

CULTURAL RESOURCES INVENTORY REPORT

FOR

PORTIONS OF THE RICHMOND PROPERTIES

RICHMOND, CONTRA COSTA COUNTY, CALIFORNIA

March 2013

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MANAGEMENT SUMMARY

This report presents the results of the cultural resources investigation, which included the identification of archaeological resources and cultural landscape features, for portions of the University of California's Richmond properties in Richmond, Contra Costa County, California. Within the 133-acre area comprised of these properties, the University of California proposes to consolidate the biosciences programs of the Lawrence Berkeley National Laboratory and to develop additional facilities for use by both the Lawrence Berkeley National Laboratory and University of California, Berkeley, and other institutional or industry counterparts for research and development focused on energy, environment, and health. The Phase 1 development plan would construct the first three buildings within a smaller 16-acre area on these properties.

Due to the involvement of the United States Department of Energy, the proposed Phase 1 development is a federal undertaking as defined by Section 106 of the National Historic Preservation Act and its implementing regulations, 36 Code of Federal Regulations Part 800. Therefore, only the smaller 16-acre area is subject to Section 106 regulations in order to take into account the effect of the undertaking on any historic property (i.e., district, site, building, structure, or object) that is included in or eligible for inclusion in the National Register of Historic Places. This cultural resources investigation was conducted to identify archaeological resources and cultural landscape features that may meet the definition of a historic property under the National Historic Preservation Act, per 36 CFR 800.4. Built environment resources, such as buildings and structures, are addressed in a separate historic properties survey report. The United States Department of Energy is the lead federal agency under Section 106.

This investigation also complies with the California Environmental Quality Act (Title 14 of the California Code of Regulations 15064.5). The 133-acre is subject to programmatic-level analysis under CEQA, while the smaller 16-acre area (where specific project construction will occur) will be subject to project-level analysis under CEQA. The University of California is the lead agency under CEQA.

This investigation included background research for the 133-acre area, which is considered the Study Area. The Area of Potential Effects is the smaller 16-acre area, which is considered the Phase 1 development plan area. Since the Area of Potential Effects is subject to Section 106 regulations, this area required a field survey as well as background research. Pursuant to Section 106 of the National Historic Preservation Act, 36 Code of Federal Regulations Part 800.4, this report documents the methods used to identify all historic properties within the Area of Potential Effects. Findings for this report are based on the following:

- A cultural resources records search and historic map review for the Study Area at the Northwest Information Center of the California Historic Resource Inventory System at California State University, Sonoma;
- the initiation of Section 106 consultation with Native American groups and individuals identified by the Native American Heritage Commission (36 CFR Part 800.2(a));
- an inventory survey of the Area of Potential Effects; and,
- documentation of newly identified cultural resources (i.e., archaeological resources and cultural landscape features) within the Area of Potential Effects on California Department of Parks and Recreation 523 forms.

The results of the records search indicate that there is one previously recorded prehistoric shellmound, CA-CC0-157, within the Study Area. The field survey resulted in the identification of two newly identified historic period cultural resources within the Area of Potential Effects, GANDA-622-01 (Eucalyptus Stands 1 and 2), which consists of historic period landscape features, and GANDA-ISO-622-01, an isolated historic period bottle. These resources were formally recorded on Department of Parks and Recreation 523 forms, but not evaluated for their potential for eligibility for listing in the National Register of Historic Places and California Register of Historical Resources.

This inventory report includes the methods and results of background research consisting of a records search and a literature review; geoarchaeological, prehistoric, ethnographic, and historical background information; a field survey; a geoarchaeological sensitivity analysis; and consultation with the Native American Heritage Commission and potentially interested Native American groups and individuals; as well as recommendations for any subsequent archaeological work to meet the requirements of Section 106 and 36 Code of Federal Regulations 800.4. This investigation addresses only archaeological resources and cultural landscape features within the Area of Potential Effects. The identification and evaluation of the built environment resources have been addressed in a separate report.

While this investigation did not result in the identification of any newly or previously documented prehistoric archaeological resources within the Area of Potential Effects, the geoarchaeological analysis, environmental setting, and close proximity of several prehistoric shellmounds to the Area of Potential Effects and Study Area indicate that the Area of Potential Effects has a high sensitivity for the presence of buried and surface prehistoric resources. In addition, there is evidence of historic use of the site based on results of the background research and field survey; therefore, there is the potential for the presence of historic period archaeological resources as well.

This cultural resources investigation adheres to the California Office of Historic Preservation's *Archaeological Resource Management Reports Recommended Contents and Format* (1990); the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 CFR 44716); and the United States Army Corps of Engineers' *Guidelines for Compliance with Section 106 of the National Historic Preservation Act* (2012).

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1.0 INTRODUCTION

The University of California (UC or the University) proposes to establish a new major research campus at properties it owns in Richmond, California. The new campus would consolidate biosciences programs of the Lawrence Berkeley National Laboratory (LBNL) and develop additional facilities for use by both LBNL and UC Berkeley and other institutional or industry counterparts for energy, environment, and health research. The approximately 133-acre site is located at 1301 South 46th Street in the South Shoreline area of the City of Richmond (Figures 1 and 2), approximately five miles northwest of the UC Berkeley campus and the LBNL site in Berkeley. The University is developing Phase 1 development plans that would result in the demolition of 25 existing structures totaling approximately 107,000 gross square feet (gsf). Phase 1 would then consolidate existing LBNL bioscience programs currently in leased space into three new buildings totaling up to 600,000 gsf with an occupancy of approximately 1,000 average daily population (adp). Phase 1 development work would occur in a smaller 16-acre area within the larger 133-acre project area.

The National Historic Preservation Act (NHPA) of 1966, as amended, requires that every federal agency consider the effect of its undertakings on historic properties. The United States Department of Energy (DOE) is the lead federal agency for the Phase 1 development plan. The Phase 1 development plan is an undertaking as defined in 36 Code of Federal Regulations (CFR) §800.16(y) with the potential to cause effects on historical properties (36 CFR §800.3(a)). As such, DOE will address Section 106 of the NHPA to take into account the effect of the undertaking on any historic property (i.e., district, site, building, structure, or object) that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). This investigation was conducted to identify archaeological resources and cultural landscape features that may meet the definition of a historic property under the NHPA, as per 36 CFR 800.4. This investigation meets the requirements for compliance with the California Environmental Quality Act (CEQA) (Title 14 CCR 15064.5). The 133-acre is subject to programmatic-level analysis under CEQA, while the smaller 16-acre area (where specific project construction would occur) is subject to project-level analysis under CEQA. The University of California is the lead agency under CEQA.

This report includes the methods and results of background research that consists of a records search and a literature review; prehistoric, ethnographic, and historic background information; a field survey; a geoarchaeological sensitivity analysis; and consultation with the Native American Heritage Commission (NAHC) and potentially interested Native American groups and individuals, as well as recommendations for complying with the requirements of Section 106 and 36 CFR 800. This investigation addresses only archaeological resources within the APE. The identification and evaluation of the built environment resources have been addressed in a separate report (Tetra Tech 2013a [Draft] *Historic Properties Survey for Portions of Richmond Field Station*).

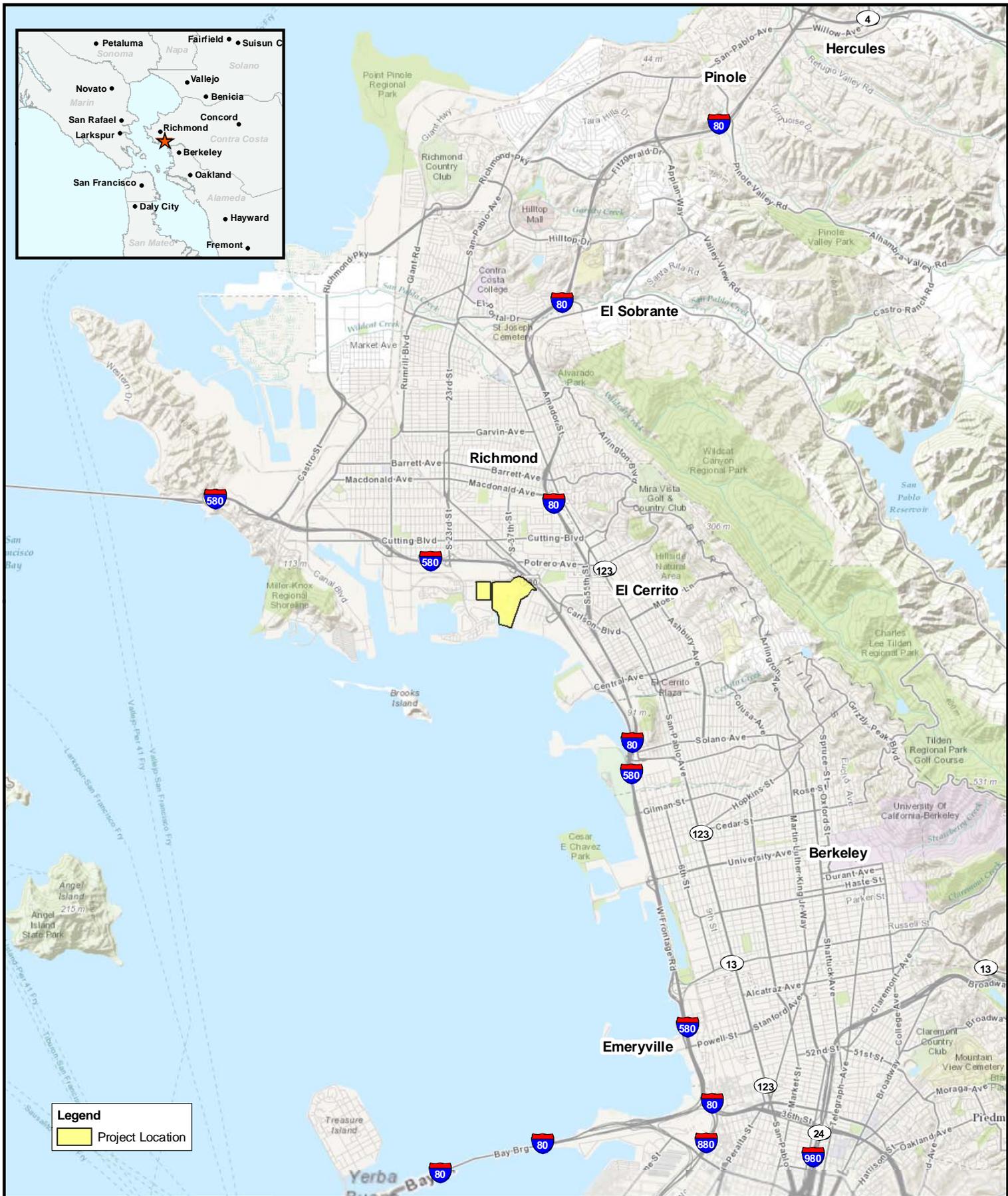
Archaeologists who conducted this investigation meet the Secretary of Interior's Professional Qualification Standards and agree to comply with the Secretary of Interior's Professional Qualification Standards for the Guidelines for Archaeology and Historic Preservation (1983; 48 CFR 44716).

DEFINITION OF THE AREA OF POTENTIAL EFFECTS - PHASE 1 DEVELOPMENT AREA

The Area of Potential Effects (APE) encompasses the Phase 1 development area, which is the 16-acre portion where building demolition and site preparation work would occur (Figures 3 and 4). Because the DOE is implementing the Phase 1 development plan, the APE is subject to Section 106 regulations. It is also subject to project-level CEQA analysis. The redevelopment includes demolishing 25 existing structures and removing approximately 170 immature and mature eucalyptus and pine trees as part of the Phase 1 site preparation work. The remainder of the existing trees would not be disturbed, and approximately 75 immature drought-resistant trees would be planted as a feature of the Phase 1 development. The southern portion of the Phase 1 site is in an area that is potentially subject to water inundation due to sea level rise, a tsunami, or a 100-year flood. In order to protect the Phase 1 facilities from potential inundation, the base elevation of the Phase 1 area would be increased from an average of approximately 10 feet above sea level (asl) to approximately 15 feet asl, and the base elevation of the facilities would be constructed at 15 feet asl. This will require adding approximately 70,000 cubic yards of soil at varying depths over an area of approximately 12 acres. The proposed depth of ground disturbance is not currently defined but is expected to be extensive due to the removal of trees, buildings, and preparations for development.

DEFINITION OF THE STUDY AREA

The Study Area encompasses the larger 133-acre site (Figure 3), which consists of developed upland areas with buildings used for academic teaching and research activities and spaces leased by private entities, a north-south oriented planting of eucalyptus trees in the central portion of the site, areas of coastal grasslands, a tidal salt marsh (known as the Western Stege Marsh), and a transition zone between the upland areas and the marsh. Grasslands occur in a number of meadows and comprise about 14 acres of the site. The Bay Trail is south of the site. The University purchased the original Richmond Field Station landholdings in 1950. From 1870 to 1950, much of the property belonged to the California Cap Company, which manufactured explosives. The southeast portion of the uplands area was used for explosive manufacturing from the 1870s until the University acquired the land (Tetra Tech 2013b). The portion of the Study Area outside of the APE (described above) is not subject to Section 106 regulations. However, Section 106 may be completed on a project-by-project basis if future activities outside the APE but within the Study Area constitute a federal undertaking per Section 106 regulations. This larger area outside the APE but within the Study Area is also subject to programmatic-level analysis under CEQA.



