley, east of the Sacramento River between the North Fork Yuba River and Cosumnes Rivers on the north and south, respectively, and extended east into the foothills of the Sierra Nevada Range. Neighboring groups included the Plains Miwok to the south, Southern Patwin to the west across the Sacramento River beyond the Yolo Basin, and Konkow and Maidu to the north. Three Maiduan languages, Konkow, Maiduan, and Nisenan are regarded as a subgroup of Penutian stock. Ethnographers have also distinguished three Nisenan dialects (Northern Hill, Southern Hill, and Valley; Kroeber 1976; Wilson and Towne 1978).

Ethnographic Nisenan established central villages and smaller satellite villages along the main watercourses in their territories. Valley Nisenan villages were generally on low, natural rises along streams and rivers or on gentle, south-facing slopes and Hill Nisenan villages on ridges and large flats along major streams. The semi-permanent or winter villages, as well as seasonally occupied campsites were used at various times during the seasonal round of subsistence activities associated with hunting, fishing, and gathering plant resources (Palumbo 1966; Kroeber 1976; Wilson and Towne 1978; Moratto 2004).

Village population varied and is reported as ranging from 15 to over 500 individuals with the number of residences ranging from 40 to 50 in larger villages, and only three to seven in smaller villages. Traditional village structures included semi-subterranean or aboveground conical, circular, or dome-shaped houses, as well as acorn granaries, winter grinding houses, ceremonial or dance houses, and sweathouses. Nisenan mortuary practices included cremation and burial in a separate cemetery area (Maloney 1944; Kroeber 1976; Wilson and Towne 1978).

Like the majority of Native Californians, the Nisenan relied on acorns as a staple food, which were collected in the fall and then stored in granaries. These seasonally mobile hunter-gatherers also relied on a wide range of abundant natural resources that were available in their territories. Large and small mammals, such as pronghorn antelope, deer, tule elk, black bears, cottontails, and jackrabbits, among other species, were hunted by individuals or by communal groups. Game birds, waterfowl, and fish, particularly salmon, were also important components of the Nisenan diet. In addition to acorns, plant resources included pine nuts, buckeye nuts, hazelnuts, fruits, berries, seeds, and underground tubers (Wilson and Towne 1978).

Similar to other California Native American groups, the Nisenan employed a variety of tools, implements, and enclosures for hunting and collecting natural resources. The bow and arrow, snares, traps, nets, and enclosures or blinds were used for hunting land mammals and birds. For fishing, they made canoes from tule, balsa, or logs, and used harpoons, hooks, nets, and basketry traps. To collect plant resources, the two groups used sharpened digging sticks, long poles for dislodging acorns and pinecones, and a variety of woven tools (Wilson and Towne 1978:seed beaters, burden baskets, and carrying nets;).

Foods were processed with a variety of tools, such as bedrock mortars, cobblestone pestles, anvils, and portable stone or wooden mortars that were used to grind or mill acorns and seeds. Additional tools and implements included knives, anvils, leaching baskets and bowls, woven parching trays, and woven strainers and winnowers. Prior to processing, the acorns were stored in the village granaries (Wilson and Towne 1978).

The Nisenan and neighboring groups participated in an extensive east-west trade network between the coast and the Great Basin. From coastal groups marine shell (*Olivella* and abalone) and steatite moved eastward, while salt and obsidian traveled westward from the Sierras and Great Basin. Basketry, an important trade item, moved in both directions (Wilson and Towne 1978).

The traditional culture and lifeways of the Nisenan who inhabited the fertile plains between Sacramento and the Sierra foothills, were disrupted beginning in the early 1800s. Although Spanish explorers entered Nisenan territory as early as 1808, there is no record of the forced movement of Nisenan to the missions. During the Mexican period, native peoples were affected by land grant settlements and decimated by foreign disease epidemics that swept through the densely populated Central Valley. An epidemic that swept the Sacramento Valley in 1833 caused the death of an estimated 75 percent of the Valley Nisenan population, wiping out entire villages (Cook 1955; Wilson and Towne 1978).

In the heart of Nisenan territory, the discovery of gold in 1848 at Sutter's Mill on the American River near Coloma had a devastating impact on the remaining Nisenan, as well as other groups of Native Americans in the Central Valley and along the Sierra Nevada foothills. By 1850, with their lands, resources and way of life being overrun by the steady influx of non-native people during the Gold Rush, surviving Nisenan retreated to the foothills and mountains or labored for the growing ranching, farming, and mining industries. Nisenan descendants reside on the Auburn, Berry Creek, Chico, Enterprise, Greenville, Mooretown, Shingle Springs, and Susanville rancherias, as well as on the Round Valley Reservation (Wilson and Towne 1978; Chartkoff and Chartkoff 1984; Bureau of Indian Affairs 2016).

3.2.2.2 Patwin

Patwin lands extended westward from the western banks of the Sacramento River to Clear Lake, and from the town of Princeton southward to San Pablo and Suisun Bays. The Patwin spoke a distinct dialect of Wintuan known as Southern Wintuan which belongs to the Penutian language family (Merriam 1966; Johnson 1978).

Low natural rises along streams and rivers were the preferred location for Patwin villages, which typically had bedrock mortars, dance houses, sweathouses, and acorn granaries, and many had cemeteries. Typical communities included a central village with several smaller satellite villages. Groups constructed temporary brush shelters while hunting or gathering seasonal plant resources, frequently at higher elevations. Among the major villages established and occupied by the Patwin at the time of European contact were *Aguasto*, *Bo'-do*, *Chemocu*, *Churup*, *Dok'-dok*, *Gapa*, *Imil*, *Katsil*, *Kisi*, *Koh' pah de'-he*, *Koru*, and *Kusêmpu* (Johnson 1978). The Patwin usually buried their dead, though cremation was common in instances when a tribal member died away from the village (Kroeber 1925; Johnson 1978).

Natural resources were abundant in the area but varied seasonally, so the subsistence economy of the Patwin tribe was based on a combination of fishing, hunting, and the collection of plant foods. Like most native Californian groups, they relied heavily on the acorn, and used a wide variety of tools, implements and enclosures to collect and process food resources. These included bows and arrows, traps, harpoons, hooks, nets, portable stone mortars, bedrock mortars and pestles, various woven tools, and canoes made of tule balsa or logs. The Patwin also traded with neighboring groups for shell ornaments, monetary beads, steatite, and obsidian (Johnson 1978).

Europeans arrived in Patwin territory relatively late in the colonial history of North America. Though their first contact with Northern California Native peoples probably occurred as early as 1579 (Sir Francis Drake's expedition), there are no published accounts of European contact with the tribe until 1832-33 when a party of American trappers working for the Hudson's Bay Company passed through the area. This delay of European intrusions into Patwin lands is unique for California's contact period considering that

Spanish missions were established around San Francisco Bay and up to the Sonoma Valley in the late 1700's and early 1800's. Historical records are clear that contact with the Spanish occurred in 1841 when Salvador Vallejo sent men into the area to round up Indians to work on his Sonoma Valley Ranch. Patwin groups are also known to have been forcibly taken by the Spanish to Mission Dolores in San Francisco (Johnson 1978).

The remote nature of much of Patwin lands served to buffer local populations from many of the disrupting activities that were taking place elsewhere in California during its early history. Most written accounts indicate that traditional life continued for many Patwin groups until the 1870's. However, gradually from the mid-19th century, enslavement and mistreatment by Spanish soldiers and missionaries, Mexican land barons, European settlers, and gold diggers, combined with a lack of natural immunity to European diseases, decimated approximately 75% of the Patwin population, wiping out entire villages and forcing the survivors to retreat into the hills (Cook 1976a).

By the mid-1850s, American pioneers and families were making their homes where the tribe had been well-established for millennia. The new settlers planted orchards and tended cattle ranches and farms. Mines yielded quicksilver, gold, and borax. Privately owned toll roads were dug through valleys and into the mountains, bringing more people, who built stores, banks, churches, saloons, and other businesses, forming dozens of new communities. Today, Wintun descendants, including the Patwin, as well as the Nomlaki and Wintu proper, total about 2,500 people and three federally recognized Patwin rancherías remain (SDSU 2010).

3.2.3 Historic Setting

Recorded history in the study area includes early settlement, the development of irrigation and flood control, the development of transportation, and the evolution of local agricultural industry.

3.2.3.1 California History

Post-contact California history is divided into three distinct periods: the Spanish Period (1769–1822), the Mexican Period (1822–1848), and the American Period (1848–present). Although there were brief visits by Spanish, Russian, and British explorers from 1529 to 1769, the first significant settlement in California was established by the Spanish at San Diego in 1769. Between 1769 and 1823, 21 missions were built by the Spanish and the Franciscan Order along the coast between San Diego and San Francisco. The Spanish expeditions into the Central Valley in 1806 and 1808 led by Lieutenant Gabriel Moraga explored along the main rivers, including the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, San Joaquin, and Stanislaus. Moraga is said to have named the lower Sacramento River and the valley region “Sacramento” (“the Holy Sacrament”; Hoover et al. 2002).

In 1813, Moraga led another expedition in the lower portion of the Central Valley and gave the San Joaquin River its name (Hoover et al. 2002). The abundance of wildlife, such as waterfowl, fish, and fur-bearing animals, within or along the banks of the rivers attracted immigrants to this region. The last Spanish expedition into California's interior was led by Luis Arguello in 1817. He and his men traveled up the Sacramento River, past the future site of the City of Sacramento to the mouth of the Feather River, before returning to the coast (Beck and Haase 1974:18, 20; Gunsky 1989:3–4).

The first American trapper to enter California was Jedediah Smith, who explored along the Sierra Nevada in 1826 and in 1827, entering the Sacramento Valley and traveling along the American and Cosumnes Rivers. In 1827, Smith also traveled through the San Joaquin Valley. Other trappers soon followed, including employees of the Hudson's Bay Company in 1832 (Hoover et al. 1966). Between 1830 and 1833, and again in 1837, diseases were introduced by the non-indigenous explorers, trappers, and

settlers. These along with relocation to the missions, military raids, and settlement by non-native groups, decimated native Californian populations, communities, and tribes in the Sacramento and San Joaquin valleys (Cook 1976a; 1976b).

The American Period was initiated in 1848 with the signing of the Treaty of Guadalupe Hidalgo, which ended the Mexican–American War (1846–1848) and incorporated California as a territory of the United States. Gold was discovered at John Sutter’s Mill on the American River in Coloma the same year, and by 1849, nearly 90,000 people had journeyed to the gold fields to share in the riches. In 1850, largely as a result of the Gold Rush, California became the thirty-first state. Four years later, the bustling boomtown of Sacramento became the state capital. In contrast to the economic boom and population growth that enabled statehood, the loss of land and territory (including traditional hunting and gathering locales), malnutrition, starvation, and violence contributed to the further decline of indigenous Californians from the Northern California coast to the Sierra Nevada foothills (Chartkoff and Chartkoff 1984; Gunsky 1989).

3.2.3.2 Sutter County History

Sutter County is one of the original 27 counties created when California became a state in 1850. The county was named in honor of the famous Sacramento Valley settler and pioneer, John Augustus Sutter. Sutter County contains the western portion of the former New Helvetia rancho, awarded to Sutter by Mexican Governor Juan Bautista Alvarado in 1841. The county seat was initially located in Oro, then Auburn; however, after Auburn became the seat for Placer County in 1851, the seat was moved to the small town of Vernon (now called Verona). In 1856, the boundaries were fixed to their present locations and Yuba City was designated the county seat, where it remains to this day. The first county courthouse was constructed in 1858 and was used until it was burned down in a fire in 1871. A second courthouse was built a year later and burned down in 1899 but was promptly rebuilt with brick walls and is still in use today (Coy 1919; Hoover et al. 2002).

Early Development

The initial growth of Sutter County resulted from the influx of miners to the region during the Gold Rush. Yuba City was founded during this period. Conceived by Samuel Brannan, Pierson Reading, and Henry Cheever as a distribution center for supplies to the miners, in July 1849 they purchased land from Sutter to establish a town on the west bank of the Feather River. The town was named after and founded upon the site of the Nisenan village of Yupu. By 1852, Yuba City was an established steamboat landing, and was chosen as the county seat two years later. The county seat was then moved to Nicolaus, but returned to Yuba City in 1856 (Hoover et al. 2002; County 2011).

On the eastern bank of the Feather River, another town developed early to serve the miners. In neighboring Yuba County, Marysville was laid out in 1850, grew more rapidly than Yuba City, and ultimately became the commercial center for the mines of the Northern Mother Lode. As mining efforts moved farther from the river as the easily accessible gold along the sand bars was exhausted, many miners began settling in Sutter County to develop the rich agricultural land, which disrupted native culture in the lowlands. Yuba City began to grow again during this period, with an economy focused on agricultural production, particularly the production of wheat, grains, and cattle. Yuba City was incorporated in January 1908 (Hoover et al. 2002; County 2011).

The town of Vernon was also established early in the history of Sutter County, founded around 1849 at the confluence of the Sacramento and Feather Rivers. A post office was established on November 8, 1849, and the town also features a hotel made entirely of mahogany. The town’s initial success was a product of the winter draught of 1848/1849, which prevented ships from sailing further north along the river beyond it. Heavy rains in 1850/1851 wet season opened the river back up to Marysville, however, and the town

suffered. Land was largely abandoned as residents of the county moved further northward where the agricultural prospects were better. Vernon all but disappeared (DeBaker and Osterlye 2018). The small unincorporated community of Verona was later established on the site of the former river town, and is characterized today by rural farmland with numerous small airports and riverside resorts.

