Appendix C:
Phase I Cultural and Paleontological Resources Assessment

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Phase I Cultural and Paleontological Resources Assessment
Willow Avenue Commercial Center Project
Initial Study/Mitigated Negative Declaration
City of Hercules, Contra Costa County, California

USGS Mare Island and Benicia 7.5 minute Quadrangle Map
Township 2 North, Range 4 West, Section 13

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MANAGEMENT SUMMARY

At the request of the City of Hercules, FirstCarbon Solutions (FCS) conducted a Phase I Cultural and Paleontological Resources Assessment of the proposed project site located within the City of Hercules, Contra Costa County, California. The project site is located near 1477 Willow Avenue and Palm Avenue intersection in the City of Hercules. The project site consists of two parcels designated by Assessor Parcel Numbers (APNs) 406-522-001 and 406-522-004 (USGS Mare Island and Benicia 7.5 minute Quadrangle Map Township 2 North, Range 4 West, Section 13 Latitude is 38° 00' 44" North and 122° 15' 25" West).

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager's apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the existing church and preschool to the north.

The purpose of this assessment is to identify the presence or absence of potentially significant cultural resources within the project area and, if impacted by the proposed development, propose recommendations for mitigation. Completion of this investigation fulfills the requirements associated with the California Environmental Quality Act (CEQA). This report follows the California Office of Historic Preservation (OHP) procedures for cultural resource surveys and the OHP's Archaeological Resource Management Report (ARMR) format for archaeological reports.

On January 19, 2018, FCS staff conducted a records search for the project area and a 0.5-mile radius beyond the project boundaries at the Northwest Information Center (NWIC) located at California State University Sonoma. To identify any historic properties or resources, the current inventories of the National Register of Historic Places (NR), the California Register of Historic Resources (CR), the California Historical Landmarks list, the California Points of Historical Interest list, and the California State Historic Resources Inventory were reviewed to determine the existence of previously documented local historical resources. Results from the NWIC indicate that seven resources have been recorded within 0.5 mile of the project area. In addition, 12 area-specific survey reports are on file with the NWIC for the search radius.

On January 10, 2018, FCS sent a letter to the Native American Heritage Commission (NAHC) in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. A response was received on January 10, 2018 indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential Tribal Cultural Resources (TCRs) that may be

affected by the project are addressed, a letter containing project information and requesting any additional information was sent to each tribal representative on January 19, 2018. No responses have been received to date.

On January 11, 2018, FCS Senior Archaeologist Dana DePietro surveyed the project area for additional unrecorded cultural resources. The survey began in the northwest corner of the project site and moved east, inspecting each parcel for cultural resources using north-south transects from west to east, spaced at 15-meter intervals whenever possible. The area has been subject to grading associated with the construction of Willow Avenue, Palm Avenue and the BNSF Railroad to the south, but largely consists of undisturbed soils across the project area. Soil visibility was moderate to poor across the site, ranging from 30 to 40 percent, which was due to grasses and light ground cover. Soils in sections of poor visibility were intermittently inspected using a hand trowel. Observed soils were largely composed of reddish brown soil with high clay content. Soils were interspersed with small (5- to 10-centimeter) stones primarily composed of quartz, schist, and basalt. Soils in the west of the project area were noticeably darker in color; however, they did not contain artifacts or materials consistent with midden soils. Survey conditions were documented using digital photographs and field notes. Particular attention was paid to areas closer to water and natural resources, including the seasonal drainage running along the northeast of the project area. No historic or prehistoric cultural resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert) were found in these areas, nor were any observed elsewhere within the project site.

On January 19, 2018, consulting paleontologist Dr. Ken Finger performed a records search on the UCMP database for the Willow Glen project site in Contra Costa County. According to the conjoined parts of the geologic maps by Dibblee and Minch (2005, 2006), the Willow Glen project site is located mostly on the Miocene mudstones of the Monterey Formation (Tmc). At the eastern end of the site, Holocene alluvium (Qa) overlies either the Briones Sandstone (Tbr) or, more likely, the Monterey Formation (Tmc). Both of these Miocene units have the potential to yield significant paleontological resources. The UCMP database records lists 32 vertebrate localities in the Monterey Formation, but the only one in Contra Costa County is V4616, about 3.5 miles north of the project site; it yielded a whale vertebra. Considering that the County has 28 invertebrate localities in the Monterey Formation, the local potential of this unit for vertebrate fossils appears to be quite low.