Legend
 Project Location



USGS 7.5' Quad: RICHMOND (1993)
 Legal Description: T01N R04W Sec 19, 20

1:95,040
 One In = 1.5 Mi

Figure 1
Project Vicinity
Portions of the Richmond Properties

Contra Costa County, CA

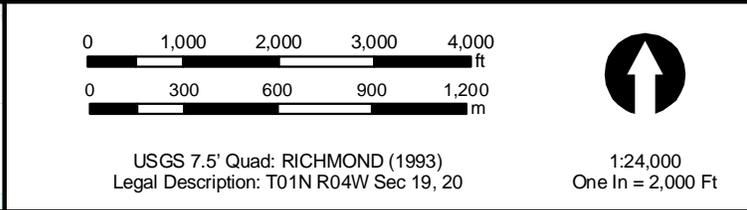
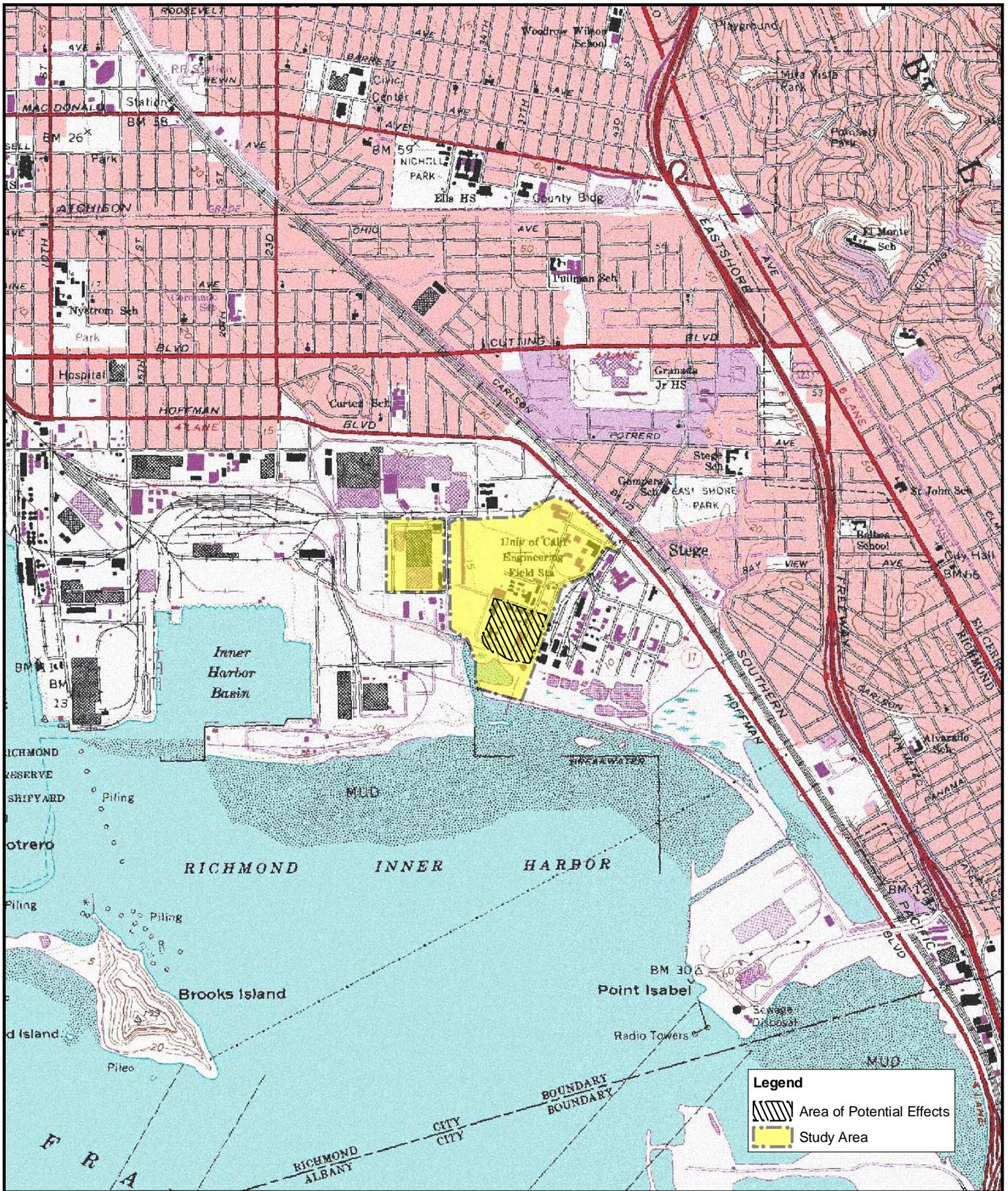


Figure 2
Project Location Map
Portions of the Richmond Properties

Contra Costa County, CA



Project Location

0 250 500 750 1,000 ft

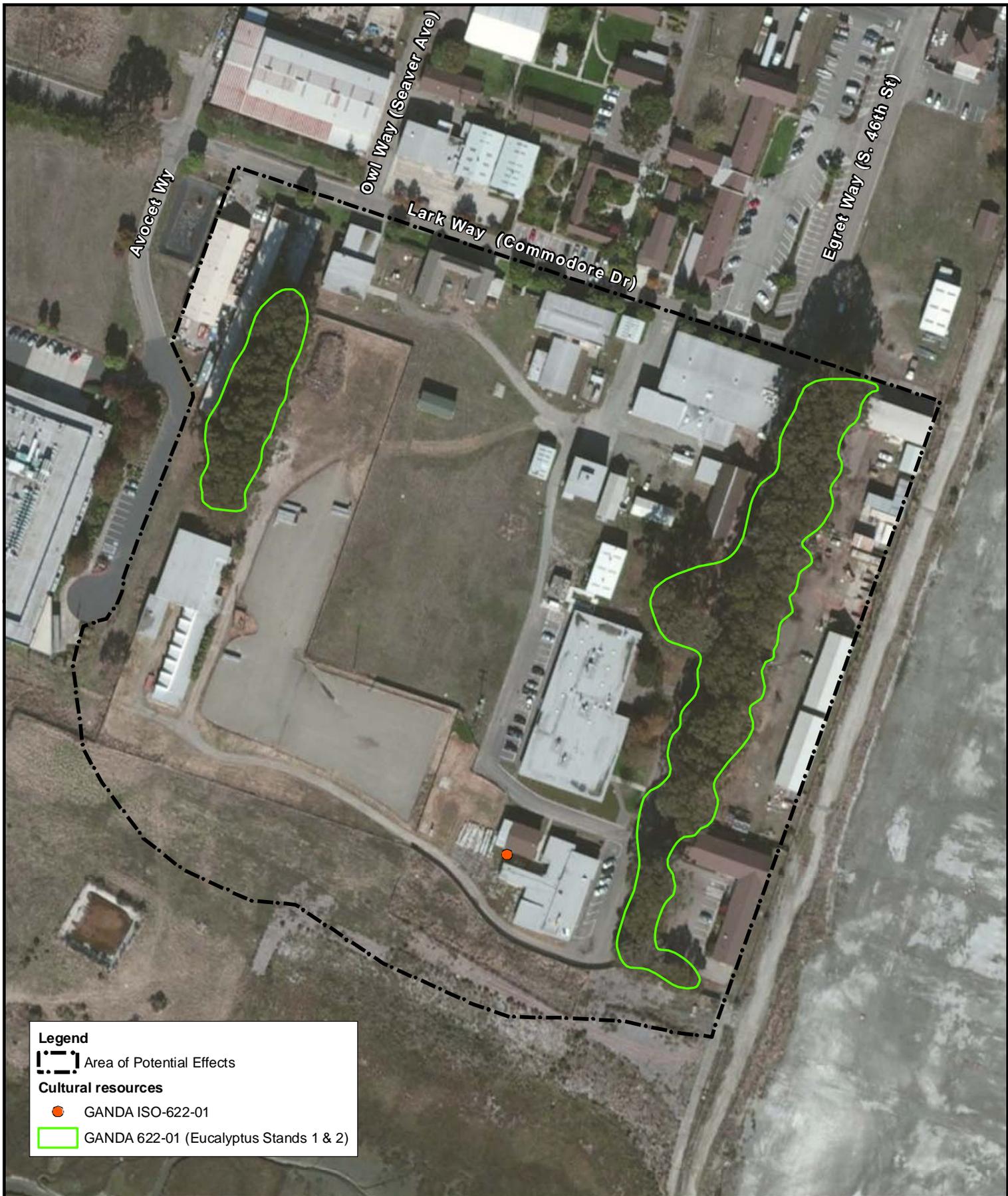
0 75 150 225 300 m

1:6,000
One In = 500 Ft

USGS 7.5' Quad: RICHMOND (1993)
Legal Description: T01N R04W Sec 19, 20

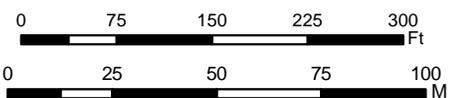
Figure 3
Study Area and Area of Potential Effects Portions of the Richmond Properties

Contra Costa County, CA



Legend

-  Area of Potential Effects
- Cultural resources**
-  GANDA ISO-622-01
-  GANDA 622-01 (Eucalyptus Stands 1 & 2)



USGS 7.5' Quad: RICHMOND (1993)
 Legal Description: T01N R04W Sec 19, 20



1:1,800
 One In = 150 Ft

Figure 4
 Area of Potential Effects
 Portions of the Richmond Properties
 Contra Costa County, CA

PROJECT LOCATION

The approximately 133-acre site is located at 1301 South 46th Street in the South Shoreline area of the City of Richmond, approximately 5 miles northwest of the UC Berkeley campus and the LBNL site in Berkeley. The site is a portion of the UC-owned properties in Richmond, composed of four parcels: a parcel that contains the currently developed upland portion known as the Richmond Field Station (RFS); a recently acquired developed parcel along Regatta Boulevard immediately west of the upland area; and two parcels that comprise tidal lands and open waters in San Francisco Bay. The site is located within Township 1 North/Range 4 West/Sections 19 and 20, Mount Diablo Base Line and Meridian, as depicted on the Richmond (1993) 7.5' topographical quadrangle maps (Figure 3) (Tetra Tech 2013b).

The 133-acre site is bounded on the west by a PG&E service station, on the north by railroad tracks and Regatta Boulevard, on the east by South 46th Street, and on the south by the San Francisco Bay. Interstate 580 (I-580) runs parallel to Meade Street along the northeastern boundary of the site. Land uses surrounding the site include industrial/office uses and a major interstate freeway, with low-/medium-density residential neighborhoods. Regatta Boulevard, along the northern boundary, is adjacent to a railroad spur and a business complex developed with one- to two-story buildings. Bio-Rad Laboratories, a private research equipment manufacturing company, is located immediately west of the site. The adjacent property to the east is the location of former chemical production operations previously owned by several entities, including Stauffer and Zeneca, and currently owned by Cherokee Simeon Venture I, LLC.

The Marina Bay residential neighborhood, across Meeker Slough, and southwest of the site, consists of a mix of multi- and single-family residences. Low- and medium-density residential uses are also located across I-580, north of the Meade Street boundary of the site.

PROJECT DESCRIPTION

The University proposes to establish a new major research campus for consolidation of biosciences programs of the LBNL and for development of additional facilities for research and development focused on energy, environment, and health by LBNL, UC Berkeley, and synergistic institutional or industry counterparts.

The University is preparing a Long Range Development Plan (LRDP) in support of the research and academic goals for this proposed new research campus. An LRDP is defined by statute (Public Resources Code [PRC] 21080.09) as a “physical development and land use plan to meet the academic and institutional objectives for a particular campus or medical center of public higher education.” The proposed 2013 LRDP addresses sustainability, land use, access and circulation, utilities and infrastructure, and open space and landscaping, and provides a policy and design framework to guide the development of up to 5.4 million square feet of new research, development, and support space at the site. Design principles in the proposed LRDP feature preservation of the site’s important natural open spaces including the San Francisco Bay, marsh, and coastal grasslands. The proposed 2013 LRDP will guide the growth and development of the campus through the year 2050.

The University is also developing Phase 1 development plans that would construct the first three new buildings within a 16-acre area. Two of these buildings would be approximately 110,000 to 150,000 gsf each, and the third building would be up to 300,000 gsf for a total of up to 600,000 gsf. These new buildings would house the following institutions:

- LBNL’s Joint Genome Institute (JGI) which UC LBNL manages for the US Department of Energy (DOE)
- Joint BioEnergy Institute (JBEI), a multi-institutional partnership led by UC LBNL

- Advanced Biofuels Process Demonstration Unit (ABPDU), which UC LBNL manages for DOE
- Knowledge Base (KBase), a multi-institutional collaboration led by UC LBNL

In addition, the facilities would house other LBNL biosciences projects and activities, and a conference facility, a dining facility, and various support facilities. Construction of Phase 1 would commence in 2014, and the buildings would be occupied starting in 2017 or 2018. Development of Phase 1 would add approximately 1,000 to the adp of the site, increasing the adp from 300 to 1,300 (Tetra Tech 2013b).