The community of Nicolaus was established around 1843 and served as a trading post and crossover point along the Feather River, connecting the historical rancho known as Hock Farm with Sutter's New Helvetia. It was named after Nicolaus Allegier, an immigrant from Germany who Sutter granted a square mile of land at Nicolaus Crossing in exchange for help managing the Hock Farm property. Nicolaus became a significant stopover town during the Gold Rush, as it provided convenient access to the rich placer mines of the Feather, Sacramento and Yuba Rivers. With the steady stream of prospectors over the following years, its population grew dramatically, and Allegier constructed an adobe hotel to house travelers. Frequent draughts made Nicolaus unreliable for early agriculture, however, so that the population of the town diminished significantly by 1853. The construction of the railroad eventually brought a new influx of settlers, and more recent reclamation efforts and improved irrigation have ensured that Nicolaus rebounded. It remains a prime agricultural community today.

Around the turn of the century several rail lines reached Sutter County, including the Central Pacific Railroad in 1864, the Southern Pacific Railroad in 1887, the Northern California Railroad by 1890, the Northern Electric Railway in 1905, and the Western Pacific in 1909. Two lines provided east-west access across the Feather River connecting Yuba City and Marysville, the Northern Electric and the Northern California Railroad. The railroads provided industrial opportunities with freight service and also provided passenger service (Galvin 2011; Sutter County Historical Society 2013). The community of Robbins was originally named Maddock and grew beside a Southern Pacific Railroad depot. The 18-mile rail line through the Sutter Basin was built circa 1918 as part of the railroad's expansion to transport the region's abundant produce to East Coast markets. The depot for freight and passengers at Maddock opened in 1920. The name was changed to Robbins on December 7, 1925.

Reclamation and Agriculture

The Sacramento Valley was once a vast and swampy region, covered in wetlands and seasonal floodplains, so flooding has always been a serious problem. Local governments and residents adopted various approaches to flood control, including the construction of levees, rerouting river and stream courses, and building above high-water levels in flood-prone areas. The first major effort to reclaim land in Sutter County involved the construction of levees along the Feather River and its tributaries in the 1860s. These levees were built to prevent flooding and to allow the land behind them to be developed and farmed. They were built by landowners using various methods but these often provided insufficient protection, so more sophisticated drainage systems were gradually adapted to include canals, pumps, and other flood control measures to remove excess water from the land (Downey 2010).

As a result of these early reclamation efforts, by the 1860s Sutter County's economy was already based on agriculture, with wheat and barley being the primary crops. The county also had a thriving fruit industry, with peaches, pears, plums, and cherries being grown in abundance. By the 1870s, rice had become a significant crop, and it remains one of the county's main productions to this day. The county's soil and climate were also ideal for growing peaches, and the county soon became known as the "Peach Bowl" of the world. The peach industry declined in the early 1900s though, due to disease and competition from other regions (Bancroft 1888; Beck and Haase 1974).

Various legislative acts were passed to facilitate land reclamation between the mid-19th and early 20th centuries. Among the earliest was the Arkansas Act which was passed by the U.S. Congress in 1850. The legislation granted swamp and overflow lands to states for reclamation and agricultural use. It also

provided private property owners with access to funding to help with reclamation efforts in support of agriculture and other forms of land development. With the passing of the California State Flood Control Act of 1911, the California legislature established the Reclamation Board to designate reclamation districts and centralize planning efforts for levee construction and the implementation of other water control measures (GEI Consultants 2019).

A major figure in early flood management in the region was Captain Thomas Jackson of the United States Army Corps of Engineers (USACE). In 1905 Jackson prepared a comprehensive flood management plan for the Sacramento Valley which later served as the basis of the Sacramento River Flood Control Project (SRFCP) proposed by the California Debris Commission. Approved in 1914, the SRFCP aimed to revert the river to its natural regime during floods, conveying flood waters through the valley and returning them into the river at its lower reaches via levees, weirs, and bypasses (Warner and Hendrix 1984). Various flood control acts were also passed in 1917, 1928, 1936, and 1941 to regulate and control flood waters of the United States through levees, land and swampland reclamation, and water storage for power (GEI Consultants 2019).

The Sutter Basin Company was involved in the 1910s when developers in Sacramento and Sutter counties began purchasing unreclaimed swampland for farming, which soon resulted in creation of Reclamation District 1500 (RD 1500 or District) in 1913 by a special act of the California State Legislature. The community was named after George Robbins who was vice president of the J. Ogden Armour Meat Packing Company in Chicago. Robbins was enlisted by the president of the Sutter Basin Company, William E. Gerber, to invest in the company. Two buildings constructed by the Sutter Basin Company still stand in Robbins, an office building on Del Monte Avenue and a warehouse adjacent to the railroad tracks. With the decline in rail traffic, the Knights Landing Branch of the Southern Pacific past Robbins was abandoned circa 1965 (Southern Pacific Bulletin 1920; Sutter County Historical Society 2013).

Prior to reclamation, the Sutter Basin was an overflow basin of the Sacramento and Feather Rivers, and was covered by a sea of tules, as indicated by historic maps. Provisions for removing the surface waters that filled the basin to reduce flooding so that crops could be grown were made by construction of levees, the Sutter Bypass, and a drainage system in accordance with the general flood control plan adopted by the Federal government and the State Reclamation Board. The first pumping plant was completed in 1914, to convey drainwater out of Sutter Basin. The Sutter Basin Company initially owned approximately two-thirds of the vast acreage encompassed within RD 1500. Circa 1918, the company formed the Sutter Mutual Water Company to build an irrigation system for the southern 45,000 acres of the District. The Main Drain, built between 1918 and 1920, was the central component of the irrigation system. Farmlands were then established by the Sutter Basin Company during the 1920s and 1930s and were sold to prospective farmers. Soon, grain warehouses and vegetable packing houses were built along the Southern Pacific's tracks that bisected the heart of the District and paralleled the Main Drain (Delay 1924; Guise 1965; Larson and Beason 2007; Sutter County Historical Society 2013).

Located wholly within Sutter County, RD 1500 is confined by surface water features and engineered channels—the Sacramento River on the west, Tisdale Bypass on the north, and Sutter Bypass on the east. The District presently encompasses nearly 68,000 acres and continues to maintain the levees and provide drainage and reclamation of lands within its boundaries. The Main Drain, which generally flows north-south, bisects Sutter Basin and collects the majority of the drainwater from RD 1500 lands. An elaborate network of both drain laterals and sublaterals conveys drainwater to the Main Drain from both the east and west. The original pumping plant still stands today and operates during emergency flood control conditions (Delay 1924).

Canning was an important component of Sutter County's agricultural industry, and companies established processing plants in the late 1880s in the commercial center of Yuba City along the railroad tracks and

near the Feather River. The County continues to rely on agriculture as its primary economic industry. Orchard crops (prunes, apricots, peaches, etc.) are particularly productive in areas near the rivers, while the lowlands farther from the rivers are more suited to the production of rice (County 2011; Sutter County Historical Society 2013).

During World War II, Sutter County played an important role in the war effort. The county was home to several military bases and training camps, including Camp Beale, which was one of the largest Army training camps in the United States. The base was used to train soldiers, and also served as a prisoner of war camp for German and Italian soldiers (Military Museum 2023).

Agriculture continued to thrive in Sutter County following the war. The county's rice industry grew significantly during the 1950s and 1960s, and it remains one of the county's primary crops, particularly in the lowlands farther from the rivers. Orchard crops (prunes, apricots, peaches, etc.) are most productive near the county's major waterways (County 2011; Sutter County Historical Society 2013).

In the 1960s, Sutter County experienced a significant increase in population due to the construction of the Oroville Dam and the resulting expansion of Lake Oroville. The lake provided irrigation water for the county's agriculture industry and also served as a popular recreational destination.

3.2.3.3 Study Area History

The 1888 United States Geological Survey (USGS) Marysville 30-minute topographic quadrangle shows two stops along the Feather River east of the study area labeled Hock Farm and Starrs Landing, along with Grimes Landing and Eddy's Ferry along the Sacramento River to the northwest. A few roads are constructed in and around the study area, including those known today as Oswald Road and South George Washington Boulevard, but the area is otherwise undeveloped (USGS 1888). The 1895 version of the map shows that the Sutter Basin, including the study area, remains mostly unreclaimed marshland. A small number of buildings and additional roads are constructed in the surrounding area (USGS 1895). No significant further development is shown on later editions of the map.

The Sutter Bypass System was constructed by the Sutter Basin Company in 1924 as part of the SRFCP. Associated collecting canals cross the study area, intersecting a segment on the northeastern end of the pipe alignment. The canals have been formally recorded as P-51-000330. The East Levee of the Sutter Bypass and its intercepting canals were also constructed in the first quarter of the 20th century and were enlarged in 1942 by the USACE to meet SRFCP standards. The Tisdale Bypass (P-51-000365) located 0.25 miles north of the project was constructed in 1935 as a flood control channel. The pumping stations and associated drainages were built between 1924 and 1936. The 1952 USGS Gilsizer Slough and Tisdale Weir 7.5-minute topographic quadrangles show that the Sutter and Tisdale Bypasses and associated infrastructure are constructed by that time (Anderson 2015; Cleveland 2019; Phillips 2016; USGS 1952a; 1952a).

By 1952, the marshlands of the Sutter Basin have been reclaimed and converted into agricultural fields. A network roads, drainage canals, and irrigation ditches are present throughout the study area. The Southern Pacific Railroad and Reclamation Road are constructed through the study area by this time as well. Multiple structures are clustered near the pumping station adjacent to the Sutter Bypass levee and two structures are shown at the north end of the study area, at the present location of the Calpine Sutter Energy Center (USGS 1952b; 1952a). By 1994, the Southern Pacific Railroad is no longer shown on topographic maps.

Historic aerial photographs from 1957 to 2020 shows the study area dominated by agricultural fields and associated infrastructure with sparsely distributed residential and farming structures. Few other significant

developments are visible. The construction of the Sutter Energy Center began in 1999 and the 547-MW gas-fired combined-cycle plant began operations in 2001 (Calpine 2000; Google 2021b; NETR 2022).

3.3 Background Research

This section describes the background research completed as part of the project, which included a California Historical Resources Information System (CHRIS) records search, a literature search, a SLF search, examination of historic aerial photographs and topographic maps, and review of additional primary and secondary sources.

3.3.1 Records Search

A CHRIS records search was conducted by the Northeast Information Center (NEIC) to determine whether prehistoric or historic cultural resources have been previously recorded within the project footprint, the extent to which the project footprint has been previously surveyed, and the number and type of cultural resources within a one-mile radius of the project limits. The results of the CHRIS search were returned on April 13, 2023. The archival search of the archaeological and historical records, national and state databases, and historic maps included the following sources:

- National Register of Historic Places: listed properties
- California Register of Historical Resources: listed resources
- Historic Property Data File for Sutter County
- Archaeological Determinations of Eligibility
- Built Environment Resources Directory
- California Inventory of Historical Resources

Additional information on the results of the record search is provided below and in Appendix C.

3.3.1.1 Previously Recorded Cultural Resources

The records search indicates that a total of six cultural resources have been previously recorded within the 1.0-mile-radius study area. Of these, one resource has been recorded within the project footprint. The resource within the project footprint is the Sutter Bypass Collecting Canals (P-51-000330). It is discussed in further detail below.

All other resources recorded in the study area are historic period resources, and all but one relate to land reclamation and flood control systems. These include a segment of the Southern Pacific Railroad (P-51-000088), the East Side Borrow Channel of the Sutter Bypass (P-51-000303), the West Side Borrow Channel of the Sutter Bypass (P-51-000306), the Sutter Bypass Pumping Plant #2 (P-51-000319), and the Tisdale Weir and Bypass (P-51-000365). It is worth emphasizing the point made in a recent USACE evaluation of flood control systems in Sacramento, Sutter, and Yolo Counties. It concludes that standard upkeep and modernization of historical flood control features such as levees make them very difficult to distinguish from modern ones, considerably reducing their ability to convey historical significance (Lemke and Clinton-Selin 2021). For this reason, such resources are rarely determined eligible for NRHP/CRHR listing.

Additional information on known cultural resources within one mile of the project is provided in in Table C-3-1 below. Figures showing the previously recorded cultural resources are included in Appendix A, Figure 3 and copies of the resource records are included in Appendix C.

Table C-3-1. Previously Recorded Cultural Resources within One-Mile-Radius Study Area

Resource Number (P-51-)	Resource Type	Resource Description	Evaluation; Year
<i>Within the Project Footprint</i>			
330	Historic-era - architectural	Sutter Bypass Collecting Canals	Not eligible for listing in the NRHP; 2015
<i>Within the 1.0-Mile-Radius Study Area</i>			
88	Historic-era - architectural	Southern Pacific Railroad Alignment	Unevaluated
303	Historic-era - architectural	The East Side Borrow Channel of the Sutter Bypass	Eligible for NRHP; 2000
306	Historic-era - architectural	The West Side Borrow Channel of the Sutter Bypass	Not eligible for NRHP/CRHR; 2000
319	Historic-era - architectural	Sutter Bypass Pumping Plant #2	Not eligible for listing in the NRHP/CRHR; 2018
365	Historic-era - architectural	Tisdale Weir and Bypass	Not eligible for NRHP/CRHR; 2006

Sutter Bypass Collecting Canals (P-51-000330)

This resource is recorded as the Sutter Bypass Collecting Canals, an element of the Sutter Bypass System constructed as part of the SRFCP. It consists of approximately seven miles of earth drainage channels located east of the Sutter Bypass and used to transport water to and from the Sutter Bypass and local agricultural fields. As a result of the construction of the East Levee of the Sutter Bypass, several natural drainage channels were cut-off from their historic flow patterns. To reduce the negative impacts of this cut-off, three pumping plants and several collecting canals were installed to route excess surface water to the Sutter Bypass. The East Levee of the Sutter Bypass was constructed in 1923 and was enlarged to meet the standards the SRFCP by 1942. The pumping stations and collecting canals were constructed between 1924 and 1936 (Anderson 2015).