Based on the results of the records searches, Native American correspondence, and pedestrian survey, FCS considers the potential for the project to have an adverse effect on historic or prehistoric cultural resources to be moderate. Seven resources have been recorded within a 0.5-mile radius of the project site, four of which are significant prehistoric resources. FCS therefore recommends that a qualified archaeologist be present during the initial phase of ground disturbance and grading in order to check for the inadvertent exposure of cultural materials. This may be followed by regular periodic or “spot-check” archaeological monitoring as needed, but full-time archaeological monitoring is not recommended at this time.

Paleontological monitoring of project-related excavations is also not recommended because they are unlikely to impact any significant paleontological resources. However, should any vertebrate remains be encountered, all construction-related activities should be diverted from the find until a

professional paleontologist has properly recorded and evaluated and, if deemed appropriate, salvaged them in a timely manner. Recovered fossils should be deposited in an appropriate repository, such as the UCMP, where they will be properly curated and available for scientific research and education.

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SECTION 1: INTRODUCTION

1.1 - Project Location

The 7.1-acre project site is located near 1477 Willow Avenue and Palm Avenue intersection in the City of Hercules, Contra Costa County, California (Exhibit 1). The project site is located between Sycamore Avenue and State Route 4 with roadway access provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to a church and preschool to the north (Exhibit 2). The project site consists of two parcels designated by APNs 406-522-001 and 406-522-004 (USGS Mare Island and Benicia 7.5 minute Quadrangle Map Township 2 North, Range 4 West Section 13 Latitude is 38° 00’ 44” North and 122° 15’ 25” West (Exhibit 3).

1.2 - Project Description

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager’s apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site.

1.3 - Assessment Team

FCS Senior Archaeologist Dana DePietro, PhD conducted the pedestrian survey and authored this report. Professional qualifications for Dr. DePietro can be found in Appendix C.

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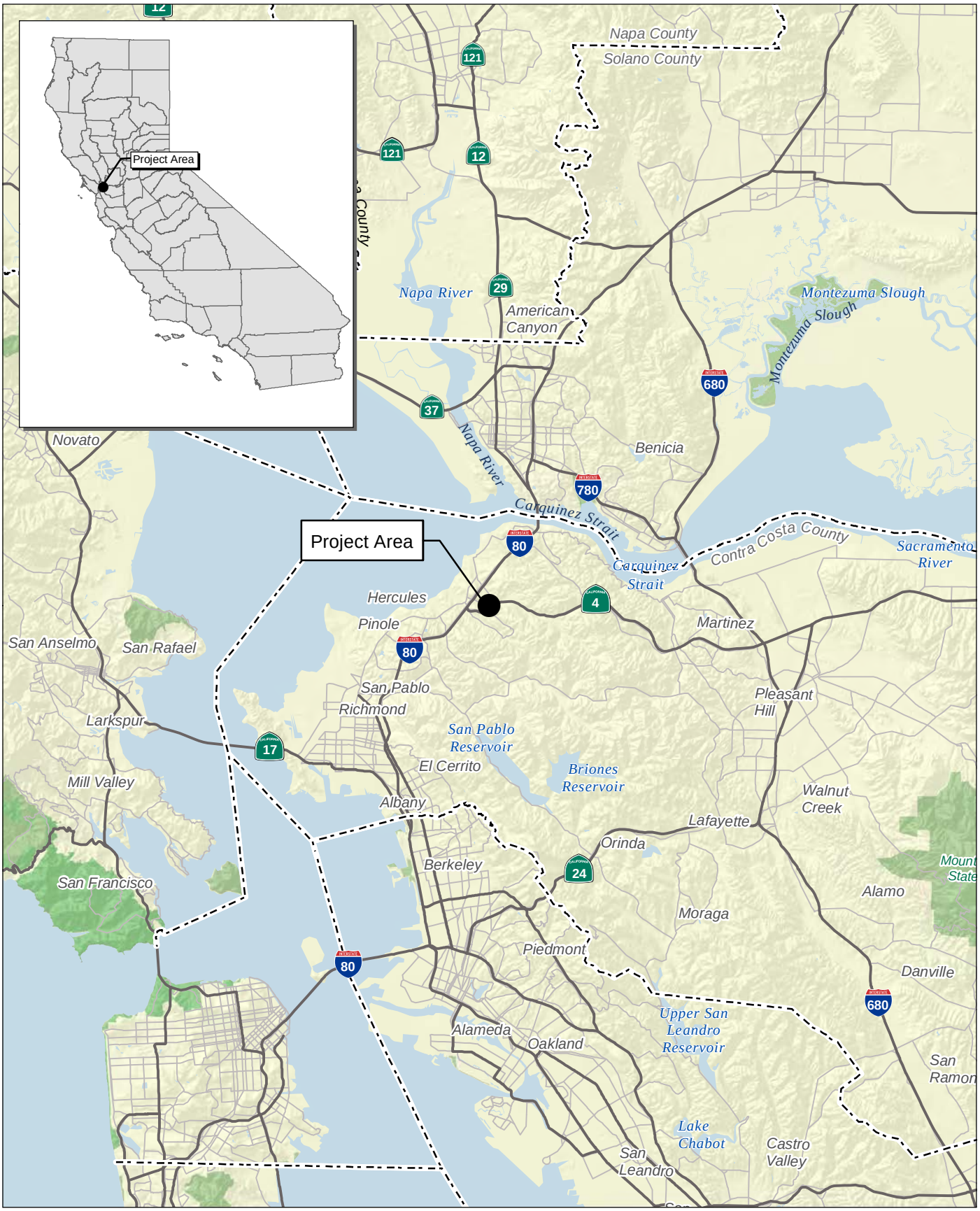

