APPENDIX G

Phase 1 Archeological Study

PHASE I ARCHAEOLOGICAL STUDY

PACIFIC GAS & ELECTRIC COMPANY
L-131Y AND L-131Z THREE MILE SLOUGH CROSSINGS PIPELINE REMEDIATION PROJECT
SACRAMENTO COUNTY, CALIFORNIA

Project No. 2402-1171

Prepared for:

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Gas Transmission, Environmental Management
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OCTOBER 2024

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

Non-Confidential Version

NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

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Report Date: October 2024

Report Title: Phase I Archaeological Study, PG&E L-131Y and L-131Z Three Mile Slough Crossings Pipeline Remediation Project, Sacramento County, California

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Key words: Sacramento County, Three Mile Slough, Eastern Miwok, plains Miwok, Sacramento River Delta, Brannan Island

MANAGEMENT SUMMARY

On behalf of Pacific Gas and Electric (PG&E), at the request of Longitude 123, Padre Associates, Inc. (Padre) prepared the following Phase I Archaeological Study in support of PG&E's L-131Y and L-131Z Three Mile Slough Crossings Pipeline Remediation Project (Project) in Sacramento County, California (Project site). The proposed Project involves the remediation of two existing natural gas transmission pipelines and the removal of two previously abandoned pipelines that cross Three Mile Slough between the Brannan Island State Recreation Area and Sherman Island.

In anticipation of permitting through the United States Army Corps of Engineers (USACE) and the California State Lands Commission (CSLC), the archaeological study was conducted in compliance with requirements of the California Environmental Quality Act, as amended (CEQA Public Resources Code Section 21000 et seq.) and Section 106 of the National Historic Preservation Act and its implementing regulations, as amended (36 CFR Part 800). The purpose of the study was to identify all historic properties / historical resources that may be affected / impacted by Project activities and conduct an effects / impacts analysis for any historic properties / historical resources within the Project Area of Potential Effects (APE) / Project Area Limits. This report summarizes the results of a Phase I pedestrian survey, archaeological records search, and Sacred Lands File search, and will determine Project impacts on cultural resources. Additionally, the Section 106 regulatory term Project APE will be synonymous with the CEQA term Project Area Limits, and for the sake of clarity only the term Project APE is used throughout this report.

For the purposes of this report, the Project APE refers to all areas that are considered for construction, access, and staging. The Area of Direct Impact (ADI) is smaller and limited to only the specific areas subject to planned ground disturbance.

[redacted] Research also revealed that 37 cultural resource studies have been completed within a 0.5-mile radius, 12 of which included portions of the Project APE.

Padre's request for a Sacred Lands File search at the Native American Heritage Commission (NAHC) did not identify any sacred sites within the Project APE. All remaining tribal consultation will be conducted by the USACE, Sacramento District.

A Padre Staff Archaeologist conducted an intensive pedestrian survey of the Project APE on August 14 and 15, 2024. Ground visibility varied from fair to excellent. No new cultural resources were observed during the survey.

Padre also reviewed a buried site sensitivity study previously prepared by Far Western in 2013 to assess the likelihood for subsurface archaeological materials within the Project APE. Based on the analysis completed in 2013, the northern Project APE was historically a swampy portion of the Sacramento-San Joaquin Delta and did not represent a formerly stable land surface that would have been available for prehistoric human occupation. In the late-1920s, the swamp was covered by 20 to 40 feet of sediments dredged from the Sacramento River. Thus, the potential to encounter buried archaeological resources is low.

[redacted]

The Project ADI within the [redacted] and the [redacted] has been previously impacted by the installation of the existing pipeline, road construction, and levee maintenance. As designed, the proposed Project will not cause any new impacts to these resources, and once ground disturbance is complete, the Project ADI will be backfilled and restored to pre-Project contours and condition. This will result in no change to the current conditions of either the [redacted] or the [redacted]. Additionally, the Project will not cause destruction or damage to either property, nor change the function or design. No change in setting will occur, as the properties will be returned to their pre-Project status. Finally, the Project will not result in the sale or neglect of a historic property.

Thus, the Project will avoid adverse effects to the [redacted] because the Project ADI will be returned to its prior condition. Therefore, Padre recommends a finding of **No Adverse Effect** for the Project and recommends no further archaeological work. If the Project footprint changes or if changes in the Project description have the potential to impact identified cultural resources, then additional work may be necessary.

The buried site sensitivity analysis indicates a low potential for buried sites within the Project APE. In the event of inadvertent discoveries of cultural resources during the course of Project-related ground disturbance activities within the Project APE, a protocol should be implemented that provides for consideration and treatment of the find pursuant to regulation 36 CFR 800.13 (Post-Review Discoveries). Such measures include stopping ground-disturbing activity near the find, notification of PG&E's Cultural Resources Specialist, assessment of the nature and extent of the resource including its possible eligibility for listing in the NRHP or California Register of Historical Resources (CRHR), and subsequent recordation and notification based upon the results of the assessment. In the event that human remains are encountered during the proposed project, the provisions outlined in Section 7050.5 of the California Health and Safety Code must be followed.

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APPENDICES

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1.0 INTRODUCTION

On behalf of Pacific Gas and Electric (PG&E), at the request of Longitude 123, Padre Associates, Inc. (Padre) has completed a Phase I Archaeological Study in support of PG&E's L-131Y and L-131Z Three Mile Slough Crossings Pipeline Remediation Project (Project) in Sacramento County, California (Project site).

Padre Staff Archaeologist Christopher J. Letter conducted the Phase I pedestrian survey of the Project Area of Potential Effect (APE) on August 14 and 15, 2024 and was overseen by Padre Senior Archaeologist Rachael J. Letter, M.S., RPA. Ms. Letter meets the U.S. Secretary of the Interior's Historic Preservation Professional Qualification Standards as outlined in 36 Code of Federal Regulations (CFR) 61.

The remainder of this section provides the Project description and location; Section 2.0 discusses the regulatory framework; Section 3.0 provides the environmental, ethnographic and archaeological overviews for the region; Section 4.0 describes the background research; Section 5.0 presents the field methodology and results; Section 6.0 provides conclusions and recommendations; and references are listed in Section 7.0. Appendix A contains the Project maps and Appendix B presents the Sacred Lands File search results.

1.1 PROJECT LOCATION

The Project APE is located within the *Jersey Island, California* United States Geological Survey (USGS) 7.5-Minute Series topographic quadrangle maps. Specifically, the Project is located within Sections 12 and 13 of Township 2 North, Range 2 East and Sections 7 and 18 of Township 2 North, Range 3 East in Sacramento County, California (Appendix A: Plate 1). The approximate elevation range is 2 to 27 feet above mean sea level. The Project APE crosses Three Mile Slough between the Brannan Island State Recreation Area and Sherman Island near the confluence with the Sacramento River.

