



**CalVTP PSA ID 2023-22**  
**Attachment C**  
**Cultural Resources Report (Confidential)**

Final Technical Report

# **CULTURAL RESOURCES INVENTORY REPORT**

## **Moraga-Orinda Fire District Tunnel East Bay Hills Shaded Fuel Break Project Contra Costa County, California**

July 2023

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# Table of Contents

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<b>Table of Contents</b> .....	<b>i</b>
<b>Executive Summary</b> .....	<b>iii</b>
<b>1 Introduction</b> .....	<b>1</b>
1.1 Location and Setting.....	1
1.2 Project Description .....	1
1.2.1 Treatment Types .....	1
1.2.2 Proposed CalVTP Treatment Activities.....	7
1.3 Regulatory Setting.....	8
1.3.1 California Environmental Quality Act.....	8
1.3.2 California Register of Historical Resources.....	8
<b>2 Project Context</b> .....	<b>10</b>
2.1 Environmental Setting.....	10
2.2 Prehistoric Context.....	10
2.3 Ethnohistoric Context.....	11
2.4 Historic-Era Context.....	12
2.4.1 Orinda .....	13
2.4.2 Lafayette .....	13
2.4.3 Moraga.....	14
2.5 Geoarchaeological Context .....	14
<b>3 Native American Communication and Archival Research</b> .....	<b>16</b>
3.1 Native American Communication.....	16
3.2 Archival Research and Results.....	16
<b>4 Inventory Methods and Results</b> .....	<b>24</b>
<b>5 Study Findings and Management Recommendations</b> .....	<b>38</b>
<b>6 References</b> .....	<b>40</b>

## Figures

Figure 1. Project Vicinity .....	2
Figure 2. Project Location .....	3
Figure 3. Study Areas and Survey Coverage.....	24

## Tables

Table 1. Previously Recorded Resources within the Search Radius.....	17
Table 2. Previously Conducted Studies intersecting with the Project Area .....	18

## Appendices

- Appendix A. Native American Correspondence
- Appendix B. Records Search Results [Confidential Information Redacted]
- Appendix C. Photographic Record

## List of Acronyms

BERD	Built Environment Resource Directory
CalVTP	California Vegetation Treatment Program
CAL FIRE	California Department of Forestry and Fire Protection
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
DPR	California Department of Parks and Recreation
MOFD	Moraga-Orinda Fire District
Montrose	Montrose Environmental
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OHP	Office of Historic Preservation
PEIR	Program Environmental Impact Report
PRC	Public Resources Code
PSA	project-specific analysis
USGS	U.S. Geological Survey
WUI	wildland urban interface

# Executive Summary

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The California Vegetation Treatment Program (CalVTP) directs implementation of vegetation treatments within the California Department of Forestry and Fire Protection's (CAL FIRE's) State Responsibility Area as one component of the State's range of actions to reduce wildfire risk, reduce fire suppression efforts and costs, and protect natural resources as well as other assets from wildfire. The California Vegetation Treatment Program Final Program Environmental Impact Report (CalVTP PEIR) (California Board of Forestry and Fire Protection 2019), which was certified in December 2019, evaluates the environmental impacts of the CalVTP.

The PEIR directs CAL FIRE or other project proponents to evaluate future specific vegetation treatment projects under a project-specific analysis (PSA) to determine whether the proposed activities are within the scope of the PEIR, or whether additional environmental documentation or an independent environmental review is necessary under the California Environmental Quality Act (CEQA).

Serving as the lead agency under CEQA, the Moraga-Orinda Fire District (MOFD) is proposing the Tunnel East Bay Hills Shaded Fuel Break Project (proposed project) and is completing a PSA to evaluate proposed vegetation treatments. The proposed project would conduct various vegetation treatments on 1,223 acres of land within Contra Costa County, including fuel breaks and fuel reduction at the wildland urban interface (WUI). The proposed treatment activities and methods include manual vegetation management, mechanical treatment, prescribed herbivory treatment, herbicide application, and prescribed burning. This cultural resources inventory (study or archaeological inventory) was conducted to support of MOFD's preparation of a PSA checklist in accordance with the CalVTP and the PEIR.

This inventory consisted of a literature review to identify any previously recorded cultural resources within the search radius of the current area of interest and a field survey to locate any cultural resources that may exist but have not yet been recorded. Four previously recorded resources occur within the Project Area; no newly identified cultural resources were identified during the archaeological pedestrian survey.

This inventory was performed based on information obtained at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS), as well as on direct observation of site conditions and other information generally applicable as of July 2023. The conclusions and recommendations herein are therefore based on information available up to that point in time. Further information may come to light in the future that could substantially change the conclusions found herein.

Information obtained from these sources in this timeframe is assumed to be correct and complete. Montrose Environmental (Montrose) does not assume any liability for findings or lack of findings based upon misrepresentation of information presented to Montrose or for items that are not visible, made visible, accessible, or present at the time of the Project Area inventory.

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# 1 Introduction

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## 1.1 Location and Setting

The proposed project would create and maintain a reduced-fuel zone around the communities within Contra Costa County south of Grove Shafter Freeway (Highway 24) (**Figure 1**). The reduced-fuel zone addressed by the project is the southern extension of an existing fuel break; implementation of the project would complete a fuel break boundary around the MOFD coverage area. Six separate environmental Work Areas (1, 2, 3, 4, 5, and 6) totaling approximately 1,320 acres of treatment area within Contra Costa County have been delineated. The Tunnel East Bay Hills Shaded Fuel Break Project (Project) would be implemented on land owned and/or managed by private landowners in and adjacent to the Cities of Orinda and Lafayette, the Town of Moraga, and the unincorporated communities of Canyon, Eastport, and Valle Vista. Non-residential areas include undeveloped rolling hills and open space managed by public and private entities; the Upper San Leandro Reservoir; and areas of scattered vineyards and infrastructure such as transmission lines and power stations. *These Work Areas constitute the Project Area for the purposes of discussion in this document.* The Project Area is located on the Oakland East, Walnut Creek, and Las Trampas Ridge USGS 7.5" Quadrangles (Township 1S, Range 3W, 2W, Sections 4, 9, 10, 11, 15, 14, 23, 24, 25, 5, 6, 7, 8, 17, 19, 20, 21, 29, 28 30, 32) (**Figure 2**).

## 1.2 Project Description

Proposed treatment types that would be performed within the Project Area consist of fuel breaks and WUI fuel reduction and would occur in all six Work Areas. Strategic vegetation removal would reduce fuels while simultaneously creating a linear break for firefighting resources to contain or stop a fire. Firefighters may utilize the fuel break from the ground or to facilitate air resources in dropping water or retardant.

### 1.2.1 Treatment Types

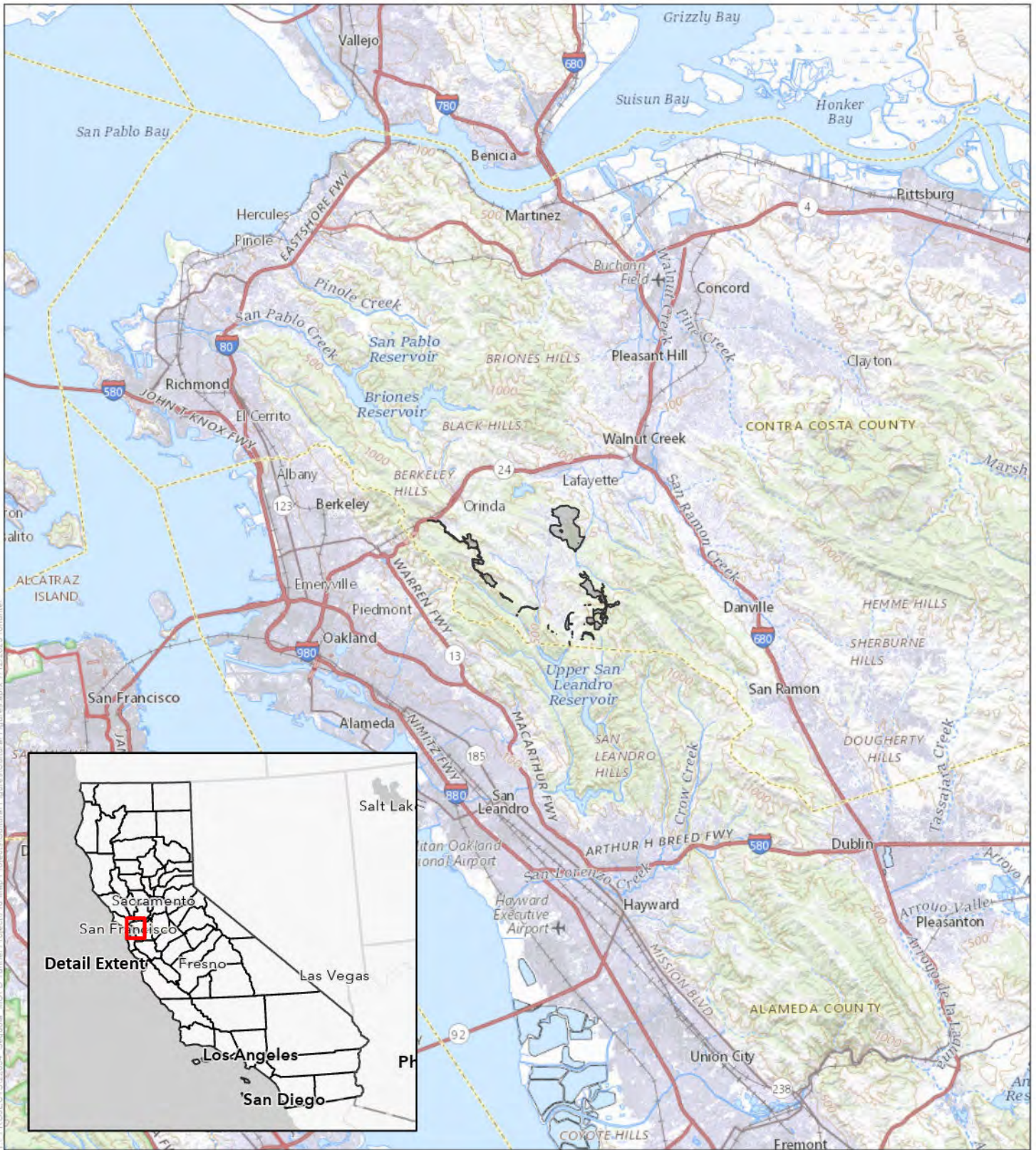
#### ***Fuel Break***

Development and maintenance of a fuel reduction zone within a 100-foot-wide fuel break would extend around community structures located adjacent to undeveloped open spaces. Portions of the fuel break would extend up to 300 feet wide based on topography, site conditions, and land management constraints. Treatment strategies in shrub areas would result in scrub islands. Treatment in forested areas would result in a shaded fuel break, retaining tree canopy and thinning understory branches and vegetation.

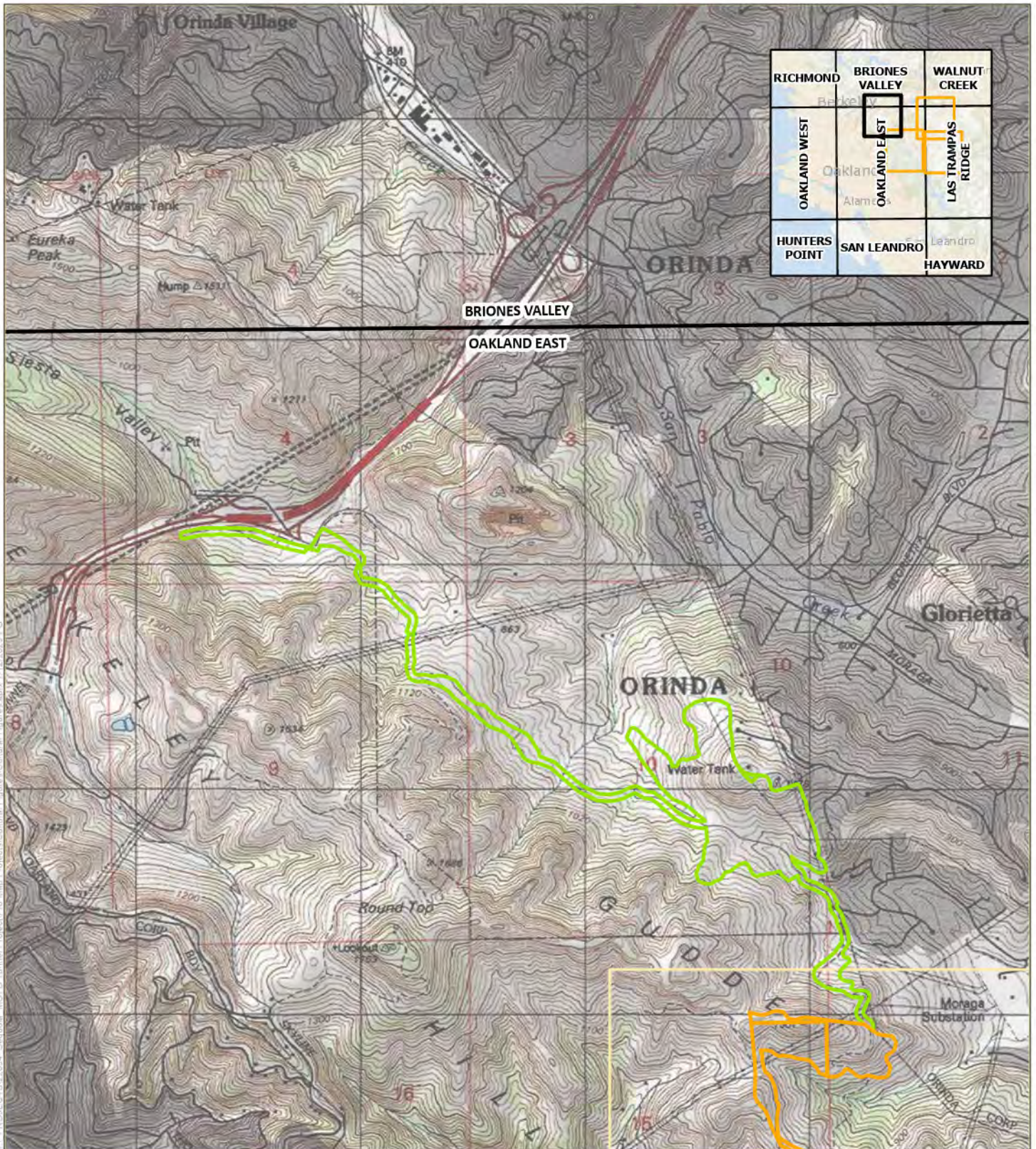
#### ***Wildland Urban Interface Fuel Reduction***

In areas where wildland and structures overlap, higher intensity fuel reduction typical of defensible space would occur within 100 to 150 feet from manmade structures, as determined by fire professionals and based on site conditions. Higher intensity fuel reduction would focus on vertical and horizontal spacing in addition to removal of invasive species, noxious weeds, and dead and dying vegetation. Beyond 100 to 150 feet from manmade structures, vegetation treatments would be implemented with lower intensity. Lower intensity treatments focus primarily on removal of invasive plants and noxious weeds, fire hazardous vegetation, and dead and dying vegetation, as well as limbing up of trees.