2.0 REGULATORY CONTEXT

The regulatory framework that mandates consideration of cultural resources in project planning includes federal, state, and local governments. Cultural resources include prehistoric and historic archaeological sites, districts, and objects; and locations of important historic events or sites of traditional and/or cultural importance to various groups. Cultural resources may be determined significant or potentially significant in terms of national, state, or local criteria, either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of each specific project.

FEDERAL REGULATIONS

Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA requires federal agencies, and those they fund or have approval authority over, to consider the effects of their actions on properties that may be eligible for listing or are listed in the National Register of Historic Places (NRHP). 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. Although compliance with Section 106 is the responsibility of the lead federal agency, others can undertake the work necessary to comply with Section 106. The Section 106 process entails five primary steps, listed below.

1. Initiate consultation and public involvement.
2. Identify and evaluate historic properties within the APE.
3. Assess effects of the project on historic properties.
4. If there are historic properties that will be affected, consult with the State Historic Preservation Officer (SHPO) regarding adverse effects on historic properties. This consultation will result in a memorandum of agreement (MOA), if determined appropriate.
5. Proceed in accordance with the MOA, if appropriate.

National Register of Historic Places (NRHP) Criteria for Evaluation

An archaeological site's significance is determined in part using the NRHP's Criteria for Evaluation at 36 CFR 60.4, which state that "the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association" and meet one or more of the following criteria:

- a) associated with events that made a significant contribution to the broad patterns of our history (Criterion A);
- b) associated with the lives of persons significant to our past (Criterion B);
- c) embodies the distinctive characteristics of a type, period, or method of construction; or that represents the work of a master, or that possesses high artistic values; or that represent a

significant and distinguishable entity whose components may lack individual distinction (Criterion C); and/or

- d) has yielded, or may be likely to yield, information important in prehistory or history (Criterion D).

Archaeologists generally evaluate archaeological resources using Criterion D in order to determine their potential to yield information. Criterion D emphasizes the importance of the information encompassed in an archaeological site, rather than its inherent value as a surviving example of a particular architectural type, or its historical association with an important person or event. If the SHPO determines that a cultural resource is eligible for inclusion to the NRHP, then it is automatically eligible for the California Register of Historical Resources (CRHR). If a resource does not have the level of integrity necessitated by the NRHP, it may still be eligible for the CRHR, which allows for a lower level of integrity (see below).

National Register of Historic Places (NRHP) Seven Aspects of Integrity

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 NRHP 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).

STATE REGULATIONS

California Environment Quality Act (CEQA)

The 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 NRHP, the 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 National Register of Historic Places or California Register of Historical Resources.
- 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 523), unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- 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).

California Register of Historical Resources (CRHR) Criteria of Evaluation

The CRHR is a listing of State of California resources that are significant within the context of California's history, and includes all resources listed in or formally determined eligible for the NRHP. The CRHR is a state-wide program of similar scope to the NRHP. In addition, properties designated under municipal or county ordinances are also 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 defined in the California Code of Regulations Title 14, Chapter 11.5, Section 4850:

1. 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
2. It is associated with the lives of persons important to local, California, or national history; or
3. 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
4. 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.

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 Native American Heritage 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 of, with appropriate dignity, the human remains and any associated grave goods. The descendants shall complete their inspection and make their recommendation within 24 hours of their notification by the commission. The recommendation may include the scientific removal and nondestructive analysis of human remains and items associated with Native American burials.
- b) Whenever the Native American Heritage Commission is unable to identify a descendent, or the descendent identified fails to make a recommendation, or the landowner or his or her authorized representative rejects the recommendation of the descendent, 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 BACKGROUND

The following is a summary of the environmental, prehistoric, ethnographic, and historic background pertaining to Contra Costa County and the project vicinity. This section also presents the existing setting and context used to assess the sensitivity for prehistoric and historic cultural resources within the APE and Study Area.

EXISTING ENVIRONMENT

The project area is located along the San Francisco Bay shoreline in the southeastern portion of the City of Richmond. Land use adjacent to the APE consists of industrial/office and low- to medium-density residential areas, along with a major interstate freeway. The APE is bordered to the south by marshes and tidal flats of the bay. The two upland parcels within the APE are currently developed with approximately 80 one- and two-story buildings, roadways, parking lots, and landscaped areas. The uplands area, which has been the location of a variety of industrial enterprises dating back to the mid-19th century, also contains previously disturbed, currently undeveloped open space.

Climate

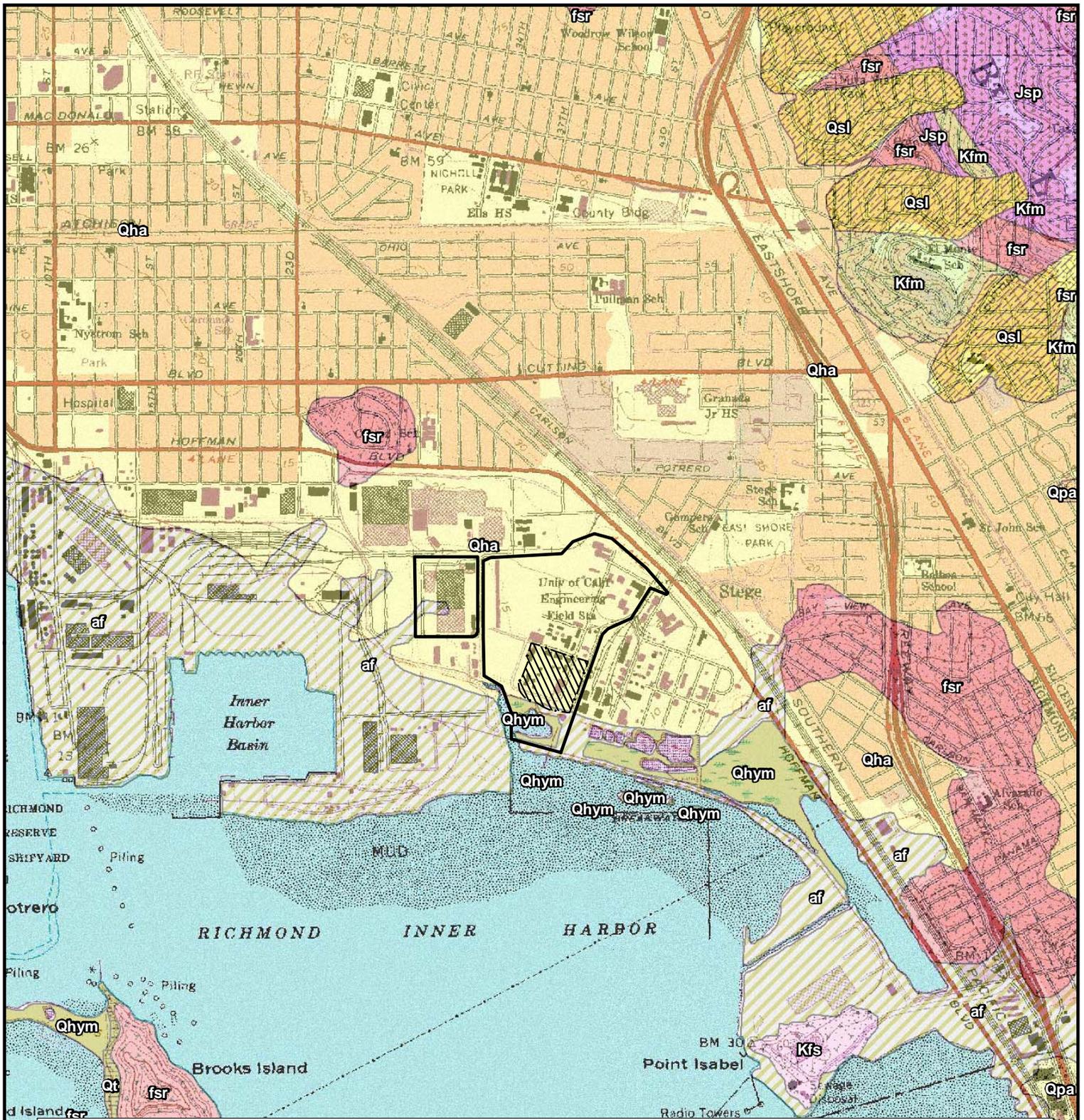
The project area is characterized by a Mediterranean climate, with cool moist winters and hot dry summers influenced by the moderating effects of the San Francisco Bay and the Pacific Ocean. The average yearly high temperature is 90 degrees Fahrenheit and the average yearly low is 31 degrees Fahrenheit. The average yearly precipitation is approximately 38 inches, in the form of rain occurring mostly between the months of November and March (US Climate Data 2012).

Geology

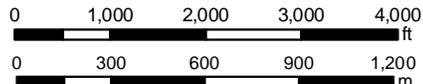
The Study Area and APE are located on Holocene age alluvium mapped as (Qha=Quaternary Holocene alluvium) (Figure 5) which consists of clay to sand and gravel sized sediments derived from upland streams, as well as eolian (wind) derived silt and sand deposition. The alluvium is interdigitated with late Holocene estuarine muds (Qhym=Quaternary Holocene young mud). This geological setting suggests a bay shoreline environment during the late Holocene (last 5,000 years), which is consistent with the local and regional archaeological record as being a resource rich environment that was heavily utilized and occupied by prehistoric and contact period Native American populations.

PREHISTORIC CONTEXT

Archaeological investigations in California and elsewhere seek to explain past human culture, continuity, and change. Archaeological interpretation of material remains can address many aspects of past human behavior, including when people occupied an area and at which time of the year; the technological and natural resources available; social organization; settlement patterns; relationships with neighboring groups in terms of trade, competition, and conflict; ceremonial systems; and external environmental issues. Prior to the use of dating techniques such as radiocarbon dating and obsidian hydration, the archaeological record was largely defined by artifact collections and mortuary practices identified during large-scale excavations. Current archaeological research helps to explain a wide array of questions regarding prehistoric human culture and adaptive responses, as well as the ongoing issue of chronology.



Legend		Geology	
	Study Area		af: Artificial Fill
	Area of Potential Effects		Qha: Alluvium (Holocene)
			Qym: Mud Deposits (late Holocene)
			Qpa: Alluvium (Pleistocene)
			Qt: Marine terrace deposits (Pleistocene)
			Qsl: Hillslope deposits (Quaternary)
			Kfm: Franciscan Complex metamorphic rocks (Cretaceous)
			Kfs: Franciscan Complex sedimentary rocks (Cretaceous)
			fsr: Franciscan Complex melange rocks (Eocene, Paleocene and/or Late Cretaceous)
			Jsp: Great Valley complex serpentinite (Jurassic)



USGS 7.5' Quad: RICHMOND (1993)
 Legal Description: T01N R04W Sec 19, 20

1:24,000
 One In = 2,000 Ft

Figure 5
Underlying Geology
Portions of the Richmond Properties
 Contra Costa County, CA

Moratto (2004), Fredrickson (1973), and other researchers (Milliken et al. 2007), have divided the prehistory of this region into seven general time periods. These periods represent patterns developed from archaeological data recovered from archaeological investigations of the San Francisco Bay Area counties. The periods include the Paleo-Indian, Lower Archaic, Middle Archaic, Initial Upper Archaic, Late Upper Archaic, Lower Emergent, and Terminal Late periods. These are briefly described below.

Paleo-Indian Period (11550 to 8550 calibrated Before Present [cal BP])¹

The oldest site from the Paleo-Indian Period representing the Central Valley and greater San Francisco Bay Area is located in King County, in the southern San Joaquin Valley. This site, CA-KIN-32, also referred to as the Witt site at Tulare Lake, yielded radiocarbon dates from human remains of approximately 9,429 to 13,852 years before present (cal BP). Archaeological investigations at Los Vaqueros Reservoir Watershed in southeast Contra Costa County have produced an artifact assemblage dating to 9,800 years cal BP (Ziesing 1997), which indicates a considerably longer span of prehistoric occupation than what had been previously accepted. These sites are typically situated near shoreline or marshes, or along pluvial lake shores, and are usually buried deep beneath Holocene alluvial deposits. According to Milliken et al. (2007:114), most, if not all of the archaeological material from this time period has either been eroded away or buried by alluvial deposits and therefore, is rarely represented in the archaeological record.

Early Holocene (Lower Archaic Period) (8550 to 5550 cal BP)

Similar to the Paleo-Indian Period, most of the archaeological discoveries for the Lower Archaic Period are represented by isolated finds (Rosenthal et al. 2007:147). Examples from this period include artifacts recovered from CA-CCO-637 and CA-CCO-696 in the Los Vaqueros Reservoir Watershed. Pestles with wooden mortars were encountered at CA-CCO-637 and have been dated to 6570 cal BP (Rosenthal et al. 2007:153; Milliken et al. 2007:115), and a charcoal sample excavated from the deepest component of CA-CCO-696 revealed a date of 9870 cal BP. Associated artifacts at this site also included a wide-stemmed projectile point of Napa Glass Mountain obsidian and plant remains including acorns and wild cucumbers (Rosenthal et al. 2007:152).