1.2 PROJECT DESCRIPTION

The proposed Project involves the remediation of two existing natural gas transmission pipelines and the removal of two previously abandoned pipelines that cross Three Mile Slough between the Brannan Island State Recreation Area and Sherman Island.

1.2.1 Pipeline Remediation

The proposed remediation of the shallowly buried pipeline sections consists of placing rock over the pipelines to achieve the prescribed minimum five feet of cover. Prior to placing rock above the pipeline, PG&E will reduce the operating pressure of the L-131Y and L-131Z pipelines to mitigate potential consequences in the unlikely event that the rock placement operation should damage the pipeline. The pipeline will be returned to normal operating pressure after the rock placement has been completed.

The proposed rock placement will begin with placement of approximately 100 cubic yards of gravel or three-quarters-of-an-inch crushed rock around the exposed pipeline to a point approximately 1 to 2 feet above the top of the pipeline to minimize the potential for larger rocks damaging the pipeline coating. Approximately 950 cubic yards of larger rock approximately matching the size of that found on the surrounding slough bed (9-inch) will then be placed above

the pipelines to achieve the prescribed minimum five feet of cover. The estimated total volume of rock to be placed is approximately 1050 cubic yards, and the estimated area over which rock will be placed is approximately 5, 706 square feet. The cross-section of the proposed rock placement would have an approximately 5-foot-wide flat top, and then be sloped at approximately 1.8 to 1 (horizontal to vertical) to a point where it meets the existing grade.

1.2.2 Pipeline Decommissioning and Removal

The proposed decommissioning scope of work for the two 10-inch-diameter L-131 pipelines that were previously filled with cement and abandoned in place is complete removal of the pipelines beneath the slough, and removal of the pipelines from the waterside slope of the Sherman Island Levee and the north bank of the slough. As-built documentation provided by PG&E indicates that the pipelines were previously removed from the levee crown. The segments that were previously abandoned in the landside slope and south of the landside levee toe are not within the scope of this project. These segments will remain filled with cement and abandoned in place. Final site restoration will be performed once decommissioning has been concluded.

Removal of the terrestrial pipeline sections, which are located on the north bank of the slough and the waterside slope of the Sherman Island levee located on the south side of the slough, will be performed using excavators. Vegetation will be removed from above the pipelines and adjacent to the planned excavation areas as needed to allow access for excavators and other equipment.

Excavators will be used to excavate the soil above and adjacent to the pipelines to be removed to fully expose the pipelines. Topsoil and riprap will be stockpiled separately from other excavation spoils to be replaced last. The terrestrial segments of the pipelines will be cut into sections using an excavator-mounted shear attachment, a hand-operated plasma cutter, or a saw designed to cut through both steel and concrete. Pipeline segments will then be picked up using an excavator with a hydraulic thumb or grapple attachment and loaded onto trucks for transportation to an off-site disposal facility.

Once the terrestrial pipeline removal is complete, excavations will be backfilled and compacted using the native spoils that were removed during excavation. Additional fill material may be imported as needed to restore the excavations to the pre-project contours. The excavation on the north bank will be compacted to match the relative compaction of adjacent undisturbed soils. The excavations on the Sherman Island levee waterside slope will be keyed or benched prior to backfill and will be backfilled in 4 to 6-inch lifts. Each layer will be compacted to at least 90%. Separately stockpiled topsoil or riprap will be placed last to match the pre-project conditions.

The previously abandoned L-131 pipelines are buried approximately 7 to 12 feet deep across much of the slough. Since the L-131 pipelines were previously filled with cement, removal will require excavation for most of their length. Underwater excavation will be performed using a submersible excavation pump narrowly following the buried pipeline alignment. Underwater excavations or disturbances to the riverbed that result from the submarine pipeline removal are expected to return to pre-Project conditions through the side-casting and natural hydrogeomorphic processes.

The terrestrial project worksites will be restored to pre-project conditions, including reseeding of vegetation and restoration of fences or other improvements that may have been

impacted by decommissioning activities. Disturbed portions of the levee slopes that are not covered with riprap will be reseeded with native vegetation.

1.3 PROJECT AREA OF POTENTIAL EFFECT

For the purposes of this report, the Project APE refers to all areas that are considered for construction, access, and staging, and includes the boundaries of identified cultural resources that overlap access roads and/or the Area of Direct Impact (ADI). The Project ADI is smaller and limited to only the specific areas subject to planned ground disturbance and all staging areas (Appendix A: Plate 2).

2.0 REGULATORY FRAMEWORK

This report complies with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, (54 United States Code [U.S.C.] § 300101 to 307108 [2014]) and its implementing regulations (36 Code of Federal Regulations [C.F.R.] §800 [2012]). The Project falls under the jurisdiction of the USACE and requires a permit under Section 404 of the Clean Water Act (33 USC 1344) and 408 Permission under Section 14 of the Rivers and Harbors Act (33 USC 408), which is a federal undertaking. Additionally, it is anticipated that the Project will require permits from the California State Lands Commission and other state agencies including the Central Valley Flood Protection Board, California Department of Fish and Wildlife, and the Regional Water Quality Control Board, which require compliance with the California Environmental Quality Act, as amended (CEQA Public Resources Code Section 21000 et seq.). The following regulatory framework describes the applicable federal and state statutes pertaining to the protection of archaeological resources.

2.1 NATIONAL HISTORIC PRESERVATION ACT OF 1966

Section 106 of the NHPA requires federal agencies with either direct or indirect jurisdiction over a proposed action to take into account the effect of their actions on historic properties. The United States Secretary of the Interior has also published a set of Standards and Guidelines for Archaeology and Historic Preservation, which describe suitable professional methods and techniques used to recover and preserve archaeological and historic properties.

Regulations revised in 1997 (36 CFR Part 800 et. seq.) set forth procedures to be followed for determining eligibility of properties for the National Register of Historic Places (NRHP). The eligibility criteria and process are used by federal, state, and local agencies in the evaluation of the significance of cultural resources. Revisions to Section 106 in 1999 emphasized the importance of Native American consultation.

36 CFR §800.16(l)(1) states:

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

Section 106 of NHPA also requires federal agencies that provide funding or approval authority to take into account effects of undertakings on historic properties and to allow the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on those undertakings, following these regulations (36 CFR Part 800). To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP.

2.1.1 National Register of Historic Places

In order for a property to be considered for inclusion in the NRHP, it must meet the criteria for evaluation set forth in 36 CFR 60.4, as follows:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- that are associated with events that have made a significant contribution to the broad patterns of our history (Criterion A); or
- that are associated with the lives of persons significant in our past (Criterion B); or
- that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C); or
- that have yielded, or may be likely to yield, information important in prehistory or history (Criterion D).

Cultural resources integrity is determined using the NRHP's seven aspects of integrity at 36 CFR 60.4, which state that a historic property must not only be shown to be significant under the National Register criteria, but it also must retain historic integrity. The seven aspects of integrity include location, design, setting, materials, workmanship, feeling, and association. A property must meet one or more of the Criteria for Evaluation before a determination can be made about its integrity (National Register Bulletin 15).