**Figure 1**  
Project Vicinity



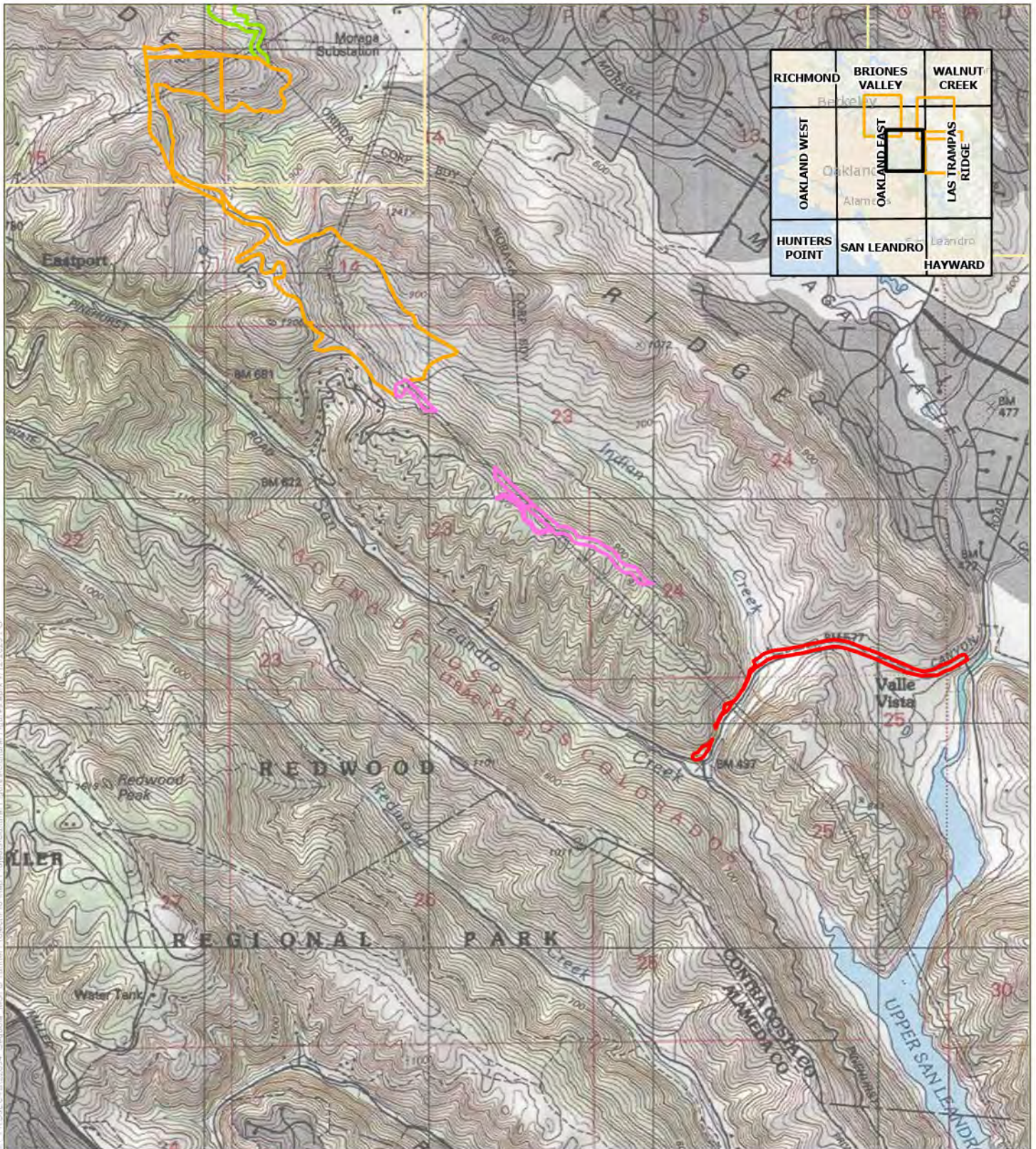
- Work Area 3
- Work Area 5

- Page Index
- USGS Quad Index



**Figure 2**  
Project Location

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RICHMOND	BRIONES VALLEY	WALNUT CREEK
OAKLAND WEST	OAKLAND EAST	LAS TRAMPAS RIDGE
HUNTERS POINT	SAN LEANDRO	HAYWARD

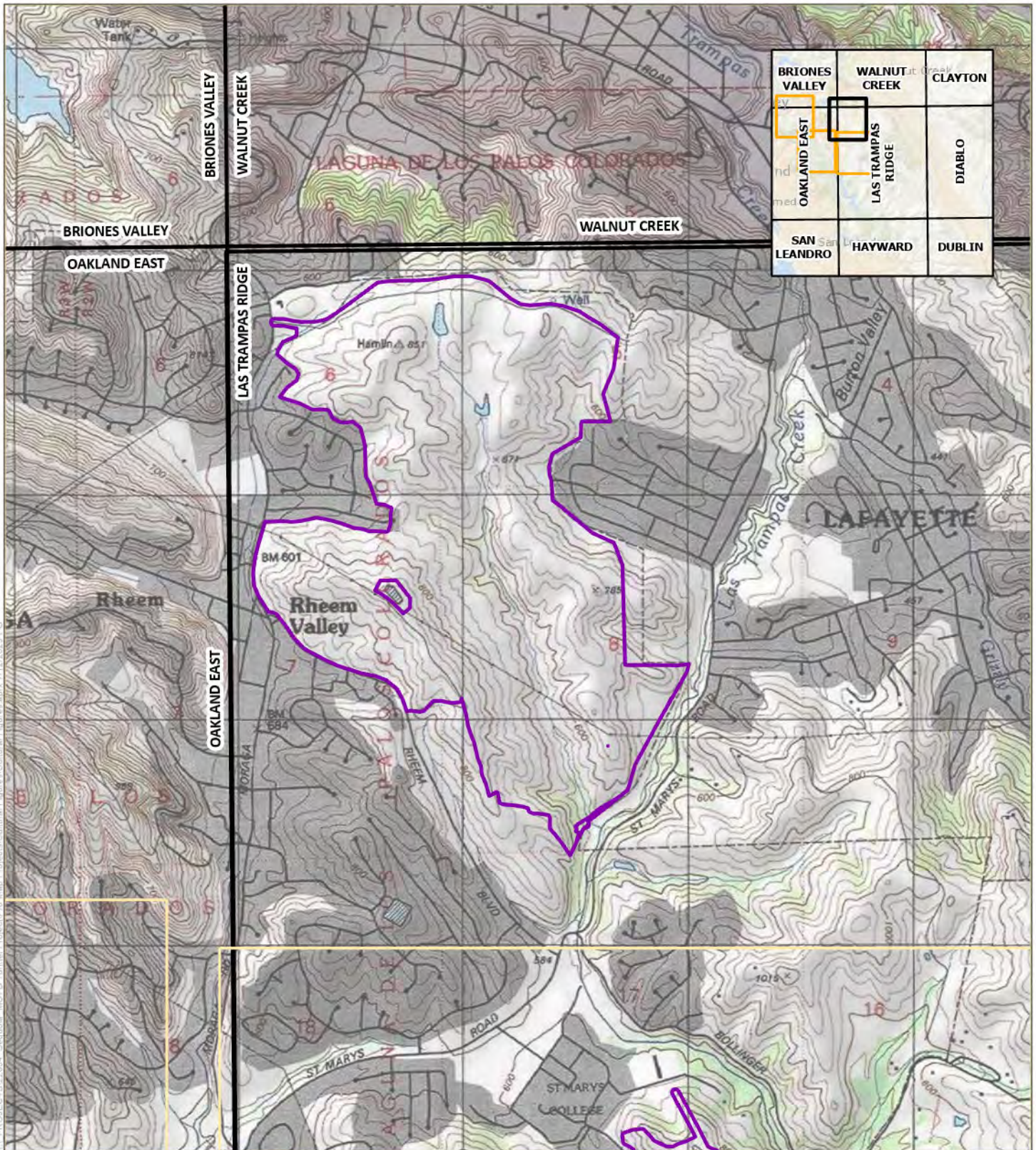
- Work Area 2
- Work Area 3
- Work Area 5
- Work Area 6
- Page Index
- USGS Quad Index



**Figure 2**  
Project Location



T:\PROJECTS\2024 - Stations - MOPFD Tunnel Project\Pro Map Project\Cultural Features.aprx 7/17/2023 8:45



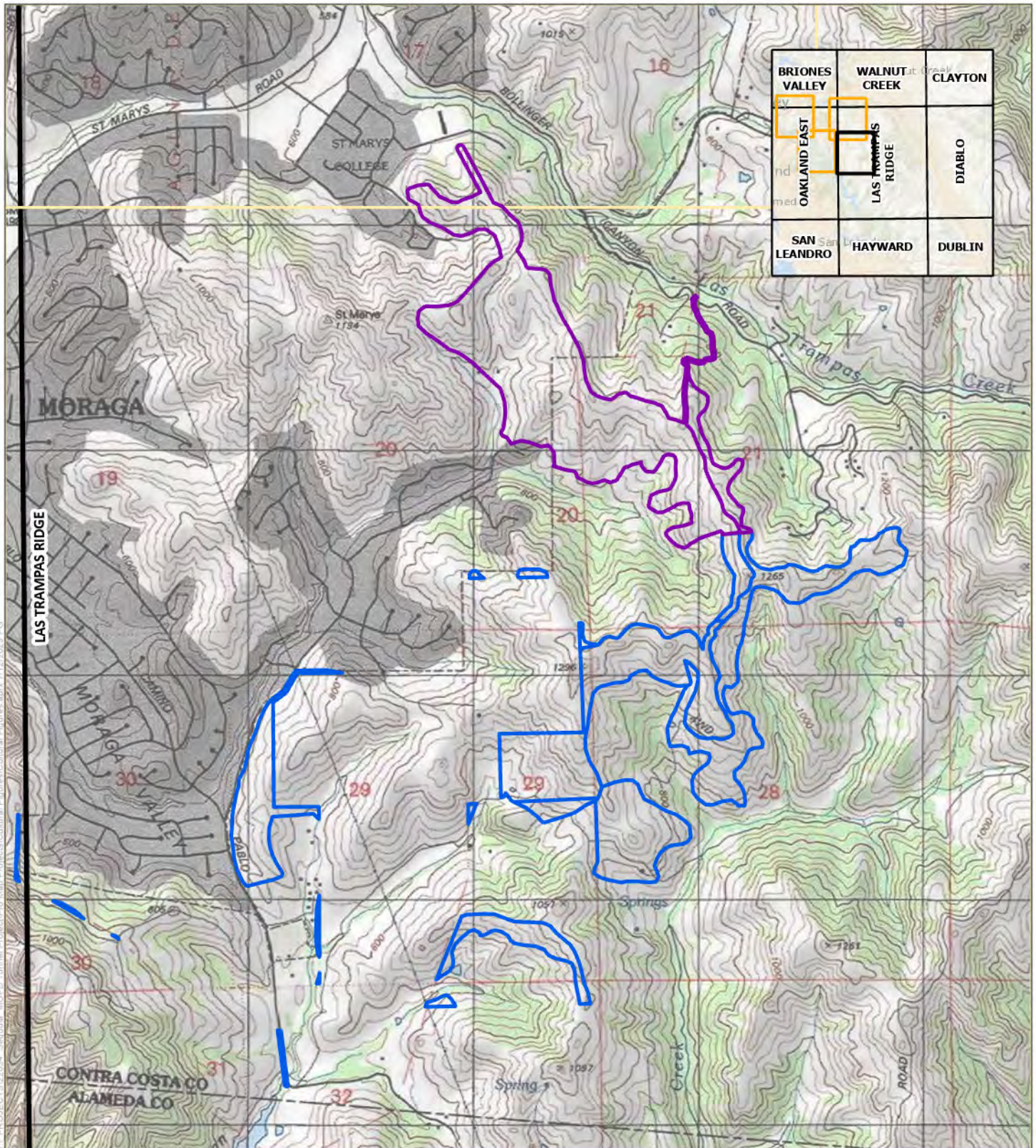
BRIONES VALLEY	WALNUT CREEK	CLAYTON
OAKLAND EAST	LAS TRAMPAS RIDGE	DIABLO
SAN LEANDRO	HAYWARD	DUBLIN

- Work Area 4
- Page Index
- USGS Quad Index

**Figure 2**  
Project Location



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- Work Area 1
- Work Area 4
- Page Index
- USGS Quad Index

**Figure 2**  
Project Location

## **1.2.2 Proposed CalVTP Treatment Activities**

### ***Prescribed Burning (Pile Burning and Broadcast)***

Prescribed low intensity surface fires may be used to control vegetation and manage fuel loads. Prescribed burning would remain within a predetermined area and would occur only with specific fuels, in safe weather conditions, and would consider other variables.

### ***Manual Treatment***

Ground crews would use hand tools and hand-operated power tools, including chainsaws, hand saws, brush cutters, and loppers, to cut, clear, and/or prune trees, herbaceous vegetation, and woody shrubs and increase space between trees. Where feasible, treatments would focus on removing invasive plants and noxious weeds. Treatments may require several days to several months to complete, depending on the treatment size, steepness of terrain, and type and density of vegetation. Cut vegetation would be left on site via lopping and scattering or chipping and broadcasting (a mechanical treatment) across the landscape. In some areas, removed vegetation would be piled for later pile burning. Manual treatment activities to reduce undesirable wildfire hazards would avoid state or federally jurisdictional waters and riparian habitat by 50 feet.

### ***Ground-based Mechanical Treatment***

Mechanical treatments would primarily include skidding, masticating, and chipping and broadcasting target vegetation. Equipment would be operated on roads or skid trails in fuel break and WUI treatment areas, and on flat to moderate slopes. Mechanical treatment activities would occur predominantly on slopes below 40 percent grade, along ridges, and may occur on slopes greater than 40 percent grade with equipment that can reach target vegetation from existing road infrastructure. No mechanical treatment would occur on slopes above 50 percent grade. Ground-based mechanical treatment activities to reduce undesirable wildfire hazards would avoid state or federally jurisdictional waters and riparian habitat by 50 feet minimum. Typically, treatments would require several days to several months to complete.

Mechanical treatments would cut, uproot, crush/compact, or chop standing and downed vegetation using masticators and other methods. Small-diameter trees (6 inches diameter at breast height or less), downed woody debris, and woody shrubs would be strategically masticated to increase tree spacing and reduce fire fuel loads. Native understory vegetation, brush, and shrubs under the drip lines of trees would be cut and masticated leaving root systems intact for resprouting. Mechanical treatments would not occur within Alameda whipsnake habitat.

### ***Prescribed Herbivory***

Prescribed herbivory would be used to reduce fuel loads, as pretreatment before other methods, and as treatment maintenance. Grazing would require temporary wildlife-safe fencing where natural barriers are not present, temporary water facilities and other infrastructure (e.g., corrals, fences), and guard animals and/or a shepherd to be present on-site. Prescribed herbivory involves transporting a herd of grazing animals such as cattle, sheep, or goats to designated prescribed herbivory sites. Stocking rate would vary based on species of grazer (e.g., a herd of cattle would require a larger acreage than a herd of goats of the same size). Livestock would be clean of weed seeds (e.g., hooves, fur, digestive tract, etc.) prior to being introduced to the site. Moving livestock from one grazing ground to another would occur at a frequency based on numerous site-specific

factors, including slope, density and type of vegetation, stocking rate, type of livestock, and precipitation/moisture content of vegetation. The relative density or quantity of the vegetation to be removed or modified would aid in determining the number of animals and the length of time necessary to complete the job. Herbivores have the potential to damage other resources if their movement is not controlled. Herds would be moved as often as every 1 to 3 days, and one to two workers would be required on average to implement this treatment activity. Any identified sensitive areas would be clearly marked on Project maps, and protection measures would be communicated to the herder and project manager, including a pre-vegetation removal field visit as appropriate.