A past evaluation of the resource concluded that it has no known associations with significant individuals (Criterion A/1) or events (Criterion B/2); it does not embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master (Criterion C/3); and it is not likely to yield information important to history. Given this lack of significance, it was recommended ineligible for listing in the NRHP/CRHP (Anderson 2015).

3.3.1.2 Previously Conducted Cultural Resources Investigations

The records search also indicates that a total of 23 cultural resources investigations have been previously conducted within the 1.0-mile-radius study area. Of these, eight included portions of the project footprint. Past studies within one mile of the project footprint were completed between 1974 and 2019. They cover less than 10 percent of the project footprint. A summary of the previously conducted cultural resources

investigations within the project footprint and 1.0-mile-radius study area is presented in Table C-3-2. Figures showing the previously conducted investigations are included in Appendix A, Figure 4.

Table C-3-2. Past Cultural Resources Investigations within One-Mile-Radius Study Area

Report No. (NEIC-)	Report Title	Author & Date
<i>Within the Project Footprint</i>		
3134	An Archaeological Assessment for the Sutter Levee District No. 1 Relief Well System in Sutter County, California	Shapiro, Syda, and Shapiro 1997
	An Archaeological Assessment within Reclamation District 1500 and the Tisdale Bypass, Sutter County, California Part of the Cultural Resources Inventory and Evaluation for U.S. Army Corps of Engineers, Sacramento District, PL 84-99 Levee Rehabilitation	Shapiro and Syda 1997
	Addendum Report for an Archaeological Assessment within Reclamation District 1500, Sutter County, California Part of the Cultural Resources Inventory and Evaluation for U.S. Army Corps of Engineers, Sacramento District, PL 84-99 Levee Rehabilitation	Shapiro and Syda 1998
	Cultural Resources Assessment within Reclamation District 1500 Sutter County, California (Sac 3) For: Cultural Resource Inventory and Evaluation for the U.S. Army Corps of Engineers, Sacramento District PL 84-99 Levee Rehabilitation on the Feather River.	Delitz 1998
	An Addendum Archaeological Assessment for the Sutter Levee District No. 1, Sutter County, California Part of the Cultural Resources Inventory and Evaluation for U.S. Army Corps of Engineers, Sacramento District, PL 84-99 Levee Rehabilitation on the Feather River.	Shapiro and Syda 1997
	An Archaeological Assessment for the Sutter Levee District No. 1 Relief Well System in Sutter County, California Part of the Cultural Resources Inventory and Evaluation for U.S. Army of Corps of Engineers, Sacramento District, PL 84-99 Levee	Shapiro, Syda, and Shapiro 1997
3146	Final Cultural Resources Inventory Report for the Williams Communications, Inc. Fiber Optic Cable System Installation Project, Point Arena to Robbins and Point Arena to Sacramento, California	Nelson 2000
3147	Cultural Resources Inventory of the Sutter Power Project, Sutter County, California	Davy and Nachmanoff 1999
8090	County of Sutter and Caltrans Proposed Bridge Replacement Project on O'Banion Road at Snake Slough	Jensen 2004
8954	Cultural Resources Report for Geotechnical Borings along the Feather River, Sutter Bypass, and Wadsworth Canal	Grant 2007
9500	Cultural Resources Survey Report for the Urban Levee Project	Grant 2008

Table C-3-2. Past Cultural Resources Investigations within One-Mile-Radius Study Area

Report No. (NEIC-)	Report Title	Author & Date
13255	Cultural Resources Inventory for the North Area Right-of-Way Maintenance Environmental Assessment CVP and Pacific AC Intertie	Davy, Calicher, and Shapiro 2007
14242	Historic Property Survey Report for the Tisdale Bridge (18C-0057) Replacement Project, Sutter County, California	Heffner 2018
<i>Within the 1.0-Mile-Radius Study Area</i>		
1048	The Sacramento River Flood Control System Evaluation for the Marysville/Yuba City Area: A Cultural Resource Overview	Gilreath 1990
1091	Sacramento River Flood Control System Evaluation, Mid-Valley Area Cultural Resources Survey, Colusa, Sacramento, Sutter, Yolo, and Yuba Counties, California	Glover and Bouey 1990
1137	Cultural Resources Along the Sacramento River from Keswick Dam to Sacramento	Johnson and Johnson 1974
7141	Cultural Resources Inventory of the Sutter Power Project, Sutter County, California	Davy and Nachmanoff 1999
7578	Archaeological Survey of the Natural Gas Supply Pipeline Reroute, Sutter Power Plant Project	Davy 2000
9873	Cultural Resources Baseline Literature Review for the Urban Levee Project	Grant 2008
9876	Section 106 Compliance for a Proposed Oil and Gas Lease in MDM, T14 N, R 2E, Sec 24 near Yuba City, Sutter County (Case # CA-018-S-SV-08/01)	Barnes 2008
10514	Archaeological Survey Report for the Sutter Pumping Plants Control Systems Project, Sutter County, California	Offermann 2009
13255	Cultural Resources Inventory for the North Area Right-of-Way Maintenance Environmental Assessment CVP and Pacific AC Intertie	Davy, Calicher, and Shapiro 2007
13478	Rodent Abatement and Damage Repair Activities Project, Archaeological Sensitivity Assessment, Butte, Glenn, and Sutter Counties, California	Hoffman and Zimmer 2016
13963	Final Cultural Resources Inventory and Evaluation on the Phase II Lower Butte Creek-West Side Channel Project, Sutter County, California	Fryman 2000
14208	Collecting Canal Maintenance Phase I Project, Sutter County, California	Anderson and Baxter 2016
14253	Cultural Resources Survey Report for NRCS Project #17FY51-0007: Sterling Oaks Proposed Microirrigation System and Pump near Everglade, Sutter County, California	Sharp 2017

Table C-3-2. Past Cultural Resources Investigations within One-Mile-Radius Study Area

Report No. (NEIC-)	Report Title	Author & Date
14380	California Department of Water Resources Sacramento Yard and Sutter Yard 2019-2020 Channel Maintenance Areas: Archaeological Resources Inventory and Architectural Resources Inventory and Evaluation Report	Sims, Robin, and Cleveland 2019
	California Department of Water Resources Sacramento Yard and Sutter Yard 2019-2020 Channel Maintenance Areas: Archaeological Architectural Resources Inventory and Evaluation Report	Cleveland and Sims 2019
14485	California Department of Water Resources, Sutter Maintenance Yard Levee Units Archaeological Survey Report	Sims and Hoffman 2019

3.3.2 Caltrans Historic Bridge Inventory

A review of the California Department of Transportation (Caltrans) Statewide Historic Bridge Inventory identified two historical bridges within the one-mile-radius study area. Both are county bridges, and one is within the project footprint. The Snake River Bridge along O'Banion Road overlaps the project footprint. It is a concrete beam bridge constructed in 1925. Westside Canal Bridge along Coles Road is located just under one mile west of the project footprint. It is a steel beam bridge constructed in 1978. Both have been identified as Category 5 bridges and are ineligible for NRHP listing (Caltrans 2022; Hope 2004; 2005).

3.3.3 Other Sources

Jacobs staff reviewed the additional historical maps and aerial photographs listed below. The results of our review of these sources are incorporated in the Study Area History section above.

- 1888 Marysville 7.5-minute USGS topographic quadrangle map
- 1907 Dunnigan 7.5-minute USGS topographic quadrangle map
- 1910 Marcuse 7.5-minute USGS topographic quadrangle map
- 1911 Gilsizer Slough 7.5-minute USGS topographic quadrangle map
- 1912 Tisdale Weir 7.5-minute USGS topographic quadrangle map
- 1915 Kirkville 7.5-minute USGS topographic quadrangle map
- 1916 Map of Reclamation District No. 1500: Situated in Sutter County, California
- 1941 Dunnigan 7.5-minute USGS topographic quadrangle map
- 1952 Glisizer Slough 7.5-minute USGS topographic quadrangle map
- 1952 Kirkville 7.5-minute USGS topographic quadrangle map
- 1952 Tisdale Weir 7.5-minute USGS topographic quadrangle map
- 1957 Sacramento 7.5-minute USGS topographic quadrangle map
- 1994 Sacramento 7.5-minute USGS topographic quadrangle map
- 1957, 1973, 1984, 1993, 1998 aerial photographs

3.3.4 Native American Consultation and Public Outreach

Jacobs contacted the NAHC requesting a search of their SLF for traditional cultural resources within or near the study area. The results of the search returned by the NAHC on March 30, 2023, were negative for Native American cultural resources in the project vicinity. The NAHC provided contact information for 15 tribal members and organizations affiliated with the region and recommended that they be contacted for more information on the potential for Native American cultural resources within or near the study area. Additional information on Native American outreach efforts is included in Appendix D.

3.4 Potential for Buried Archaeological Deposits

Background research and recent geoarchaeological studies completed for the Caltrans, District 3, which includes Sutter County, suggests that there is a low-to-low-moderate potential for the discovery of buried archaeological deposits within the study area (Meyer and Rosenthal 2008). As noted above, the project is underlain by Late Holocene-aged (4,000 to 150 years ago) alluvium and basin deposits (Qha/Qhb) with soils of the Clear Lake, Oswald, and Shanghai Series formed at their surface. Because these materials formed after the first human occupation of the area, they are generally regarded as sensitive for subgrade archaeological remains.

However, as noted in the District 3 report and other recent geoarchaeological studies (e.g.; Meyer et al. 2011b), discovery of buried sites depends on a number of site-specific variables, not just the age of the underlying landform. These variables include distance from watercourses, micro-topographic variations (e.g., the presence of buried stream channels, former sloughs, springs, or natural levees), proximity to known archaeological sites, and the extent of past disturbances of the area.

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The Sacred Lands File (SLF) search conducted for the project also returned negative results for tribal resources in the study area. The Sutter Basin is a naturally low-lying floodplain. The unstable marshland environment would have been inhospitable to human occupation for much of prehistory, reducing the likelihood that archaeological deposits are present today. The nearest significant sources of freshwater are the Sacramento and Feather Rivers, one mile to the west and 4.5 miles to the east of the project respectively. Slope throughout the study area is mostly level, averaging 0.5 percent. The maximum slope is gentle, ranging from 7.5 percent on the west side of the project, to 9.4 percent on the northeast side.

Background research finds that the entire project alignment has been intensively used for agricultural purposes from the early-to-mid-20th century, with native vegetation removal, plowing and tilling, agricultural production, and levee, farm, road, and railroad construction all taking place. These activities would have caused subgrade disturbance to depths of one foot or more, diminishing the likelihood that any buried archaeological deposits present remain intact.

Based on these site-specific variables - the age and instability of underlying landform, gentle slope, distance from major freshwater sources, absence of known archaeological sites in the study area, extent of past disturbance, and relatively shallow depth of anticipated ground-disturbance for the project - the potential for discovery of intact archaeological deposits, including buried archaeological deposits, materials, or features, by implementation of the project is estimated to be low-to-low-moderate throughout the study area, with sensitivity increasing nearer to the Sacramento River to the south and west of the project alignment.

4. Conclusions and Recommendations

A CHRIS record search was completed in April 2023 and indicates that 23 cultural resources investigations have been previously conducted within the 1.0-mile-radius study area. Of these, eight included portions of the project footprint, accounting for roughly ten percent of the total area. The records search also indicates that six cultural resources have been previously recorded within the 1.0-mile-radius study area. Of these, one was recorded within the project footprint. The resource within the project footprint is the Sutter Bypass Collecting Canals (P-51-000330). A past evaluation of P-51-000330 concluded that it is ineligible for NRHP/CRHR listing due to a lack of historical significance. All other resources recorded in the study area are historic period resources, and all but one segment of the Southern Pacific Railroad relate to land reclamation and flood control systems. No archaeological sites have been recorded within one mile of the project. The results of the SLF search returned by the NAHC on March 30, 2023, were negative for Native American resources in the project vicinity.

A recent USACE evaluation of flood control systems in Sacramento, Sutter, and Yolo Counties concluded that standard upkeep and modernization of historical flood control features such as levees make them very difficult to distinguish from modern ones, considerably reducing their ability to convey historical significance (Lemke and Clinton-Selin 2021). Hence, resources of this kind are rarely determined eligible for NRHP/CRHR listing. As historical land uses and past cultural resource investigations in the study area suggest that any previously unrecorded resources in the project footprint are likely to fall into this category, the likelihood that the project will impact significant built environment or other historic period resources is estimated to be low.

Geoarchaeological analysis finds that the project footprint is underlain by Quaternary alluvium and basin deposits (Qha/Qhb) with soils of the Clear Lake, Oswald, and Shanghai Series formed at their surface. These soil units all date to the Late Holocene (4,000 to 150 years ago). Given several site-specific variables, including the age and instability of underlying landform, gentle slope, distance from major freshwater sources, absence of known archaeological sites in the study area, extent of past disturbance, and relatively shallow depth of anticipated ground-disturbance for the project, based on preliminary assessments the potential for discovery of intact archaeological deposits by implementation of the project is estimated to be low-to-low-moderate, with sensitivity increasing nearer to the Sacramento River to the south and west of the project alignment.