2.2 STATE REGULATIONS

2.2.1 California Environment Quality Act (CEQA)

CEQA statute and guidelines include procedures for identifying, analyzing, and disclosing potential adverse impacts to historical resources, which include all resources listed in or formally determined eligible for the California Register of Historical Resources (CRHR) or local registers. CEQA further defines a "historical resource" as a resource that meets any of the following criteria:

- A resource listed in, or determined to be eligible for listing in, the CRHR;
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code, unless the preponderance of evidence demonstrates that it is not historically or culturally significant;
- A resource identified as significant (i.e., rated 1-5) in a historical resource survey meeting the requirements of Public Resource Code Section 5024.1(g) (Department of Parks and Recreation Form [DPR] 523), unless the preponderance of evidence demonstrates that it is not historically or culturally significant; or
- Any object, building, structure, site, area, place, record or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California, provided the determination is supported by substantial evidence in light of the whole record. Generally, a resource is considered "historically significant" if it meets the criteria for listing on the CRHR (CEQA Guidelines Section 15064.5).

2.2.2 California Register of Historical Resources

CRHR Criteria of Evaluation.

The CRHR is a listing of California resources that are significant within the context of California's history. The CRHR is a state-wide program of similar scope to the National Register Historic Places (NRHP). In addition, properties designated under municipal or county ordinances are eligible for listing in the CRHR. A historic resource must be significant at the local, state, or national level under one or more of the following criteria that are defined in the California Code of Regulations Title 14, Chapter 11.5, Section 4850:

- It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
- It is associated with the lives of persons important to local, California, or national history; or
- It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

The CRHR criteria are similar to NRHP criteria, and are tied to CEQA, as any resource that meets the above criteria is considered an historical resource under CEQA.

2.3 REGULATIONS CONCERNING DISCOVERY OF HUMAN REMAINS

California Public Resources Code §5097.98 (Notification of Native American human remains, descendants; disposition of human remains and associated grave goods) mandates that the lead agency adhere to the following regulations when a project results in the identification or disturbance of Native American human remains:

(a) Whenever the commission receives notification of a discovery of Native American human remains from a county coroner pursuant to subdivision (c) of Section 7050.5 of the Health and Safety Code, it shall immediately notify those persons it believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 48 hours of their notification by the Native American Heritage Commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

(b) Whenever the commission is unable to identify a descendant, or the descendant identified fails to make a recommendation, or the landowner or his or her authorized representative

rejects the recommendation of the descendant, and the mediation provided for in subdivision (k) of Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance.

(c) Notwithstanding the provisions of Section 5097.9, the provisions of this section (including those actions taken by the landowner or his or her authorized representative to implement this section), and any action taken to implement an agreement developed pursuant to subdivision (l) of Section 5097.94, shall be exempt from the requirements of the California Environmental Quality Act (Division 13, commencing with Section 21000).

(d) Notwithstanding the provisions of Section 30244, the provisions of this section (including those actions taken by the landowner or his or her authorized representative to implement this section), and any action taken to implement an agreement developed pursuant to subdivision (1) of Section 5097.94 shall be exempt from the requirements of the California Coastal Act of 1976 (Division 20, commencing with Section 30000).

3.0 NATURAL AND CULTURAL OVERVIEW

3.1 ENVIRONMENTAL SETTING

The Project APE is located within the Great Valley geomorphic province, which is characterized by a river outwash plain spanning an area that is approximately 50 miles wide and 400 miles long. The Great Valley is bordered to the west by the Coast Range, and to the east by the Sierra Nevada range. Both the Sacramento and San Joaquin valleys, as well as their respective rivers, are enclosed within the larger Great Valley. During the Jurassic and Cretaceous periods, the Great Valley was a marine environment, constituting a deep-water inland arm of the Pacific Ocean. Over time the valley was filled with finely textured marine sediments, and later by river and flood (alluvial) deposits.

Specifically, the Project APE is located within the Sacramento-San Joaquin River Delta, a large inland river delta consisting of a network of shallow channels and marshy islands at the confluence of the Sacramento and San Joaquin Rivers (Pierce, 1988). The Sacramento-San Joaquin River Delta formed toward the end of the Pleistocene, as rising sea levels and associated slowing of river currents caused wetlands to expand and river sediments to accumulate. Over the next several thousand years, the accumulation of sediment continued, eventually forming natural levees composed of thick deposits of peat, sand, and silt. Until the mid-nineteenth century, settlement in the area was limited because of the shortage of solid ground and constantly shifting banks of sand and organic material; however, there is evidence that Native American groups have occupied this area for thousands of years (Garlignhouse et al., 2017).

The Delta region is characterized by a mild Mediterranean climate where summers are virtually rainless. The region receives on average 14 to 20 inches of annual precipitation, mostly from December to March. Summertime temperatures are moderated, particularly in the evenings, by the prevailing winds from the west. Average July temperatures are slightly higher in the east compared to the western Delta. Temperatures rarely reach freezing in the winter and tend to be no lower than the mid to low 40 degrees Fahrenheit (CDWR, 2009).

Historically, the Delta consisted of hundreds of miles of tidally influenced sloughs and channels and hundreds of thousands of acres of marsh and overflow land. At one time, the Delta supported hundreds of species, including the grizzly bear, tule elk, and gray wolf. As land reclamation took place and levees were built, the ecosystem changed. More than 90 percent of the marshland was converted to farms. The grizzly bear and gray wolf no longer reside in the Delta, but a population of tule elk has been established in the Suisun Marsh. The numbers of birds using the Delta have declined as well due to land reclamation, although changes in cropping patterns have allowed populations of some species to increase (CDWR, 2009).

The Project APE is located south of the City of Rio Vista, between Brannan Island and Sherman Island. The surrounding area consists primarily of agricultural and developed land. A recreational area is located on the north and western sides of Three Mile Slough and the eastern and southern sides of the slough are comprised of fields used for agriculture. Wild oats and annual brome grasslands were observed on Sherman Island along the southern levee slope of Sherman Island East Levee Road and throughout the majority of the upland area on Brannan Island. Along the south bank of Three Mile Slough, California sycamore and coast live oak riparian woodland

was observed along the shoreline. On the north bank of Three Mile Slough, sandbar willow thicket was observed along the steep banks.

Sediments within the Project APE generally consist of multiple constituents related to floodplains, backswamps and freshwater marshes. Soils on the north side of Three Mile Slough are Xeropsamment, one to 15 percent slopes, which consist of artificial fill deposited over the past 87 years (SoilWeb, 2024; Thomas, 2013). Soils on the south side of Three Mile Slough are Egbert clay, zero to two percent slopes, a very deep, poorly drained soil formed in alluvium from mixed sources that typically form in basins of river deltas (SoilWeb, 2024).