### ***Biomass Disposal***

Project debris would typically be processed through natural decomposition (e.g., lopping and scattering, chipping and broadcasting), hauling cut materials to an off-site biomass facility, or pile burning cut materials. Understory debris chipped and scattered on-site would follow BMPs for reducing the spread of pests, disease, noxious weeds, and invasive species. The chipped biomass would be broadcast on-site, with chipped materials cut to under 3 inches in size and spread up to 4 inches in depth to minimize wildfire risk. The remaining biomass that could not be broadcast on-site would be hauled off-site or pile-burned.

## **1.3 Regulatory Setting**

### **1.3.1 California Environmental Quality Act**

CEQA Guidelines Section 15064.5 provides specific guidance for determining the significance of impacts on historic and unique archaeological resources. Under CEQA these resources are called historical resources whether they are of historic or prehistoric age. CEQA Public Resources Code (PRC) Section 21084.1 defines historical resources as those listed, or eligible for listing, in the California Register of Historical Resources (CRHR), or those listed in the historical register of a local jurisdiction (county or city). CEQA PRC Section 21083.2 and CEQA Guidelines Section 15064.5(c) provide further definitions and guidance for archaeological sites and their treatment.

### **1.3.2 California Register of Historical Resources**

PRC Section 5024.1 establishes the CRHR. This register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed, or determined to be eligible for listing, in the National Register of Historic Places (NRHP), including properties evaluated under Section 106 of the National Historic Preservation Act (NHPA). The criteria for listing in the CRHR are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

- 1) Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- 2) Are associated with the lives of persons important in our past;
- 3) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
- 4) Have yielded, or may be likely to yield, information important in prehistory or history.

The regulations set forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

Section 15064.5 also prescribes a process and procedures for addressing the existence of, or probable likelihood, of Native American human remains, as well as the unexpected discovery of any human remains within the project area. This includes consultations with appropriate Native American tribes.

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Appendix G in Section 15023 provides an Environmental Checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts. One of the questions to be answered in the Environmental Checklist (Section 15023, Appendix G, Section V, part c) is the following: "Would the project directly or indirectly destroy a unique paleontological resource or site?" Although CEQA does not define what is "a unique paleontological resource or site," Section 21083.2 defines "unique archaeological resources" as "any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and show that there is a demonstrable public interest in that information.
- It has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."



## 2 Project Context

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### 2.1 Environmental Setting<sup>1</sup>

The Project Area is situated within the Coast Range geologic province. The northern Coast Ranges are a geologic province comprised of numerous rugged north-south trending ridges and valleys that run parallel to a series of faults and folds. Formation of these ranges is generally attributed to events associated with subduction of the Pacific Plate beneath the western border of North America. The bedrock that underlies the region is a complex assemblage of highly deformed, fractured, and weathered sedimentary, igneous, and metamorphic rocks (Schoenherr 1992). The bedrock geology of the Project Area consists of Pliocene and Pleistocene age, non-marine sedimentary rock (California Geological Survey 2010).

The Project Area includes several watersheds with a diversity of aquatic habitats and watercourses, such as freshwater emergent wetland, forested/shrub wetland, freshwater pond, lake, riverine and streams. Named creeks adjacent to the Project Area include San Pablo Creek, Indian Creek, San Leandro Creek, and Redwood Creek and their tributaries. Indian Creek intersects the Project Area in Work Areas 2 and 5. Tributaries from San Pablo Creek and an unnamed creek intersect Work Area 3. Tributaries from an unnamed creek that flows into Upper San Leandro Reservoir intersects Work Area 3. Tributaries from Las Trampas Creek intersect Work Area 4.

The Project site contains three fuel type categories as described in the CalVTP PEIR: Grass, shrub, and tree. The fuel types on the Project site are characterized as follows:

Grass fuel type includes California Wildlife Habitat Relationship (CWHR) habitat type: Annual grass

Shrub fuel type includes CWHR habitat type: Coastal scrub

Tree fuel type includes CWHR habitat type: Coastal oak woodland

Other CWHR vegetation types classified for the Project site include freshwater emergent wetland and lacustrine, which will be avoided with a minimum 50-foot buffer; and barren and urban, which correspond primarily to access roads.

### 2.2 Prehistoric Context

The pre-contact (or prehistoric) era of the Project Area reflects information known about the indigenous population from the time the region was first populated with humans until the arrival of the first Europeans, who visited and recorded their journeys through the written record. The pre-contact record is derived from over a century of archaeological research, and while much has been gleaned from these studies, large gaps in the data record remain. The following pre-contact culture sequence, derived from Milliken et al. (2010:114-118), briefly outlines the prehistory of the San Francisco Bay region.

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<sup>1</sup> Biological conditions summarized here are based on the review conducted for the Biological Resources Report for the project (Sequoia 2023)

The Early Holocene (Lower Archaic; 8000 to 3500 B.C.) is considered a time when populations continued to be very mobile as they practiced a foraging subsistence pattern around the region. Artifacts that characterize this period include the milling slab and handstone to process seeds, as well as large wide-stemmed and leaf-shaped projectile points.

The Early Period (Middle Archaic; 3500 to 500 B.C.) is marked by the appearance of cut shell beads in the archaeological record, as well as the presence of the mortar and pestle for processing acorns. House floors with postholes indicate substantial living structures, which suggests a move toward establishing a more sedentary lifestyle and an increasing population.

The Middle Period, which includes the Lower Middle Period (Initial Upper Archaic; 500 B.C. to A.D. 430) and Upper Middle Period (Late Upper Archaic; A.D. 430 to 1050), appears to be a time when geographic mobility may have continued, although groups began to establish longer-term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. The addition of milling tools, obsidian and chert concave-base projectile points, and the occurrence of sites in a wider range of environments suggest that the economic base was more diverse. By the Upper Middle Period, mobility was being replaced by the development of numerous small villages. Around A.D. 430 a “dramatic cultural disruption” occurred, as evidenced by the sudden collapse of the Olivella saucer bead trade network.

The Initial Late Period (Lower Emergent; A.D. 1050 to 1550) reflects a social complexity that had developed toward lifeways of large, central villages with resident political leaders and specialized activity sites. Artifacts associated with the period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments.

The Terminal Late Period (Upper Emergent; A.D. 1550 to circa 1750) generally represents the indigenous cultures that were encountered by the Spanish when they first arrived in San Francisco Bay.

### ***Interior Contra Costa County***

While the archaeological record for the immediate Bay Area clearly focuses on bayshore sites, the interior valleys and watersheds exhibit a wide range of Early to Late Period sites and traditions (Moratto 1984). In particular, the Stone Valley site, CA-CCo-308, located in the San Ramon Valley, represented five archaeological sites that collectively reflected at least seven components spanning about 4,000 years (Fredrickson 1993). The types and patterns of artifacts found at CA-CCo-308 indicate relationships with populations from both the early Central Valley (“Windmill” tradition) and the Bay Area (Berkeley Pattern). Mortars and pestles dominate the lower levels of these sites, suggesting that the acorn was of greater significance in the interior valleys and was present much earlier than it was in the bayshore region.

## **2.3 Ethnohistoric Context**

The population indigenous to the Project Area spoke a language referred to as Costanoan, a derivative from a Spanish term for “coast people.” Costanoan, which consisted of six known languages and various dialects within those languages, was spoken over a broad territory that included all of the San Francisco Peninsula and all lands along the east and south of San Francisco Bay, and that extended south to include Monterey Bay, Salinas Valley, and the area around Hollister. Those residing in the Project Area likely spoke the Chochenyo dialect of San Francisco Bay Costanoan (Milliken et al. 2009:33-35).

The Costanoan peoples, who are referred to as the Ohlone, Mutsun, or Rumsen, depending on geography, were not a united cultural or political entity (Milliken et al. 2009:2-4). Rather, there were strong differences, not only in language but also in culture, between the San Francisco and Monterey bay occupants, and political affinity was based on the tribelet, which comprised one or more villages within a specific geographic territory (Levy 1978:487).

Tribelet territory had a range of 10 to 12 miles in diameter and contained a population that consisted of 200 to 400 people living among four or five villages (Milliken et al. 2010:99). Those living in the Project Area resided in large villages along permanent streams in locations that allowed access to the diverse resources found in the tidal marshlands, the valley floor, and the hills. (Milliken et al. 2010:106; Moratto 2004:225).

The Ohlone group associated with the Project Area are the Huchiuns, who occupied all of the lands bordering San Francisco Bay from Oakland north to Richmond and the Carquinez Strait (Milliken et al. 2009:40). Records indicate that they were closely tied to the Yelamu tribe, who lived across the bay on the northern San Francisco Peninsula, with whom they shared the Chochenyo language dialect, intermarried, and traded. No Huchiun villages are known within proximity to the Project Area.

The Huchiuns were among the first in the region to feel the impact created by the arrival of the Spanish. Mission Dolores was founded in San Francisco in 1777, and Mission Santa Clara, in the town of Santa Clara, was established just seven months later. This was followed by the pueblo at San Jose (El Pueblo San Jose de Guadalupe) shortly thereafter (Kyle et al. 2002:423-424). Members of the Huchiuns were quickly conscripted into Mission Dolores, and by 1794 the tribe had the largest population of any local tribe there. The following year, they rebelled, along with their Saclan neighbors who lived around Mount Diablo, and many returned to the East Bay. Mission San Jose, in present-day Fremont, was established in 1797 in response to the rebellion. Most of the Huchiun population appears to have been returned to Mission Dolores or other nearby missions over the next two decades.

Today the Ohlone reside throughout the region and strive to maintain their cultural traditions.

## **2.4 Historic-Era Context**

Euro-American settlement of present-day Contra Costa County, including much of today's Orinda, Lafayette, and Moraga, is generally associated with the Mexican land grant period, which extended from about 1841 to 1883. The area that includes the southern half of today's Orinda, much of Lafayette, and all of Moraga, was in the 13,316-acre Moraga land grant received in 1835 by Joaquin Moraga from the Mexican government for his service in the military. Joaquin Moraga was the grandson of Joseph Joaquin Moraga, who was second in command of the Anza expedition of 1776, the founder of San Francisco's Mission Dolores, and the founder and first commandant of the San Francisco Presidio. The original land grant was known as Rancho Laguna de los Palos Colorados ("Ranch of the Lake of the Redwoods") (Marschner 2000). In 1841, Joaquin Moraga built an adobe ranch house on a knoll in the eastern hills of today's Orinda. The northern portion of Orinda, including the San Pablo and El Sobrante areas, was originally within the 22,000-acre El Sobrante land grant given to brothers Juan Jose and Victor Castro by Governor Juan Bautista in 1841. Portions of today's Lafayette were within the 3,300-acre Acalanes land grant, deeded to Candelario Valencia in 1835 (Marschner 2000). After California statehood in 1850, the Mexican land grant period was supplanted by the American rancher period, which lasted until about 1916. During this period, farms stretched from San Pablo on the north to Moraga on the south, with the only sizeable village between these

settlements located at Orinda Park at the present-day junction of San Pablo Dam Road, Bear Creek Road, and Wildcat Canyon Road in Orinda.

### **2.4.1 Orinda**

The town of Orinda did not see wide-scale development until the 1920s. In 1921, the de Laveaga family had roads graded to the west of San Pablo Dam Road and created a small reservoir later named Orinda Park Pool. Orinda Village was laid out in 1923 by Miguel de Laveaga's grandson, Edward de Laveaga, who in the previous year had started Hacienda Homes, Inc. in order to develop the area east of San Pablo Dam Road (East Bay Municipal Utility District [EBMUD] 1999). To help sell the homes, de Laveaga established the Orinda Country Club and Lake Cascade in 1924, providing private water service to the development, as Orinda was not served by the water company operating in the area at the time. The success of de Laveaga's housing developments inspired other developers and businesses, which grew along Camino Pablo Avenue.

With completion of the Broadway Low Level (Caldecott) Tunnel in 1937, Orinda began to attract new residents (EBMUD 1999). Orinda became more accessible by private automobile, reducing the commute time from Orinda to San Francisco from over an hour to less than 30 minutes. In the post-war era, Orinda developed into a full-scale suburban community. Between 1940 and 1970, more than 60 percent of Orinda's 6,300 homes were built. The City of Orinda was incorporated in 1984 (City of Orinda 2023).

### **2.4.2 Lafayette**

Much of present-day Lafayette was within the 3,300-acre Acalanes land grant, deeded to Candelario Valencia in 1835. Valencia, who had been a soldier in San Francisco from 1823 to 1833, sold the land to wealthy San Francisco merchant William Leidesdorff. In late 1847, after exploring the area for a place to settle, Elam Brown bought Rancho Acalanes, complete with 300 head of cattle, from Leidesdorff (Lafayette Historical Society 2023). In 1848, Brown built the first of three homes in today's Lafayette, as well as a horse-drawn grist mill, followed by a steam-powered mill, on Lafayette Creek near First Street. The commercial center of Lafayette began to grow around the mill at the present-day intersection of Mt. Diablo Boulevard and Moraga Road. These first businesses were a blacksmith's shop, a bar, a general store, and rooming houses. Elam Brown's first permanent home was a small frame house located at present-day 985 Hough Avenue on Lafayette Creek in downtown Lafayette. The house was erected as early as 1849, occupied by various members of the Brown family throughout the late 1800s, and torn down in the late 1920s (City of Lafayette 2023). A row of about 10 locust trees on the east side of Happy Valley Road, about 0.75 mile north from its intersection with Mt. Diablo Boulevard, was planted by early settlers and are classified as "heritage trees" (Contra Costa County 1989).

Benjamin Shreve came to Lafayette after failing to make a fortune in the California Gold Rush of 1849. Shreve built and ran Lafayette's first school; in 1857 he became postmaster and named the town, "La Fayette." In the early 1860s, the Pony Express rode through town, stopping to get a fresh horse at what was then the historic core of Lafayette at the intersection of Mt. Diablo Boulevard and Moraga Road. Lafayette remained a quiet farming village until the post-World War II building boom. The City of Lafayette was incorporated in 1968 (City of Lafayette 2005).

### 2.4.3 Moraga

Moraga is named after Joaquin Moraga, whose rancho was established in the area in 1841, as described above. This historic structure still stands, although greatly modified, as a private home within Orinda city boundaries. Most of present-day Moraga was open grazing land until the early 20th century. By 1912, most of the original Joaquin Moraga rancho was purchased by James Irvine, who started the Moraga Land Company with the intention of developing the area. The period of 1912–1913 brought the Oakland Antioch Railroad to Moraga, with service from Oakland to Chico through Moraga. This line would later become the Sacramento Northern Railroad, which served many early residents of the Moraga Valley. In 1914, the Moraga Ranch was built near the current intersection of School Street and Moraga Way. Many of these historic buildings are still standing, including a cook house, a commissary, a walk-in cooler, and a mess hall. In addition, the ranch also had a garage, a repair shop, bunk houses, a bath house, a warehouse, and blacksmith shop. The Moraga Barn was originally constructed in 1914 as a hotel and stage stop across Moraga Way from the Moraga Ranch. The Moraga Ranch/Moraga Barn area was an important stop along the Sacramento Northern Railroad (Town of Moraga 2023).