In general the Lower Archaic Period is associated with artifacts such as wide-stemmed point types (Borax Lake Wide Stem) and milling implements (i.e., handstones and milling slabs) signifying the increased use of, and reliance on, plant resources. Furthermore, social systems appear to have been developing and becoming more elaborate during this time period.

Early Period (Middle Archaic Period) (5500 to 2500 cal BP)

Distinct cultural adaptations are demonstrated at sites dating to the Middle Archaic Period. Cultural materials from this period are typically described as originating from the foothills or valley traditions. Artifact assemblages for the foothill tradition are composed of flaked stone dart points and cobble tools similar to those of the Lower Archaic. These sites are also characterized by rock-filled hearths and ovens, and “cairn capped” graves (Rosenthal et al. 2007). Middle Archaic sites of the valley tradition are fairly well represented in the archaeological record and are prevalent throughout Contra Costa County. For example, artifact assemblages and paleobotanical studies from sites CA-CCO-18/548 and CA-CCO-637 have produced data regarding extremely diverse technological and dietary remains suggesting the emergence of organized subsistence and increased occupation along river

¹ “cal BP” means calibrated years before present, present starts at 1950.

corridors (Rosenthal et al. 2007). Tabular pendants, incised slate, and perforated stone plummets are rare, but have been identified across a broad geographical area during this time period.

Some of the oldest documented sites in the San Francisco Bay Area are from the Middle Archaic Period and are located in Contra Costa and Alameda counties. These prehistoric sites include, CA-CCO-637 (described above) in the Los Vaqueros Reservoir Watershed, CA-CCO-308 in San Ramon Valley, and CA-ALA-483 in the Livermore Valley, which contained deeply buried deposits of mortar and pestle assemblages (Miliken et al. 2007). Also associated with this time period are three important shellmounds, CA-ALA-307, CA-CCO-295, and CA-MRN-152, located in the central San Francisco Bay Area (Milliken et al. 2007). Twenty-three radiocarbon dates were taken from CA-ALA-307 (West Berkeley site), the earliest yielded a timeframe spanning 4,980 to 4,840 cal BP (Lighfoot and Luby 2002:270). Elliptical house floors with postholes were encountered at the Rossmoor site (CA-CCO-309), in southern Contra Costa County, which may indicate a shift towards sedentism or semisedentism during this period (Miliken et al. 2007). It is important to note that both the *Olivella* and *Haliotis* (commonly known as abalone) rectangular beads are represented in the Bay Area during the Early Period from approximately 4,780 years ago and continued in use until 2,800 years ago (Milliken et al. 2007). The fishing net sinker is also a typical period marker for the Middle Archaic period.

The Middle Archaic Period is also associated with the Windmill Pattern or cultural sequence for this period (Rosenthal et al. 2007). However, the advent, spatial distribution, and variation across the regional landscape of the Windmill Pattern are not clearly defined at this time. Situated in riverine, marshland, or valley floor settings, as well as on small knolls above prehistoric seasonal floodplains, most Windmill Pattern sites contain ventrally extended burials that are oriented to the west. These sites generally contain large amounts of mortuary artifacts which indicate social hierarchy, and often include large projectile points and a variety of fishing gear such as net weights, bone hooks, and spear points. The presence of faunal remains throughout the archaeological record suggests a hunting economy that included both large and small mammals (Rosenthal et al. 2007).

The high frequency of mortars and pestles in delta area sites indicates a shift to a more intensive subsistence strategy based on the acorn as a dietary staple, or at least an intensification of the use of the mortar and pestle technology. However, the types of plant foods that the population was procuring do not change during this time period, simply the method used to process the resources. The increased efficiency in food processing may have allowed for a more sedentary lifestyle (Rosenthal et al. 2007:155). There is also archaeological evidence for the advent of other technologies such as cordage, twined basketry, basketry awls, simple pottery, and other baked clay objects, stone plummets, bird bone tubes, and shell beads in the Middle Archaic sites. The presence of exotic items, such as obsidian and shell ornaments, point to a complex exchange system with other native groups throughout California.

Lower Middle Period (Initial Upper Archaic) (2450 cal BP to AD 430)

The archaeological record of the Upper Archaic Period demonstrates a substantial shift in occupation, settlement, and artifact assemblages. It is suggested that this time period marks some of the most distinct representations of California's early occupation by prehistoric peoples. Assemblages change dramatically during this time period, particularly in the form of bead type changes represented in the archaeological record of the San Francisco and North Bay areas.

Split beveled and tiny saucer *Olivella* beads replaced the rectangular shell beads that were widely used over the preceding 3,000 years. Mortuaries that date to this period contain fewer grave goods, and cut *Olivella* beads are less common than spire-topped *Olivella* beads (Milliken et al. 2007). Defined as the M1 Bead Horizon, artifact types of this period include: *Olivella* saucer beads, circular *Haliotis*

ornaments, new forms of bone tools (including those for coiled basketry), barbless fish spears, elk femur spatulas, tubes, and whistles. Stone net sinkers disappear from the archaeological record during this period.

The representative cultural pattern for the Initial Upper Archaic is the Berkeley Pattern. Spanning about 2,500 to 1,300 years ago, this pattern resembles earlier cultural ones, but shows an increase in larger and more frequent settlements across the landscape. Fredrickson (1973) defined the Berkeley Pattern by the economic adaptive strategies developed around the extensive and rich resources of the Bay Area during this time period. There were numerous marshes, tidal wetlands, streams, and inland grasslands and oak wooded areas that offered an abundant resource base, perhaps due to the slightly wetter period of prehistory during the late Holocene. Out of the Berkeley Pattern emerged larger occupation sites located near water sources, with the presence of projectile points and atlatls (Fredrickson 1989).

Berkeley Pattern assemblages generally show a decrease in the presence of milling slabs and handstones and a shift to the mortar-and-pestle technology, indicating an increased dependence on acorns as a staple, or again, an increased reliance on that particular technology. However, millstone technology continues to be used in the North Bay region during this time (Milliken et al. 2007:115). While gathered resources gained importance during this period, the continued presence of projectile points and atlatls (spear-throwers) in the archaeological record indicates that hunting was still an important activity (Fredrickson 1973).

Artifact assemblages from this period are also noted for especially well developed bone tool industry, twined basketry, and such technological innovations as ribbon flaking of stone artifacts. Populations generally increased and status differentiation and social stratification is more prevalent in the artifact assemblages, as evidenced in the forms of grave goods and wealth items, such as shell beads and ornaments. Flexed burials replaced extended burials during this time. The Berkeley Pattern may represent the spread of ancestral Utians (proto-Miwok and Costanoans) from their hypothesized lower Sacramento Valley/Delta homeland to surrounding regions.

Upper Middle Period (Late Upper Archaic) (cal AD 430 to 1050)

The beginning of the Upper Middle Period is marked by another significant cultural disruption, as evidenced by trade network collapse and site abandonment. This precipitates a series of *Olivella* bead types with a relatively narrow chronological range, one supplanting the next through time, allowing for a clear chronological picture of the archaeological record. The following information is adapted from Milliken et al. (2007), and highlights the most recent findings regarding San Francisco Bay Area cultural chronology based on bead types.

- M2: New shapes of *Haliotis* pendants, ceremonial blades, fishtail charmstones, and mica ornaments appear.
 - M2a: The rough-edged, full saddle *Olivella* beads with very small perforations (marker for M2a) replace the *Olivella* saucer beads.
 - M2b: marked by mixed *Olivella* saddle beads.
- M3: mixed *Olivella* saddle beads replaced by small, square saddle *Olivella* beads “occasionally with small, poorly shaped *Olivella* saucer beads, often in off village single component cemeteries” (Milliken et al. 2007:116); single barbed bone fish spears, ear spools, and large mortars also appear in the archaeological record.

- M4: “de-evolution of saddle bead into a variety of wide and tall, bisymmetrical forms and distinctive *Haliotis* ornament styles, such as unperforated rectangles and perforated ovals” (Milliken et al. 2007:116). Most graves lack grave goods and there are few sites dated to the particular time period.

In addition, bone artifacts are represented in the Upper Middle Period and include a diverse assemblage of tools and other items. The relative importance of hunting is apparent, based on an increased volume of projectile points as compared to the previous period. There is a marked degree of social complexity and semi-permanent settlements become common. Complex, long-distance exchange networks develop during this period as well (Moratto 2004).

Initial Late Period (Lower Emergent) (cal AD 1050 to 1500)

According to Milliken et al. (2007), the Middle Period is defined by “collectors who buried their dead with diverse, numerous but fairly simple ornaments,” whereas the Late Period concerns “collectors who invested large amounts of time in the creation of finely wrought wealth objects” (Milliken et al. 2007:116). This transition suggests a shift in use of time, and likely an increasingly sedentary nature of the prehistoric settlement patterns, along with the increased importance of ceremonialism and the idea of wealth distribution and status amongst the population.

The people who occupied Contra Costa County during this time practiced extensive elaboration of ceremonial and social organization, including the development of social stratification. Exchange networks became well established and proliferated. Local populations became more dependent on the acorn, as evidenced by the prevalence of mortars, pestles, and hopper mortars throughout the archaeological record.

Other important artifacts that are representative of this time period include smoking pipes, harpoons, baked clay composition of pottery vessels and figurines, coiled basketry, clamshell disks and pine nut beads, and the use of small projectile points, especially Gunther series points that denote adoption of the bow-and-arrow (Moratto 2004). This period is also represented by the presence of Bead Horizon L1, characterized by *Olivella* callus cup beads, banjo *Haliotis* ornaments, and flanged pipes, as well as the bow-and-arrow (Milliken et al. 2007).

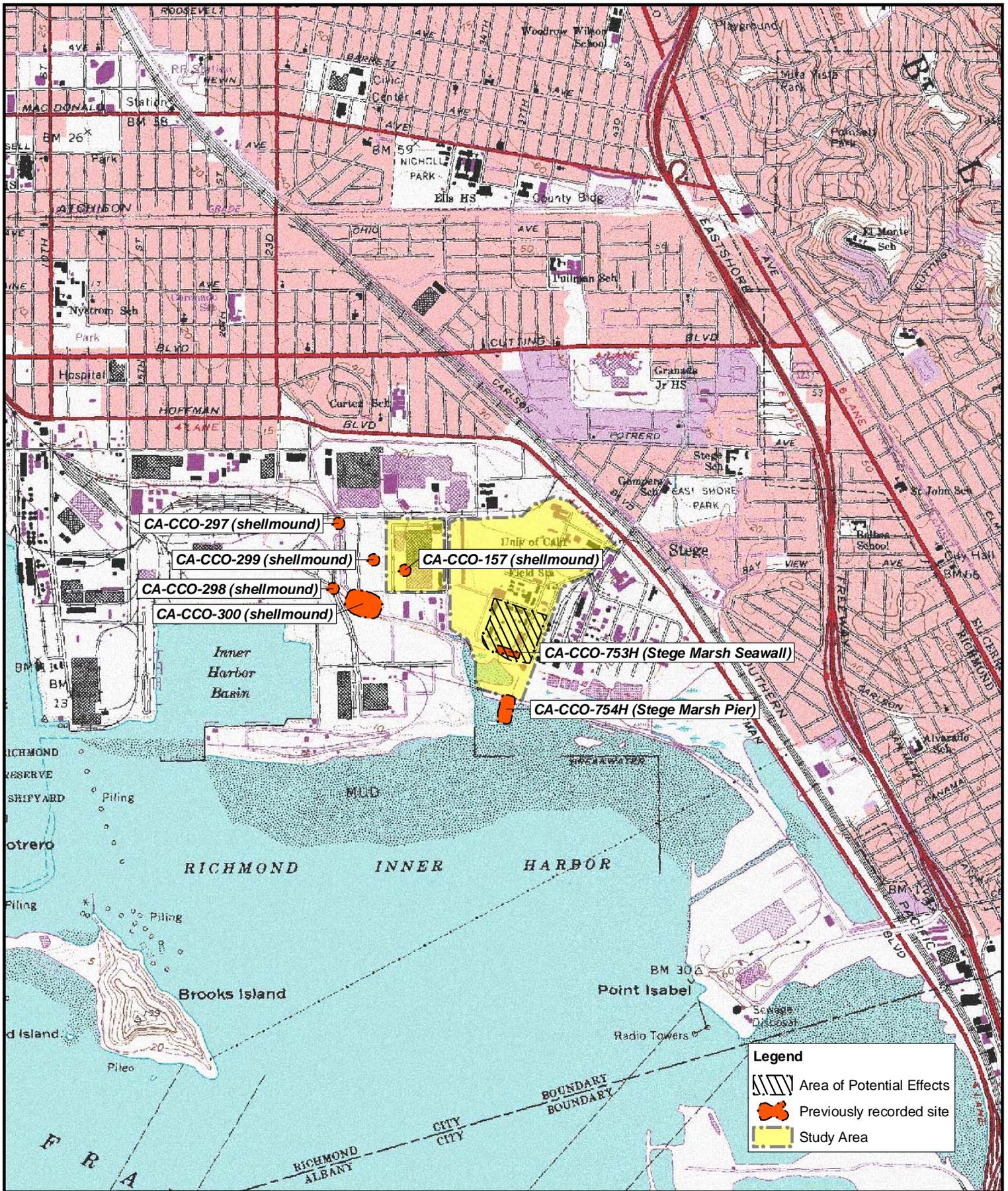
Terminal Late Period (cal AD 1500 to 1700)

Cultural adaptations grew more complex in terms of settlement patterns, indicating a shift to a more sedentary lifestyle. This was likely based on, or resulting from, a dynamic combination of population pressures, competition for resources, and population movements, which, in turn, led to an increase in ceremonialism, trade networks, technological change, and social stratification and organization. Some researchers suggest that increasing pressure on the region’s carrying capacity, population size in relationship to abundance of resources, at the time of contact with European settlers was the reason behind the rapid increase in cultural complexity at the end of the Late Period (Milliken et al. 2007). In the archaeological record, this period is represented by the presence of callus-cupped *Olivellas*, replaced by clam shell disc beads and lipped beads, and larger amounts of spire-topped *Olivellas* than in previous time periods (Milliken et al. 2007).