3.2 ARCHAEOLOGICAL CONTEXT

Archaeologists working in the Delta region of California's Central Valley have generally recognized four major precontact periods of cultural adaptation within the last 10,000 years: Paleo-Indian, Windmiller Pattern, Berkeley Pattern, the Meganos Tradition (an amalgamation of the Windmiller and Berkeley patterns), and the Augustine Pattern.

3.2.1 Paleo-Indian Period (c. 10,000 – c. 4,500 Before Present [B.P.])

Due to the rapid accumulation of alluvial (stream-deposited) sediments that occurred during the late Holocene epoch, there exists very little archaeological data regarding early human occupation of the Delta region of the Central Valley during the "Paleo-Indian" period (Ragir, 1972). While humans likely inhabited the region as early as 10,000 years ago, and possibly earlier, physical evidence of these early occupations would likely be deeply buried. However, traces of human activity during this period have been identified in and around the Central Valley. Archaeological remains from the Paleo-Indian period have been grouped into what is called the Farmington Complex, which is characterized by core tools and large, reworked percussion flakes (large chunks removed from a stone using blunt force). Populations during this time were likely small and mobile, and the subsistence strategy employed by these early peoples is generally thought to be centered around the exploitation of large game.

3.2.2 Windmiller Pattern (Early Period c. 4,500 – c. 2,500 B.P.)

The human settlement strategy of the Windmiller Pattern in the Central Valley was predominantly riverine, with most sites found on the valley floor along rivers or marshes. Other Windmiller Pattern sites have been identified atop small knolls above prehistoric floodplains (Martin and Self, 2002). The archaeological record contains examples of numerous projectile point forms and ground stone artifacts, which are associated with processing wild seeds and acorns (Ascent Environmental, 2018). Mortuary practices of the Windmiller Pattern typically involved burial mounds. Specific items found in association with Windmiller Pattern burials include large, stemmed-type projectile points, fishing weights and bone hooks, stone pipes, charmstones, quartz crystal, red ocher pigment, and shell beads.

3.2.3 Berkeley Pattern (Middle Period c. 2,500 – c. 1,500 B.P.)

Berkeley Pattern sites display a trend towards a more specialized economy that procured seeds for dietary purposes. The distribution of Berkeley Pattern sites displays a more diverse environmental range, although riverine settings are still common. Deeply stratified midden deposits with milling and ground stone artifacts are common to Berkeley Pattern sites, indicating prolonged occupations spanning multiple generations. Berkeley Pattern sites contain projectile

points predominantly made from obsidian and are non-stemmed in form, becoming progressively smaller and lighter over time and culminating in the introduction of the bow-and-arrow during the late precontact period. There is a general reduction of mortuary goods with burials; however, red ocher pigment is still found spread over burials (Fredrickson, 1973; Moratto, 1984). If mortuary goods are present, they are often utilitarian in nature and include few ornamental or ritual objects.

3.2.1 Meganos Tradition (ca. 1,500 B.P. – ca. 1,000 B.P.)

A cultural tradition resembling an amalgamation of Windmiller Pattern and Berkeley Pattern traits was established between the tidal marsh people of the south San Francisco Bay and those to the north. Bennyhoff (Hughes, 1994) calls this tradition *Meganos*, the Spanish word for “sand mound,” due to the abundance of sand mound burials found in area sites. Other cultural traits associated with the Meganos Tradition include marine snail saucer and saddle beads, and increased occurrences of otter bone in habitation and resource processing sites (Milliken et al., 2007). The Meganos Tradition is indicative of a semi-sedentary settlement arrangement, marked by increased seasonal movement of villages (Garlignhouse et al., 2017). During the upper Middle Period, the Meganos Tradition extended into the Fremont Plain of the southeast Bay and mixed with the populations in the Santa Clara Valley.

3.2.4 Augustine Pattern (Late Period c. 1,500 – c. 150 B.P.)

The Augustine Pattern is characterized by a shift in the general subsistence pattern, specifically the introduction of the bow-and-arrow for hunting and acorns becoming the dominant food resource. This Pattern is typified by increased population size, expanded trade and exchange networks, and great elaboration of ceremonial and social organization, which includes the development of social stratification. Other traits associated with the Augustine Pattern are increased sedentary villages and a monetary economy that exchanged beads as currency (City of Davis, 2000). Mortuary practices continued to use flexed positioning with variable orientation, but burials included less red ocher. The number of cremations also significantly increased and were widespread at this time (Moratto, 1984).

3.3 ETHNOGRAPHIC CONTEXT

The Project APE is located within territory traditionally associated with the Eastern Miwok (Kroeber, 1925). The area from present Walnut Creek in Contra Costa County and the Delta, along the lower Mokelumne and Cosumnes Rivers and along the Sacramento River from present Rio Vista to Freeport, the foothill and mountain areas of the upper Mokelumne River and Calaveras River watersheds, the upper Stanislaus River and Tuolumne River watersheds, and the upper Merced River and Chowchilla River watersheds, respectively has been home to the many cultures and bands of the Eastern Miwok people for thousands of years (Levy, 1978; Shipley, 1978). These bands and communities, including the Bay, Plains, Northern Sierra, Central Sierra, and Southern Sierra Miwok were diverse and thriving throughout time until the Spanish invasion and establishment of the mission system.

No one Miwok tribal organization encompassed all the peoples speaking Miwokan languages, nor was there a single tribal organization that encompassed an entire division. Both sides of the Sacramento River, from approximately 5 miles south of its confluence with the American River, downstream to Rio Vista, were occupied by the Plains Miwok (Bennyhoff, 1977). Today, Native people of Miwok descent continue to inhabit their ancestral homeland and revitalize

their culture, protecting and caring for the land and fighting for access to practice their culture in a highly altered and developed landscape.

Prior to western colonization, the Miwok territory encompassed a wide range of environments, some rich enough to support permanent villages, others less abundant and necessitating a more mobile way of life. Tribelets were the predominant political unit among the Miwok. Each tribelet occupied and maintained distinct boundaries that were generally recognized and respected by neighboring tribelets (Bennyhoff, 1977). Within each tribelet there were lineages and settlements between 20 and 300 persons with the larger villages along the rivers and San Francisco Bay (Garlignhouse et al., 2017). Within the Rio Vista area, two such tribelets have been documented. *Anizumne*, a tribelet of approximately 250 individuals, was likely located approximately 1 mile north of the present-day city of Rio Vista. The second tribelet, *Ompin*, was located south of Rio Vista, and contained a smaller population than *Anizumne*.