Source: Census 2000 Data, The CaSIL, FCS GIS 2013.

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5 2.5 0 5 Miles

Exhibit 1
Regional Location Map

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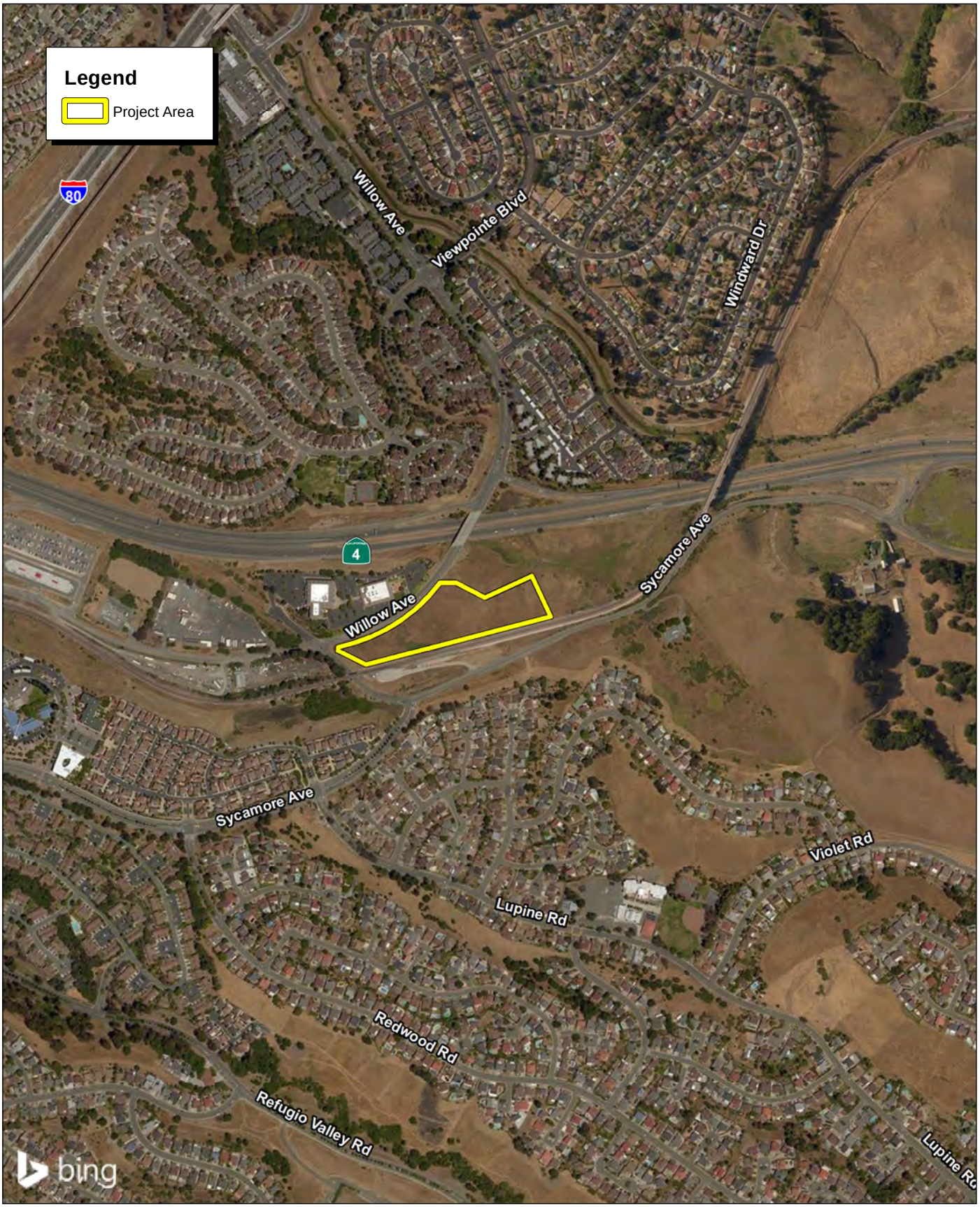