Archaeology of the APE

In 1915, L. L. Loud originally recorded CA-CCO-157 (Loud’s No. 299) as an approximately 350-foot wide by 250-foot long shellmound situated on the end of a slough around 800 feet from the San Francisco Bay’s historic shoreline. What remains of the archaeological site is unknown and it is currently located underneath a warehouse and paved parking lot at 3200 Regatta Boulevard in

Richmond (Banks 1985a). This resource is located within the Study Area (Figure 6). In addition, there are four additional shellmounds located between 0.08 and 0.18 miles from the APE. These include: CCO-297, CCO-298, CCO-299, and CCO-300, also shown on Figure 6. These prehistoric shellmounds were all recorded within close proximity to the APE, along the historic shoreline by Nels Nelson in the early 20th century (Banks 1985a, 1985b, 1985c, 1985d, 1985e). These were prehistoric sites that generally demonstrated long periods of intense occupation, with an abundance of marine shellfish dietary debris, with human remains often associated with the sites, and served as long term habitation sites during the middle and late prehistoric periods. See the records search section below for a more detailed description of these resources.



Legend

-  Area of Potential Effects
-  Previously recorded site
-  Study Area




Project Location

0 1,000 2,000 3,000 4,000 ft

0 300 600 900 1,200 m



USGS 7.5' Quad: RICHMOND (1993)
Legal Description: T01N R04W Sec 19, 20

1:24,000
One In = 2,000 Ft

Figure 6
Previously Recorded Cultural Resources in the Project Vicinity Portions of the Richmond Properties
Contra Costa County, CA

ETHNOGRAPHIC CONTEXT

The Study Area is located within the area that is ethnographically attributed to the Ohlone (also known as Costanoan). The term “Costanoan” derives from the Spanish word *Costaños* or “coast people” and refers to an ethno-linguistic group of people that lived along the San Francisco peninsula before contact with European Americans. Ethnographic and ethnohistoric information about the Ohlone derives primarily from the accounts of early explorers and missionaries. The territory of the Ohlone is purported to have extended from the Central Coast Ranges between San Pablo Bay in the north and Monterey in the south. The Ohlone tribal territory boundary in the east is not precisely known but is understood to extend to the Mount Diablo Range (Kroeber 1925:462; Moratto 2004).

The Ohlone spoke a language considered to be one of the eight major subdivisions of the Miwok-Costanoan, as categorized by linguistics, which belonged to the Utian family within the Penutian language family (Shiple 1978:82-84). Linguistic evidence suggests that the Ohlone entered the San Francisco and Monterey Bay areas about 1500 cal BP (Levy 1978:486). The Ohlone were politically organized by tribelets, each having a designated territory. A tribelet consisted of one or more villages and camps in a territory designated by physiographic features. Tribelets generally had 200 to 250 members (Levy 1978:485; Margolin 1978:1). Each tribelet consisted of villages every three to five miles (as noted by early Spanish explorers) that contained an average of 60 to 90 persons (Milliken 1995:19). The current study area is located within the *Huchium* tribelet ethnographic territory, where *Chochbenyo*/East Bay Costanoan was the common spoken language (Levy 1978:485; Margolin 1978:2).

The acorn was among the most important food resources for Ohlone, who preferred tanbark oak, valley oak, and California black oak, all abundant in the area. The large stands of oak trees created a readily accessible staple. Acorns could be stored in granaries and used through the winter months. The acorns were ground into meal and leached to remove tannins. Other important food resources were buckeye nuts, which were leached and made into a mush, and the seeds of dock, gray pine, and tarweed, all of which were roasted in baskets with hot coals before being eaten. The Ohlone gathered berries and fruits including gooseberries, blackberries, madrone berries, and wild grapes along with root resources such as wild onion, cattail, and wild carrot (Levy 1978:491).

Shellfish and marine mammals were important resources in the Ohlone diet in general, particularly for coastal populations. Midden deposits found in shellmounds throughout the Bay Area attest to the importance of shellfish in the Ohlone diet. The Emeryville Shellmound (CA-ALA-309) is nearby, this was once a complex of mounds and was documented by Nels Nelson (1909); it is located approximately 2.5 miles south of the Study Area on the east shore of San Francisco Bay. Terrestrial mammals were also important to coastal and inland Ohlone populations including rabbits, black-tailed deer, tule elk and pronghorn sheep which were hunted and trapped using drive and snare methods. Hunting parties were communal, often bulk harvesting meat for immediate consumption or for winter storage for the various village groups (Lightfoot and Parrish 2009:212). Migratory waterfowl, particularly geese, ducks, and coots, were the most important avian resources and were captured with nets. Additionally, local quail were caught in traps. The Ohlone fished for salmon, sturgeon, and lampreys, and built tule balsas (rafts) to move about the waterways. The Ohlone traded with surrounding tribes such as the Miwok (to the northeast), and the Northern Valley Yokuts (to the east). Mussels, abalone shells, dried abalone, and salt were exchanged for piñon nuts with the Yokuts. *Olivella* shells were traded with the Sierra Miwok and bows with the Plains Miwok (Levy 1978:488).

Between 1770 and 1797, six missions were set up within the Ohlone territory (Margolin 1978:160). In 1770, the Ohlone population was estimated to be between 7,000 and 10,000 (Moratto 2004). Based on mission records, Milliken estimates that there were 2.5 people per square mile (Milliken et al. 1993:25). As a result of numerous stressors including the introduction of European diseases; the loss of traditional lifeways, including their settlement and subsistence practices; reduced birth rates; and

poor working and living conditions that they were forced to endure the Ohlone population dramatically and rapidly declined to fewer than 2,000 by 1832 (Milliken 1995). For native peoples who lived in tribelets, the loss of this many members would destabilize what little remained of their traditional social structure. By the time of secularization in 1834, there were no traditionally functioning tribal groups left within the project vicinity.

Since the 1980s, the modern Ohlone community has undergone a period of revitalization based on familial ties and former rancheria affiliations. Although they have yet to receive formal recognition from the federal government, the Ohlone are becoming increasingly organized as a political unit in the San Francisco Bay Area. Today, the Ohlone continue to live in and around Alameda and Contra Costa counties and despite more than a century of adversity, they continue to engage in traditional cultural practices and advocate for the preservation of their heritage.

HISTORIC CONTEXT

The historic context of the Study Area is influenced by four eras, including the Contact Period, Mission Period, Rancho Period, and American Period.

Contact Period (A.D. 1542 - 1769)

In 1542, Juan Sebastian Cabrillo was the first of the Europeans explorers to sail along the California coast. The goal of this expedition was to explore the new territory and to find suitable locations for establishing Franciscan missions; during this expedition they rediscovered the Bay of Monterey, described by sailors a hundred years earlier. Several accounts of this expedition exist including those of Fray Juan Crespi (Bolton 1971), Miguel Costansó (Browning 1992), and Pedro Fages (Priestley 1937). A Spanish expedition, led by Pedro Fages in 1772, reentered the San Francisco Bay Area returning from a southern expedition to Monterey. The explorers first saw the land that became Contra Costa County from San Francisco, and thus named the area “opposite coast” (Hoover et al. 1990).

Mission Period (A.D. 1769 – 1822)

The arrival of the Spanish and the subsequent establishment of the missions had a dramatic effect on native lifeways. The destruction of native culture resulted from the disruption of social systems, changes in subsistence and settlement patterns, the alteration of the landscape with the introduction of European plants and animals, and the devastation of Native American populations with the introduction of European diseases. The California missions of the San Francisco Bay Area that were established in the Ohlone territory are as follows: Mission San Francisco de Asis in 1776, Mission Santa Clara de Asis in 1777, Mission San José in 1797, Mission San Rafael Arcangel in 1817, and Mission San Francisco Solano in Sonoma in 1823. As the populations of Ohlone, who were originally brought to the Santa Clara de Asis, San Francisco de Asis, and San José missions, fled or died of disease, the Spanish were forced to search for replacement neophytes (Milliken 1995).

Rancho Period (A.D. 1822 – 1850)

In 1821, Mexico declared independence from Spain, and in 1822, California became a Mexican Territory. Following the secularization of the missions in 1834, representatives of the Mexican government distributed very large land grants to various individuals. Native Americans continued to work as laborers for new landowners (Beck and Haase 1977). During 1821 and 1846 when California was under the control of the Mexican Government, Contra Costa County was divided into the numerous ranchos, including Rancho San Pablo, Rancho San Ramón, Rancho El Sobrante de San Ramón, Rancho Sobrante, Rancho La Boca de la Cañada del Pinole, Rancho El Pinole, Rancho Los Medranos, Rancho Laguna de los Palos Colorados, and Rancho Arroyo de las Nueces y Bolbones

(Hoover et al. 1990). The current project area is located within Rancho San Pablo (Hatoff et al. 2003). A detailed description of the rancho is below:

Rancho San Pablo

Spain sought to solidify its claim to the territory by colonizing Alta California by encouraging settlement with large land grants. The closest land grant to the Study Area, Rancho San Pablo, was provisionally granted to Francisco Castro in 1823. Castro was born in Mexico and in 1800, relocated to Alta California where he served as a soldier for 13 years. In 1822, he became a member of the Governor's Council and acted as a *diputado*, or official representative, of the expedition led by Father Jose Altamira to the land north of the San Francisco Bay. The following year, he was provisionally granted Rancho San Pablo, where he lived until his death in 1831. His widow and eleven children inherited the estate and received official confirmation of the land grant in 1834 (Hoover et al. 1990).

American Period (A.D. 1850 to present)

The discovery of gold in the Sierra Nevada by Euro-americans ignited a major population increase in the northern half of California, as immigrants poured into the territory seeking gold and the opportunities it presented. The significant influx of people had a major impact on the environment and the remaining indigenous populations. Beginning in 1849, the Gold Rush created a shortage of ranch workers who rushed off to seek their fortunes. This loss of a ranch workforce, along with a huge increase in Euro-americans squatting on these lands, would later contribute to the disintegration of the Mexican land grants and eventual division and sale of land grant property.

Although rancho owners tried to maintain their property rights during the Gold Rush, by continuing to develop their cattle ranch industry, their lands were overrun by settlers or squatters as California ushered in the Gold Rush and ultimately and officially became a state in September 1850. The courts immediately reviewed Spanish and Mexican land grants, which were either confirmed or denied. Contra Costa became one of the state's original 27 counties in 1850 (Hoover et al. 1990). During the 1850s, the county grew rapidly resulting in the construction of roads, docks, railroads, canals, and shipping areas adjacent to the San Francisco Bay. In 1852, Castro divided the rancho into eight sections given to his heirs, who quickly sold the land to American settlers in the county. (Hatoff et al. 2003).

In 1876, the restaurateur Richard Stege purchased 600 acres of land within the former Rancho San Pablo. Stege established an estate on his new property, which included four frog ponds to raise red-legged frogs for restaurants in San Francisco, and a landing pier (located just south of the APE and dismantled in 2003) used by visitors to his estate and later by ships transporting grain to San Francisco (Hatoff et al. 2003).

Around the same time, chemical and explosive industries, including the Hercules Power Company and Stauffer Chemicals, began settling in the immediate vicinity. In 1880, Letts Oliver acquired the Stege property and established the California Cap Company to manufacture a new detonator, which he designed to be safer than those imported from Europe. The manufacturing plant featured over 150 buildings as well as trees to protect nearby residents in the event of an explosion. A wood seawall (located within the project vicinity and dismantled in 2003) was also constructed to serve as a wave barrier between the plant and the bay. The California Cap Company continued operations at the plant until 1948 (Hatoff et al. 2003).

In 1950, the University of California purchased the property from the California Cap Company and allowed the College of Engineering at the Berkeley campus to use it for off-site research. It renamed the property as the Richmond Field Station, remodeled existing buildings, and also constructed several new buildings to house administrative offices or specific research projects. The college also

filled in the area south of the seawall in order to construct a “hydrate pond” and a separate pond for sewage treatment research. (Hatoff et al. 2003). In 2002, the University of California conducted remediation of the shoreline to remove elevated concentrations of chemicals in the marsh sediments. The shoreline had been identified by the Regional Water Quality Control Board (RWQCB) as a high-priority “toxic hotspot” due to the release of mercury and pyrite cinders by the California Cap Company and adjacent manufacturing plants in the late 19th and early to mid-20th centuries. The above ground features of the cultural resources CA-CCO-754H (Stege Marsh Pier) and CA-CCO-753H (Stege Marsh Seawall) were removed during the remediation process, leaving remnants of these resources in place. These resources were evaluated and recommended ineligible for listing in the NRHP and CRHR (Hatoff et al. 2003). The University continues to own and operate the research facility (Hatoff et al. 2003).