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Wohlgemuth, Eric

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Appendix A

Project Maps

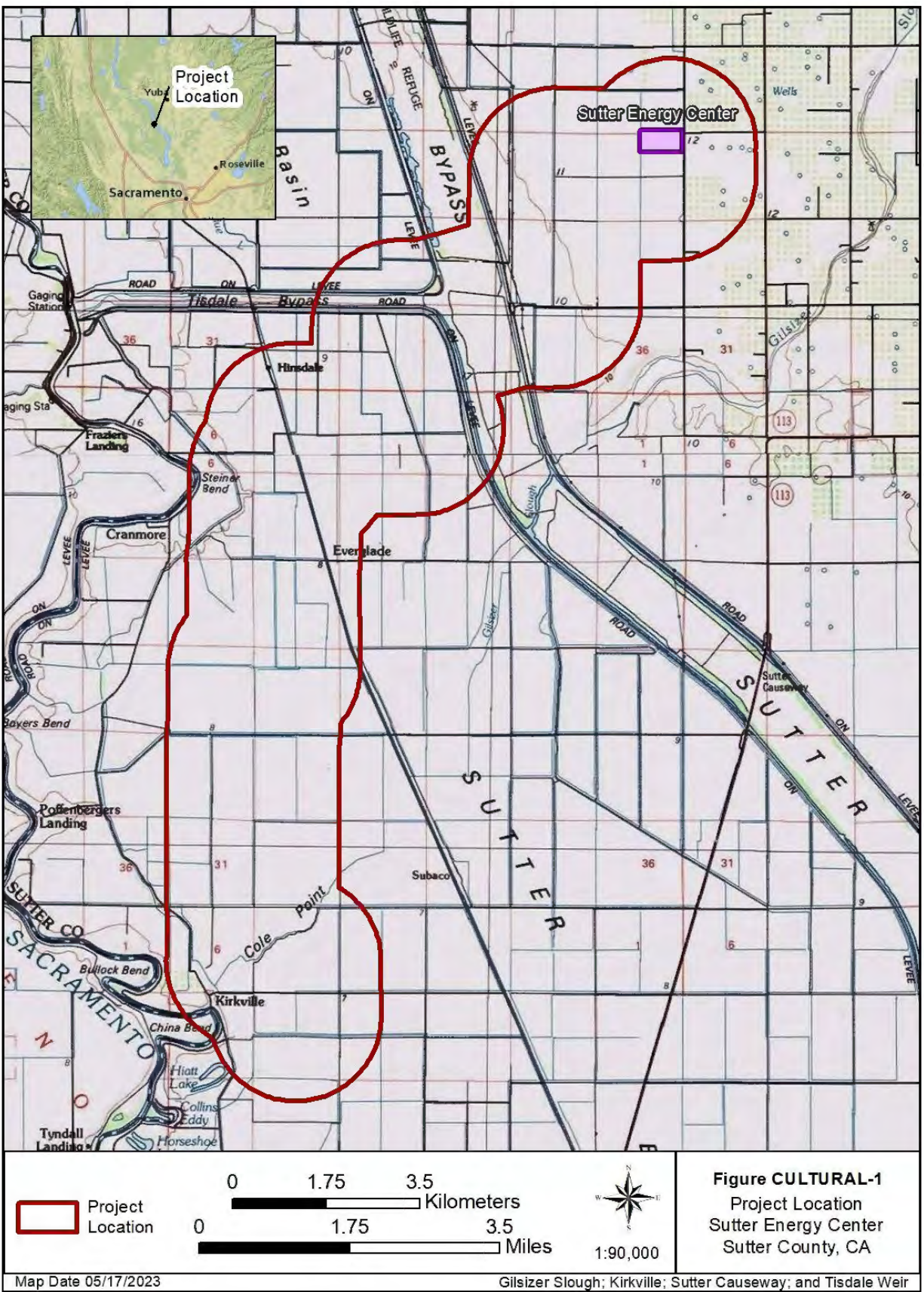


Figure CULTURAL-1. Project Location

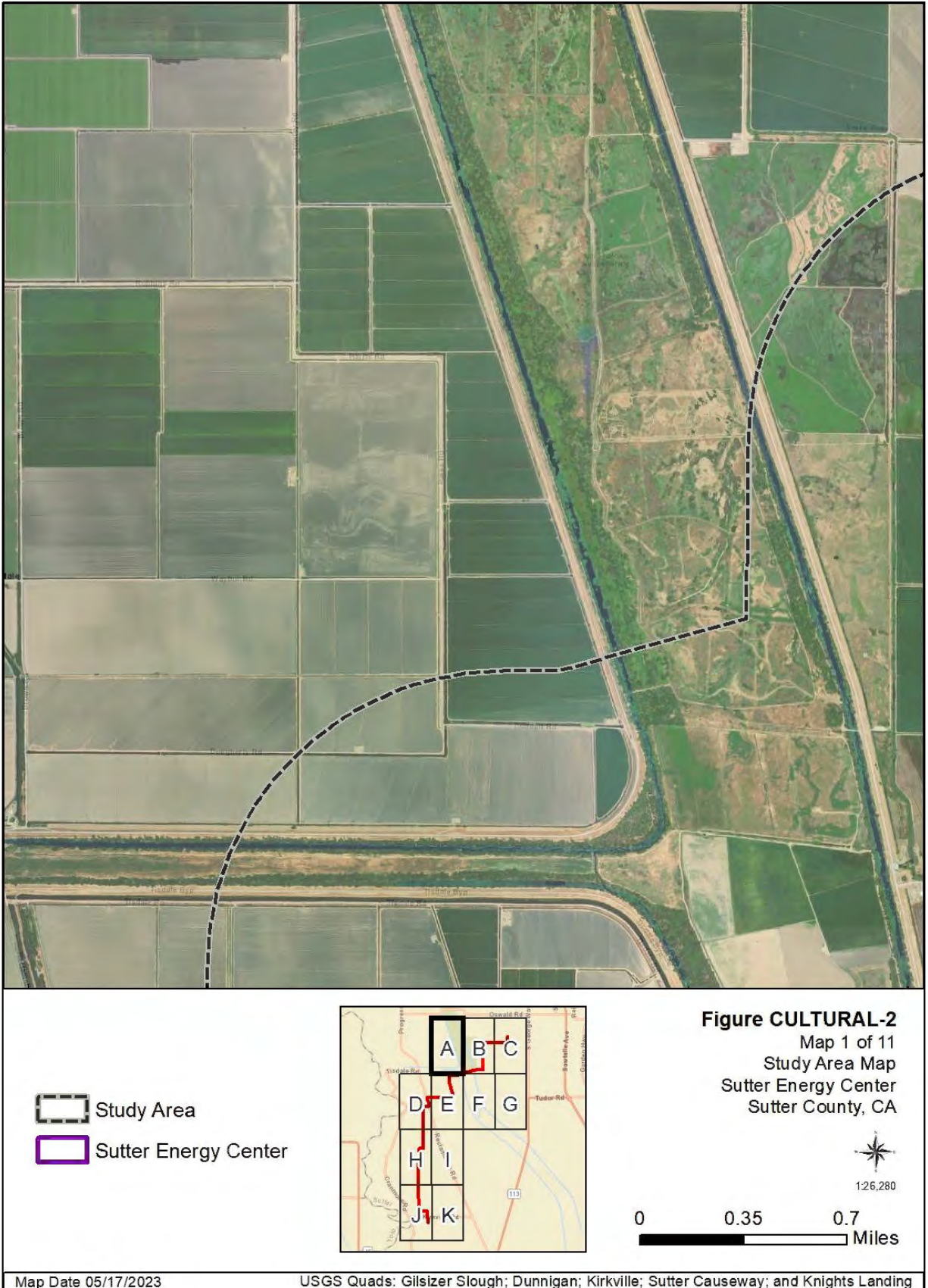




Figure CULTURAL-2. Study Area Map 1 of 11



-  Study Area
-  Sutter Energy Center

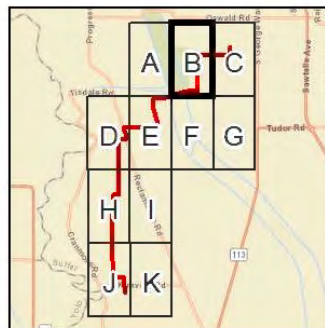
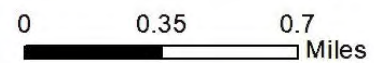


Figure CULTURAL-2
 Map 2 of 11
 Study Area Map
 Sutter Energy Center
 Sutter County, CA





Map Date 05/17/2023

USGS Quads: Gilsizer Slough; Dunnigan; Kirkville; Sutter Causeway; and Knights Landing

Figure CULTURAL-2. Study Area Map 2 of 11



-  Study Area
-  Sutter Energy Center

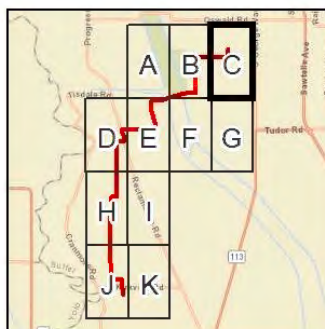


Figure CULTURAL-2
 Map 3 of 11
 Study Area Map
 Sutter Energy Center
 Sutter County, CA



126,290

0 0.35 0.7
 Miles

Map Date 05/17/2023

USGS Quads: Gilsizer Slough; Dunnigan; Kirkville; Sutter Causeway; and Knights Landing

Figure CULTURAL-2. Study Area Map 3 of 11

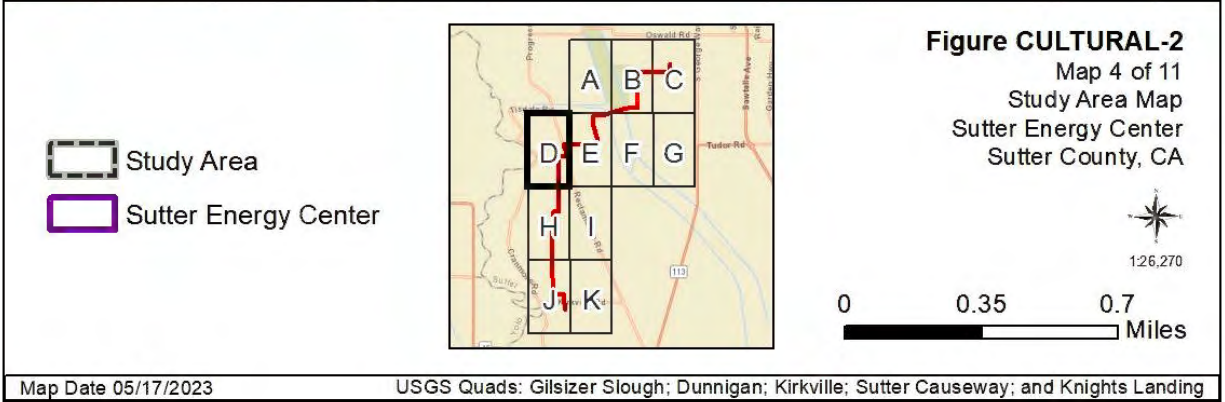


Figure CULTURAL-2. Study Area Map 4 of 11

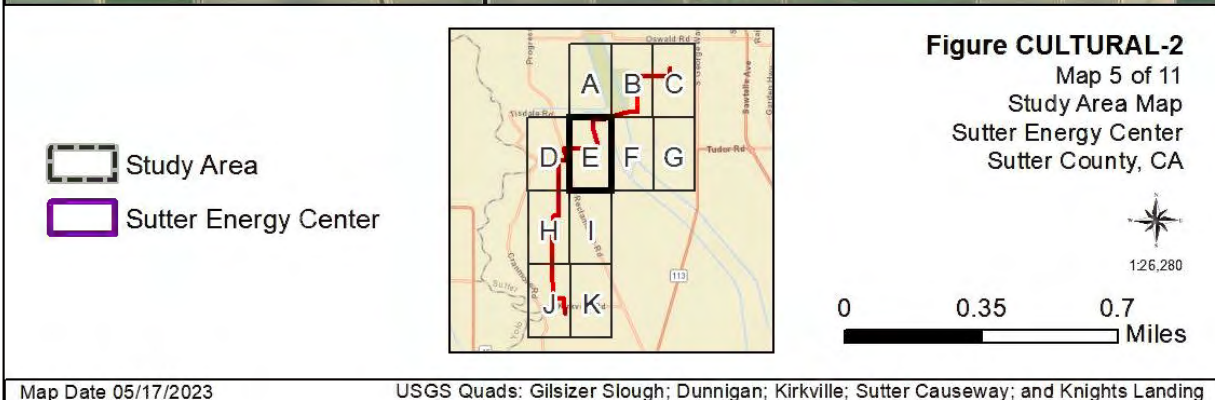


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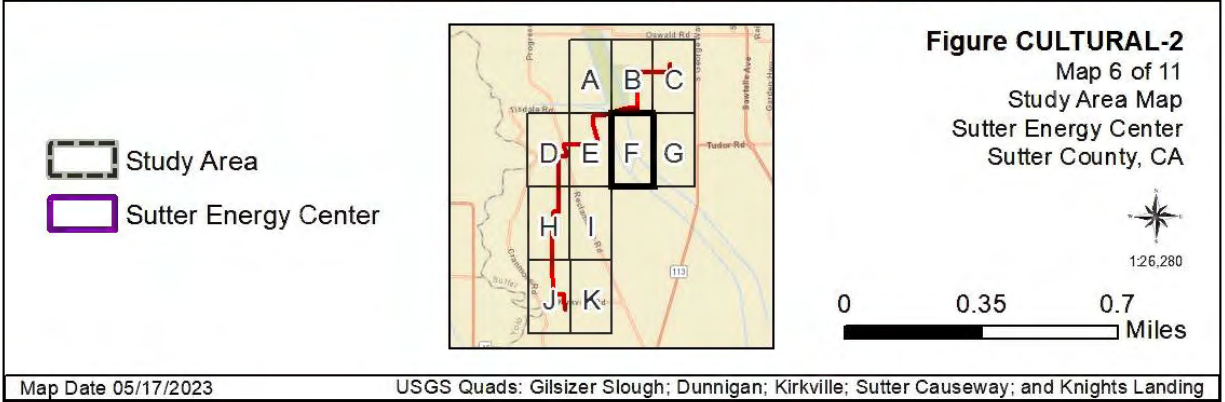