In 1927, the Moraga Land Company gave 100 acres to St. Mary's College and College of Holy Names, and in 1928 the college moved from its original site in San Francisco's Mission District to Moraga Valley. A number of buildings from the late 1920s and early 1930s still exist on the campus. In 1935, most of the Moraga Land Company property was bought by the Utah Construction and Mining Company, and many subdivisions and homes were started in the area. Utah Construction later sold the remaining land to Russell Bruzzone, a Lafayette developer who developed much of the property in the post-war period (Town of Moraga 2023).

Similar to the towns of Orinda and Lafayette, Moraga remained a quiet village until the post-World War II building boom. Donald Rheem, who bought 20 acres surrounding his Hacienda de las Flores in 1929, originally wanted to develop a country club, but eventually developed the Rheem shopping center on the property in the mid-1950s. Most of the homes, roads, and businesses in present-day Moraga were built since 1960. The Town of Moraga was incorporated in 1974 (Town of Moraga 2023).

## 2.5 Geoarchaeological Context

To assess the potential for buried archaeological sites within a project area's components, an investigation will often take into account factors that either encouraged or discouraged human use or occupation of certain landforms (e.g., geomorphic setting and distance to water), combined with those that affected the subsequent preservation (i.e., erosion or burial) of those landforms. It is well known, for instance, that prehistoric archaeological sites in California are most often found on relatively level landforms near natural water sources (e.g., spring, stream, river, or estuary), which is often where two or more environmental zones (ecotones) are present. Landforms with this combination of variables are frequently found at or near the contact between a floodplain and a higher and older geomorphic surface, such as an alluvial fan or stream terrace (Hansen 2004:5).

In general, most Pleistocene-age landforms have little potential for harboring buried archaeological resources, as they developed before the first evidence of human migration into North America (ca. 13,000 years BP). However, Pleistocene or older surfaces buried below younger Holocene deposits do have a potential for containing archaeological deposits because of the long-term viability of the platform (or Pleistocene age surface) from which occupation can occur. Holocene alluvial deposits may contain buried soils (paleosols) that represent periods of landform stability before renewed

deposition. The identification of paleosols within Holocene-age landforms is of particular interest because they represent formerly stable surfaces that have a potential for preserving archaeological deposits.

The potential for the Project Area to contain buried archaeological resources was investigated using a model formulated by Byrd et al. (2017) for predicting a location's sensitivity for buried Native American archaeological sites based on the age of the landform, slope, and proximity to water. A location is considered to have the highest sensitivity if the landform dates to the Holocene<sup>2</sup>, has a slope of 5 percent or less, is within 150 meters (500 feet) of fresh water, and 150 meters (500 feet) of a confluence. A basic premise of the model is that Native American archaeological deposits will not be buried within landforms that predate human colonization of the area. Calculating these factors using the buried site model (Byrd et al. 2017: Tables 11 and 12), a location's sensitivity was scored on a scale of 1–10 and classed as follows: lowest (<1); low (1-3); moderate (3-5.5); high (5.5-7.5); highest (>7.5).

Based on landform age and the other factors described above, the model determined that the sensitivity for buried sites at the location of the Project Area is considered low. Moreover, a review of Witter et al. (2006), a quaternary geology review of the Bay Area—from which the Byrd et al. (2017) analysis is partially derived—indicates that the Project Area is underlain by mostly bedrock<sup>3</sup> and some dating to the Latest Pleistocene (20,000 years ago to 11,700 years ago). This suggests that the majority of the Project Area is underlain by a landform that would not have likely supported substantial human activity due to the antiquity of the landform as pre-dating known human occupation for the area.

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<sup>2</sup> The Holocene Epoch is the current period of geologic time, which began about 11,700 years ago, and coincides with the emergence of human occupation of the area.

<sup>3</sup> Early Quaternary and older (>1.4 Ma) deposits

## 3 Native American Communication and Archival Research

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### 3.1 Native American Communication

An email request was made to the Native American Heritage Commission (NAHC) on June 22, 2022, to review its files for the presence of recorded sacred sites on the Project Area. The NAHC responded on July 17, 2022. The results of the Sacred Lands database review were negative for any sacred sites within the Project Area.

On November 15, 2022, letters were sent to the 16 tribal contacts provided by the NAHC. The letters requested any additional information regarding tribal resources and to notify MOFD if they wished to initiate consultation regarding the project actions. To date, one response has been received: Corrina Gould, of the Confederated Villages of Lisjan Nation, who requested further consultation regarding the project. A MOFD representative met with Chairperson Gould on February 22, 2023, to discuss her concerns. As planning proceeds, MOFD will continue to consult with interested Tribal representatives regarding the project and incorporate their concerns into project planning and mitigation as warranted.

All correspondence, to date, between the NAHC and contacted tribes is provided in **Appendix A**.

### 3.2 Archival Research and Results

A total of four records searches were performed for this project. The initial record search was requested at the Northwest Information Center (NWIC) to determine whether any portions of the Project Area (or all work areas) had been previously surveyed for cultural resources and to identify the presence of any previously recorded cultural resources within the Project Area, as well as a 0.25-mile buffer (the search radius). The records search was received on August 4, 2022 (NWIC File No. 21-2154). Slight changes to individual Work Areas changed the search radius outside of the boundaries of this records search, so a subsequent records search was conducted in-house at the NWIC on November 2, 2022 (NWIC File No. 22-0722). Additional changes led to another records search conducted in-house at the NWIC on January 12, 2023 (NWIC File No. 22-1061). Further changes were introduced in April 2023 that required a records search (NWIC File No. 22-1612). See **Appendix B** for summaries of results for these records searches (the in-house records searches do not produce formal letter summaries).

Other sources of information reviewed included, but were not limited to, the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, California Points of Historical Interest, as listed in the Office of Historic Preservation's (OHP's) Historic Property Directory, and the Built Environment Resource Directory (BERD) for Contra Costa County (OHP 2020).

Four resources have been previously recorded within the Project Area (**Table 1**), while five have been previously recorded within the search radius. No CRHR or NHPA listed historical resources or properties have been recorded within the Project Area or the search radius.

Of the four previously recorded resources, P-07-00404, or the Carrick Homestead Site, was characterized as both an historical and prehistoric archaeological site; P-07-00405, the Domingo

Ranch, was described as a collapsed house and buildings associated with an historic settlement. The remaining two resources are electrical transmission lines. In the case of P-07-00404, the original site boundaries intersect with the boundaries of Work Area 4 near Las Trampas Creek; however, only a very small segment overlaps with the Project Area. Neither of the archaeological sites (P-07-00404 and P-07-00405) have been previously evaluated for listing in the CRHR or NRHP. Both resources were revisited during the archaeological survey conducted for this project and both have been destroyed by subsequent development and road construction. The transmission line structures were determined to lack significance per CEQA and NRHP criteria (Supernowicz 2012; Supernowicz 2017).

**Table 1. Previously Recorded Resources within the Search Radius**

Primary No.	Name/Description	Type	Age
<b>Resources Previously Identified within the Project Area</b>			
P-07-000404	Carrick Homestead Site	Site	Prehistoric, Historic
P-07-000405	Locus 2 (Domingo Ranch)	Site	Historic
P-07-003118	Moraga PG&E High Lead Electrical Transmission Tower	Structure	Historic
P-07-004688	Contra Costa - Moraga Transmission Line	Structure	Historic
<b>Resources Previously Identified within the Search Radius</b>			
P-07-000475	Locus 1; Boeger Ranch	Site, District	Historic
P-07-000742	CC-77-1	Site	Prehistoric
P-07-002705	Park Gallery Commercial Building	Building	Historic
P-07-002746	Rheem Theatre	Building	Historic
P-07-003118	Moraga PG&E High Lead Electrical Transmission Tower	Structure	Historic

According to the record search results, the boundaries of 39 previous studies intersect the Project Area (**Table 2**). Of the approximately 1,320-acres of land within the Project Area, about 1,000 acres have been previously surveyed for cultural resources. The majority of the previous surveys were conducted within Work Area 4.



**Table 2. Previously Conducted Studies intersecting with the Project Area**

Report Number	Author(s)	Year	Title
S-001316	Cindy Desgrandchamp	1978	Archaeology Survey Report, Rescinded Route 04-CC-77, Excess Parcels 24524-07-01, 24524-08-01, 24524-16-01, 19575-01-01, 24524-10-01, 24524-17-01, 24524-18-01, 19560-03-01, 24524-11-01, 24524-13-01, In Moraga, Contra Costa County, Calif.
S-001931	Peter M. Banks	1979	An Archaeological Investigation of Minor Subdivision 210-78, 201 Crestview Drive, Orinda, Contra Costa County, California.
S-002059	Jane C. Adams	1980	Archaeological Survey Report, 04-CC-24 P.M. 1.2, Proposed Access Road to Route 24 near the Gateway Boulevard Overcrossing at the end of Upton Road near Orinda, Contra Costa County, 04229-910062
S-002497	David Chavez	1980	Cultural Resources Overview for the East Bay Municipal Utilities District Emergency Facilities-North Oakland Area, Alameda-Contra Costa Counties, California
S-002502	David Chavez	1981	Archaeological Resources Evaluation for Moraga Place, 55 Unit Subdivision EIR (letter report).
S-002761	David Chavez	1981	Northwood Homes EIR (letter report).
S-009172	Allen Pastron	1987	A Literature Search and Archaeological Surface Reconnaissance of the Proposed High Buckhorn Reservoir, Alameda and Contra Costa Counties, California
S-009451	Robert Cartier	1987	Cultural Resource Evaluation for the Siesta Valley Amphitheatre in the County of Contra Costa
S-010501	Leigh Jordan	1989	An Archaeological Study of the Lawrence Property at 1080 Bolinger Canyon Road, Moraga, Contra Costa County, CA
S-020516	Barry A. Price	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility PL-343-01, Orinda, Contra Costa County, California (letter report)

Report Number	Author(s)	Year	Title
S-023171	Allen G. Pastron and R. Keith Brown	2000	Historical Cultural Resources Assessment, Proposed Telecommunications Facility, Site No. PL-346-01, 370 Park Street, Moraga, California (letter report)
S-023882	Carolyn Losee	2001	Record Search for Sprint Spectrum's Personal Communication Services (PCS) Wireless "Gateway" Site (Ref# SF55XC600A): No Further Recommendations (letter report)
S-024567	Carolyn Losee	2001	Archaeological Survey for Sprint Spectrum's Personal Communication Services (PCS) Wireless "Gateway" Site (Ref#SF55XC600A): Negative Results (letter report)
S-026057	Carolyn Losee	2002	Archaeological Survey for Sprint Spectrum's Personal Communication Services (PCS) Wireless "Gateway" Site (Ref# SF55XC600A) (letter report)
S-030420	Earth Touch, Inc	2005	Collocation ("CO") Submission Packet, FCC Form 621, DT Moraga, SF16310A.
S-032094	Carolyn Losee	2006	Collocation ("CO") Submission Packet, FCC Form 621, TV-047-02, Rheem Theatre, 350 Park Street, Moraga, CA
S-037526	Carrie D. Wills and Kathleen A. Crawford	2010	Cultural Resources Records Search and Site Visit for T-Mobile West Corporation a Delaware Corporation Candidate BA01346, 370 Park Street, Moraga Contra Costa County, California.
S-039309	Dana E. Supernowicz	2012	Collocation ("CO") Submission Packet, PG&E Moraga, CNU4298
S-039309		2012	Cultural Resources Study of the PG&E Moraga Project, AT&T Wireless Services, Inc. Site No. CNU4298, Rheem Boulevard, South of Via Barcelona, Moraga, Contra Costa County, California 94556
S-043353	Carrie D. Wills and Kathleen A. Crawford	2013	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate BA01346A (PL346 370 Park St. RHEE), 370 Park Street, Moraga, Contra Costa County, California (letter report)
S-046765	Tara McClure-Cannon, Danna Allen, and Danielle Ross	2014	Rheem Valley AWS (EnSite 20547) Rheem Boulevard & Moraga Road, Moraga, Contra Costa County, CA 94556

Report Number	Author(s)	Year	Title
S-049869	Alex DeGeorgey	2015	Archaeological Survey Report for Robert Sanders Producer, Contra Costa County, California, Farm No. 2072, 2078, 2074, and 20789, Tract No. 61379, 61381, 61385, and 61386
S-049869	Oscar Gonzales and Julianne Polanco	2016	USDA_2015_1221_003 Section 106 Consultation, Livestock Watering Facilities for Robert and Sandra Sanders, Contra Costa, California
S-050911	Kyle Rabellino	2017	Historic Property Survey Report for the State Route 13 and 24 Lighting Safety Project, 04-VAR-13 & 24, PM VAR, EA 1J990, E-FIS 0414000411
S-050911	Kyle Rabellino	2018	Archaeological Survey Report for the State Route 13 and 24 Lighting Safety Project, CC0-24-1.0/R2.49, R4.20/R4.9 & ALA-13-5.19/5.49, EA 04-1J990, EFIS 0414000411
S-050911	Kyle Rabellino	2017	"Extended Phase I Archaeological Testing for the Proposed SR 13 and SR 24 Lighting Safety Project, SR 13, PM 5.19/5.49, Alameda County,
S-052523	Robin Hoffman, Katherine Anderson, and Paul Zimmer	2018	SR 24, PM 1.0/1.7, 1.7/R2.49, R4.2/R4.99, Contra Costa County, EA 04-1J990/0414000411"
S-052523	Paul Zimmer, Katherine Anderson, and Robin Hoffman	2018	Cultural Resources Inventory Report, Robert Sibley Volcanic Regional Preserve Land Use Plan Amendment Project
S-001093	Eric T. McGuire	1976	Archaeological/Historical Survey, Proposed Subdivision 4873, Lafayette, California
S-001316	Cindy Desgrandchamp	1978	Archaeology Survey Report, Rescinded Route 04-CC-77, Excess Parcels 24524-07-01, 24524-08-01, 24524-16-01, 19575-01-01, 24524-10-01, 24524-17-01, 24524-18-01, 19560-03-01, 24524-11-01, 24524-13-01, In Moraga, Contra Costa County, Calif.
S-001478	Stephen A. Dietz	1979	An archaeological reconnaissance of the approximately 8.5 acre Rancho Laguna Park Location in Moraga, Contra Costa County, California (letter report).
S-002538	Nancy Schluntz	1981	Draft Environmental Impact Report for Development of the Sanders Ranch in Moraga, California (letter report).