Source: Bing Aerial Imagery.

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860 430 0 860 Feet

Exhibit 2
Local Vicinity, Aerial Base

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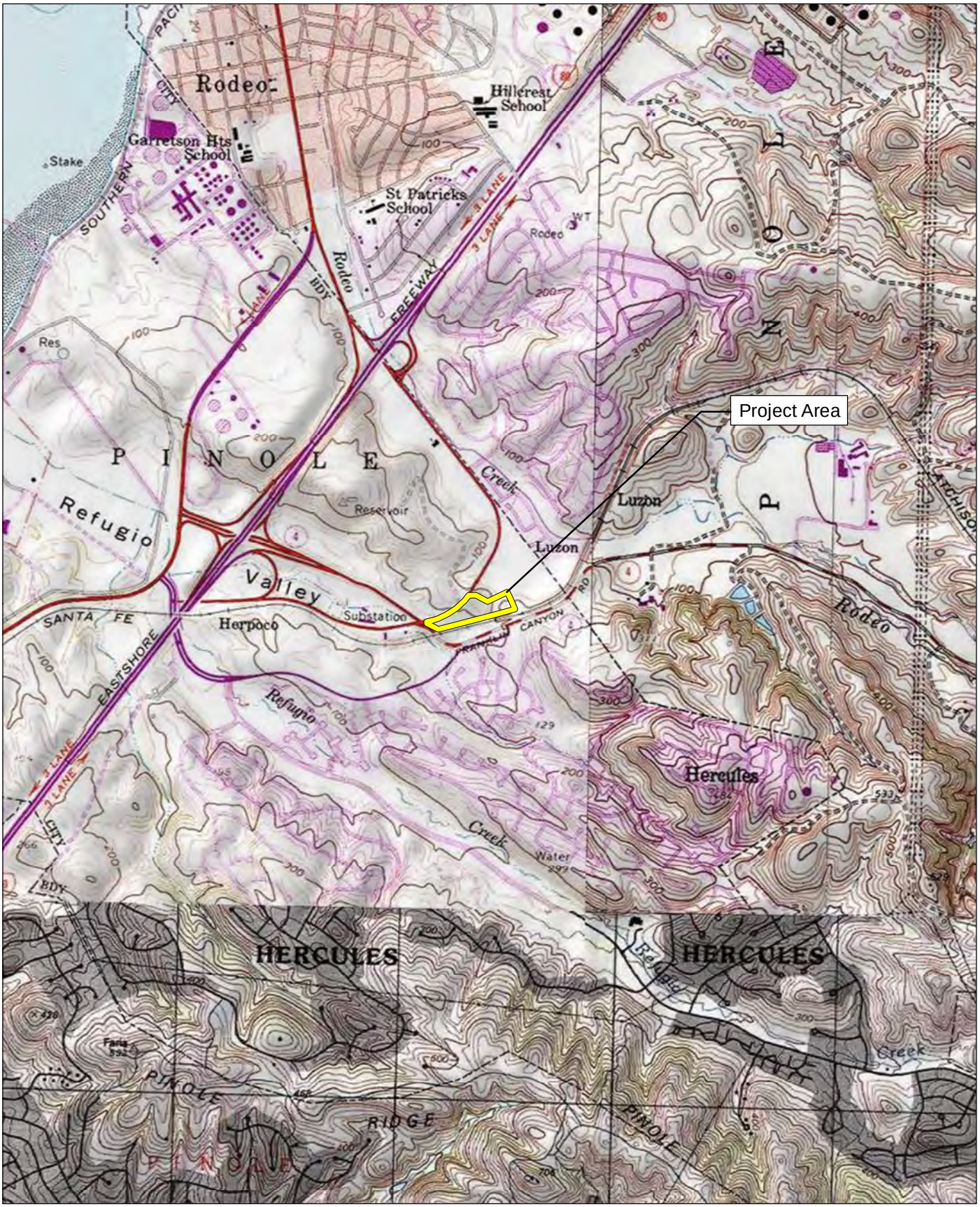