4.0 PREFIELD RESEARCH AND CONSULTATION METHODS AND RESULTS

The methods used to conduct the records search, historic map review, and pedestrian survey for this inventory, and the results of those efforts are described in detail below.

RECORDS SEARCH METHODS

A GANDA cultural resource specialist conducted a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University, Rohnert Park, on January 16, 2013 (File No. 12-0713). The NWIC is a repository of all cultural resources site records, previously conducted cultural resources investigations, and historic information concerning cultural resources for 16 counties, including Contra Costa County. The records search was conducted to compile information regarding the locations of previously recorded archaeological sites and previously conducted studies within a 0.25-mile radius of the Study Area which encompasses the APE. In addition, this information was used to assess the archaeological sensitivity of the Study Area and the APE. The following sources were consulted during the records search:

- NWIC base map: United States Geological Survey (USGS) 7.5-minute series topographic quadrangle for Richmond (1993).
- Survey reports from previous cultural resources investigations and cultural resources site records to identify previously recorded archaeological sites located within a 0.25-mile radius of the Study Area and the APE.
- California Office of Historic Preservation (OHP) resources, including the *California Inventory of Historic Resources* (1976), the *OHP Archaeological Determinations of Eligibility* for Contra Costa County (2012a), and the *OHP Historic Properties Directory* for Contra Costa County (2012b), which combines cultural resources listed as California Points of Historic Interest, listed as California Historical Landmarks, and listed in or determined eligible for listing in the NRHP or the CRHR.

RECORDS SEARCH RESULTS

Cultural Resources Investigations

The records search indicates that 29 cultural resources investigations have been completed within a 0.25-mile radius of the Study Area and the APE, four of which have been completed within the APE (Table 1).

Table 1. Previous Cultural Resource Investigations Located within the APE.

Study No.	Author/Date	Investigation Type	Associated Cultural Resources Recorded within the APE
S-02442	Banks 1980	Intensive level archaeological survey with limited testing excavation	None
S-11762	Holman 1989a	Intensive level archaeological survey	None

Study No.	Author/Date	Investigation Type	Associated Cultural Resources Recorded within the APE
S-11763	Holman 1989b	Built Environment reconnaissance survey	Several buildings over 45 years old were identified during the field survey but were not recorded on DPR 523 forms or evaluated for listing in the NRHP
S-26851	Hatoff et al. 2003	Archaeological monitoring	Two cultural resources were identified within the APE during the field survey: CA-CCO-754H/ P-07-002555 (Stege Marsh Pier/Richmond Field Station Pier/California Cap Company Pier) CA-CCO-753H/ P-07-002591 (Stege Marsh Seawall)

The following discussion provides information regarding the cultural resource investigations conducted within the APE and the cultural resources identified:

S-02442

Conducted in 1980 (Banks 1980), this archaeological survey covered a six acre parcel that included the Study Area and the APE. It consisted of a pedestrian survey of the parcel, the examination of three geotechnical auger borings that had been drilled to a depth of 30-60 feet before the survey began, and the drilling of two new hand-auger units. The location of the three previously-drilled augers is unknown and did not result in the discovery of cultural resources. The two new hand-auger units conducted by archaeologists, were located within the Study Area but outside the APE and were excavated to a depth of approximately 55 centimeters (Auger Unit #1) and approximately 105 centimeters (Auger Unit #2). This investigation did not result in the identification of cultural resources (Banks 1980).

S-11762

This archaeological survey, conducted in 1989, encompassed both the Study Area and the APE. The Study Area and the APE were surveyed using 20-foot (or less) transects, and the ground surface, including two existing trenches, was visually inspected. The survey did not result in the identification of cultural resources (Holman 1989a).

S-11763

Conducted in 1989, this reconnaissance field survey included the Study Area and the APE for the purpose of identifying built environment resources over 45 years old. Several buildings were identified, but they were not recorded on DPR 523 forms or evaluated for listing in the NRHP (Holman 1989b).

S-26851

Archaeological monitoring was conducted in 2003 within the southern portion of the APE. The monitoring resulted in the identification of one cultural resource, CA-CCO-753H (Stege Marsh Seawall) within the APE. Subsurface portions of CA-CCO-753H may still be present and buried to the west of the 2004 excavation. However, this resource was evaluated and recommended ineligible for listing in the NRHP and CRHR (Hatoff et al. 2003).

Cultural Resources

As a result of the 29 cultural resources investigations conducted within 0.25 mile of the APE, seven cultural resources, including five prehistoric shellmounds and a historic-period pier and seawall, were recorded. One of these cultural resources, CA-CCO-157 (Loud's No. 299) is located within the Study Area and several others are located within close proximity to the Study Area (Table 2) (Figure 6). Subsurface remnants of CA-CCO-753H (Stege Marsh Seawall) are located within the APE but have been evaluated and recommended as ineligible for listing in the NRHP and CRHR.

Table 2. Previously Recorded Cultural Resources Located within 0.25 Miles of the APE.

Trinomial/ Primary No.	Resource Name	Resource Type/Age	Proximity to the APE and Survey Area	NRHP Eligibility Status
CA-CCO-157/ P-07-000099	Loud's No. 299	prehistoric shellmound	Within the Study Area, adjacent to the APE	Not evaluated
CA-CCO-297/ P-07-000174	Nelson's No. 297	prehistoric shellmound	Outside the APE, approx. 0.16 mile to the west	Not evaluated
CA-CCO-298/ P-07-000175	Nelson's No. 298/Loud's No. 298	prehistoric shellmound	Outside the Study Area and APE, approx. 0.18 mile to the west	Not evaluated
CA-CCO-299/ P-07-000176	Nelson's No. 299/Loud's No. 297	prehistoric shellmound	Outside the Study Area and APE, approx. 0.08 mile to the west	Not evaluated
CA-CCO-300/ P-07-000177	Nelson's No. 300/Loud's No. 300	prehistoric shellmound	Outside the Study Area and APE, approx. 0.10 mile to the west	Not evaluated
CA-CCO-754H/ P-07-002555	Stege Marsh Pier/Richmond Field Station Pier/California Cap Company Pier	Wood pier (late 19th or early 20th century)	Outside the Study Area and APE, approx. 50 feet to the south	Not evaluated
CA-CCO-753H/ P-07-002591	Stege Marsh Seawall	Seawall (late 19th or early 20th century)	Remnants located within the APE	Recommended ineligible

The following discussion provides information regarding the known resources located within the Study Area and the APE:

CA-CCO-157 (Loud's No. 299)

In 1915, L. L. Loud originally recorded this resource as an approximate 350-foot wide by 250-foot long shellmound situated on the end of a slough around 800 feet from the San Francisco Bay's historic shoreline. What remains of this resource is currently located underneath a warehouse and paved parking lot at 3200 Regatta Boulevard in Richmond (Banks 1985a). This resource is located within the Study Area but outside of the APE.

CA-CCO-753H (Stege Marsh Seawall)

Constructed in the late 19th or early 20th centuries, this segment of the Stege Marsh Seawall consists of an approximate 18-foot long wood beam mounted in place by two sets of round wood poles. Seventeen 1-foot by 3-inch wood planks form the back of the seawall. According to the monitoring report (S-26851), the other portion of the seawall has been dismantled (Lee 2002a). This resource was located within the Study Area and the APE, and subsurface portions of it may still be present and buried. This resource was evaluated and recommended ineligible for listing in the NRHP and CRHR (Hatoff et al. 2003).

HISTORIC MAP REVIEW

Historic maps showing features such as towns, railways, wagon roads, creeks, rivers, power lines, and reclamation and irrigation districts were reviewed in order to provide additional information to assess the sensitivity for the presence of historic-period resources within the Study Area and the APE. Historic maps were available at various online archives, such as the David Rumsey Map Collection and Calisphere. Results of the historic map review depict a historic period road system and railroad spurs within the Study Area and the APE. These roads and railroad are mapped on the 1947, 1959, and 1968 Richmond USGS topographic maps. These historic roads appear to be associated with the development of the explosive manufacturing plant in the late 19th or early- to mid-20th centuries and will be addressed as a part of the built environment analysis (Tetra Tech 2013a).

GEOARCHAEOLOGICAL ANALYSIS

Background research included a review of geology maps for archaeological and environmental information regarding the geology underlying the Study Area and the APE (Figure 5). This information was used to assess the sensitivity of the APE for buried archaeological resources, along with an understanding of the distribution and environmental setting of archaeological sites recorded nearby. Figure 5 illustrates that the APE is underlain primarily by Holocene aged alluvial deposits that were once along the San Francisco Bay shoreline. In addition, due to the proximity of the former bay shoreline, abundance of natural marine and estuarine resources, and the documented prehistoric shellmounds recorded within and adjacent to the Study Area, there is a clear sensitivity of the Study Area and APE for the presence of buried and at or near surface prehistoric archaeological sites.

NATIVE AMERICAN CONSULTATION

As part of the consultation process with Native American organizations and individuals, GANDA archaeologist Cassidy DeBaker, M.A., contacted the Native American Heritage Commission (NAHC) on January 24, 2013. DeBaker requested information about sacred lands that may be within the Study Area and APE and a list of interested Native American groups and individuals for Alameda County (Appendix A). To date, a response has not been received from the NAHC.

5.0 FIELD METHODS AND RESULTS

SURVEY METHODS

On January 24, 2013, archaeologist Kruger Frank, B.A., conducted a pedestrian survey of the approximately 16-acre APE, within the larger Study Area (Figure 3). The survey location was identified on an aerial map provided by Tetra Tech. Approximately 70 percent of the 16 acres is developed, consisting of buildings, roads, parking lots, and a large stock pile of soil. The remaining 30 percent of land consists of a large grassy field, lawns, landscaping, dirt driveways/parking lots, and wetlands. A small southern portion of the APE was inaccessible, because it was located within a fenced area marked with signs for hazardous waste and habitat restoration areas. K. Frank used conventional survey methods adapted to accommodate the undeveloped areas of the surrounding environment. K. Frank surveyed all land that was not paved or developed using two to five meter transects, roughly north to south. Some areas were spot-checked with a trowel, and gopher holes and recent ground disturbances were thoroughly inspected. The ground visibility was between 5 to 10 percent in the undeveloped portions of the APE, and the soil consisted of fill with the presence of some native black silty loam. K. Frank used a sub-meter accurate Trimble GXT hand held Global Positioning System (GPS) unit to take control points in the APE and to map the location of one isolated historic period bottle and two stands of Eucalyptus trees identified during the survey. In addition, K. Frank documented the APE using a digital camera.

SURVEY RESULTS

As a result of the field survey, no previously recorded or newly identified prehistoric archaeological resources were observed. Remnants of the previously recorded historic period resource within the APE, CA-CCO-753H (Stege Marsh Seawall) were not relocated. In addition, this area was inaccessible due to fact that it is located in the fenced area marked as hazardous waste and habitat restoration. The survey did result in the identification of two previously unrecorded historic period resources, including two stands of Eucalyptus trees, GANDA-622-01 (Figure 7), and one isolated bottle, GANDA-ISO-622-01 (Figure 8), which were identified within the APE and are described below. DPR 523 forms have been prepared for these resources and are presented in Appendix B.

GANDA 622-01 (Eucalyptus Stands 1 and 2)

This landscape feature consists of two historic period Eucalyptus stands located within the APE (Figure 7). Eucalyptus Stand 1 is located on the east side of the APE, along the east side of S. 46th Street (Egret Way). Eucalyptus Stand 2 is located on the northwest side of the APE, east of Avocet Way. According to the technical report for the Richmond Field Station Remediation Project (S-26851), Richard Stege purchased 600 acres of land and established an estate in 1876. Around the same time, chemical and explosive companies also began buying land in the area and constructing manufacturing plants. In 1880, the California Cap Company was established at the Stege property, and trees were planted to serve as a buffer between the manufacturing facility and nearby residents (Hatoff et al. 2003). It is possible that the Eucalyptus stands are the same trees planted in the 1880s. The University purchased the property in 1950s and reused many of the existing buildings (Hatoff et al. 2003). It also may have retained the Eucalyptus stands.



Figure 7. View south toward Eucalyptus Stand 1 along Egret Way (left) and view northeast toward Eucalyptus Stand 2 from Avocet Way (right).

GANDA ISO-622-01

This isolated resource consists of a late 19th to early 20th century complete aqua whiskey bottle, which was identified in the southern portion of the APE, on the south side of Building 110 (Figure 8). The bottle was not collected during the field survey.



Figure 8. Photograph of GANDA ISO-622-01.