Report Number	Author(s)	Year	Title
S-006139	William D. Self	1983	An Archaeological Reconnaissance of the Bigbury Company Property in Moraga and Lafayette, Contra Costa County, California
S-010803	Miley Paul Holman	1989	Archaeological Inspection of Additional Properties of the Gateway Valley Specific Plan and Gateway Blvd. Extension Project, Orinda, Contra Costa County, California (letter report)
S-013417		1990	Archaeological Survey Report, Rheem Creek Project, Town of Moraga, Contra Costa County, California
S-013418		1991	Addendum to Archaeological Survey Report, Rheem Creek Project, Town of Moraga, Contra Costa County, California
S-022702	Jeffrey Hall, Eduardo Serafin, and Christopher D. Dore	2000	Cultural Resources Inventory for the Lamorinda Recycled Water Project, Contra Costa County, California. A study on the Briones Valley, Las Trampas Ridge, Oakland East, Vine Hill, and Walnut Creek USGS 7.5' Topographic Quadrangles
S-026732	Sue-Ann Schroder and Thomas M. Origer	2003	A Cultural Resources Survey for the Rancho Laguna Project, Contra Costa County, California
S-027553	Wayne H. Bonner	2004	Records Search Results and Site Visit for Cingular Wireless Facility Candidate PL-341-03 (Burton Valley/Lucas Drive), 3148 Lucas Drive, Lafayette, Contra Costa County, California (letter report)
S-033810	David S. Byrd	2005	Caldecott Tunnel Improvement Project, Historic Property Survey Report, Caltrans District 4, Alameda and Contra Costa Counties, 04-ALA 24 KP 8.5/10.0 (PM 5.3/6.2), 04-CC 24 KP 0.0/2.1 (PM 0.0/1.3), EA # 294900
S-033810	David S. Byrd	2005	Caldecott Tunnel Improvement Project, Finding of No Adverse Effect, Caltrans District 4, Alameda and Contra Costa Counties, 04-ALA 24 KP 8.5/10.0 (PM 5.3/6.2), 04-CC 24 KP 0.0/2.1 (PM 0.0/1.3), EA # 2494900

Report Number	Author(s)	Year	Title
S-033810	Barbra Siskin	2005	Archaeological Survey Report for the Caldecott Tunnel Improvement Project, Caltrans District 4, Alameda and Contra Costa Counties, 04-ALA 24 KP 8.5/10.0 (PM 5.3/6.2) 04-CC 24 KP 0.0/2.1 (PM 0.0/1.3), EA #294900
S-038392	Adrian Whitaker	2010	PG&E Contra-Costa to Moraga Reconductoring Project (letter report)
S-038392	Christophe Descantes	2014	PG&E Contra Costa-Moraga 230 Kilovolt Reconductoring Project, Cultural Resource Studies (Order #30983398 & 31058247; USACE File #2012-00043C) (letter report)
S-038392	Cindy L. Baker	2011	California Register of Historic Places Evaluation, Moraga Substation and the Contra Costa-Moraga Transmission Line, Contra Costa County, California
S-038392	Cindy L. Baker	2014	Cultural Resources Evaluation, Rossmoor Substation, Contra Costa County, California
S-038392	Adrian R. Whitaker	2015	Cultural Resources Report for the Contra Costa-Moraga 230 Kilovolt Reconductoring Project, Contra Costa County, California USACE File #2012-00043S
S-038392	Adrian Whitaker	2015	PG&E Contra Costa-Moraga 230 kV Reconductoring Project Modifications and Additions: Pull Site 41A North, Work Area 40; Crossing Structure 81F; Pull Site 77; Structures 143A, 143B, 143C; Pull Site 96; Landing Zone 96; Work Areas 101, 102A, 103; Work Area 1
S-038392	Carol Roland-Nawi	2015	COE_2015_0123_001; Contra Costa-Moraga 230 Kilovolt Re-conductor Project, Orinda, California; (2012-00043S)
S-039309	Dana E. Supernowicz	2012	Collocation ("CO") Submission Packet, PG&E Moraga, CNU4298
S-039309		2012	Cultural Resources Study of the PG&E Moraga Project, AT&T Wireless Services, Inc. Site No. CNU4298, Rheem Boulevard, South of Via Barcelona, Moraga, Contra Costa County, California 94556
S-046765	Tara McClure-Cannon, Danna Allen, and Danielle Ross	2014	Rheem Valley AWS (EnSite 20547) Rheem Boulevard & Moraga Road, Moraga, Contra Costa County, CA 94556

Report Number	Author(s)	Year	Title
S-048546	John Kelley	2016	Historic Property Survey Report; Canyon Road Bridge Replacement Over the West Branch of San Leandro Creek (also called Moraga Creek)
S-048546	John Kelley	2016	Archaeological Survey Report; Canyon Road Bridge Replacement Over the West Branch of San Leandro Creek (also called Moraga Creek)

## 4 Inventory Methods and Results

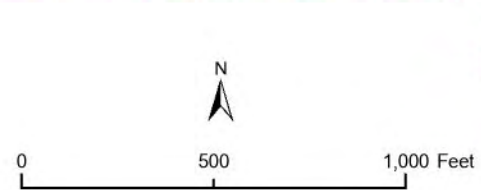
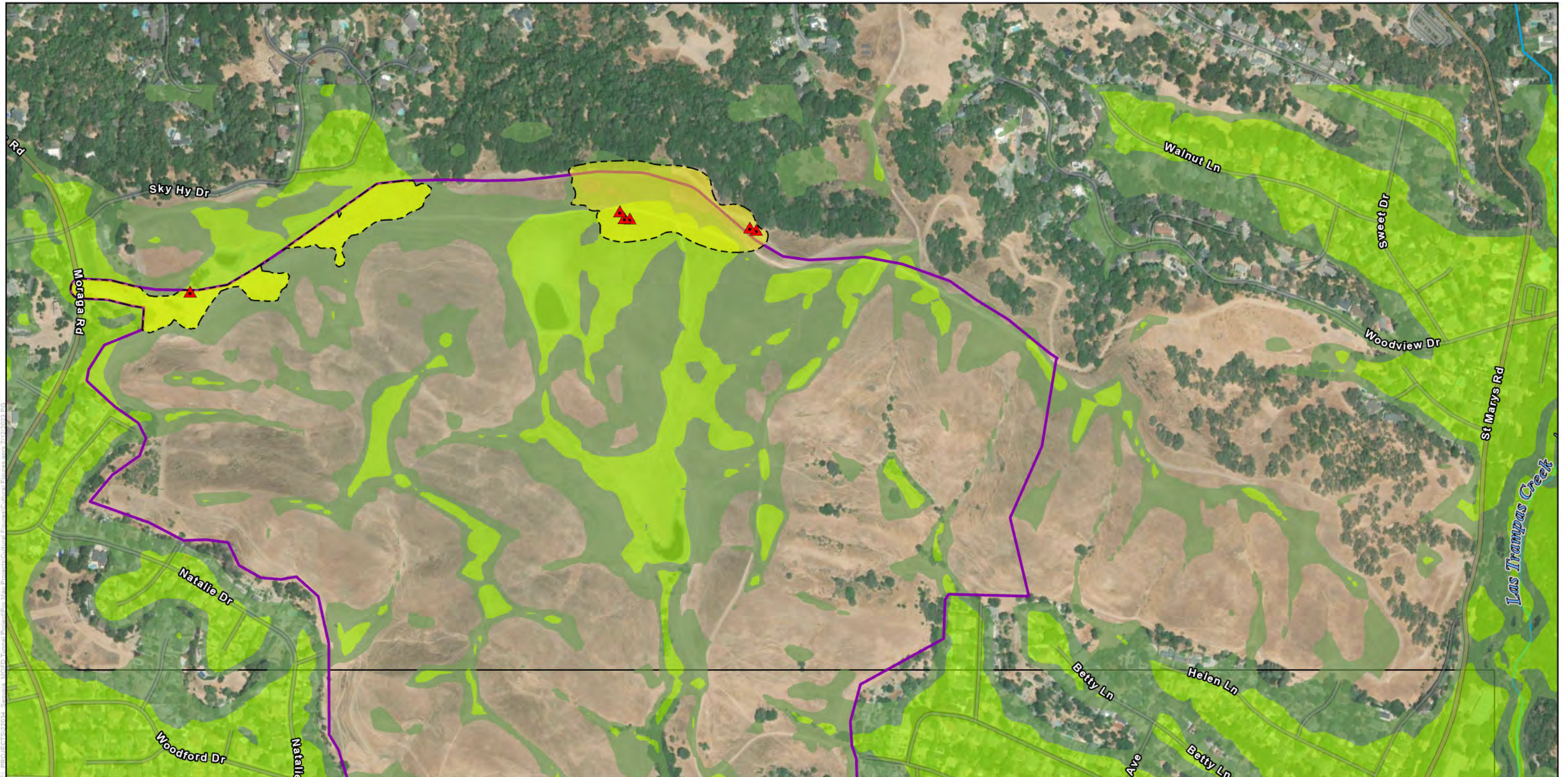
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A pedestrian survey was conducted by Montrose senior archaeologist Dean Martorana within portions of the Project Area that represented slopes of 10 percent or lower, were over 2 acres in area and were within proximity of a stream or confluence (see **Figure 3**). The survey intervals employed in this situation were intensive, or spaced at 20-meter intervals. Other areas that represented slopes between 10 and 20 percent were surveyed based on sensitivity and were surveyed using wider intervals, or 20- to 40-meter intervals. All other areas were not subject to pedestrian survey due to the steepness of the slopes (or >20 percent) or were isolated within areas surrounded by steep mountainous areas where the travel costs on foot would minimize the potential for long-term habitation or settlement by prehistoric populations.

The surveys were conducted on four separate dates, December 8, 2022, January 26, January 27, 2023, and June 2, 2023. Two of the previously recorded resources within the Project Area, P-07-000404 and P-07-000405, were revisited in the field during the field survey. Both resources have been destroyed by development or grading associated with housing or roadway projects, and no surface evidence of the sites was identified. Due to the heavy vegetation and grass cover, 24 shovel test pits were dug at locations within the Project Area surveyed that were considered of higher sensitivity for archaeological resources in order to better observe the subsurface conditions and inspect for evidence of archaeological deposits. A total of about 36-acres were surveyed. No evidence of archaeological deposits was identified throughout the surveys. **Appendix C** contains example photos of the Project Areas and surroundings.

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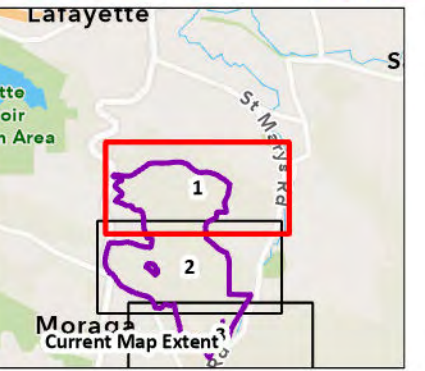
Work Areas  
 Work Area 4

▲ Shovel Test Probe Location  
 Archaeological Survey Area

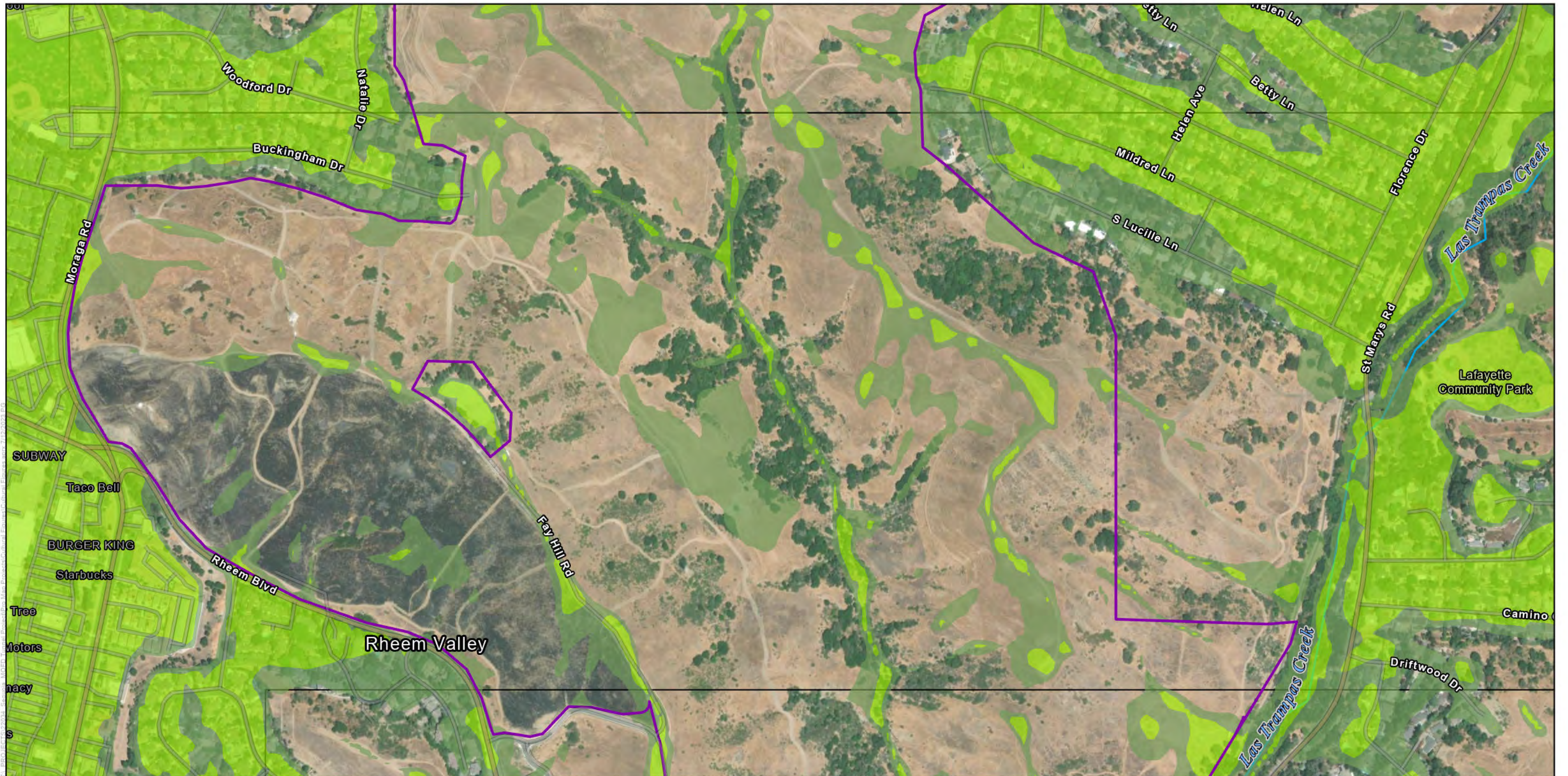
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Page Index  
 Streams

**Figure 3**  
 Project and Survey Areas



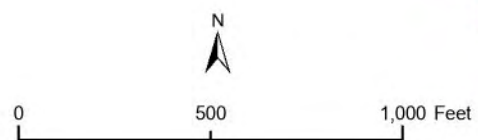
Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



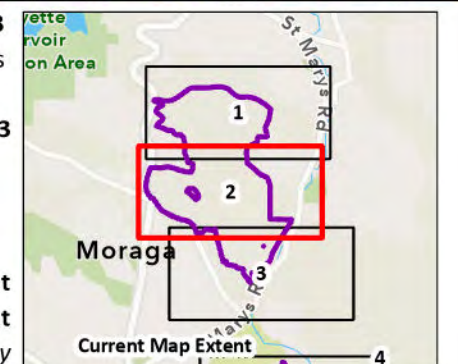
Work Areas  
 [Purple outline] Work Area 4

Slope Area (Percentage)  
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[Black outline] Page Index  
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**Figure 3**  
 Project and Survey Areas  
 Page 2 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