Source: USGS Mare Island 7.5' Quadrangle / T2N,R4W,sec13

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2,000 1,000 0 2,000 Feet

Exhibit 3
Local Vicinity, Topographic Base

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SECTION 2: CULTURAL SETTING

Following is a brief overview of the prehistory, ethnography, and historic background, providing a context in which to understand the background and relevance of sites found in the general project area. This section is not intended to be a comprehensive review of the current resources available; rather, it serves as a general overview. Further details can be found in ethnographic studies, mission records, and major published sources.

2.1 - Prehistoric Background

Early archaeological investigations in California were conducted at sites located in the Sacramento-San Joaquin Delta region. The first published account documents investigations in the Lodi and Stockton area (Schenck and Dawson 1929). The initial archaeological reports typically contained descriptive narratives, with more systematic approaches sponsored by Sacramento Junior College in the 1930s. At the same time, University of California at Berkeley excavated several sites in the lower Sacramento Valley and Delta region, which resulted in recognizing archaeological site patterns based on variations of inter-site assemblages. Research during the 1930s identified temporal periods in central California prehistory and provided an initial chronological sequence (Lillard and Purves 1936; Lillard et al. 1939). In 1939, Lillard noted that each cultural period led directly to the next and that influences spread from the Delta region to other regions in central California (Lillard et al. 1939). In the late 1940s and early 1950s, Beardsley documented similarities in artifacts among sites in the San Francisco Bay region and the Delta and refined his findings into a cultural model that ultimately became known as the Central California Taxonomic System (CCTS). This system proposed a uniform, linear sequence of cultural succession (Beardsley 1948 and 1954). The CCTS system was challenged by Gerow, whose work looked at radiocarbon dating to show that Early and Middle Horizon sites were not subsequent developments but, at least partially, contemporaneous (1954; 1974; Gerow with Force 1968).

To address some of the flaws in the CCTS system, Fredrickson (1973) introduced a revision that incorporated a system of spatial and cultural integrative units. Fredrickson separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (10000 to 6000 B.C.); Lower, Middle and Upper Archaic (6000 B.C. to A.D. 500), and Emergent (Upper and Lower, A.D. 500 to 1800). The suggested temporal ranges are similar to earlier horizons, which are broad cultural units that can be arranged in a temporal sequence (Moratto 1984). In addition, Fredrickson defined several patterns—a general way of life shared within a specific geographical region. These patterns include:

- Windmiller Pattern or Early Horizon (3000 to 1000 B.C.)
- Berkeley Pattern or Middle Horizon (1000 B.C. to A.D. 500)
- Augustine Pattern or Late Horizon (A.D. 500 to historic period)

Brief descriptions of these temporal ranges and their unique characteristics follow.

2.1.1 - Early Horizon or Windmiller Pattern (3000 to 1000 B.C.)

Characterized by the Windmiller Pattern, the Early Horizon was centered in the Cosumnes district of the Delta and emphasized hunting rather than gathering, as evidenced by the abundance of projectile points in relation to plant processing tools. Additionally, atlatl, dart, and spear technologies typically included stemmed projectile points of slate and chert but minimal obsidian. The large variety of projectile point types and faunal remains suggests exploitation of numerous types of terrestrial and aquatic species (Bennyhoff 1950; Ragir 1972). Burials occurred in cemeteries and intra-village graves. These burials typically were ventrally extended, although some dorsal extensions are known with a westerly orientation and a high number of grave goods. Trade networks focused on acquisition of ornamental and ceremonial objects in finished form rather than on raw material. The presence of artifacts made of exotic materials such as quartz, obsidian, and shell indicates an extensive trade network that may represent the arrival of Utian populations into central California. Also indicative of this period are rectangular *Haliotis* and *Olivella* shell beads, and charmstones that usually were perforated.