Figure CULTURAL-2. Study Area Map 6 of 11



 Study Area
 Sutter Energy Center

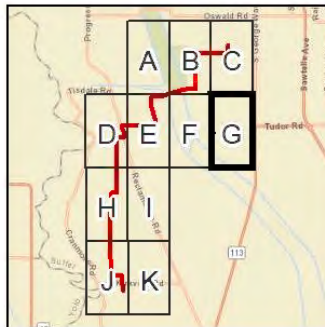


Figure CULTURAL-2

Map 7 of 11
Study Area Map
Sutter Energy Center
Sutter County, CA



126,290

0 0.35 0.7
Miles

Map Date 05/17/2023

USGS Quads: Gilsizer Slough; Dunnigan; Kirkville; Sutter Causeway; and Knights Landing

Figure CULTURAL-2. Study Area Map 7 of 11

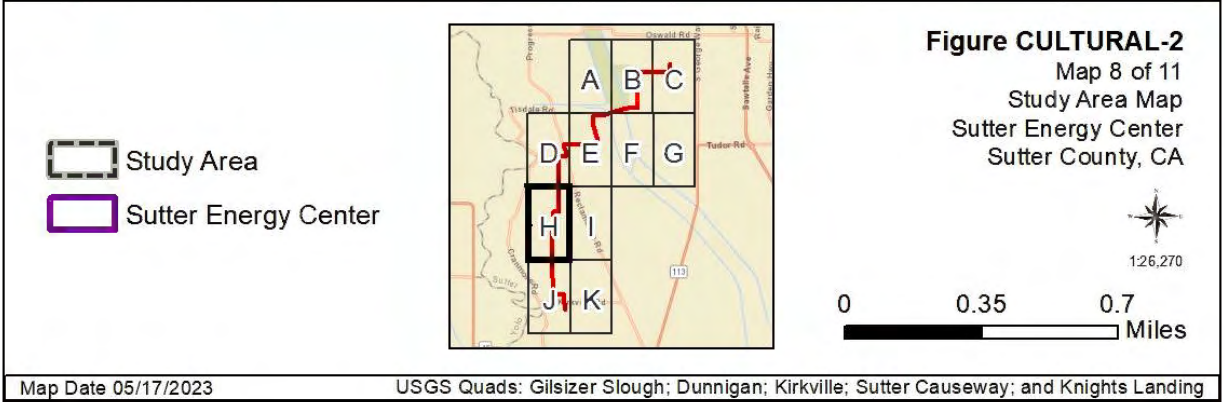




Figure CULTURAL-2. Study Area Map 8 of 11



-  Study Area
-  Sutter Energy Center

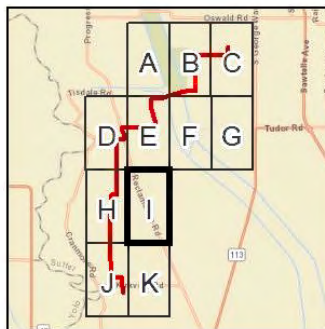


Figure CULTURAL-2

Map 9 of 11
Study Area Map
Sutter Energy Center
Sutter County, CA



126,280

0 0.35 0.7
Miles

Map Date 05/17/2023

USGS Quads: Gilsizer Slough; Dunnigan; Kirkville; Sutter Causeway; and Knights Landing

Figure CULTURAL-2. Study Area Map 9 of 11

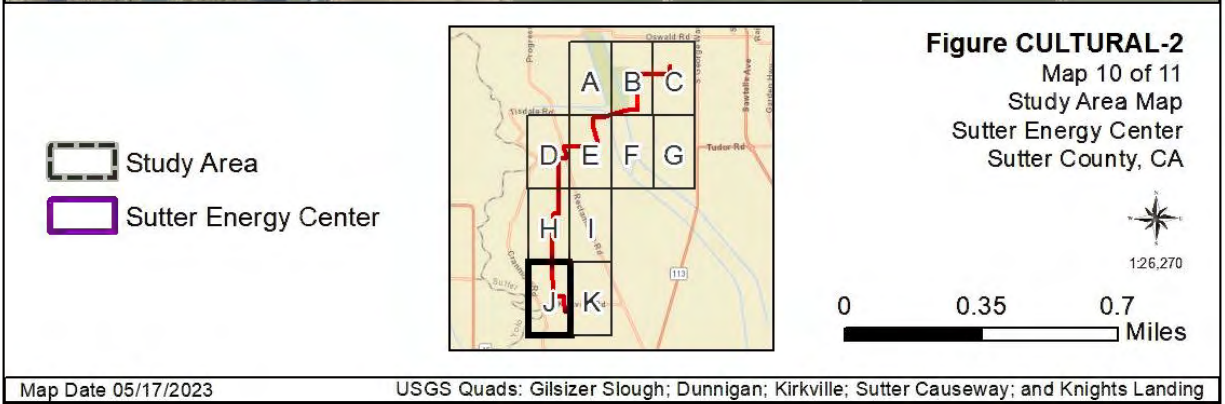


Figure CULTURAL-2. Study Area Map 10 of 11

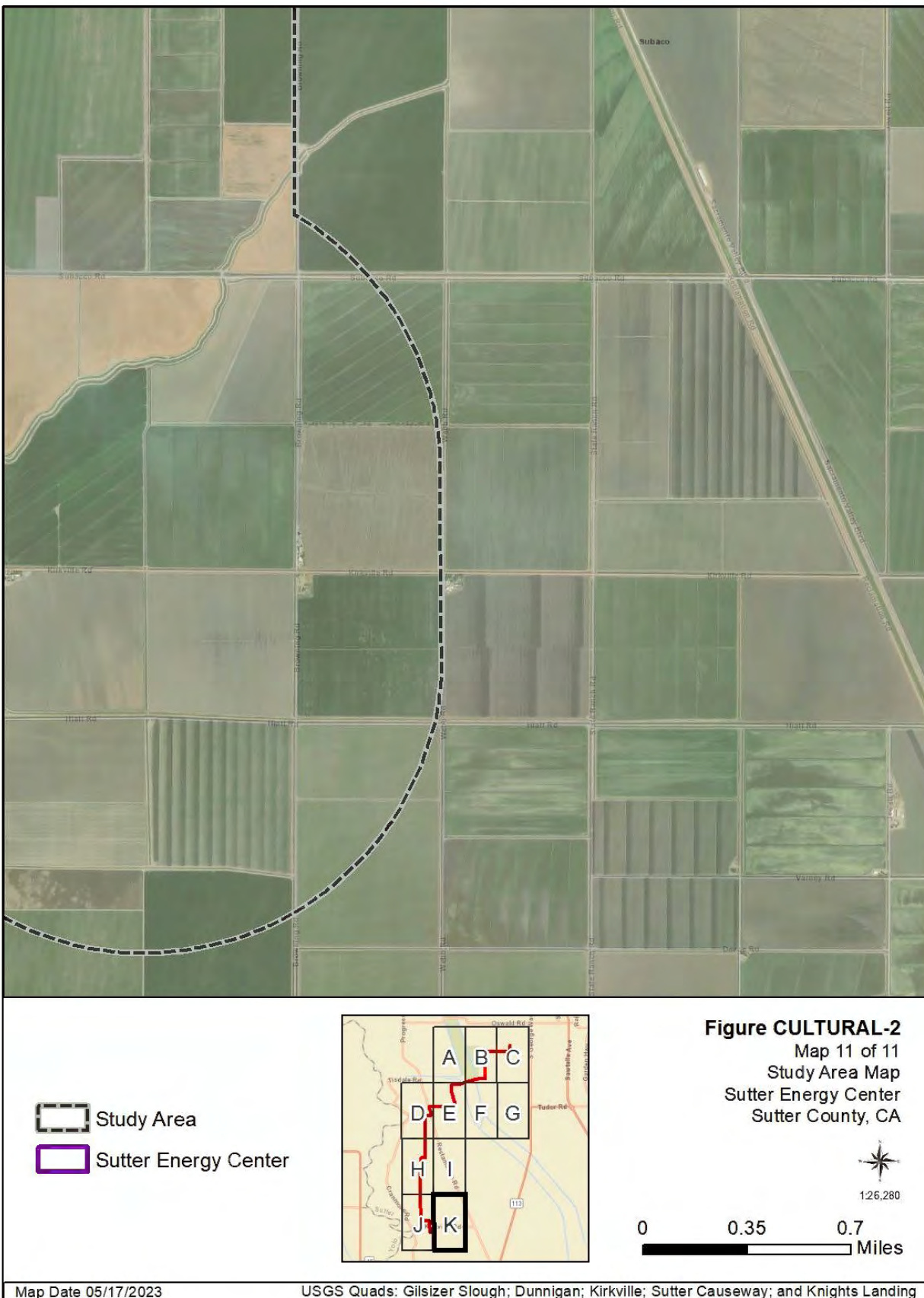


Figure CULTURAL-2. Study Area Map 11 of 11

CONFIDENTIAL

Figure CULTURAL-3. Cultural Resources

CONFIDENTIAL

Figure CULTURAL 4. Cultural Studies Map

Appendix B

Resumes

Tim Spillane, M.A., RPA

Senior Archaeologist/Principal Investigator

Profile

Tim Spillane is a Registered Professional Archaeologist (RPA) with more than 13 years of experience working with agencies in the public and private sectors on cultural resource management projects, developing particular expertise in the historic and prehistoric archaeology of the San Francisco Bay, Sacramento, and larger California region. He has extensive experience in Section 106 and CEQA compliance, and over six years of professional training in GIS, holding professional certifications in ArcGIS, AutoCAD, SketchUp, and Illustrator.

He currently works as a Senior Archaeologist/Principal Investigator for Jacobs Engineering Group, partnering with a diverse range of clients, stakeholders, and tribes to responsibly and efficiently move the cultural resource process forward. He has an extensive background in all phases of archaeological work, including assessment, evaluation, and mitigation, regularly authoring technical reports, including treatment plans, data recovery reports, and historical contexts.

He is cross-trained in paleontology and proficient in GIS, maintaining geodatabases, publishing map services online, and building archaeological sensitivity models. He has supervised cultural resource and GIS personnel and managed all phases of the cultural resource compliance process on complex projects throughout California and beyond.

Key Skills | Areas of Expertise

- Over 13 years of environmental management experience
- Strong management and business development experience
- Archaeological investigation, all phases
- Cultural resource significance evaluation
- Geographic Information Systems (GIS) and cartography
- Regulatory compliance
- Archival research and reporting
- Data recovery
- Collections management
- Public interpretation and resource stewardship
- Native American consultation
- Meets Secretary of Interior Professional Qualification Standards (36 Code of Federal Regulations [CFR] Part 61)
- Experienced managing cultural resources studies for large energy, linear utility and transportation, and oil and gas projects to meet federal requirements of National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Federal Energy Regulatory Commission (FERC), and state requirements of California Environmental Quality Act (CEQA)

Education | Qualifications

- MA, Text & Material Culture (Archaeological Approaches), Roehampton University, London, England, United Kingdom
- Dual BA, Anthropology (Archaeology Emphasis) & English Literature, San Francisco State University, California, United States

Registrations | Certifications

- Registered Professional Archaeologist (ID: 29410869)
- SketchUp for Planners: Intermediate
- SketchUp for Planners: An Introduction.
- GIS Fundamentals: Importing, Selecting, and Managing Data
- AutoCAD for Site Planning
- Illustrator for Planners – Introduction
- AutoCAD 101
- Cogstone 10 Hour Training in Paleontology, Sedimentology, and Mineralogy
- Occupational Safety and Health Administration (OSHA) 40-Hour HAZWOPER Training Certification
- OSHA 8-Hour HAZWOPER Refresher Training Certification

Employment History

Jacobs Engineering Group, Inc., September 2022 – Present

Role: Senior Archaeologist/Principal Investigator

Responsibilities: Works full-time in a decision-making capacity as Senior Archaeologist/Principal Investigator. Regularly authors cultural resources reports; manages cultural resources staff; composes mitigation measures and ensures compliance with relevant regulations; coordinates with clients, tribes, and other invested parties; performs data analysis and produces maps in GIS; and conducts occasional fieldwork.

Natural Investigations, Inc., September 2019 – September 2022

Role: Principal Investigator/Project Manager/GIS Analyst II

Responsibilities: Worked full-time in a decision-making capacity as Project Manager/Principal Investigator/GIS Analyst II. Authored over 200 cultural and paleontological resources reports; managed field survey, monitoring, and data-recovery projects at all levels of complexity; composed mitigation measures and ensured compliance with relevant regulations; prepared budgets and proposals; coordinated with clients, tribes, and other invested parties; performed data analysis and produced maps in GIS; and conducted occasional fieldwork.