Work Areas  
 Work Area 4

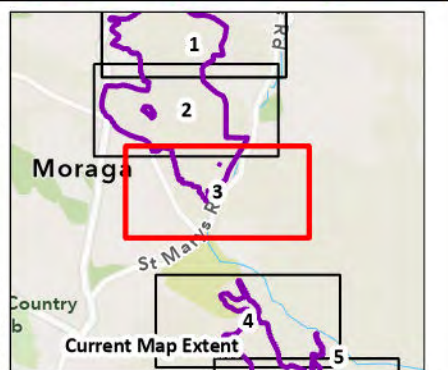
Archaeological Survey Area

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 ≤20

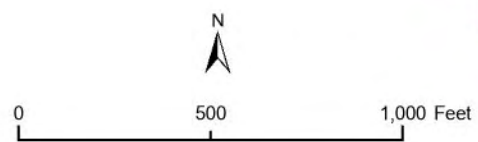
Page Index  
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**Figure 3**  
 Project and Survey Areas

Page 3 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory

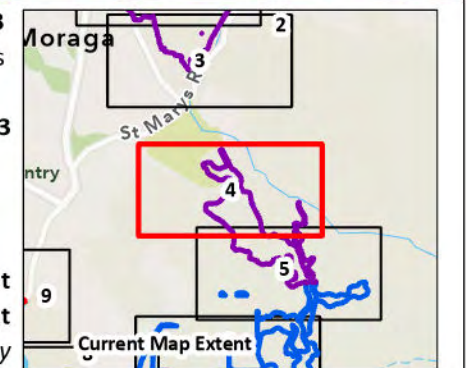


**Work Areas**  
 Work Area 4

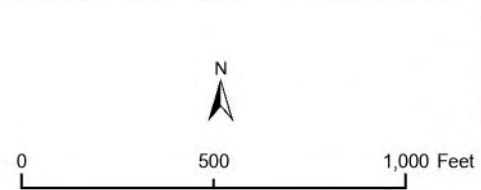
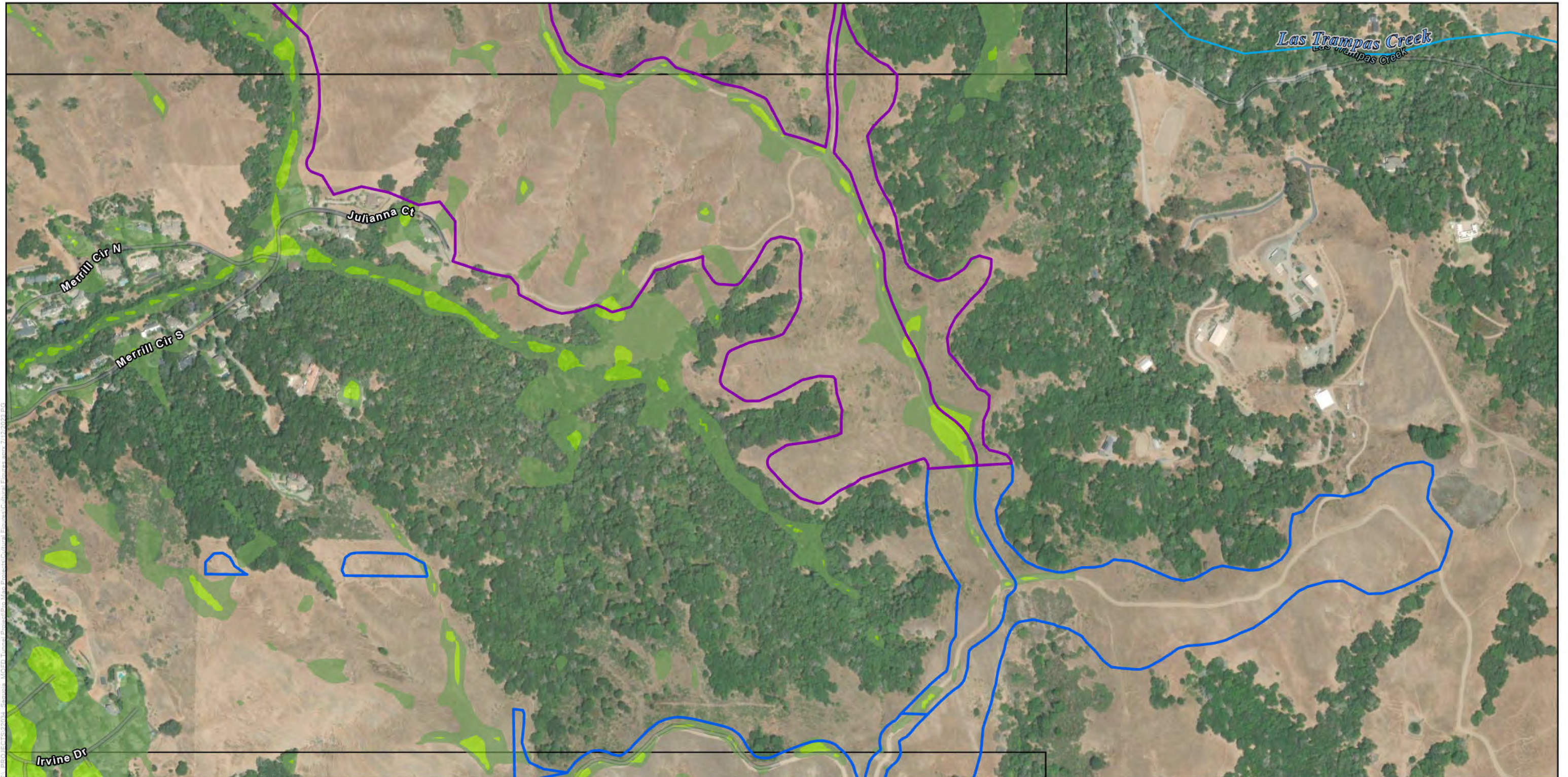
**Slope Area (Percentage)**  
 ≤10  
 ≤20

Page Index  
 Streams

**Figure 3**  
 Project and Survey Areas  
 Page 4 of 13



**Moraga-Orinda Fire District**  
**Tunnel East Bay Hills Shaded Fuel Break Project**  
 Cultural Resources Inventory

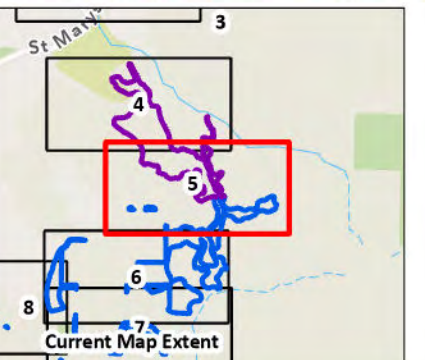


**Work Areas**  
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 [Purple outline] Work Area 4

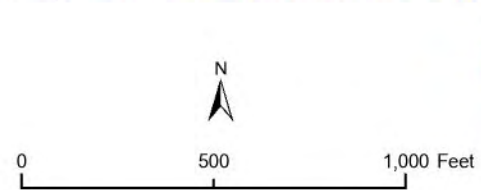
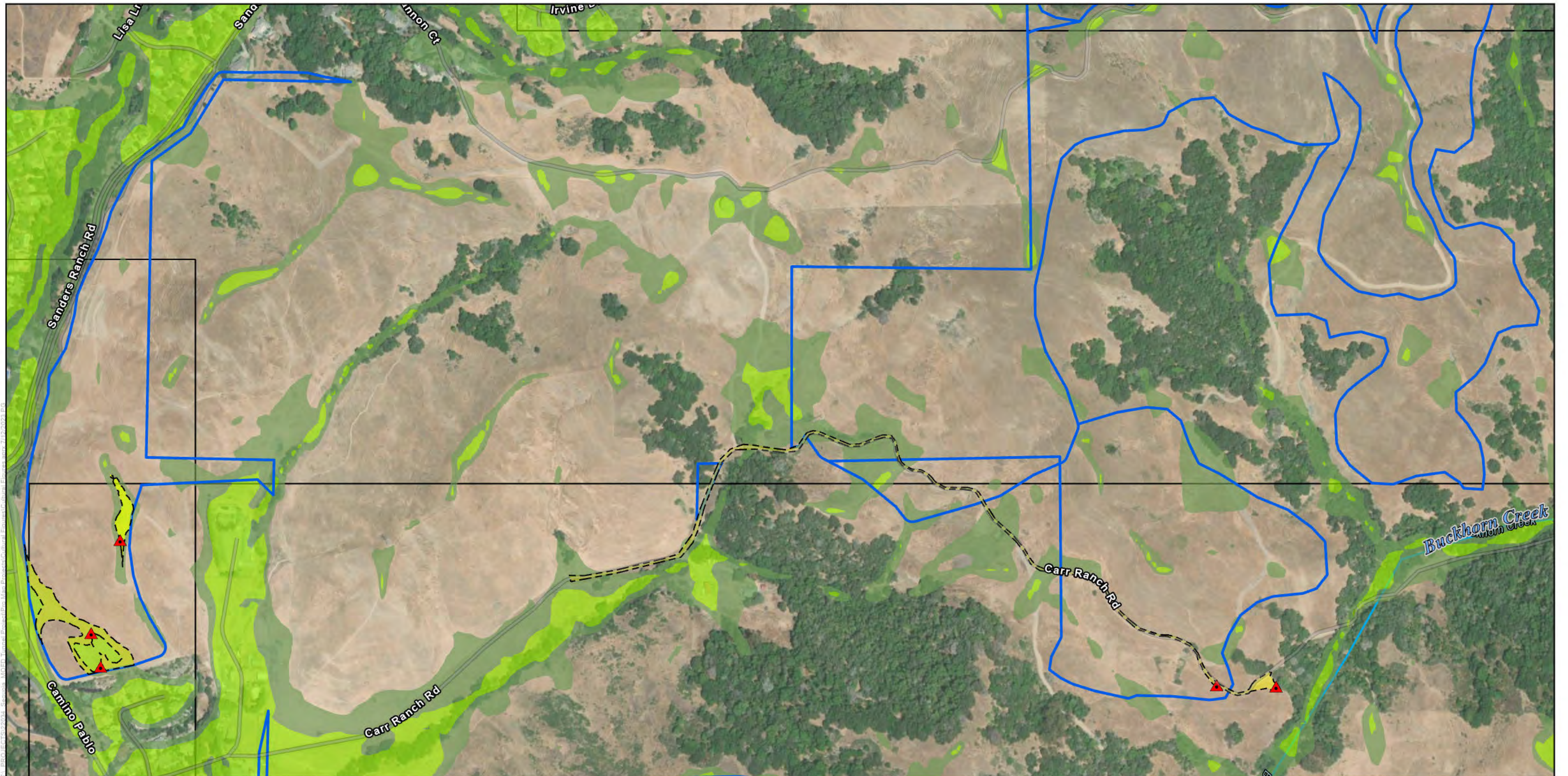
**Slope Area (Percentage)**  
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 [Dark Green] ≤20

[Black outline] Page Index  
 [Blue line] Streams

**Figure 3**  
 Project and Survey Areas  
 Page 5 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



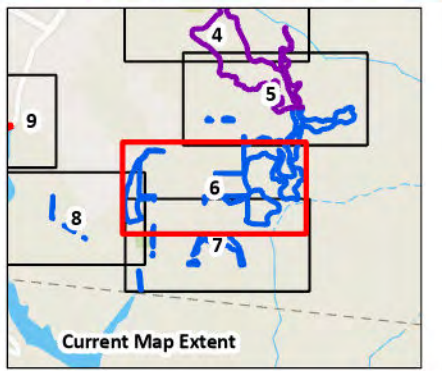
Work Areas  
 Work Area 1

▲ Shovel Test Probe Location  
 Archaeological Survey Area

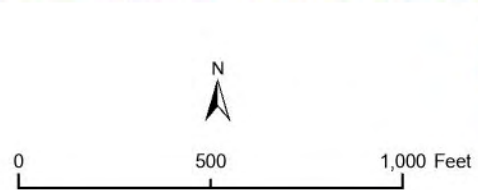
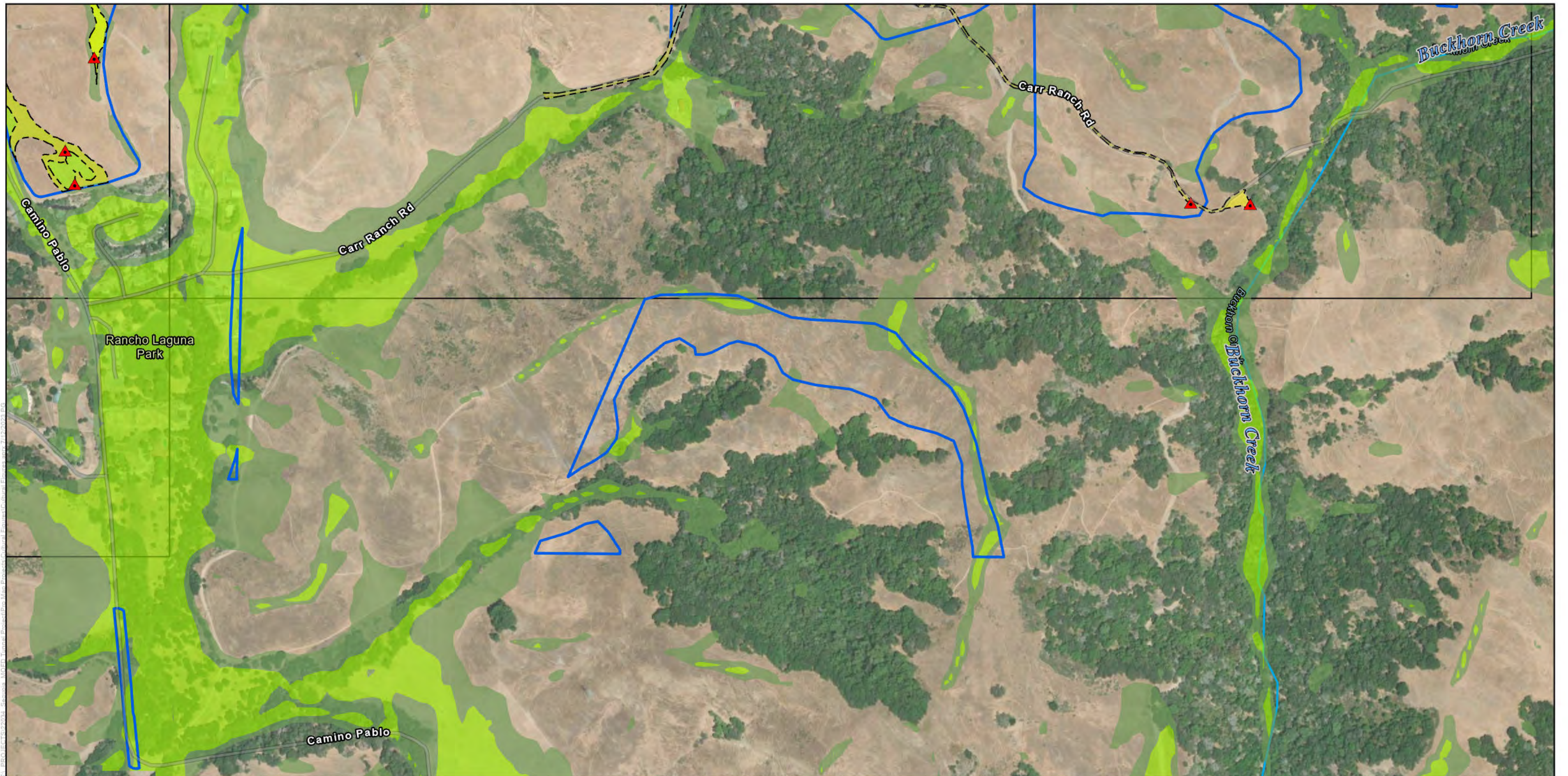
Slope Area (Percentage)  
 ≤10  
 ≤20