2.1.2 - Middle Horizon or Berkeley Pattern (1000 B.C. to A.D. 500)

The Middle Horizon is characterized by the Berkeley Pattern, which displays considerable changes from the Early Horizon. This period exhibited a strong milling technology represented by minimally shaped cobble mortars and pestles, although metates and manos were still used. Dart and atlatl technologies during this period were characterized by non-stemmed projectile points made primarily of obsidian. Fredrickson (1973) suggests that the Berkeley Pattern marked the eastward expansion of Miwok groups from the San Francisco Bay Area. Compared with the Early Horizon, there is a higher proportion of grinding implements at this time, implying an emphasis on plant resources rather than on hunting. Typical burials occurred within the village with flexed positions, variable cardinal orientation, and some cremations. As noted by Lillard, the practice of spreading ground ochre over the burial was common at this time (Lillard et al. 1939). Grave goods during this period are generally sparse and typically include only utilitarian items and a few ornamental objects. However, objects such as charmstones, quartz crystals, and bone whistles occasionally were present, which suggest the religious or ceremonial significance of the individual (Hughes 1994). During this period, larger populations are suggested by the number and depth of sites compared with the Windmiller Pattern. According to Fredrickson (1973), the Berkeley Pattern reflects gradual expansion or assimilation of different populations rather than sudden population replacement and a gradual shift in economic emphasis.

2.1.3 - Late Horizon or Augustine Pattern (A.D. 500 to Historic Period)

The Late Horizon is characterized by the Augustine Pattern, which represents a shift in the general subsistence pattern. Changes include the introduction of bow and arrow technology; and most importantly, acorns became the predominant food resource. Trade systems expanded to include raw resources as well as finished products. There are more baked clay artifacts and extensive use of Haliotis ornaments of many elaborate shapes and forms. Burial patterns retained the use of flexed burials with variable orientation, but there was a reduction in the use of ochre and widespread evidence of cremation (Moratto 1984). Judging from the number and types of grave goods associated with the two types of burials, cremation seems to have been reserved for individuals of higher status, whereas other individuals were buried in flexed positions. Johnson (1976) suggests

that the Augustine Pattern represents expansion of the Wintuan population from the north, which resulted in combining new traits with those established during the Berkeley Pattern.

Central California research has expanded from an emphasis on defining chronological and cultural units to a more comprehensive look at settlement and subsistence systems. This shift is illustrated by the early use of burials to identify mortuary assemblages and more recent research using osteological data to determine the health of prehistoric populations (Dickel et al. 1984). Although debate continues over a single model or sequence for central California, the general framework consisting of three temporal/cultural units is generally accepted, although the identification of regional and local variation is a major goal of current archaeological research.

2.1.4 - Regional Investigations

The majority of previous investigations in the lower Sacramento Valley have been conducted east of the Sacramento River, typically along the Cosumnes River. Two investigations that focused on the lower Sacramento Valley are CA-SAC-133 (Bouey and Waechter 1992) and CA-SAC-16 (Derr 1983), among others. Pertinent to the proposed project is CA-SOL-363 (Rosenthal and White 1994) located in Dixon, which documented 15 features and 39 burials. The assemblage included projectile points, primarily lanceolate forms, manufactured from obsidian found in Napa Valley, which are typically associated with the Berkeley Pattern. The predominant type of shell beads were *Olivella*, Class F2a, F2b, F3b, G5, and C3, which were attributed to the Intermediate Phase of the Middle Period. The lack of Augustine Pattern components is indicated by the absence of Olivella Class M shell beads and clamshell disk beads (Rosenthal and White 1994). The paucity of milling tools in relation to projectile points suggests that subsistence strategies relied on hunting rather than vegetal resources. The analyzed faunal remains indicated that the site was used seasonally as a winter camp. Consistent with Berkeley Pattern burial practices, burials at the site were flexed with variable cardinal orientation. No cremations were reported at the site.