6.0 FINDINGS STATEMENT

As per the requirements of Section 106 of the NHPA and 36 CFR 800.4 and CEQA [Title 14 CCR 15064.5], this report presents the results of an archaeological inventory of the Study Area and APE. This investigation resulted in the identification of two newly identified historic period resources within the APE: 1) GANDA-622-01 (Eucalyptus Stands 1 and 2), which are likely associated with extant historic period buildings; and 2) GANDA-ISO-622-01, an isolated historic period bottle. It is recommended that GANDA-622-01 (Eucalyptus Stands 1 and 2) be evaluated for its potential eligibility for listing in the NRHP in conjunction with the extant historic structures as these landscape features are associated with those buildings and part of the overall historic landscape of the APE. As an isolated artifact that lacks association within the larger historic context of the APE, this resource is not potentially eligible for listing in the NRHP.

No prehistoric archaeological resources have been identified within the APE. However, much of the ground surface within the APE is obscured by historic and modern development. In the Study Area, there is one previously recorded prehistoric shellmound that is also currently obscured by buildings. In addition, there are three other previously recorded prehistoric shellmounds recorded within adjacent to the Study Area, and the geoarchaeological analysis and environmental setting of the APE and Study Area indicate that the APE has a very high sensitivity for buried, surface, or near surface prehistoric resources. Prior to ground disturbance within the APE, it is recommended that a testing program be conducted to complete the identification of prehistoric resources within the horizontal and vertical APE. In addition, based on the results of the background research, understanding of the historic use of the APE, and the identification of historic period materials and landscape features within the APE, there appears to be sensitivity for the presence of historic period archaeological resources, but not the degree that additional identification efforts are recommended.

7.0 REFERENCES

Banks, Peter

- 1980 An Archaeological Investigation of the Proposed Northern California Regional Compact Shelving Facility, University of California Field Station. Richmond, Contra Costa County, California. Prepared by California Archaeological Consultants. On file at the Northwest Information Center, Rohnert Park, California (S-02422).
- 1985a Archaeological Site Record forms for CA-CCO-157/P-07-000099 (Loud's No. 299), Richmond, Contra Costa County, California. Prepared by California Archaeological Consultants, Inc. On file at the Northwest Information Center, Rohnert Park, California.
- 1985b Archaeological Site Record forms for CA-CCO-297/P-07-000174 (Nelson's No. 297), Richmond, Contra Costa County, California. Prepared by California Archaeological Consultants, Inc. On file at the Northwest Information Center, Rohnert Park, California.
- 1985c Archaeological Site Record forms for CA-CCO-298/P-07-000175 (Nelson's No. 298/Loud's No. 298), Richmond, Contra Costa County, California. Prepared by California Archaeological Consultants, Inc. On file at the Northwest Information Center, Rohnert Park, California.
- 1985d Archaeological Site Record forms for CA-CCO-299/P-07-000176 (Nelson's No. 299/Loud's No. 297), Richmond, Contra Costa County, California. Prepared by California Archaeological Consultants, Inc. On file at the Northwest Information Center, Rohnert Park, California.
- 1985e Archaeological Site Record forms for CA-CCO-300/P-07-000177 (Nelson's No. 299/Loud's No. 297), Richmond, Contra Costa County, California. Prepared by California Archaeological Consultants, Inc. On file at the Northwest Information Center, Rohnert Park, California.

Beck, Warren and Ynez Haase

- 1977 *Historical Atlas of California*. University of Oklahoma Press. Norman.

Bolton, H.E.

- 1971 *Fray Juan Crespi, Missionary Explorer on the Pacific Coast, 1769-1774*. University of California Press, Berkeley, California.

Browning, P. (Editor)

- 1992 *The Discovery of San Francisco Bay-The Portola Expedition of 1769-1770: The Diary of Miguel Costanso*. Great West Books, Lafayette, California.

California Office of Historic Preservation

- 1976 *California Inventory of Historic Resources*. California Department of Parks and Recreation, Sacramento.
- 1990 *Archaeological Resource Management Reports (ARMR)*. California Department of Parks and Recreation, Sacramento.

2012a *Archaeological Determinations of Eligibility* for Contra Costa County. California Department of Parks and Recreation, Sacramento, California.

2012b *Historic Properties Directory* for Contra Costa County. California Department of Parks and Recreation, Sacramento, California.

Contra Costa County

2010 Contra Costa County General Plan, 2005-2020.

Fredrickson, D.A.

1973 *Early Cultures of the North Coast Ranges, California*. Ph.D. dissertation, Department of Anthropology, University of California, Davis.

1989 Spatial and Temporal Patterning of Obsidian Materials in the Geysers Region. In *Current Directions in California Obsidian Studies*, edited by R.E. Hughes pp.95-109. Contributions of the University of California Archaeological Research Facility no.48.

Gillies, Sara, and John Kelley

2001 California Department of Parks and Recreation (DPR) 523 forms for CA-CCO-754H/P-07-0025551 (Steger Marsh Pier/Richmond Field Station Pier/California Cap Company Pier), Richmond, Contra Costa County, California. Prepared by LSA Associates, Inc. On file at the Northwest Information Center, Rohnert Park, California.

Hatoff, Brian, Christopher Lee, and Jessica Kusz

2003 Richmond Field Station Remediation Project—Subunit 2A, Cultural Resources Monitoring Program for 2002, Technical Report. Prepared by URS Corporation. Prepared for University of California, Berkeley (S-26851).

Holman, Miley Paul

1989a Archaeological Field Inspection of the Richmond Field Station, Richmond, Contra Costa California. Prepared by Holman and Associates. Prepared for WRT. On file at the Northwest Information Center, Rohnert Park, California (S-11762).

1989b Additional Research into Historic Structures on the Richmond Field Station Property, Richmond, Contra Costa California. Prepared by Holman and Associates. Prepared for WRT. On file at the Northwest Information Center, Rohnert Park, California (S-11763).

Hoover, M.B. and H.E. Rensch

1990 *Historic Spots in California*. Stanford University Press. Stanford, California.

Kroeber, A.L.F

1925 *Handbook of the Indians of California*. Reprinted. Dover Publications, New York .Originally published Smithsonian Institution, Bureau of American Ethnology.

Lee, Christopher

2002a California Department of Parks and Recreation (DPR) 523 forms for CA-CCO-753H/P-07-002591 (Steger Marsh Seawall), Richmond, Contra Costa County, California. Prepared by URS Corporation. On file at the Northwest Information Center, Rohnert Park, California.

2002b California Department of Parks and Recreation (DPR) 523 forms for CA-CCO-754H/P-07-0025551 (Stege Marsh Pier/Richmond Field Station Pier/California Cap Company Pier), Richmond, Contra Costa County, California. Prepared by URS Corporation. On file at the Northwest Information Center, Rohnert Park, California.

Levy, Richard

1978 Costanoan. In *Handbook of North American Indians-Volume 8*. Editors: William Sturtevant and Robert F. Heizer. Smithsonian Institution, Washington.

Lightfoot Kent, and Edward Luby

2002 "Late Holocene in the San Francisco Bay Area: Temporal Trends in the Use and Abandonment of Shell Mounds in the East Bay" in *Catalysts to Complexity: Late Holocene Societies of the California Coast*, J.M. Erlandson and T.L. (editors). Cotsen Institute of Archaeology, University of California, Los Angeles, pp. 263-281.

Lightfoot, Kent and Otis Parrish

2009 *California Indians and Their Environment: an Introduction*. University of California Press. Berkeley.

Margolin, Malcom

1978 *The Ohlone Way*. Heyday Books. Berkeley. California.

Milliken, Randall

1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Publication. Novato, California.

Milliken, Randall, Julia Costello, Carina Johnson, Glory Anne Laffey, Ann-Marie Sayers, and Patrick Orozco

1993 *Archaeological Test Excavations at Fourteen Sites Along Highways 101 and 152, Santa Clara and San Benito Counties, California Volume 2: History, Ethnohistory, and Historical Archaeology*. Far Western Anthropological Research Group for the California Department of Transportation, District 4, Environmental Planning, Oakland.

Milliken, Randall, Richard T. Fitzgerald, Mark G. Hylkema, Randy Groza, Tom Origer, David G. Bieling, Alan Leventhal, Randy S. Wiberg, Andrew Gottsfield, Donna Gillette, Viviana Bellifemine, Eric Strother, Robert Cartier, and David A. Frederickson

2007 "Punctuated Culture Change in the San Francisco Bay Area." Chapter 8 in *California Prehistory: Colonization, Culture, and Complexity*. Terry L. Jones and Katharine A. Klar, eds. Altamira Press, Rowman and Littlefield Publishers, Inc. New York.

Moratto, M. J.

2004 *California Archaeology*. Second Edition Academic Press, San Diego.

Nelson, Nels C.

1909 Shellmounds of the San Francisco Bay Region. In *American Archaeology and Ethnology, Volume 7*. Frederic Putnam and A. L. Kroeber, Editors. Berkeley, the University Press, 197-1910. Reprinted 1964 by Kraus Reprint Corporation.

Priestley, H.I.

1937 *A Historical, Political, and Natural Description of California by Pedro Fages, Written for the Viceroy in 1775*. Translated by Herbert Ingram Priestley. University of California Press, Berkeley, California.

Rosenthal, Jeffrey, Gregory White, and Mark Sutton
2007 *The Central Valley: View from the Catbirds's Seat*. In Jones, T. L. and K. A. Klar, *California Prehistory. Colonization, Culture and Complexity*. Alta Mira Press.

Shipley, William
1978 *Native Languages of California*. In *California*, edited by Robert Heizer, pp. 80-90. Handbook of North American Indians, Volume 8; William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Tetra Tech
2013a *Draft Historic Properties Survey for Portions of Richmond Field Station*, Richmond, Contra Costa County, California.

2013b *Preliminary Project Description for the Richmond Bay Campus Project*, Richmond, Contra Costa County, California.

U.S. Army Corps of Engineers
2012 *Guidelines for Compliance with Section 106 of the National Historic Preservation Act*. U.S. Army Corps of Engineers, Sacramento District, Sacramento, California.

Ziesing, Grace H.
1997 *Archaeological Investigations of the Vasco Adobe Site, CA-CCO-470H, for the Los Vaqueros Project, Alameda and Contra Costa Counties, California*. Rohnert Park: Anthropological Studies Center, Sonoma State Academic Foundation, Inc.

Maps

U.S. Geological Survey
1947 *Richmond, California*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1959 *Richmond, California*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1968 *Richmond, California*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

1993 *Richmond, California*, 7.5-minute topographic quadrangle. U.S. Geological Survey, Washington, D.C.

Internet Resources

California Historic Topographic Map Collection
2012 http://cricket.csuchico.edu/maps/topo_search.html (last accessed in February 2013).

David Ramsey Historical Map Collection
2012 <http://www.davidramsey.com/> (last accessed in February 2013).

Historical Quadrangles of California
2012 http://alabamamaps.ua.edu/historicalmaps/us_states/california/topos/15index.htm (last accessed in February 2013).

Special Collections Maps, Meriam Library, California State University, Chico
2012 http://cricket.csuchico.edu/maps/catmap_search1.html (last accessed in February 2013).

U.C. Davis Soil Resource Laboratory
2012 Online Soil Survey. <https://casoilresource.lawr.ucdavis.edu/drupal/node/27> (last accessed in February 2013).

U. S. Climate Data
2012 Online Climate survey. <http://www.usclimatedata.com/> (last accessed in February 2013).

Appendix A

Native American Correspondence

January 24, 2013

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814
(916) 653-4082 (office)
(916) 657-5390 (fax)
nahc@pacbell.net

Subject: Cultural Resources Study for the Richmond Field Station

Dear Native American Heritage Commission,

Garcia and Associates (GANDA) is conducting a cultural resources investigation for the Richmond Field Station Project in Contra Costa County to determine if the project might affect any cultural resources. Please review the Sacred Lands File for any Native American cultural resources that may be within or adjacent to the project area. The project area is located in Sections 19 and 20, Township 01 North, Range 04 West of the Richmond (1993) CA 7.5 minute USGS Quadrangle (please see attached map).

We also request a list of Native American individuals and organizations that may have knowledge of cultural resources in the project area. If you have any questions, please contact me at the address and phone number above or via email (cdebaker@garciaandassociates.com). I look forward to hearing from you.

Thank you.

Sincerely,



Cassidy DeBaker, Archaeologist
415.458.5803 office
415.250.1687 cell
Garcia and Associates

Attachments (1)



Appendix B

Department of Parks and Recreation (DPR) 523 Forms

State of California - The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial:
NRHP Status Code

Other Listings
Review Code

Reviewer

Date

Page 1 of 6

*Resource Name or #: GANDA 622-01 (Eucalyptus Stands 1 and 2)

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County Contra Costa

*b. USGS 7.5' Quad Richmond, Calif. Date 1995 T3S ; R5W ; SE ¼ NW ¼ and SW ¼ NW ¼ of Sec 20; Mount Diablo B.M.

c. Address 1301 South 46th Street

City Richmond

Zip 94804

d. UTM: Zone 10N; NAD 83: 558553mE/4196376mN (north end of Stand 1) 558380mE/4196466mN (north end of Stand 2)

e. Other Locational Data: From the entrance station of the Berkeley Field Station on Seaver Avenue (Owl Way), continue east on Seaver Avenue for 700 feet until reaching South 46th Street (Egret Way). To reach Stand 1, make a left and continue south down South 46th Street for approximately 0.30 mile and stop at the intersection of Lark Way (Commodore Drive) and South 46th Street. To reach Stand 2, continue west (right) on Lark Way for approximately 560 feet and stop at Seaver Avenue. From here continue on foot south for approximately 100 feet.