Cogstone Resource Management, Inc., September 2016 – August 2019

Role: Principal Investigator/Project Manager/GIS Analyst I

Responsibilities: Served full-time in a decision-making capacity as Project Manager/Principal Investigator/GIS Analyst I. Managed Cogstone's Northern California office in Grass Valley; authored 90 cultural resources reports; managed field survey, monitoring, and data-recovery projects at all levels of complexity; composed mitigation measures and ensured compliance with relevant regulations; prepared budgets and proposals; coordinated with clients, tribes, and other invested parties; performed data analysis and produced maps in GIS; and conducted regular fieldwork.

SWCA Environmental Consultants, June 2016 – September 2016

Role: Cultural Resources Specialist III

Responsibilities: Served full-time in a decision-making capacity as Cultural Resources Specialist III. Co-authored numerous cultural resources reports; conducted fieldwork including survey, monitoring, and data-recovery; and performed data analysis and produced maps in GIS.

SWCA Environmental Consultants, November 2014 – June 2016

Role: Cultural Resources Specialist I

Resume

Responsibilities: Served as Cultural Resources Specialist I part-time on a project basis. Conducted fieldwork including survey, monitoring, and data-recovery and drafted numerous cultural resources reports and related documents.

Cogstone Resource Management, Inc., July 2015 – June 2016

Role: Archaeological Field Director

Responsibilities: Served in a decision-making capacity as Archaeological Field Director part-time on a project basis. Managed the archaeological monitoring program on the Presidio Parkway Project. Coordinated with the project Compliance Manager to determine the potential significance of archaeological artifacts and features identified by monitors in the field; managed monitoring schedules; and conducted research and reporting on archaeological discoveries made.

Cogstone Resource Management, Inc., July 2013 – July 2015

Role: Archaeologist

Responsibilities: Served as Archaeologist part-time on a project basis. Conducted fieldwork including survey, monitoring, and data-recovery and drafted numerous cultural resources reports and related documents.

Garcia & Associates, November 2013 – June 2016

Role: Staff Archaeologist

Responsibilities: Served as Staff Archaeologist part-time on a project basis. Conducted fieldwork including survey, monitoring, and data-recovery and drafted numerous cultural resources reports and related documents.

BayArcheo, March 2009 – June 2016

Role: Principal Archaeologist/Owner

Responsibilities: Operated own small cultural resources management business, working on various public and private sector projects part-time. Managed numerous small projects and staff, regularly performing fieldwork including survey, monitoring, and data-recovery and authoring numerous cultural resources reports.

AECOM, June 2013 – December 2013

Role: Archaeology Technician II

Responsibilities: Served as Archaeological Technician II part-time on a project basis. Conducted fieldwork including survey, monitoring, and data-recovery and drafted numerous cultural resources reports and related documents.

Relevant Project Experience

Highlands 1102628 PH 1.2 Project, Clearlake Oaks, Lake County, California, 2022

Client: Pacific Gas and Electric Company (PG&E)

Role: Senior Archaeologist/Principal Investigator

Responsibilities: Served as Principal Investigator on the project, part of PG&E's Community Wildfire System Hardening Program (CWSP) to reduce the risk of future wildfire ignitions in Northern California. Conducted a cultural resources records search, literature review, geoarchaeological sensitivity analysis, and prepared technical cultural resource reports. As the project was in California Department of Transportation (Caltrans) right-of-way along State Route (SR) 20, reporting met Caltrans standards.

Middletown 1101-H12-LR548-PH1.2 Project, Whispering Pines, Lake County, California, 2022

Client: PG&E

Role: Senior Archaeologist/Principal Investigator

Responsibilities: Served as Principal Investigator on the project, part of PG&E's Electric Correction Tag Optimization Program (ECOP) which targets sections of overhead primary where electric correction tags

Resume

were found in higher risk circuit protection zones. Conducted a cultural resources records search, literature review, geoarchaeological sensitivity analysis, and prepared technical cultural resource reports. As the project was in Caltrans right-of-way along SR 175, reporting met Caltrans standards.

Nevada Energy Resilience Corridors Project, South Lake Tahoe, California and Humboldt -Toiyabe National Forest, Carson Ranger District, Carson City, Nevada, 2022

Client: U.S. Department of Agriculture/U.S. Forest Service/Lake Tahoe Basin Management Unit

Role: Project Manager/Principal Investigator/GIS Analyst II

Responsibilities: Served as Principal Investigator on the project which proposed the treatment and maintenance of vegetation adjacent to NV Energy electrical infrastructure and power line corridors. Conducted a cultural resources records search, literature review, geoarchaeological sensitivity analysis, reviewed and reported on intensive pedestrian surveys, updated cultural resource records, evaluated 81 cultural resources for NRHP eligibility, and prepared technical inventory and evaluation reports.

Hat Creek Bioenergy Facility Construction Project, Burney, Shasta County, California, 2022

Client: ENPLAN

Role: Project Manager/Principal Investigator/GIS Analyst II

Responsibilities: Served as Principal Investigator on the project which proposed to construct a new bioenergy facility on a property along Hat Creek. Conducted a cultural resources records search, literature review, geoarchaeological sensitivity analysis, reviewed and reported on intensive pedestrian surveys, updated cultural resource records, evaluated the Lorenzo Spur of the McCloud River Railroad- an element of the McCloud River Railroad Historic District- for NRHP/California Register of Historical Resources (CRHR) eligibility, and prepared a technical evaluation report.

Cal-Neva Battery Energy Storage System (BESS)/Photovoltaic Solar Energy System (PSES) Project, Calneva, Lassen County, California, 2020

Client: Cal-Neva Energy

Role: Project Manager/Principal Investigator/GIS Analyst II

Responsibilities: Served as Principal Investigator on the project which proposed to construct a nominal 50-megawatt solar photovoltaic power facility, related substation, and integrated BESS. Conducted a cultural resources records search, literature review, geoarchaeological sensitivity analysis, reviewed and reported on intensive pedestrian surveys, updated cultural resource records, produced an archaeological sensitivity model, evaluated the multicomponent Calneva Station Site for CRHR eligibility, and prepared a technical evaluation report.

Presidio Parkway Project, San Francisco, California., 2014 – 2018

Client: Flatiron Construction Corporation/Kiewit Corporation

Role: Project Manager/Principal Investigator/GIS Analyst I

Responsibilities: Managed the cultural resource monitoring and reporting program for the 6-lane highway construction project in the National Historic Landmark District of the Presidio of San Francisco, which contains numerous prehistoric and historic archaeological sites. Coordinated with the project Compliance Manager to determine the potential significance of archaeological artifacts and features identified by monitors in the field; managed monitoring schedules; conducted research and reporting on archaeological discoveries made; reviewed, edited, and submitted daily field reports produced by archaeological monitors; produced site maps in ArGIS; formally recorded previously undocumented sites; fielded all cultural resource related calls from monitors, the Compliance Manager, the client, the U.S. National Park Service, Caltrans and other parties; met various project related needs, including additional supplies, forms, and staff support; compiled all records, photos, sketches, and other data collected in the field; processed, researched, and cataloged all artifactual recoveries; composed weekly and semi-annual project reports summarizing monitoring activities and critically examining archaeological discoveries; and developed archaeological treatment and testing plans when necessary.

Saratoga Estates Development East Easement Project, El Dorado County, California, 2018

Client: City of El Dorado Hills

Role: Project Manager/Principal Investigator

Responsibilities: Managed all cultural resource tasks, including California Historical Resources Information System (CHRIS) records search, Native American consultations, survey, and draft reporting. Maintained a geodatabase in GIS and produced site maps in ArcMap for inclusion in the report. Provided an initial assessment of a prehistoric bedrock mortar identified in the field as well as recommendations for resource management including archaeological monitoring to ensure that project-related impacts to cultural resources would be reduced to a less than significant level.

Cultural Resources Testing and Monitoring for the Bryte Park Phase II Construction Project, Yolo County, California, 2017 – 2018

Client: City of West Sacramento

Role: Project Manager/Principal Investigator

Responsibilities: Developed and implemented archaeological testing plan in anticipation of park improvements. Managed field crew. Collected processed, researched, documented, and prepared prehistoric and historic artifact recoveries for on-site reburial. Managed consultation with tribal individuals and organizations. Prepared final compliance report.

Burial Recovery and Archaeological Monitoring for the Upper Berryessa Flood Channel Improvements Project, Santa Clara County, California, 2017 – 2018

Client: Suulutaaq, Inc./U.S. Army Corps of Engineers

Role: Project Manager/Principal Investigator/Field Director

Responsibilities: Managed project involving the identification and recovery of nine prehistoric interments. Coordinated with U.S. Army Corps of Engineers archaeologist, Santa Clara Valley Water District planners, Ohlone Most Likely Descendants (MLDs), and construction contractors to develop recovery and treatment approaches. Managed construction monitoring schedules and artifactual and osteological remains, and served as field crew chief. Created GIS maps of all findings and produced a final compliance report.

Archaeological Testing for the Villas on the Park Development Project, Santa Clara County, California, 2017 – 2018

Client: City of San Jose

Role: Project Manager/Principal Investigator

Responsibilities: Designed and implemented an archaeological testing program in support of an urban residential development project in an area of high prehistoric and historic archaeological sensitivity. Managed field crew. Coordinated with City planners and tribal representatives and monitors. Collected processed, researched, documented, and prepared prehistoric and historic artifact recoveries for long-term curation. Authored final compliance report characterizing all findings and present recommendations for resource management.

Extended Phase I Testing for the Meadowview/24th Street Streetscape Improvements Project, Sacramento, California, 2017

Client: Sacramento County

Role: Project Manager/Principal Investigator

Responsibilities: Helped design and implement an XPI testing program on a roadway improvements project managed by Caltrans. Managed subcontractors and led field crew during test excavation at a historic cemetery site. Identified historic artifacts and features. Managed artifact processing, identification, and research. Prepared archaeological sensitivity maps in GIS. Authored final compliance report summarizing all field findings.

Purple Line Extension Project, Los Angeles, California, 2016 – 2017

Client: Los Angeles Metro/Federal Transit Administration

Role: Project Manager/Principal Investigator

Responsibilities: Conducted analysis of historical archaeological features and artifacts dating late 19th to mid-20th century. Prepared artifact analysis section of Metro Division 20, Building 61S report and evaluated features under NRHP criteria.

Midpeninsula Open Space District Survey Project, San Mateo County, California, 2016 – 2017

Client: Midpeninsula Regional Open Space District

Role: Project Manager/Principal Investigator

Responsibilities: Exhaustive archival and historical research along with a CHRIS records search at the Northwest Information Center was conducted to facilitate the archaeological survey of the Driscoll Ranch within the La Honda Creek Open Space Preserve in San Mateo County. A summary of research findings along with detailed maps of known and suspected resources and archaeologically sensitive areas was produced.

Phase I Archaeological Testing of the Building 83 Garden Site, Alcatraz Island, San Francisco County, California, 2016

Client: U.S. National Park Service/Golden Gate National Recreation Area (NPS/GGNRA)

Role: Principal Investigator

Responsibilities: Partnered with U.S. National Park Service Archaeologists in Phase I testing project at the Building 83 Garden Site, a historic deposit of refuse associated with the Occupation of Alcatraz by American Indians of All Tribes between 1969 and 1971. Conducted site reconnaissance and surface collection of artifacts, assisted in site mapping, placed a series of test excavation units, screened and collected diagnostic resources, and contributed to site documentation.

Baseline Archaeological Inventory of Unexplored Parklands Project, Phleger Estate, San Mateo County, California, 2015 – 2016

Client: NPS/GGNRA

Role: Principal Investigator/Project Manager

Responsibilities: Produced a successful grant proposal to the Golden Gate National Parks Conservancy on behalf of the Golden Gate National Recreation Area to initiate baseline archaeological inventory survey on unexplored parklands. Designed a long-term, park-wide inventory strategy, determining the areas of highest priority based on environmental threats, anticipated development, data deficiencies, predictive models of site placement, and other pertinent factors. Conducted an initial field survey of 350 acres in the historic sawmilling district of Phleger Estate, identifying 21 archaeological sites and associated features, documented all new site discoveries in the U.S. National Park Service Archeological Sites Management Information System and on DPR 523 series forms, and produced a thorough inventory report summarizing strategies and findings, and offering recommendations for resource management. Maintained a geodatabase for the park, collected and cataloged diagnostic artifacts, and produced a suite of maps illustrating survey efforts and findings.

Cultural Resources Survey, Phase II Testing/Evaluation, Point Arena Weather Station, Mendocino County, California, 2015 – 2016

Client: NPS

Role: Field Director

Responsibilities: Conducted intensive survey of APE; documented and photographed all built environment resources; identified prehistoric site; led Phase II testing and evaluation efforts, directed field crews; developed a site sensitivity model in GIS to direct project construction; and authored the final Section 106 evaluation report.

Alcatraz Island Archaeological Resource Survey, San Francisco County, California, 2014 – 2015

Client: NPS/GGNRA

Role: Principal Investigator/Project Manager

Responsibilities: Conducted an intensive archaeological survey, site inventory, and condition assessment of archaeological resources on Alcatraz Island- the first comprehensive archaeological survey to be accomplished at the National Historic Landmark Site. Identified and documented numerous historic period archaeological sites.

Black Rock Indigenous Sites Data Recovery and Determination of Eligibility Project, Marin County, California, 2014 – 2015

Client: NPS/GGNRA

Role: Principal Investigator/Project Manager

Responsibilities: Conducted a data recovery program at three prehistoric Coast Miwok shellmidden sites in the Marin Headlands. The project involved intensive pedestrian survey of the region; selective auger testing and controlled excavation at each of the three sites to help determine eligibility for inclusion on the NRHP; laboratory analysis for constituent identification and quantification; cataloging of all artifacts and ecofacts; completion of applicable DPR forms; and final reporting.