2.2 - Native American Background

2.2.1 - The Ohlone (Costanoan)

At the time of European contact, the project vicinity was occupied by various tribelets that were part of the Ohlone (previously Costanoan) tribe of California Native Americans (Levy 1978). The Ohlone group designates a language family consisting of eight branches of the Ohlone language that are considered too distinct to be dialects, wherein each is related to its geographically adjacent neighbors. These groups lived in approximately 50 separate and politically autonomous tribelet areas, each with one or more permanent villages, between the North San Francisco Bay and the lower Salinas River (Levy 1978).

The arrival of Ohlone groups into the Bay Area appears to be temporally consistent with the appearance of the Late Period artifact assemblage in the archaeological record, as documented at sites south of the project area such as the Emeryville Shellmound or the Ellis Landing Shellmound. It is probable that the Ohlone moved south and west from the delta region of the San Joaquin-Sacramento River into the Bay Area during the Late Prehistoric. The tribal group that most likely occupied the project area was of the Karkin ethnic group, whose territory extended over the

Carquinez Strait region in the northeast portion of the San Francisco Bay estuary. They spoke the Karkin language, which was documented by linguist-missionary Felipe Arroyo de la Cuesta at Mission Dolores in 1821. His records show that the Karkin language was a distinct branch of Costanoan, strikingly different from the neighboring Chochenyo Ohlone language or other Ohlone languages spoken farther south. Their direct neighbors to the east may have been tribelets associated with Northern Valley Yokuts people.

The various Ohlone tribes subsisted as hunter-gatherers and relied on local terrestrial and marine flora and fauna for subsistence (Levy 1978). The predominant plant food source was the acorn, but they also exploited a wide range of other plants, including various seeds, buckeye, berries, and roots. Protein sources included grizzly bear, elk, sea lions, antelope, and black-tailed deer as well as smaller mammals such as raccoon, brush rabbit, ground squirrels, and wood rats. Waterfowl, including Canadian geese, mallards, green-winged teal, and American widgeon, were captured in nets using decoys to attract them. Fish also played an important role in the Ohlone diet and included steelhead, salmon, and sturgeon (Jones 2007).

The Ohlone constructed watercraft from tule reeds and possessed bow and arrow technology. They fashioned blankets from sea otter pelts, fabricated basketry from twined reeds of various types, and assembled a variety of stone and bone tools in their assemblages. Ohlone villages typically consisted of domed dwelling structures, communal sweathouses, dance enclosures, and assembly houses constructed from thatched tule reeds and a combination of wild grasses, wild alfalfa, and ferns.

The Ohlone were politically organized into autonomous tribelets that had distinct cultural territories. Individual tribelets contained one or more villages with a number of seasonal camps for resource procurement within the tribelet territory. The tribelet chief could be either male or female, and the position was inherited patrilineally, but approval of the community was required. The tribelet chief and council were essentially advisors to the community and were responsible for feeding visitors, directing hunting and fishing expeditions, ceremonial activities, and warfare on neighboring tribelets.

The Gold Rush brought disease to the native inhabitants, and by the 1850s, nearly all of the Ohlone had adapted in some way or another to economies based on cash income. Hunting and gathering activities continued to decline and were rapidly replaced with economies based on ranching and farming (Levy 1978).

2.3 - Historical Background

2.3.1 - Spanish and Mexican California

Spanish exploration into the Central Valley dates back to the late 1700s. Spanish mission records indicate that by 1800, Costanoan speaking peoples, and other villages were being taken to Mission Dolores, and that Mission Sonoma, built in 1823, was baptizing tribal members until secularization of the missions in 1833. Many Native Americans were not willing converts: there are numerous accounts of neophytes fleeing the missions, and a series of “Indian Wars” broke out when the Spanish tried to return them to the missions (Johnson 1978). During this period, Native American populations were declining rapidly because of an influx of Euro-American diseases. In 1832, a party of trappers from the Hudson’s Bay Company, led by John Work, traveled down the Sacramento River, unintentionally

spreading a malaria epidemic to Native Californians. Four years later, a smallpox epidemic decimated local populations. (Cook 1955).

The Mexican Period, 1821 to 1848, was marked by secularization and division of mission lands among the *Californios* as land grants, termed ranchos. During this period, Mariano G. Vallejo assumed authority of Sonoma Mission and established a friendly relationship with the Native Americans who were living there. In particular, Vallejo worked closely with Chief Solano, a Patwin who served as Vallejo's spokesperson when problems with Native American tribes arose. The large rancho lands often were worked by Native Americans who were used as forced labor.