Page Index  
 Streams

**Figure 3**  
 Project and Survey Areas  
 Page 6 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



Work Areas  
 Work Area 1

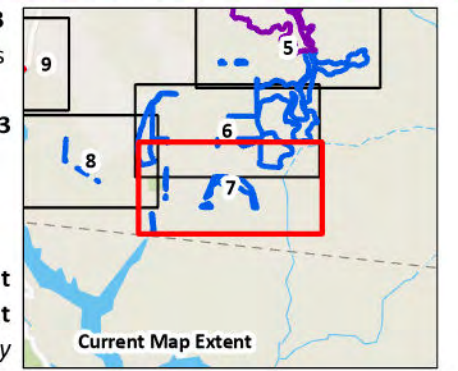
▲ Shovel Test Probe Location  
 Archaeological Survey Area

Slope Area (Percentage)  
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 ≤20

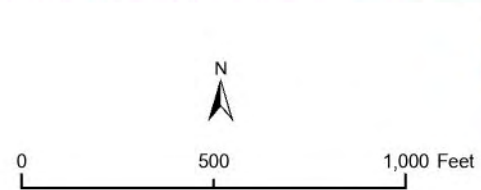
Page Index  
 Streams

**Figure 3**  
 Project and Survey Areas

Page 7 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



Work Areas  
  Work Area 1

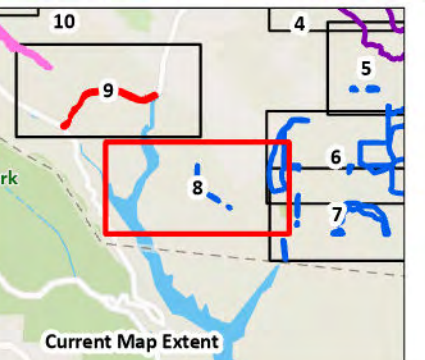
▲ Shovel Test Probe Location  
  Archaeological Survey Area

Slope Area (Percentage)  
 ≤10  
 ≤20

Page Index

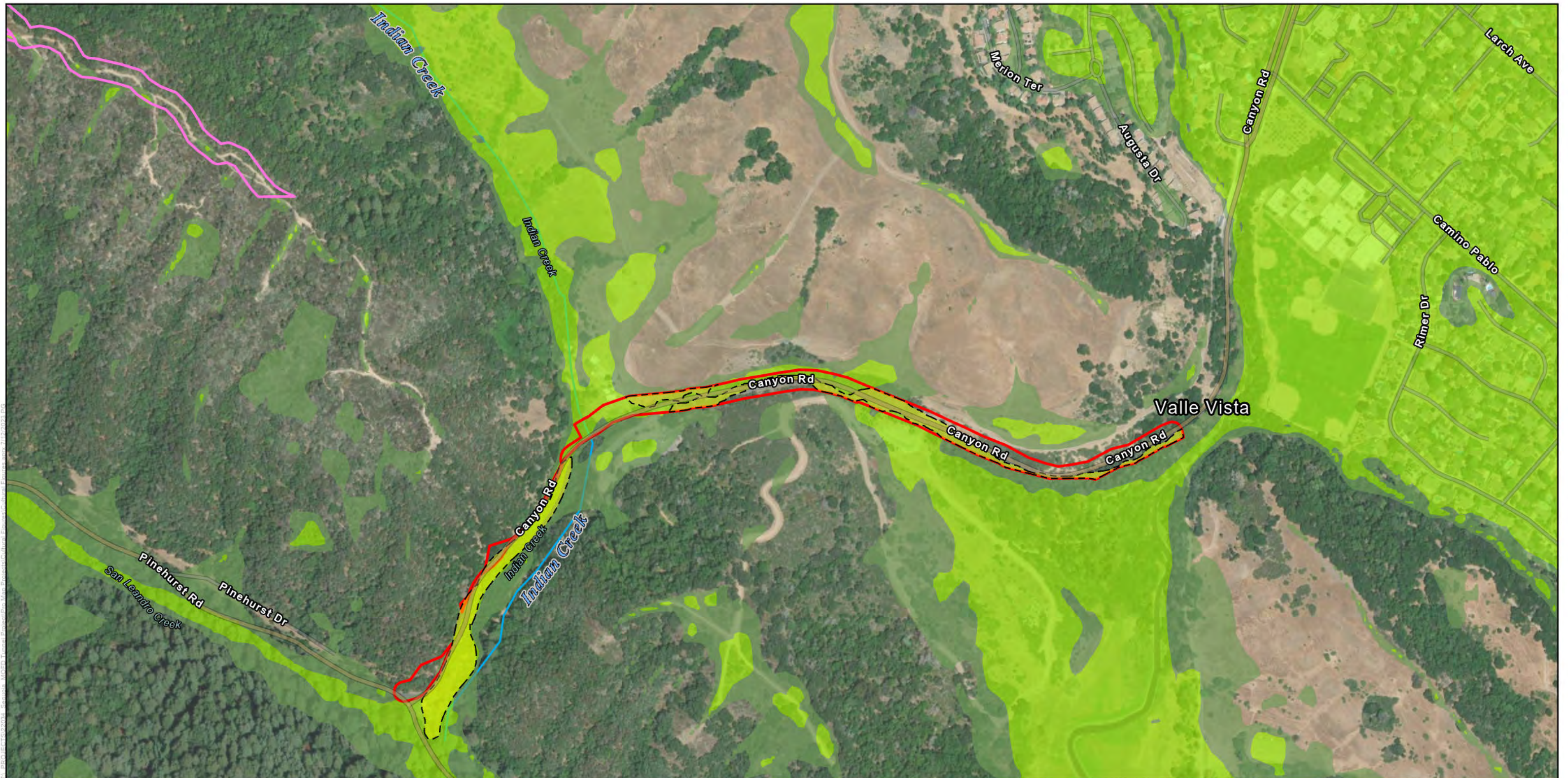
**Figure 3**  
 Project and Survey Areas

Page 8 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



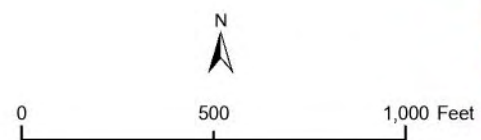


**Work Areas**  
 [Red outline] Work Area 2  
 [Pink outline] Work Area 6

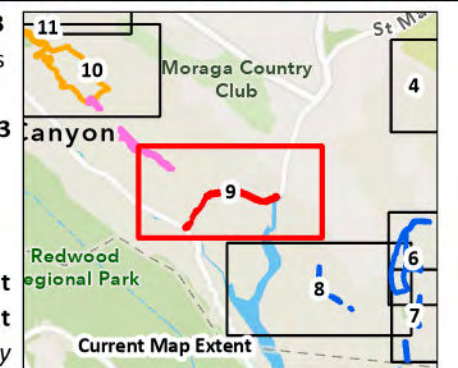
[Dashed yellow outline] Archaeological Survey Area

**Slope Area (Percentage)**  
 [Light green] ≤10  
 [Dark green] ≤20

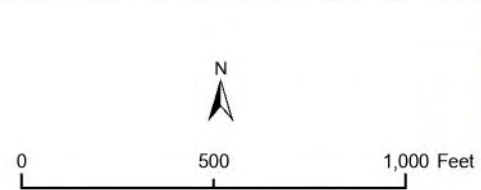
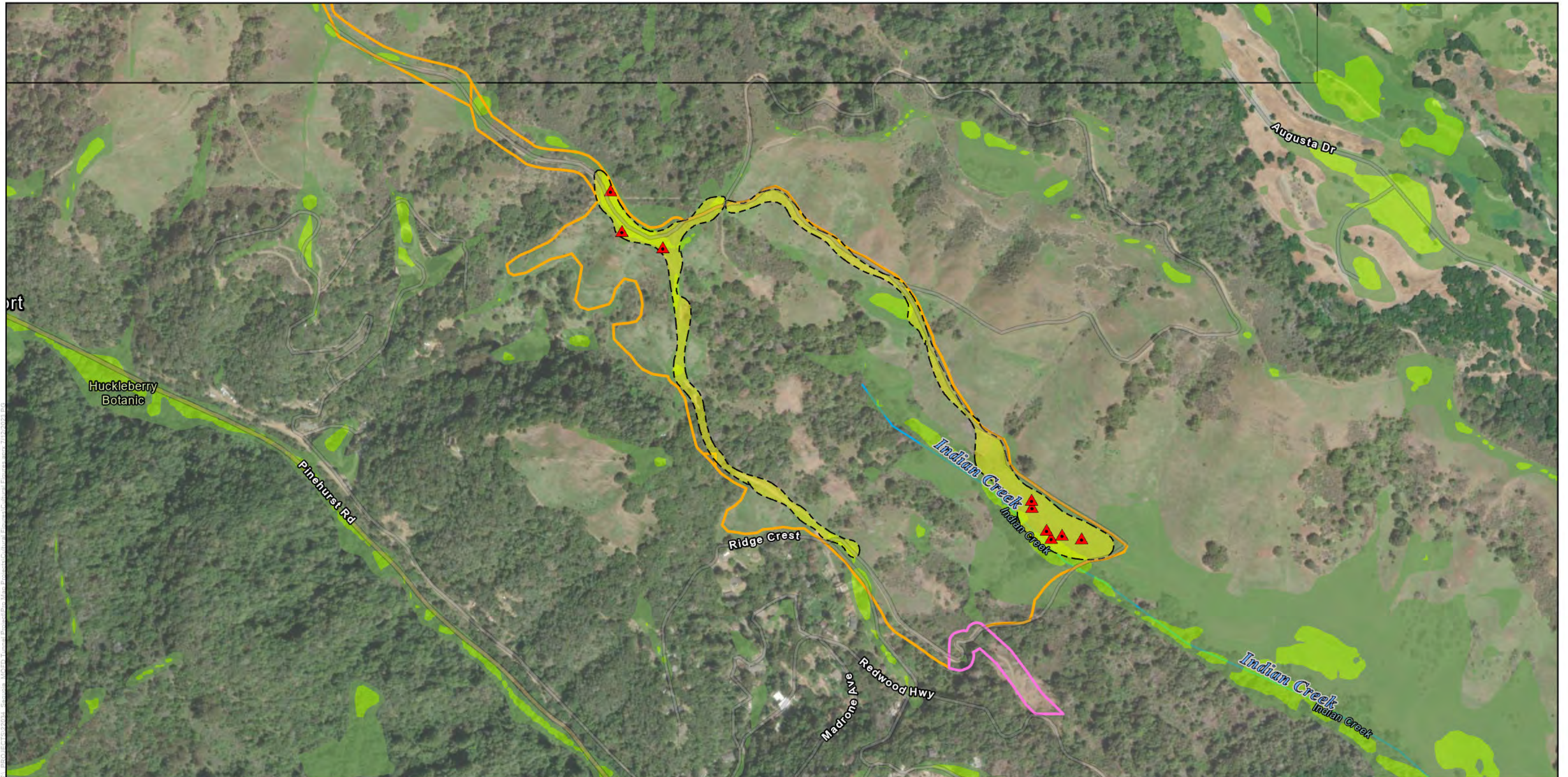
[Black outline] Page Index  
 [Blue line] Streams



**Figure 3**  
 Project and Survey Areas  
 Page 9 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



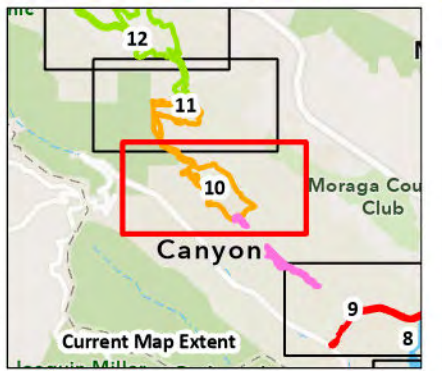
**Work Areas**  
 Work Area 5  
 Work Area 6

Shovel Test Probe Location  
 Archaeological Survey Area

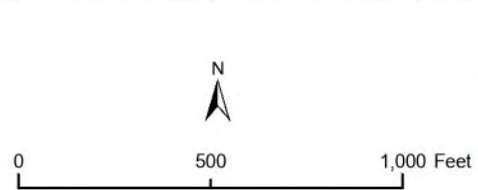
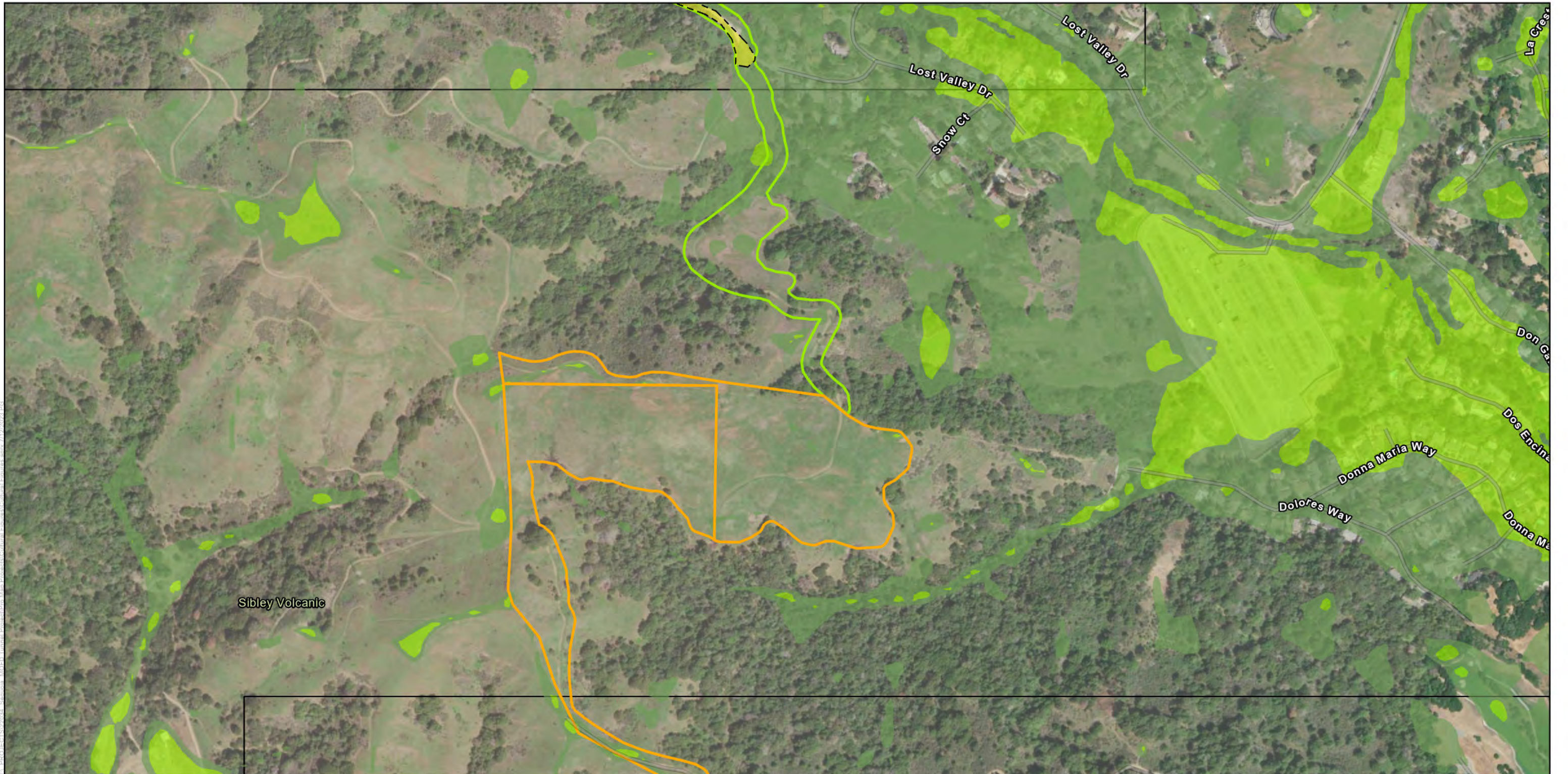
**Slope Area (Percentage)**  
 ≤10  
 ≤20