Indigenous Archaeological Overview and Assessment, Marin, San Francisco, and San Mateo Counties, California, 2013 – 2014

Client: NPS/GGNRA

Role: Principal Investigator/Project Manager

Responsibilities: Performed a broad overview and assessment of all known indigenous archaeological sites within the legislative bounds of the Golden Gate National Recreation Area. Completed DPR forms for new sites discovered; updated U.S. National Park Service ASMIS records for all resources assessed; and composed an overview report which discusses the historic and scientific significance of the indigenous sites managed by the Park. Outlined critical areas requiring focused survey, and provided a source for the design of future studies and management approaches.

Land's End Lookout, San Francisco County, California, 2011 – 2013

Client: NPS/GGNRA

Role: Principal Investigator/Project Manager

Responsibilities: Led the excavation of the Merrie Way Stands Site, part of a late-19th century amusement-park at Land's End owned and operated by Adolph Sutro. Excavated, mapped, and documented the boundaries, artifact densities, and features of the site, and monitored subgrade construction of the Land's End Lookout complex. Oversaw the collection of thousands of historic artifacts, as well as documented, mapped, researched, processed, and cataloged them. Following the fieldwork portion of the project, supervised volunteers, staff, and interns in the laboratory analysis and processing of all recoveries. Produced a comprehensive multimedia web-report on site history which was incorporated into the U.S. National Park Service website and detailed the findings of all archaeological work conducted.

Select Technical Reports

- 2021. Cultural and Paleontological Resources Assessment for the Costco Commercial Center Development Project in the City of Fresno, Fresno County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources Assessment for the Road Widening at the Bar X Ranch, 20103 South State Highway 29, Middletown, Lake County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural and Paleontological Resources Assessment for the Sacramento State – Placer Center Development Project, Near Roseville, Placer County, California. Natural Investigations Company, Inc., Sacramento, CA.

Resume

- 2021. Cultural and Paleontological Resources Assessment for the Sacramento Area Sewer District-Carollo-Rio Cosumnes Pump Station Rehabilitation Project in Elk Grove, Sacramento County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources and Paleontological Resources Inventory for the Lincoln Regional Airport Improvements Project, City of Lincoln, Placer County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources Inventory for the Pump Outfalls Replacement Project, City of Sacramento, Sacramento County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural and Paleontological Resources Assessment for the Bouldin Island Levee Rehabilitation Project – South Mokelumne River Corridor, Reclamation District 756, Lodi, San Joaquin County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural and Paleontological Resources Assessment for the Diamond Plaza Commercial Development Project, City of Corning, Tehama County, California. Natural Investigations Company, Inc., Sacramento, CA, January.
- 2021. Archaeological Survey Report for the El Dorado Trail Halcon to Camino/US 50 Class 1 Improvements Project, El Dorado County, California. (CML-5925(174)). Prepared for the California Department of Transportation, District 3. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural and Paleontological Resources Assessment for the Sacramento Suburban Water District Well 80 Construction Project, Sacramento, Sacramento County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources Inventory for the Meeks Bay Restoration Project, Meeks Bay, Tahoma, El Dorado County, California. Prepared for: The Tahoe Regional Planning Agency, 128 Market Street, Stateline, NV 89449. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural and Paleontological Resources Assessment for the Connection Slough and Santa Fe Cut Levee Rehabilitation Project, Reclamation District 2028, Bacon Island, San Joaquin County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources Assessment for the Creekview Ranch Development Project, Unincorporated Dry Creek-West Placer Community Area of Placer County, California (Revised 2021). Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Archaeological Survey Report for the Tehama County 99 West and South Main Reconstruction Project, Red Bluff, Tehama County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources Inventory for the Lathrop Consolidated Treatment Facility Surface Water Discharge Project, Lathrop, San Joaquin County, California. Revised to Exclude Archaeological Site. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Cultural Resources Inventory for the Bonanza Mineral Exploration Project in Lemhi County, Idaho. Salmon-Challis National Forest Cultural Resources Project No. SL-21-1841 (R2021041300004). Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Monitoring Plan for the Spring Creek Road Bridge (6C0209) Replacement Project, Shasta County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. ESA Action Plan for the Spring Creek Road Bridge (6C0209) Replacement Project, Shasta County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2021. Finding of No Adverse Effect Without Standard Conditions for the Spring Creek Road Bridge (6C0209) Replacement Project, Shasta County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2020. Cultural Resources Inventory for the Markleeville Sewer Pump Station Relocation and Sewer System Modifications Project, Markleeville, Alpine County, California. Natural Investigations Company, Inc., Sacramento, CA.
- 2020. Cultural Resources Assessment for the UCIP DS ID: 2041 Pipe Removal Project, Sacramento River West Side Levee District, Colusa County, California. Natural Investigations Company, Inc., Sacramento, CA.

Jenna Tanner

ARCHAEOLOGIST, B.A.

EDUCATION

University of California, Santa Cruz, 2015

B.A. Anthropology and Earth Science. Concentrations in Archaeology, Biological Anthropology, and Environmental Geology, 2015.

Undergraduate Thesis: Climate Change and Dune Deflation Effects on Archaeological Sites at Año Nuevo State Park, San Mateo County, California. 2015

Teaching Assistant for Field Geology in Spring 2015, Fall 2015, and Spring 2016

Faunal Researcher for Professor Blackmore, 2013 - 2015

West Valley College, 2015

A.A. Anthropology, 2012
A.A. Sociology, 2013
A.A. Geography, 2013
A.S. Geology, 2013
Certificate. Geographic Information Systems and Global Positioning Systems, 2015

Cabrillo College, 2012

Archaeology Field School, 2012

TECHINICAL SKILLS

Proficient in Windows, Mac OSX, and Linux Operating Systems

Microsoft Office (Word, Excel, and PowerPoint)

Adobe Photoshop

ArcGIS (Collector, Survey123, and Pathfinder for Trimble and iPad Devices), Google Earth, Avenza, and ENVI for Remote Sensing

Jenna has over 12 years of professional experience conducting archaeological investigations in California including research, fieldwork, analysis, and reporting. Her experience includes conducting and leading all phases of fieldwork which includes archaeological monitoring, archaeological survey, faunal and human skeletal remains identification, and paleontological vertebrate and invertebrate identification. Jenna has extensive experience working with the Pacific Gas and Electric (PG&E) through their vegetation management program assisting in hazard tree removal and resource protection and with the SHURG program assisting in electrical system hardening, undergrounding, and remote gridding. She has been involved in supporting reconstruction of utility infrastructure, vegetation management, and debris clean up following catastrophic wildfire disaster events and aided with all phases of projects. Additionally, Jenna has experience in archiving, collections management, outdoor education, and is a Nationally Registered Emergency Medical Technician.

Potter Valley 1105 System Hardening, Mendocino County, CA (March 2023)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian Survey, drafting of cultural maps, and drafting a technical memorandum.

Responsibilities: Jenna conducted a pre-construction pedestrian survey of the project area which included taking survey notes, photographs, and recording archaeological sites within the project area. She drafted the after-survey report detailing the results of the survey and the DPR form for a site record update.

Cargill Pipeline Geotechnical Exploration, Alameda County, CA (March 2023)

Client: Cargill, Inc.

Role on project: Archaeologist

Scope/description: Archaeological Monitoring, drafting of cultural maps, and drafting a technical memorandum.

Responsibilities: Jenna served as an archaeological monitor process within East Bay Regional Park District in San Lorenzo, California to ensure avoidance of known cultural resources within construction zone. She drafted a technical memorandum detailing the results of the bores and submitted GIS data.

Viracocha Wind Energy Project – Sand Hill and Rooney Ranch, Alameda County, CA (November 2022 to April 2023)

Client: Salka Energy

Role on project: Archaeologist

Scope/description: Pedestrian Survey and drafting cultural survey maps.

Responsibilities: Jenna served as a member of the field crew for pedestrian survey for the proposed Sand Hill and Rooney Ranch Wind Energy Project in Livermore, California. In addition, she created all cultural survey maps.

Los Medanos Energy Center, Contra Costa County, CA (October 2022 to February 2023)

Client: Calpine

Role on project: Archaeologist

Jenna Tanner *ARCHAEOLOGIST, B.A.*

CERTIFICATIONS AND TRAININGS

Geographic Information Systems and Global Positioning Systems, 2015

Emergency Medical Technician NREMT Certified. 2011

First Aid/CPR Certified. 2020

Hazwaper, 40 Hour. 2022

AREAS OF EXPERTISE

Faunal and Human Skeletal Remains Analysis

GIS/GPS/Remote Sensing

Vertebrate and Invertebrate Paleontology

Coastal Geology

Fieldwork

OTHER

Total Years of Experience: 12

Office Location: Sacramento, CA

Scope/description: Archaeological monitoring of construction of carbon capture system.

Responsibilities: Jenna served as an archaeological monitor during the construction of a new carbon capture system within the Los Medanos Energy Center in Pittsburg, California to ensure avoidance of known cultural resources within construction zone.

Former Camp Claiborne, Rapides Parish, LA (December 2022)

Client: U.S. Army Corps of Engineers

Role on project: Archaeologist

Scope/description: Pedestrian survey and subsurface testing for cultural resources within a formally used defence testing site.

Responsibilities: Jenna served as a member of the field crew for pedestrian survey and subsurface testing of the area required for the removals of unexploded WWII-era ordnance in Alexandria, Louisiana. In addition, she assisted with running the GPS collector unit, took handwritten notes, took photographs, and recorded one site within the project area.

Middletown 1101 and 1103 System Hardening, Lake County, CA (September 2022-October 2022)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian survey, archaeological monitoring, and drafting of Cultural Resource Constraints Report for the undergrounding of utility structures in Middletown, California.

Responsibilities: Jenna conducted the pre-field research and drafted a Cultural Resources Constraints Report for the undergrounding of the Middletown 1101 and 1103 electrical distribution line in multiple locations throughout Lake County. Following the pre-field research, Jenna conducted a surface pedestrian survey of the project area which included taking survey notes and photographs. She drafted the after-survey report detailing the results of the survey. Jenna returned to monitor active trenching for underground utilities, provided a cultural resource tailboard to all construction crew members, and produced a monitoring report.

Hartley 1101 System Hardening, Lake County, CA (September 2022)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian survey for the undergrounding of utility structures in Lakeport, California.

Responsibilities: Jenna conducted a surface pedestrian survey of the project area which included taking survey notes and photographs. She drafted the after-survey report detailing the results of the survey.

Lower Lake 1101 System Hardening, Lake County, CA (September 2022)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian survey for the undergrounding of utility structures in Lakeport, California.

Responsibilities: Jenna conducted a surface pedestrian survey of the project area which included taking survey notes and photographs. She drafted the after-survey report detailing the results of the survey.

Upper Lake 1101 System Hardening, Lake County, CA (September 2022)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian survey for the undergrounding of utility structures in Upper Lake, California.

Responsibilities: Jenna conducted a surface pedestrian survey of the project area which included taking survey notes and photographs. She drafted the after-survey report detailing the results of the survey.

Konocti 1102 System Hardening, Lake County, CA (August 2022)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian survey for the undergrounding of utility structures in Kelseyville, California.

Responsibilities: Jenna conducted a surface pedestrian survey of the project area which included taking survey notes and photographs. She drafted the after-survey report detailing the results of the survey.

Ignacio-Mare Island Phase 2 Tower Replacement, Napa, Marin, Solano, and Sonoma Counties, CA (May 2022 – June 2022)

Client: Pacific Gas and Electric Company

Role on project: Archaeologist

Scope/description: Pedestrian survey and drafting of the Department of Parks and Recreation archaeological site forms and after survey report for the replacement of transmission towers in Novato, Petaluma, and Sonoma, California.

Responsibilities: Jenna conducted a surface pedestrian survey of the project area which included taking survey notes, recording resources, and photographs. She drafted the after-survey report detailing the results of the survey and drafted the Department of Parks and Recreation archaeological site forms for resources identified within the project area.

Hecate Bonanza Solar, Klamath County, OR (September 2021)

Client: Hecate Energy, LLC

Role on project: Archaeologist

Scope/description: Pedestrian survey for the proposed Hecate Bonanza Solar facility, Bonanza, Oregon.

Responsibilities: Jenna served as a crew member for pedestrian survey, operated the Collector GPS unit, and assisted in recording sites.

Sanborn Solar Expansion Project, Kern County, CA (July 2021)

Client: Sanborn Solar, LLC

Role on project: Archaeologist

Scope/description: Pedestrian survey and drafting of the Department of Parks and Recreation archaeological site forms in the Mojave Desert, California.

Responsibilities: Jenna conducted a surface pedestrian survey of the project area which included taking survey notes, recording resources, and photographs. She drafted the Department of Parks and Recreation archaeological site forms for resources identified within the project area.

Marine Ocean Terminal Concord Military Base, Contra Costa County, CA (July 2021)

Client: U.S. Department of Defense

Role on project: Archaeologist

Scope/description: Archaeological monitoring of construction of a small military facility installation.

Responsibilities: Jenna served as an archaeological monitor during the boring process within the Marine Ocean Terminal Concord Military Base in Concord, California to ensure avoidance of known cultural resources within construction zone. She drafted a monitoring memo detailing the results of the bores and submitted GIS data.

U.S. 20 Chester to Ashton, Fremont County, ID (October 2020 – July 2021)

Client: Idaho Transpiration Department

Role on project: Archaeologist

Scope/description: Pedestrian survey and shovel testing for the widening of the highway and installation of an interchange between Chester and Ashton, Idaho.