Aside from tobacco, the Eastern Miwok did not cultivate plants or, aside from the dog, domesticate animals (Levy, 1978). Subsistence was primarily focused on gathering wild plant foods such as acorn (*Quercus* spp.), buckeye (*Aesculus californica*), hazelnut (*Corylus cornuta* var. *californica*), nuts from the digger pine (*Pinus sabiniana*), and bulbs from various types of *Brodiaea*, all of which would be supplemented by meat from large mammals such as mule deer (*Odocoileus hemionus*), tule elk (*Cervus nannodes*), and pronghorn antelope (*Antilocarpa americana*). Other important food sources, particularly for the Plains Miwok, included freshwater fish such as lampreys and sturgeon and game birds such as quail and various species of waterfowl. Salmon was preeminent among the Eastern Miwok, with trout holding a similar preeminence for those living in the mountains. Fishing was accomplished through a variety of techniques that included cast netting, drag nets towed behind tule rafts, stationary nets placed across narrow waterways and, for larger species such as salmon, harpooning and spearing. The Bay Miwok, in particular, used milkweed (*Asclepias* spp.), California fremontia (*Fremontodendron californicum*), and Indian hemp (*Apocynum cannabinum*) in net-making for fishing activities (Levy, 1978). Freshwater clams, mussel, and land snail were also gathered from riverine environments (Levy, 1978).

The Miwok primarily used the bow and arrow for both large game hunting and warfare. Bows were generally sinew-backed, and large-game hunting arrows would often feature a detachable foreshaft that would remain in the prey even if the main shaft were broken or removed (Aginsky, 1943). Miwok inhabiting lower elevations would select wood from ash (*Fraxinus latifolia*), oak (*Quercus* spp.*),* willow (*Salix* spp.), pepperwood, maple, and hazel to construct their arrow shafts (Aginsky, 1943; Levy, 1978).

Miwok basketry could be either twined or coiled, with the twined variety consisting of seed beaters, burden baskets, cradles, and netted rackets used in a lacrosse-like, women-only ball game called *a'mta*, *ama'tup,* or *sakumship* (Barrett and Gifford, 1933). The coiled technique was often employed for crafting winnowing trays (a flat, woven tray used for separating grain from chaff), parching baskets, and various types of truncated conical baskets (Levy, 1978). Other Miwok textiles included tule mats, which were used extensively by the Plains Miwok.

The Eastern Miwok made several distinct types of dwellings. The Bay Miwok utilized a thatched structure, which used poles to form an inner, conical frame, over which was arranged thatching of brush, grass, or tule (Levy, 1978). Other Miwok structures included assembly houses

which were 40 to 50 feet in diameter, semisubterranean, and used for social and ritual community gatherings; a smaller circular structure composed of brush that would be used for mourning ceremonies held during the summer months; and conical sweathouses, which ranged from 6 to 15 feet in diameter and were built over a pit that was 2 to 3 feet deep (Levy, 1978).

3.4 HISTORIC PERIOD CONTEXT

The modern history of Northern California, which includes Sacramento County, is grouped into three distinct periods: Spanish, Mexican, and American. Due to its distance from San Francisco Bay, the Project APE was largely isolated from the Spanish and Mexican periods of California history. The following section briefly references major events from these periods.

3.4.1 Spanish Period (A.D. 1775 - 1822)

The earliest overland exploration of the region was the Fages-Crespi Expedition in 1772. In 1775, Captain Manuel Ayala's expedition explored the San Francisco Bay and later ventured up the Sacramento and San Joaquin rivers in search of suitable sites to establish missions. In 1776, Mission San Francisco de Asís (Mission Dolores) in San Francisco was established as the region's first mission. It was followed 3 months later by Mission Santa Clara de Asís and in 1797 with the Mission San Jose de Guadalupe (Martin and Self, 2002). The missions functioned as procurement and dispersal hubs for local economic resources, and as military outposts and proxies of secular governance. The establishment of the mission system decimated local villages, and dramatically transformed the lives of Native peoples from throughout California. Untold numbers of Native people were killed outright or enslaved – brought into the missions as "neophytes" for both labor and forced conversion into the Catholic faith. Disease epidemics also ravaged the people housed in the missions, further fracturing communities and culture.

3.4.2 Mexican Period (A.D. 1822 – 1850)

In 1821, Mexico declared independence from Spain; a year later, California became a Mexican Territory. After the missions were secularized in 1834, lands were gradually transferred to private ownership via a system of land grants (Hoover et al., 2002). The Project APE is east of the Rancho Los Ulpinos Land Grant, which included 17,726 acres patented to John Bidwell by Governor Manuel Micheltorena in 1844 (Hoffman, 1862). John Bidwell was born in Chautauqua County, New York, and led the Bartleson-Bidwell Party to California in 1841. John Sutter employed Bidwell as his business manager shortly after Bidwell's arrival in California. Bidwell built an adobe house in the vicinity of present-day Rio Vista and attempted to cultivate the land. Bidwell's efforts at agriculture, as well as those of subsequent settlers on the ranch, were unsuccessful (Hunt and Gunn, 1926).

Following the Bear Flag Revolt in 1846, California gained its independence from Mexico and the United States gained control of the territory. While the Treaty of Hidalgo promised all property belonging to the Californios would be respected, the Land Act of 1851 required all land grant owners to prove their title and ownerships rights. Bidwell filed a claim and patented the Rancho Los Ulpinos Land Grant in 1866. Meanwhile, Rancho Los Ulpinos was subdivided into twenty parcels and sold in 1855. In 1857, Colonel N. H. Davis purchased a parcel and founded the town of Rio Vista, originally called "Brozos del Rio". The town included a wharf that could accommodate daily steamers traveling up to Sacramento.

3.4.3 American Period (A.D. 1850 to present)

The discovery of gold in the Sierra Nevada mountains in 1849 prompted a population surge throughout northern California. The increased demand for supplies and provisions also increased the volume and market value of livestock, timber, and agricultural products. Additional changes in land use involved widespread logging, which greatly accelerated with the increased demand for railroad ties, mine timbers, and building materials. Agricultural development across all arable land rapidly intensified during the American period, both to meet local and regional demand and also as a commercial venture.

Sherman Island located at the extreme western end of the Delta was the first of the “peat islands” to install levees. The reclamation of Sherman Island began in July 1865 and the entire levee was completed in 1869. Originally it was a three to five feet wall built from local peat soils. After a series of damaging floods in the 1870s through the early 1900s, privately owned and funded Reclamation Districts attempted to rebuild the levees utilizing Chinese labor. With flood damage occurring more or less every year the local Reclamation districts experimented with alternative materials and construction methods for levee building eventually utilizing dredges. In 1913, the United States Army Corps of Engineers began work on widening and deepening the Sacramento River. In conjunction with the State of California and landowners in the San Joaquin-Sacramento Drainage District, millions of cubic yards of spoils were used to construct new levees. Numerous systematic modifications and rehabilitation projects have occurred throughout the 20th century including levee slope repairs, adding rip rap splash caps, raising levee crowns, and road replacements and repairs (JRP, 2006).

Prior to 1921, the southern tip of Brannan Island was a swampy portion of the Sacramento – San Joaquin Delta. The area was later acquired by the Sacramento San Joaquin Drainage District for the State Reclamation Board for use by the United States Army Corps of Engineers. Between 1926 and 1929, the swamp was filled with sand and silt that was dredged and pumped from Sacramento River to widen the channel for shipping. Spoils from the dredging were used to raise the elevation of the area some twenty to forty feet above the water level, making it the highest spot east of the Sacramento River for miles. Eventually, Brannan Island State Recreation Area was established on the spoils pile (Thomas, 2013).