Page Index  
 Streams

**Figure 3**  
 Project and Survey Areas  
 Page 10 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory



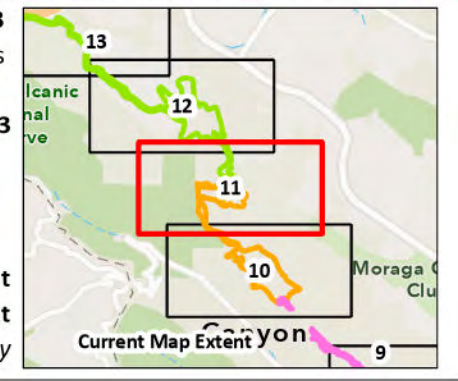
**Work Areas**  
  Work Area 3  
  Work Area 5

  Archaeological Survey Area

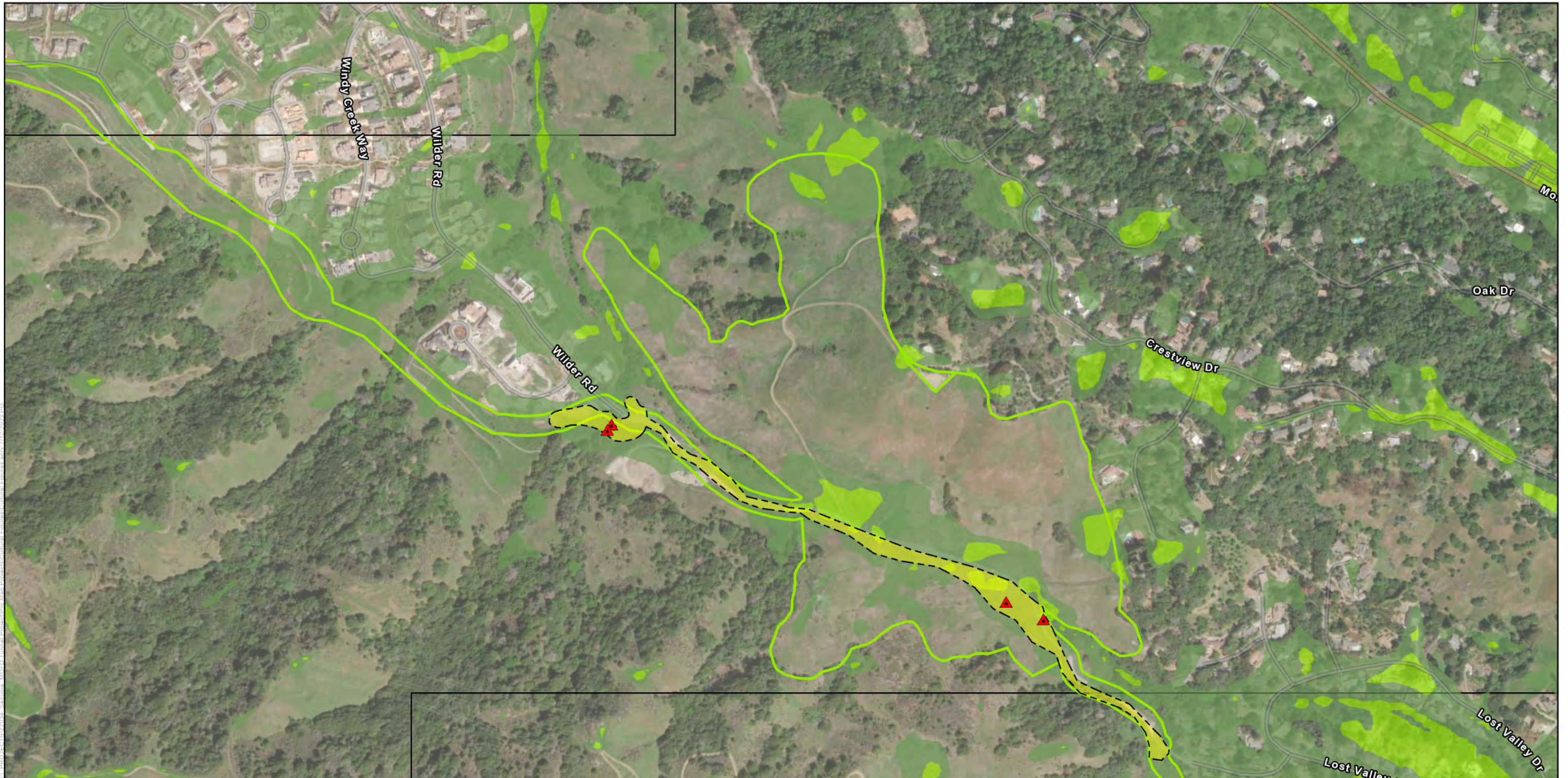
**Slope Area (Percentage)**  
 ≤10  
 ≤20

Page Index

**Figure 3**  
 Project and Survey Areas  
 Page 11 of 13



**Moraga-Orinda Fire District**  
**Tunnel East Bay Hills Shaded Fuel Break Project**  
 Cultural Resources Inventory



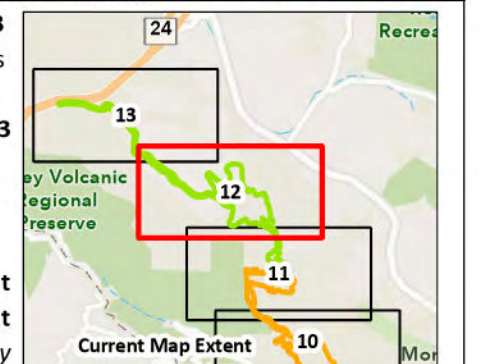
**Work Areas**  
 Work Area 3  
 Feature

Shovel Test Probe Location  
 Archaeological Survey Area

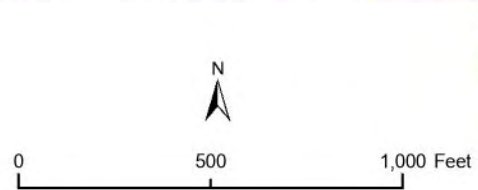
**Slope Area (Percentage)**  
 ≤10  
 ≤20

Page Index

**Figure 3**  
 Project and Survey Areas  
 Page 12 of 13



Moraga-Orinda Fire District  
 Tunnel East Bay Hills Shaded Fuel Break Project  
 Cultural Resources Inventory

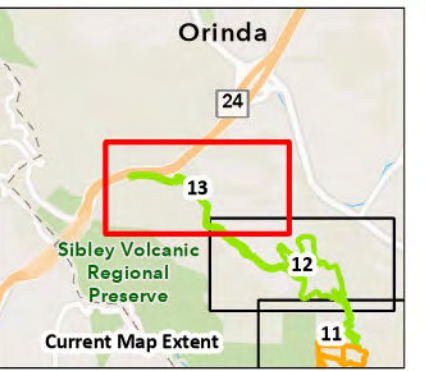


Work Areas  
 Work Area 3

Slope Area (Percentage)  
 ≤10  
 ≤20

Page Index

**Figure 3**  
 Project and Survey Areas  
 Page 13 of 13



**Moraga-Orinda Fire District**  
**Tunnel East Bay Hills Shaded Fuel Break Project**  
*Cultural Resources Inventory*

## 5 Study Findings and Management Recommendations

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A cultural resources record search was conducted to ascertain whether any previously identified, significant cultural resources occur within the Project Area<sup>4</sup>. To identify any previously unrecorded archaeological resources that occur within areas of the Project Area, a stratified sample archaeological field survey was also conducted considered to have the greatest potential to contain cultural resources. While the proximity to the riparian habitats would suggest a higher potential to encounter archaeological resources, the Project Area is predominately located in very steep terrain, surrounded by valleys that have been heavily altered since the prehistoric period for suburban development. About 1,280-acres or 96 percent of the Project Area is in terrain greater than 20 percent slopes. This hummocky and hilly landscape would not promote long-term habitation or settlement by prehistoric populations due to the costs of travel and lack of access to fresh water and resources. While ephemeral lithic processing sites or bedrock mortar sites may occur in these areas, no substantial archaeological deposits would be expected throughout the majority of the project acreage. Historic-era (or post 1850-era) settlement and the archaeological deposits associated with this period, would also not be expected for the same reasons.

The treatment measures of the proposed project are not expected to require significant ground disturbance, especially in the case of prescribed burns or herbicidal applications. The manual treatments proposed will utilize hand tools and the mechanical operations will use some tractors and masticators that can disturb the surface; however, these actions are not expected to disturb the surface beyond a depth of 1 to 2 feet. Further, the horizontal level of disturbance in these cases would be limited to the surface area associated with the vegetation being removed, a vast majority of which are on slopes of >20 percent, and, as such, is not likely to disturb areas that would have served as platforms for human activities.

Although no significant resources were identified during the archival and field efforts that may be impacted by the project actions, and the proposed treatment areas are considered to have a low potential to yield unidentified historical resources, the potential exists for unexpected discoveries throughout the landscape in the Project Area. The CalVTP PEIR provides mitigation measures for the protection of historical resources in the event of an unanticipated discovery during the implementation of the proposed project, as follows (CalVTP Section 3.5 Page 15):

### **Mitigation Measure CUL-2: Protect Inadvertent Discoveries of Unique Archaeological Resources or Subsurface Historical Resources**

If any prehistoric or historic-era subsurface archaeological features or deposits, including locally darkened soil (“midden”), that could conceal cultural deposits, are discovered during ground-disturbing activities, all ground-disturbing activity within 100 feet of the resources will be halted and a qualified archaeologist or archaeologically trained resource professional will assess the significance of the find. The qualified archaeologist will work with the project proponent to develop a primary records report that will comply with the current “Archaeological Review Procedures for CAL FIRE Projects” or equivalent applicable state or local agency procedures, if applicable. If the archaeologist determines that further information is needed to evaluate significance, a data recovery plan will be prepared. If the

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<sup>4</sup> To reiterate, the Project Area refers to all the individual Work Areas (1 through 6) allotted for potential treatment.

find is determined to be significant by the qualified archaeologist (i.e., because the find constitutes a unique archaeological resource, subsurface historical resource, or tribal cultural resource), the archaeologist will work with the project proponent to develop appropriate procedures to protect the integrity of the resource. Procedures could include preservation in place (which is the preferred manner of mitigating impacts to archaeological sites), archival research, subsurface testing, or recovery of scientifically consequential information from and about the resource. Any find will be recorded standard DPR Primary Record forms (Form DPR 523) will be submitted to the appropriate regional information center.

Per the CalVTP EIR (Section 3.5 page 18), due to the shallow depth of any ground disturbance relative to the anticipated depth of buried human remains, treatment activities under the CalVTP have low potential to uncover previously unknown remains. Further, the procedures for the treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 that would be applicable in a situation where any human remains are identified during project operations, will mitigate any potential impacts to Native American burials or human remains.

## 6 References

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**Appendix A**  
**Native American Correspondence**  
**[Confidential Information Redacted]**

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**Appendix B**  
**Records Search Results**  
**[Confidential Information Redacted]**

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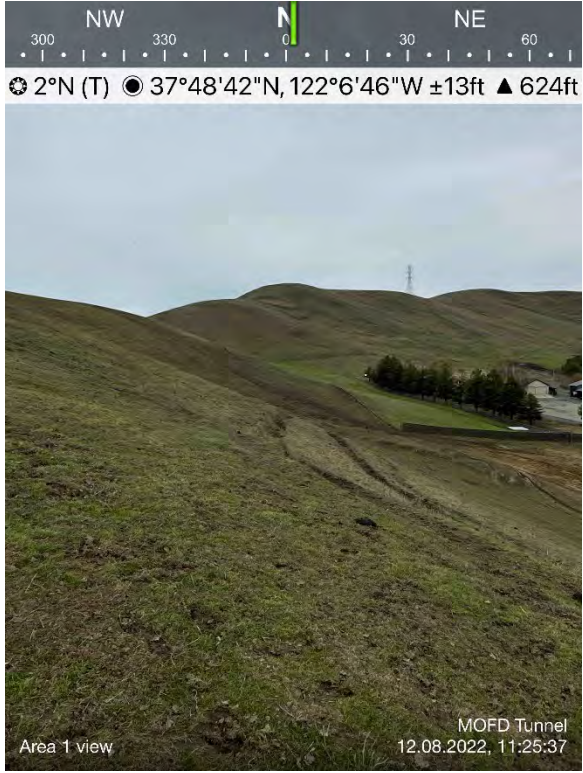

# **Appendix C**

## **Photographic Record**

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# Appendix C. Site Photographs

<b>Photo No. 1</b>	<b>Date:</b> 12/8/2022	<div data-bbox="669 214 1247 982">  <p>Area 1 view</p> <p>MOFD Tunnel 12.08.2022, 11:25:37</p> </div>
<b>Photo No. 2</b>	<b>Date:</b> 12/8/22	<div data-bbox="669 1008 1247 1774">  <p>Work area 3</p> <p>MOFD Tunnel 12.08.2022, 12:50:25</p> </div>



# Appendix C. Site Photographs

<b>Photo No. 3</b>	<b>Date:</b> 1/27/2023	<div data-bbox="673 210 1242 315">  </div>  <div data-bbox="682 934 1234 976"> <p>Work area side of road</p> <p>Work Area 2 - MGFED Tunnel 01.27.2023 - 12:05:52</p> </div>
<b>Photo No. 4</b>	<b>Date:</b> 1/27/23	<div data-bbox="673 1018 1242 1123">  </div>  <div data-bbox="682 1701 1234 1764"> <p>View west along survey</p> <p>Work Area 4 - MOFD Tunnel 01.27.2023 - 11:07:37</p> </div>

# Appendix C. Site Photographs

<b>Photo No. 5</b>	<b>Date:</b> 1/27/2023	<div data-bbox="662 205 1250 982"> </div>
<b>Photo No. 6</b>	<b>Date:</b> 1/27/23	<div data-bbox="673 1014 1237 1759"> </div>

# Appendix C. Site Photographs

<b>Photo No. 6</b>	<b>Date:</b> 6/2/2023	<div data-bbox="678 220 1234 972"> <p>View from work area</p> <p>MOFD Carr ranch 06.02.2023, 11:32:02</p> </div>
<b>Photo No. 7</b>	<b>Date:</b> 6/2/2023	<div data-bbox="678 1018 1234 1759"> <p>Viewshed west toward home, not from work area but access</p> <p>MOFD Carr ranch 06.02.2023, 11:46:40</p> </div>