*P3a. Description: This historic-period resource consists of two stands of Eucalyptus trees (Stand 1 and Stand 2), which are located in the northeast and northwest portions of the project area. Stand 1 is located in the northeast portion of the project area starting on the south side of Lark Way (Commodore Drive) and continuing more than 700 feet along the east side of South 46th Street (Egret Way). Stand 2 is located in the northwest portion of the project area also starting on the south side of Lark Way (Commodore Drive) and continuing more than 270 feet south parallel to Avocet Way. Both tree stands represent landscape features that are likely associated with the California Cap Company.

*P3b. Resource Attributes: AH3. Landscaping/orchards

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5a. Photograph:



P5b. Description of Photo:

Overview of the northern extent of Eucalyptus Stand 1, facing south along South 46th Street (Egret Way).

*P6. Date Constructed/Age and

Sources: Historic
 Prehistoric Both

*P7. Owner and Address:

University of California, Berkeley
Berkeley, CA 94720

*P8. Recorded by:

Kruger Frank
Garcia and Associates (GANDA)
1 Saunders Avenue
San Anselmo, CA 94960

*P9. Date Recorded: January 24, 2013

*P10. Survey Type: Pedestrian Survey

*P11. Report Citation:

Garcia and Associates (GANDA). Draft Cultural Resources Inventory and Evaluation Report for the Richmond Bay Campus Project, Richmond, Contra Costa County, California. Prepared for Tetra Tech. February 2013.

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record
 Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
 Artifact Record Photograph Record Other

Page 2 of 6

*Resource Name or #: GANDA 622-01 (Eucalyptus Stands 1 and 2)

*A1. Dimensions: Tree Stand 1: a. Length 770 feet (N-S) × b. Width 30 feet (E-W)
Tree Stand 2: a. Length 300 feet (N-S) × b. Width 30 feet (E-W)

Method of Measurement: Paced Taped Visual estimate Other: GPS data collected with a Trimble Geo XT.

Method of Determination: Artifacts Features Soil Vegetation Topography
 Cut bank Animal burrow Excavation Property boundary Other (Explain):

Reliability of Determination: High Medium Low Explain:

Limitations: Restricted access Paved/built over Site limits incompletely defined
 Disturbances Vegetation Other (Explain):

A2. Depth: None Unknown Method of Determination: Monitored excavation.

*A3. Human Remains: Present Absent Possible Unknown (Explain):

*A4. Features:

Tree Stand 1: This historic-period landscape feature consists of approximately 250 mature eucalyptus trees that are located on intersection of South 46th Street (Egret Way) and Lark Way. The stand of eucalyptus trees are planted in three rows and start on the south side of Lark Way (Commodore Drive) and continue south on the east side of South 46th Street for approximately 800 feet. The overall width of the tree rows are approximately 30 feet. Most of the trees are greater than 4 feet wide and approximately 100 feet tall.

Tree Stand 2: This historic-period landscape feature consists of approximately 100 mature eucalyptus trees that are located east of Building 276 and run parallel north-south along Avocet Way. The stand of eucalyptus trees are planted in three rows and is approximately 30 feet wide. The overall length of the Eucalyptus Stand 2 is approximately 300 feet. Most of the trees are greater than 4 feet wide and are approximately 100 feet tall.

*A5. Cultural Constituents: No artifacts were noted.

*A6. Were Specimens Collected? No Yes

*A7. Site Condition: Good Fair Poor:

*A8. Nearest Water: San Francisco Bay is approximately 200 meters south of Stand 1.

A9. Elevation: 5.6 meters amsl.

A10. Environmental Setting: The features are located in a highly industrialized area that is located on the former marsh lands of the San Francisco Bay. The surrounding environment consists of industrial and commercial buildings and other built environment features, such as sidewalks, driveways, and roads.

A11. Historical Information: The two stands of eucalyptus trees are likely associated with the California Cap Company, which acquired the property in 1880. It built a manufacturing plant with over 150 buildings as well as trees to protect nearby residents in the event of an explosion. In 1950, the University of California (UC) purchased the property from the California Cap Company and allowed the College of Engineering at the UC Berkeley campus to use it for off-site research. It renamed the property as the Richmond Field Station, remodeled existing buildings, and also constructed several new buildings to house administrative offices or specific research projects (Hatoff et al. 2003). It is possible that the eucalyptus stands are the same trees planted in the 1880s. Both stands of trees are parallel to roads that may have replaced earlier railroad spurs, which can be identified on the 1947 Richmond, California topo map (USGS 1947).

*A12. Age: Prehistoric Protohistoric 1542-1769 1769-1848 1848-1880 1880-1914 1914-1945
 Post 1945 Undetermined

A13. Interpretations: Based on the overall size of the eucalyptus trees in both stands, it is more than likely that the trees are more than 100 years old and likely associated with the California Cap Company.

A14. Remarks: None

A15. References:

Hatoff, Brian, Christopher Lee, and Jessica Kusz

2003 Richmond Field Station Remediation Project—Subunit 2A, Cultural Resources Monitoring Program for 2002, Technical Report. Prepared by URS Corporation. Prepared for University of California, Berkeley (S-26851).

United States Geological Survey (USGS)

1947 USGS *Richmond, California* 7.5-minute topographic quadrangle.

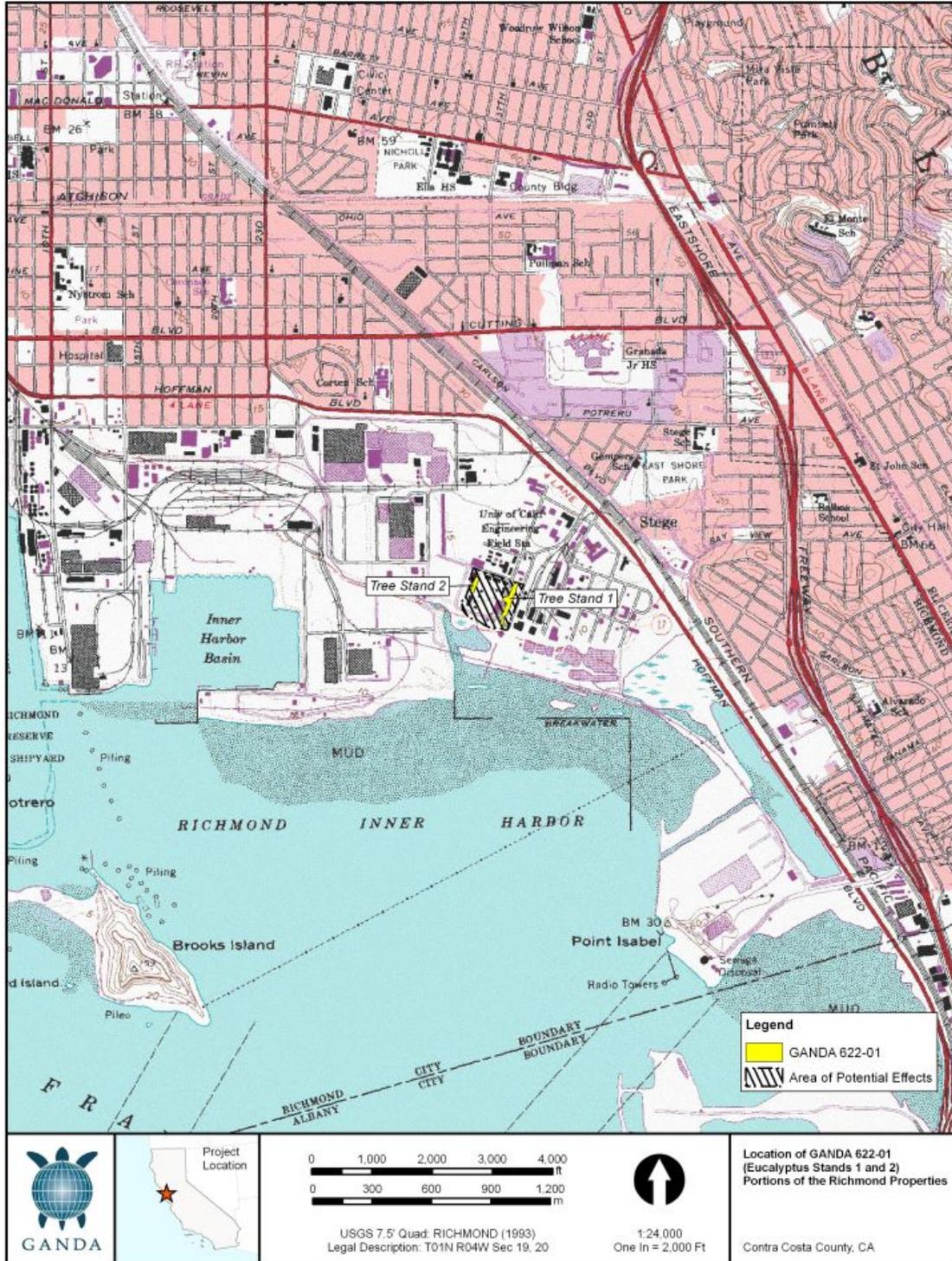
A16. Photographs:

Original Media/Negatives Kept at: Garcia and Associates, San Anselmo office.

*A17. Form Prepared by: Kruger Frank

Date: January 24, 2013

Affiliation and Address: Garcia and Associates, 1 Saunders Avenue, San Anselmo, CA 94960



Additional Photographs:



Overview of Stand 1, facing north on South 46th Street (Egret Way).



Close-up of relative size of eucalyptus trees at Stand 1, facing south.



Overview of Stand 2 facing south from Lark Way (Commodore Drive).



Overview of Stand 2 facing north.



Detail from the 1947 Richmond, California, 7.5-minute topographic map showing the approximate location of Stand 1 (yellow arrows) and Stand 2 (red arrows) in relation to the non-extant railroad spurs.



Aerial map depicting GANDA 622-01 (Eucalyptus Stands 1 and 2).

Other Listings
Review Code

Reviewer

Date

Page 1 of 3

*Resource Name or #: GANDA ISO-622-01

P1. Other Identifier:

*P2. Location: Not for Publication Unrestricted

*a. County Contra Costa

*b. USGS 7.5' Quad Richmond, Calif. Date 1993 T1N ; R4W ; SW ¼ NW ¼ of Sec 20 B.M. Mount Diablo

c. Address 1301 South 46th Street

City Richmond

Zip 94804

d. UTM: Zone 10N; NAD 83: 558472mE/4196303mN

e. Other Locational Data: From the entrance station of the Berkeley Field Station on Seaver Avenue (Owl Way), continue east on Seaver Avenue for 700 feet until reaching South 46th Street (Egret Way). Make a left and continue south down South 46th Street for approximately 0.40 mile. Park in front of Building 102 and follow the sidewalk to Building 110 to the west. The isolate is located on the south side of Building 110 at base of the wood

*P3a. Description: This historic-period resource consists of an isolated aqua whiskey bottle, which was identified along the east side of a wood fence between Building 102 and Building 110. The bottle exhibits a tooled whiskey finish that is chipped slightly and still retains the original cork. The body of the bottle exhibits numerous air bubbles and waves. The base of the bottle exhibits a slight kick-up and no maker mark. The bottle was likely manufactured in a turn mold, because there is no evidence of mold seams. The overall measurement of the bottle is 12 inches in height by 3 inches wide. The base is 2 5/8 inches wide. The bottle is likely from the late 19th century to the early 20th century, which would fit into the early days of operations of the California Cap Company.

fence.

*P3b. Resource Attributes: AH4. (trash scatter)

*P4. Resources Present: Building Structure Object Site District Element of District Other (Isolates, etc.)

P5a. Photograph:



P5b. Description of Photo:

Overview of isolate location, facing west.

*P6. Date Constructed/Age and

Sources: Historic

Prehistoric Both

Likely manufactured during the late 19th century to the early 20th century

*P7. Owner and Address:

University of California, Berkeley
Berkeley, CA 94720

*P8. Recorded by:

Kruger Frank
Garcia and Associates (GANDA)
1 Saunders Avenue
San Anselmo, CA 94960

*P9. Date Recorded: January 24, 2013

*P10. Survey Type: Pedestrian Survey

*P11. Report Citation:

Garcia and Associates (GANDA). Draft Cultural Resources Inventory and Evaluation Report for the Richmond Bay Campus Project, Richmond, Contra Costa County, California. Prepared for Tetra Tech. February 2013.

*Attachments: NONE Location Map Sketch Map Continuation Sheet Building, Structure, and Object Record
 Archaeological Record District Record Linear Feature Record Milling Station Record Rock Art Record
 Artifact Record Photograph Record Other



Additional Photographs:



Detail of the aqua whiskey bottle.



Detail of the bottle neck.



Detail of the tooled whiskey finish and view of cork closure.



Detail of the wavy glass and air bubbles on the body and view of slight kick-up on base.