4.0 BACKGROUND RESEARCH

4.1 CCRD SEARCH METHODS

Padre completed a review of PG&E's Confidential Cultural Resources Database (CCRD) on August 9, 2024. The search included a review of all recorded historic-era and precontact archaeological sites within a 0.5-mile radius of the Project APE, as well as a review of known cultural resource surveys and technical reports.

4.2 CCRD SEARCH RESULTS

The records search revealed that 37 cultural resource studies have been completed within a 0.5-mile radius, 12 of which included portions of the Project APE. Table 4-1 lists and describes the studies completed within the Project APE.

Table 4-1. Cultural Resources Studies Completed within portions of the Project APE

Study No.	Author, Year	Title
S-404	Waugh, 1986	*Cultural Resource Survey Brannan Island and Fanks Tract State Recreation Areas.*
S-2389	Orlins, 1997	*A Cultural Resources Survey for the Sherman Island Levee Improvement Project, Sacramento County, California.*
S-5055	Seldomridge and Smith-Madsen, 1976	*Cultural Resource Reconnaissance: Sacramento River Deep Water Ship Channel (Collinsville to Sacramento)*
S-6147	Littlefield, 1981	*Archaeological Report for Brannan Island State Park Entrance*
S-9182	Hale, 1993	*Cultural Resources Survey Sacramento River Systems Evaluation phase IV, Sacramento and Solano Counties, California (Contract No. DACWO5-92-P-1771)*
S-9326	Leach-Palm et al., 2008	*Cultural Resources Inventory of Caltrans District 3, Rural Conventional Highways in Butte, Colusa, El Dorado, Glenn, Nevada, Placer, Sacramento, Sierra, Sutter, Yolo, and Yuba Counties*
S-11493	Polson, 2014	*A Cultural Resources Inventory for the Delta Feasibility Study, Contra Costa and Sacramento County, California*
S-17236	Cultural Resources Unlimited, 1994	*A Cultural Resources Survey Report for Mega Sand – Sacramento River Dredging/ Decker Island Sand Mining Facility ADEIR: Solano and Sacramento Counties, California*
S-29837	Jones et al., 2005	*Archaeological Record Search and Literature Review for the Calpine Bradford Island 3D Geophysical Survey, Contra Costa and Sacramento Counties, California*
18214	Wisely, 2014	*2014 Hydrotest Segment T-235-13, Cultural Resources Constraints Report*
10522	Thomas, 2013	*Cultural Resources Study for the Line 131Y MP 0.53-0.54 PSEP Replacement Project, Sacramento County, California*
376589	Turner, 2020	*TD19-04, D-1018A, L-131Y, L-131Z Drip 17058 Removal, Sacramento County 74023961*

Source: PG&E, 2024

[redacted]

[redacted]

[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]

[redacted]

[redacted]

5.0 PHASE I PEDESTRIAN SURVEY

5.1 SURVEY METHODS AND FIELD CONDITIONS

Padre Staff Archaeologist Christopher Letter conducted a Phase I pedestrian survey of the Project APE on August 14 and 15, 2024. Mr. Letter examined the Project APE with parallel transects spaced at no more than five-meter intervals, where feasible. Field conditions were documented with color digital photographs and Project APE maps are located in Appendix A. The total size of the survey area was approximately five acres.

5.1.1 North Side of Three Mile Slough

The Project APE on the north bank of Three Mile Slough is located within the Brannan Island State Recreation Area approximately 2.5 mile south of the town of Rio Vista and 0.41 miles southeast of State Route 160. The Project APE consists of two sections. The smallest section is a 0.12-acre portion of an asphalt parking lot associated with day use Ramada rentals (Figure 5-1). The largest portion of the Project APE consists of a 2.5-acre mostly level field bounded by an asphalt access road to the north and the slough bank to the south (Figure 5-2 and Figure 5-3). Within this portion of the Project APE is a 1,580 square foot PG&E Valve Vault in a chain link fenced enclosure adjacent to an asphalt walking path (Figure 5-4 and Figure 5-5) and just north of the slough bank which drops down approximately seven feet to the water's edge (Figure 5-6). Ground visibility on the north side of Three Mile Slough was good ranging from zero to 100 percent with asphalt, gravel, and dense vegetation accounting for areas of lesser visibility. Vegetation consisted of seasonal grasses, weeds, and mature oaks and blackberry bramble mainly along the slough bank. The soils observed consisted of a fine sand and the slough bank is reinforced with rip rap. This portion of the Project APE will be accessed by an asphalt access road from State Route 160 (Figure 5-7).

Figure 5-1. Overview of parking lot, facing northeast

Figure 5-2. Overview of Project APE adjacent to access road, facing west

Figure 5-3. Overview of Project APE, facing south

Figure 5-4. Overview of valve vault, facing west

Figure 5-5. Overview of Project APE along slough bank, facing west

Figure 5-6. Overview of slough from top of bank, facing south

Figure 5-7. Overview of access road, facing west

5.1.2 South Side of Three Mile Slough

The Project APE on the south bank of Three Mile Slough is located on the northeast corner of Sherman Island. The Project APE encompasses [redacted] (Figure 5-8, Figure 5-9, Figure 5-10, and Figure 5-11). The inland level area currently consists of several debris piles of vegetation, dirt, modern trash, and charred material from a recent fire event (Figure 5-12 and Figure 5-13). Vegetation consisted of seasonal grasses, weeds, with mature oaks and blackberry bramble mainly along the slough bank. The soils observed consisted of multi-colored silty clay and the slough bank is reinforced with rip rap. Ground visibility on the south side of Three Mile Slough was excellent ranging from zero to 100 percent with recent mowing and fire charred grasses accounting for large areas of clear ground. Dense vegetation accounted for areas of less visibility. [redacted]

Figure 5-8. Overview of Project APE on south side of [redacted], facing east

Figure 5-9. Overview of slough from top of bank, facing north

Figure 5-10. Overview of Project APE on north side of [redacted], facing west

Figure 5-11. Overview of Project APE on top of [redacted], facing east

Figure 5-12. Overview of Project APE, facing southeast

Figure 5-13. Overview of Project APE, facing northwest

[redacted]

[redacted]

[redacted]

[redacted]

5.2 [redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

6.0 CONCLUSIONS AND RECOMMENDATIONS

Padre completed a Phase I Archaeological Study in support of PG&E's L-131Y and L-131Z Three Mile Slough Crossings Pipeline Remediation Project in Sacramento County, California. The study included background research, a buried site sensitivity assessment, and an intensive pedestrian survey. The background research identified two previously recorded cultural resources that overlap with the Project APE. The survey did not identify any new cultural resources.