Responsibilities: Jenna served as a crew member for survey and subsurface investigations for the replacement of the existing two-lane U.S. 20 roadway with a four-lane roadway and above-ground interchanges between Chester and Ashton in eastern Idaho. She operated the Collector GPS unit and provided her findings in the form of handwritten notes, photographs, and GIS data.

PacifiCorp Klamath Emergency Fire Work within Collier Memorial State Park, Klamath County, OR (December 2020)

Client: PacifiCorp

Role on project: Archaeologist

Scope/description: Archaeological monitoring of emergency FEMA tree removal following a wildfire, Chiloquin, OR.

Responsibilities: Jenna served as an archaeological monitor during emergency FEMA tree removal following a large-scale wildfire. She operated Google Earth and provided her findings in the form of typed monitoring report, photographs, and GIS data.

Blue Marmot Solar Energy Facility, Lake County, OR (September 2020-December 2020)

Client: Blue Marmot Solar Park, LLC

Role on project: Archaeologist

Scope/description: Pedestrian survey and drafted site forms for the survey report for the proposed construction and operation of the Blue Marmot Solar Energy facility in Lakeview, Oregon.

Responsibilities: Jenna served as a crew member for pedestrian survey for the proposed Blue Marmot Solar Energy Facility. She led one of three field crews and operated the Collector GPS unit and assisted in site recording. Jenna then assisted in drafting parts of the survey report and the archaeological site and isolate forms for the project.

Cedar Springs I, II, and III Cultural Resources Mitigation, Converse County, WY (October 2019 – January 2022)

Client: NextEra Energy

Role on project: Archaeologist

Scope/description: Pedestrian survey and shovel testing for known archaeological resources within the planned area of impact in Douglas, Wyoming.

Responsibilities: Jenna served as a crew member for survey and subsurface investigations of five known archaeological site within the grading boundaries for the Cedar Springs Facility project. She operated the Trimble unit and Collector GPS unit

and provided her findings in the form of handwritten notes, photographs, GIS data, and assisted in site recording.

Summit Wind Repower Wind Energy Project, Alameda County, CA (July 2019 to October 2022)

Client: Salka Energy

Role on project: Archaeologist and Paleontologist

Scope/description: Pedestrian survey and archaeological/paleontologically monitoring for the Summit Wind Energy Project in Livermore, California.

Responsibilities: Jenna served as the paleontology and archaeology lead on a large-scale windfarm for the removal of older wind turbines and the site relandscaping and installation of new wind turbines in the Altamont Pass, California. Over the course of four years, Jenna served as a lead for conduct multiple surveys and monitored construction to ensure avoidance of cultural and paleontological resources. She led multiple crews through different phases of the project, operated Google Earth and ArcGIS through a handheld device and provided her findings in the form of monitoring reports, survey reports, handwritten notes, photographs, drafting survey coverage maps and GPS data.

PREVIOUS EXPERIENCE

Archaeologist, Stantec Consulting, Inc., San Jose, California
2021 – Present.

General Overview of Position: Primary responsibilities included conducting archaeological investigations in California, including archaeological monitoring, pedestrian survey, and excavation; authoring over 100 Cultural Resource Constraint Reports for vegetation management and undergrounding programs, over 20 technical memorandums, over 10 After Survey Reports, Reports; served as a quality reviewer for colleagues reports; conducting extensive research; preparing archaeological site forms; fieldwork coordination; completing state resource survey forms; and developing maps. Primary client was Pacific Gas and Electric Company.

Select Projects:

- GPRP Madison Street and Jonathan Street Gas Pipeline Installation, Santa Clara County, California. Role: Archaeologist/Lead Author. Client: Pacific Gas and Electric Company.
- Padre Flat Substation-Panoche 230kV Reconductor Project, BOR Segments, Merced County, California. Role: Archaeologist/Lead Author. Client: Pacific Gas and Electric Company.
- Lucerne 12kV CEMA UKIBLM Vegetation Management Project, Lake County, California. Role: Archaeologist/Lead Author. Client: Pacific Gas and Electric.
- SFPUC Sunol 12kV Vegetation Management Project, Alameda County, California. Role: Archaeologist/Lead Author. Client: Pacific Gas and Electric Company.
- Salinas Street and Merritt Street Gas Pipeline Installation, Monterey County, California. Role: Archaeologist/Lead Author. Client: Pacific Gas and Electric Company.
- M2M Lab Building Project, Moffett Field, Santa Clara County, California. Role: Archaeologist. Client: National Aeronautics and Space Administration and the United States Geological Survey.
- Monterey Substation Line Project, Monterey County, California. Role: Archaeologist/Lead Author. Client: Pacific Gas and Electric Company.

Archaeologist/Paleontologist, Applied Technology and Sciences, San Francisco, California. 2021 – Present.

General Overview of Position: Primary responsibilities included conducting archaeological and paleontological investigations in California, including archaeological and paleontological monitoring, pedestrian survey, and excavation; conducting extensive research; preparing archaeological site forms; fieldwork coordination; completing state resource survey forms; and developing maps.

Select Projects:

- ALA-84 Niles Canyon Safety Improvements, Alameda County, California. Role: Paleontologist. Client: California Department of Transportation, District 4.
- Alameda Creek Bridge Replacement Project, Alameda County, California. Role: Paleontologist. Client: California Department of Transportation, District 4.
- SR-84 Expressway Widening and SR-84/I-680 Interchange Improvements Project, Alameda County, California. Role: Paleontologist. Client: California Department of Transportation, District 4.
- Google 399 West Java and Google Caribbean Projects, Santa Clara County, California. Role: Paleontologist. Client: Google, Sar Regis, and Devcon.
- SCU Complex Fire A.4 Fence Repair Project, Alameda and Santa Clara Counties, California. Role: Archaeologist/Lead Author. Client: San Francisco Public Utilities Commission.
- SMP30 Fissure Project, Alameda County, California. Role: Archaeologist. Client: San Francisco Public Utilities Commission.

Archaeologist, Beckett Environmental Co., Jackson, California. 2021 – 2022.

General Overview of Position: Primary responsibilities included conducting archaeological investigations, including pedestrian survey, and excavation.

Select Projects:

- Mokelumne Community Forest Project, Amador County, California. Role: Archaeologist. Client: Bureau of Land Management.

Archaeologist/Faunal Analyst, Albion Environmental, Santa Cruz, California. 2015-2017.

General Overview of Position: Primary responsibilities included excavation and processing materials; wet and dry screening; lab sorting of excavated materials; sorting of mammal fauna by taxa; archaeological monitoring; and organization of artifacts.

Select Projects:

- Franklin Block 448 Project at former Mission Santa Clara, Santa Clara County, California. Role: Archaeofaunal Analyst/Archaeologist. Client: Santa Clara University.

Field Geology Teaching Assistant, University of California, Santa Cruz. Santa Cruz, California. 2015 – 2016

General Overview of Position: General Overview of Position: While a teaching assistant for three quarters, introduced 25+ undergraduate students to techniques used by professional geologists to develop basic field geology skills of collecting, analyzing, and presenting data in a lecture, laboratory, and field setting. Instructed included basic structural geology and stratigraphy, how to read and interpret geologic maps, how to identify and classify rocks, writing concise and accurate

descriptions, instructed students on how to use a Brunton compass and how to measure stratigraphy with a Jacob's staff, how to prepare a geologic map and cross section, and writing clear and concise scientific papers while working with multiple working hypothesis from what was gathered in the field.

Teaching Assistant, Foothill College Field School. Los Altos, California. 2014

General Overview of Position: Helped oversee and coordinate archaeological field students during survey, excavation, and lab in the Monte Bello Preserve. Assisted students to locate, collect, record, interpret data for the project while surveying and excavating. Oversaw laboratory/processing activities such as cleaning, reconstruction, classification, and cataloguing of artifacts. Provided guidance and leadership to students in faunal analysis, identifying fossils, working with GIS, and lithic analysis.

Faunal Researcher, University of California, Santa Cruz, Blackmore Lab. Santa Cruz, California. 2013 - 2015

General Overview of Position: Logged over 100+ hours analyzing, sorting, and identifying species, element, and human/nonhuman modifications of fauna excavated from Mission San Antonio de Padua. Created and maintained protocols and trainings for incoming student researchers as well as generating and managing all databases.

Bioarcheological Field Technician, Foothill College, San Jose, CA. 2013

General Overview of Position: Contracted through URS Corporation, primary responsibilities included excavation and data recovery of historic burials and resources. Data recovery included the excavation of over 60 burials with in situ analysis and recording all artifacts via notes, profile and plan drawing, photographic and video records. Also performed total station set-up and archaeological survey, artifact analysis, documentation, and packaging artifacts for transfer.

Archaeological/Paleontological Lab Assistant and Teaching Assistant, Foothill College, Los Altos, California. 2013-2015.

General Overview of Position: General collections management and care, processing, and data entry of seven anthropological and three paleontological collections. The collections included Native American cultural material and remains, local invertebrate and vertebrae fossils, artifacts from local historical sites, teaching collections of human remains, and the Castroville Mammoth remains. Responsible for processing human and the Castroville Mammoth remains and cataloging.

Appendix C

Records Search Results

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

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Appendix D

Native American Coordination



NATIVE AMERICAN HERITAGE COMMISSION

March 30, 2023

Tim Spillane
Jacobs Engineering Company, Inc.

Via Email to: tim.spillane@jacobs.com

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Sara Dutschke
Miwok

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Buffy McQuillen
Yokayo Pomo, Yuki,
Nomlaki

COMMISSIONER
Wayne Nelson
Luiseño

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
[VAVANT]

COMMISSIONER
[VACANT]

EXECUTIVE SECRETARY
**Raymond C.
Hitchcock**
Miwok/Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

Re: Calpine Energy Center Addendum Project, Sutter County

Dear Mr. Spillane:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Pricilla.Torres-Fuentes@nahc.ca.gov.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

**Native American Heritage Commission
Native American Contact List
Sutter County
3/30/2023**

***Cachil Dehe Band of Wintun
Indians of the Colusa Indian
Community***

Clifford Mota, Tribal Preservation
Liaison
3730 Highway 45 Wintun
Colusa, CA, 95932
Phone: (530) 458 - 8231
cmota@colusa-nsn.gov

***United Auburn Indian
Community of the Auburn
Rancheria***

Gene Whitehouse, Chairperson
10720 Indian Hill Road Maidu
Auburn, CA, 95603 Miwok
Phone: (530) 883 - 2390
Fax: (530) 883-2380
bguth@auburnrancheria.com

***Cachil Dehe Band of Wintun
Indians of the Colusa Indian
Community***

Daniel Gomez, Chairman
3730 Highway 45 Wintun
Colusa, CA, 95932
Phone: (530) 458 - 8231
dgomez@colusa-nsn.gov

Wilton Rancheria

Jesus Tarango, Chairperson
9728 Kent Street Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
Fax: (916) 683-6015
jtarango@wiltonrancheria-nsn.gov

***Estom Yumeka Maidu Tribe of
the Enterprise Rancheria***

Glenda Nelson, Chairperson
2133 Monte Vista Avenue Maidu
Oroville, CA, 95966
Phone: (530) 532 - 9214
Fax: (530) 532-1768
info@enterpriserancheria.org

Wilton Rancheria

Dahlton Brown, Director of
Administration
9728 Kent Street Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
dbrown@wiltonrancheria-nsn.gov

***Shingle Springs Band of Miwok
Indians***

Regina Cuellar, Chairperson
P.O. Box 1340 Maidu
Shingle Springs, CA, 95682 Miwok
Phone: (530) 387 - 4970
Fax: (530) 387-8067
rcuellar@ssband.org

Wilton Rancheria

Steven Hutchason, THPO
9728 Kent Street Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
Fax: (916) 863-6015
shutchason@wiltonrancheria-
nsn.gov

***Pakan'yani Maidu of Strawberry
Valley Rancheria***

Tina Goodwin, Chairperson
P.O. Box 984 Maidu
Marysville, CA, 95901 Miwok
Phone: (617) 417 - 2166
tinagoodwin@washoetanf.org

Yocha Dehe Wintun Nation

Anthony Roberts, Chairperson
P.O. Box 18 Patwin
Brooks, CA, 95606
Phone: (530) 796 - 3400
thpo@yochadehe-nsn.gov

Yocha Dehe Wintun Nation

Yvonne Perkins, THPO, Cultural
Resources Chairman
P.O. Box 18 Patwin
Brooks, CA, 95606
Phone: (530) 796 - 3400
thpo@yochadehe-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Calpine Energy Center Addendum Project, Sutter County.

**Native American Heritage Commission
Native American Contact List
Sutter County
3/30/2023**

Yocha Dehe Wintun Nation

Laverne Bill, Director of Cultural
Resources

P.O. Box 18 Patwin

Brooks, CA, 95606

Phone: (530) 796 - 3400

thpo@yochadehe-nsn.gov

***Nevada City Rancheria Nisenan
Tribe***

Shelly Covert, Tribal Secretary

P.O. Box 2226 Nisenan

Nevada City, CA, 95959

Phone: (530) 570 - 0846

shelly@nevadacityrancheria.org

***Nevada City Rancheria Nisenan
Tribe***

Saxon Thomas, Tribal Council
Member

P.O. Box 2226 Nisenan

Nevada City, CA, 95959

Phone: (530) 570 - 0846

shelly@nevadacityrancheria.org

***Nevada City Rancheria Nisenan
Tribe***

Richard Johnson, Chairman

P.O. Box 2624 Nisenan

Nevada City, CA, 95959

Phone: (530) 570 - 0846

shelly@nevadacityrancheria.org

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Calpine Energy Center Addendum Project, Sutter County.