Based on a buried site sensitivity study previously prepared by Far Western in 2013, the northern Project APE was historically a swampy portion of the Sacramento-San Joaquin Delta and did not represent a formerly stable land surface that would have been available for prehistoric human occupation. In the late-1920s, the swamp was covered by 20 to 40 feet of sediments dredged from the Sacramento River. Thus, the potential to encounter buried archaeological resources is low.

The proposed Project will directly impact approximately 20,550 square feet (with 16,145 square feet located underwater) of the [redacted]. This resource has been recommended eligible for listing on the NRHP. The Project will also directly impact approximately 1,959 square feet of the [redacted]

The Project ADI within the [redacted] has been previously impacted by the installation of the existing pipeline, road construction, and levee maintenance. As designed, the proposed Project will not cause any new impacts to these resources, and once ground disturbance is complete, the Project ADI will be backfilled and restored to pre-Project contours and condition. This will result in no change to the current conditions of either the [redacted]. Additionally, the Project will not cause destruction or damage to either property, nor change the function or design. No change in setting will occur, as the properties will be returned to their pre-Project status. Finally, the Project will not result in the sale or neglect of a historic property.

This study identified no resources that will be impacted/affected by the proposed Project. Therefore, Padre has identified no impacts to cultural resources per CEQA and recommends a finding of No Adverse Effect for the Project per 36 CFR 800.5(b) for compliance with Section 106. If the Project changes such that it may have the potential to impact identified cultural resources or impinge on locations not surveyed, then additional work may be necessary. Otherwise, no further cultural resources studies are necessary.

If any newly discovered cultural resources are encountered during Project activities, PG&E Cultural Resource Specialist, Alicia Gonzales, should be notified. Ms. Gonzales will coordinate any necessary investigation of the find with appropriate specialists and consult with appropriate agency staff, as needed. PG&E may be required to implement protective measures to ensure the protection of the discovery.

In the event that human remains are encountered during the proposed Project, the provisions outlined in Section 7050.5 of the California Health and Safety Code must be followed.

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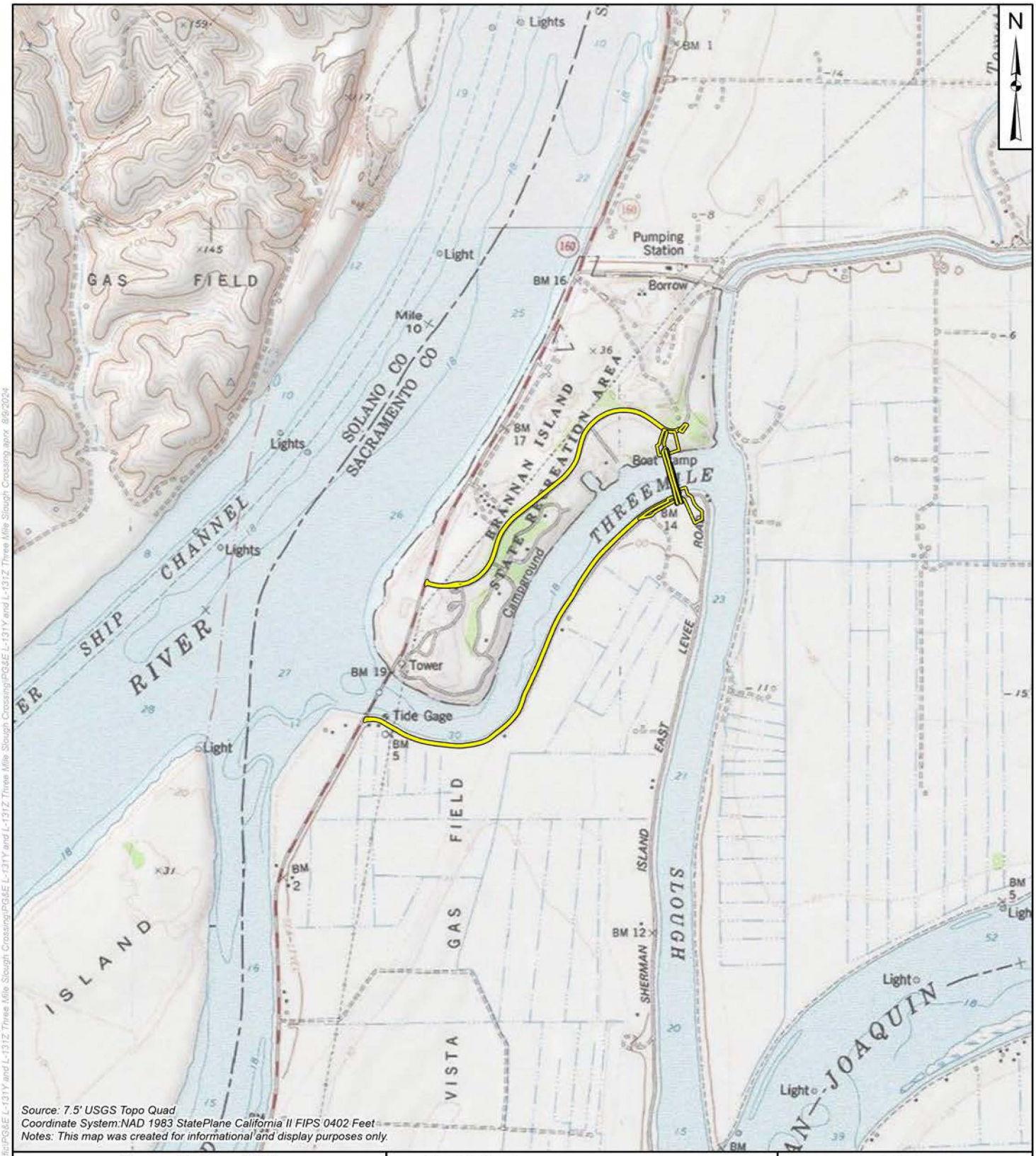
APPENDIX A

PROJECT MAPS



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USGS 7.5' Quadrangle: Jersey Island
Legal Description: T3N, R2E, Sec.12 & 13, T3N, R3E, Sec.18 & 7

LEGEND:

Project Location

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E L-131Y & L-131Z THREE MILE SLOUGH CROSSING REMEDIATION COUNTY, CA

PROJECT NUMBER: 2402-1171

DATE: August 2024

PROJECT LOCATION

FIGURE 1-1

Z:\GIS Projects\GIS Maps\GIS Data\Project Specific\PG&E L-131Y and L-131Z Three Mile Slough Crossing\PG&E L-131Y and L-131Z Three Mile Slough Crossing.aprx 8/9/2024

LEGEND:

- Pipeline Alignment
- Access Route
- Area of Potential Effect (APE)
- Area of Direct Impact (ADI)

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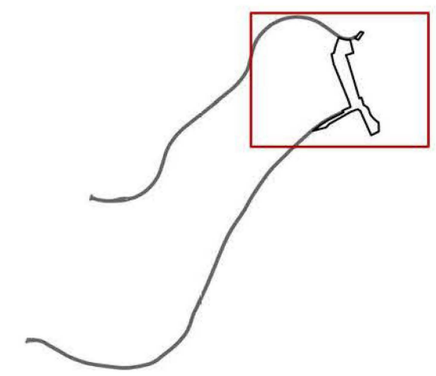

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Source: Esri Online Imagery Basemap, County of Sacramento
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

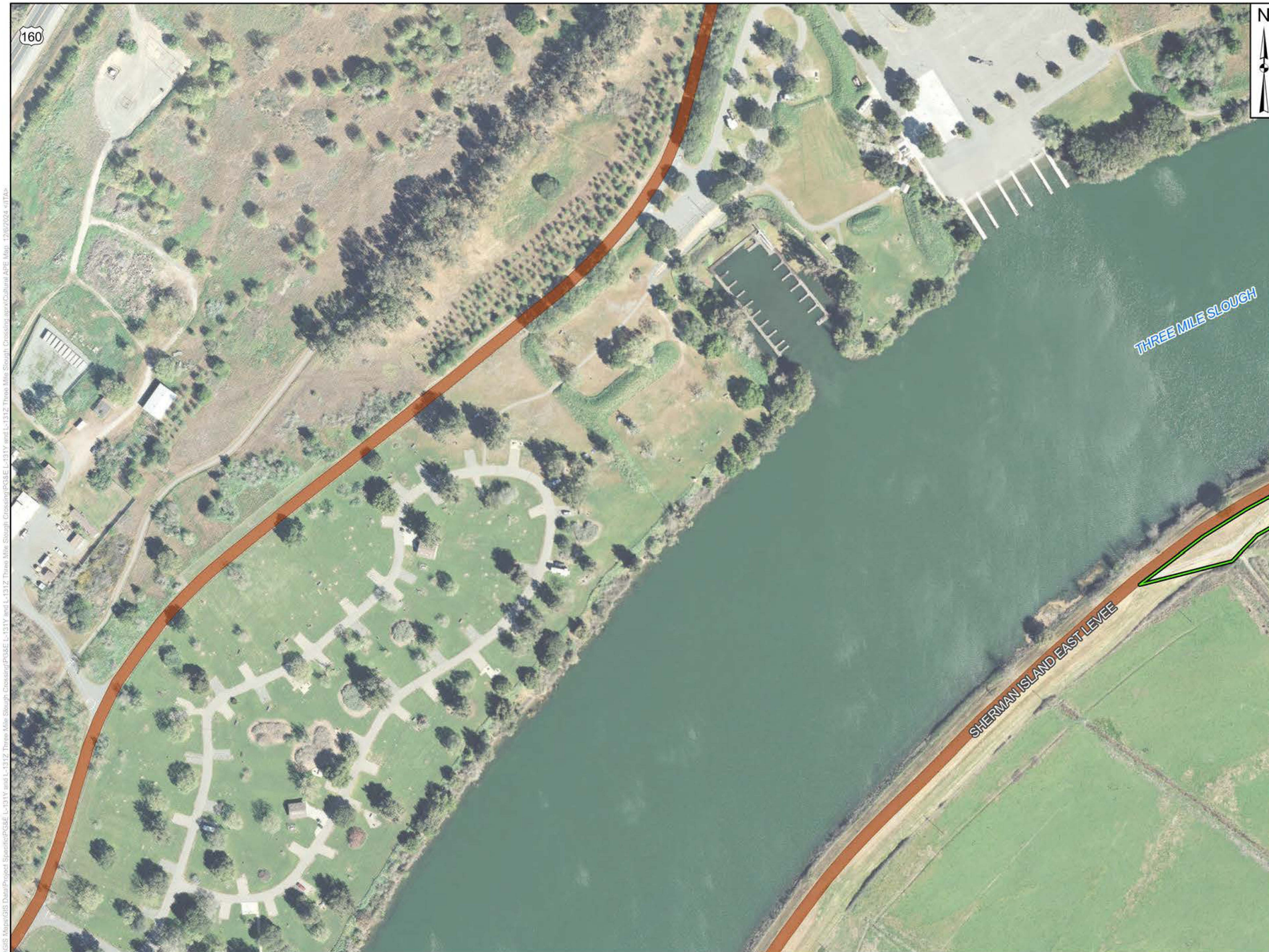
PROJECT NAME: PG&E THREEMILE SLOUGH PIPELINE CROSSINGS REMEDIATION AND DECOMMISSIONING SACRAMENTO COUNTY, CA

PROJECT NUMBER: 2402-1171

DATE: December 2024

AREA OF POTENTIAL EFFECT

PLATE 2



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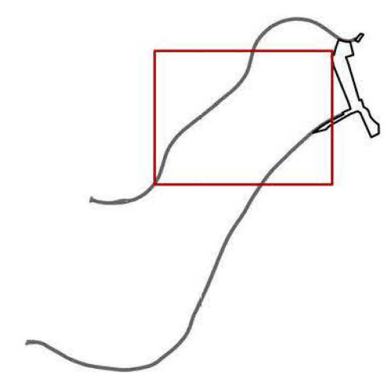
LEGEND:

- Pipeline Alignment
- Access Route
- Area of Potential Effect (APE)
- Area of Direct Impact (ADI)

MAP EXTENT:



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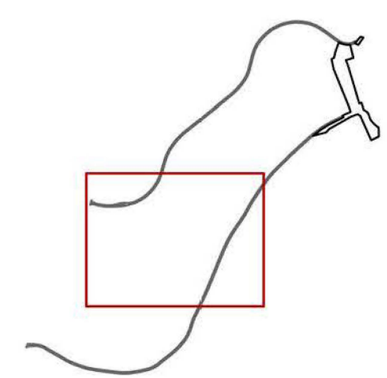

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AREA OF POTENTIAL EFFECT

PLATE 2

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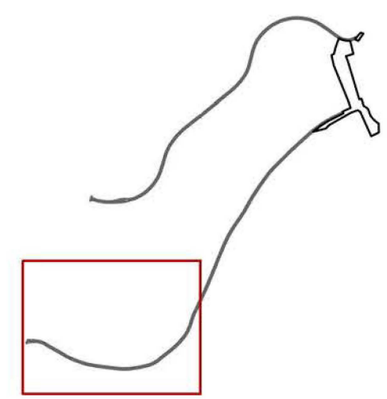
MAP EXTENT:



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Source: Esri Online Imagery Basemap, County of Sacramento
Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
Notes: This map was created for informational and display purposes only.

padre associates, inc.
ENGINEERS, GEOLOGISTS & ENVIRONMENTAL SCIENTISTS

PROJECT NAME: PG&E THREEMILE SLOUGH PIPELINE CROSSINGS REMEDIATION AND DECOMMISSIONING SACRAMENTO COUNTY, CA

PROJECT NUMBER: 2402-1171

DATE: December 2024

AREA OF POTENTIAL EFFECT

PLATE 2