2.3.2 - The Gold Rush and American Expansion

In 1848, James W. Marshall discovered gold at Coloma in modern-day El Dorado County, which started the gold rush into the region that forever altered the course of California's history. The arrival of thousands of gold seekers in the territory contributed to the exploration and settlement of the entire state. By late 1848, approximately four out of five men in California were gold miners (Robinson 1948). The gold rush originated along the reaches of the American River and other tributaries to the Sacramento River, and Hangtown, present-day Placerville, became the closest town offering mining supplies and other necessities for the miners in El Dorado County. Gold subsequently was found in the tributaries to the San Joaquin River, which flowed north to join the Sacramento River in the great delta east of San Francisco Bay.

As mining spread, mining techniques changed. Initially, miners relied on gold panning in a shallow pan until the heavier, gold-bearing materials fell to the bottom while the water and lighter sand spilled out over the rim. This technique was displaced by simple mining machines like the wooden "rocker" into which pails of water were emptied and processed at one time. The gold in and around stream beds was soon exhausted, and hard-rock mining took over, digging shafts up to 40 feet deep with horizontal tunnels radiating from these shafts in search of subterranean veins of gold-bearing quartz (VSFWM 2006).

By 1864, California's gold rush had essentially ended. The rich surface and river placers were largely exhausted and the miners either returned to their homelands or stayed to start new lives in California. After the gold rush, people in towns such as Jackson, Placerville, and Sonora turned to other means of commerce, such as ranching, agriculture, and timber production. With the decline of gold mining, agriculture and ranching came to the forefront in the State's economy. California's natural resources and moderate climate proved well suited for cultivation of a variety of fruits, nuts, vegetables, and grains (Beck and Haase 1974).

2.3.3 - Contra Costa County

Contra Costa County is one of the original 27 counties formed in 1851. The County occupies the northern portion of the East Bay region of the San Francisco Bay Area region. The County was originally to be named Mt. Diablo County but the name was changed to Contra Costa ("Opposite Coast") reflecting its orientation to San Francisco. The project is situated within present-day City of Hercules, a Bay Area suburb.

In the northern part of the County, significant coal and sand deposits were formed in early geologic eras. Other areas of the County have ridges exposing ancient sandstone layers with alternating limestone. Layers of volcanic ash ejected from geologically recent but now extinct volcanoes, compacted and now tilted by compressive forces that may be readily seen along roadways. The County is an agglomeration of several distinct geologic formations, as is most of the Bay Area, which is one of the most geologically complex regions in the world.

California was seen as a land of economic opportunity, not just for its mining resources but also for its productive land where farmers could cultivate a variety of crops. Agriculture became important in the California economy in the late 1850s, and through to the 1860s, homesteading became a means by which people could own and operate a family farm. The decidedly agricultural focus also underpins the historical significance of the Spanish colonial and Mexican era of land grants. The variety of cultural traditions, technological developments, and ideological views further underwrite the County's agricultural history. The County's rural setting continues to support farming and ranching operations.

As early as 1887, special interests advertised the County's virtues as a place to cultivate. Early settlers began to speak of beneficial soils that support a range of crops—oranges, lemons, olives, pomegranates, figs, and grapes flourished—with seasonal rainfall, and suitable climates. In addition, the welcoming character of towns, regional accessibility, and schools further encouraged westward migration.

A variety of crops flourished in the County because of favorable sub-climate conditions. Cultivated lands expanded with changes and advancements in the agricultural industry that encouraged farmers to adapt operations and remain relevant. More generally, stable crops such as wheat and specialty crop agriculture were an important component of California's agricultural history. Between 1880 and 1900, for example, farmers shifted from apples to such fruits as peaches, plums, prunes, apricots, and pears. The shift boosted California's orchard industries, coinciding with accelerated growth in local drying and canning industries. The development of these specialized crops gave California an economic buffer when wheat prices declined in the early 20th century.

Large-scale commercial operations began to capitalize on mechanical innovations just as irrigation developed in the early 1880s. Consequently, competing economic interests caused land prices to increase and make family farming a less profitable enterprise. Following the world wars, large companies followed their employees to suburban areas east of San Francisco. The establishment of large population centers fostered the development of equally large shopping centers. To meet demand on infrastructure, the State modernized highways and roadways. With the establishment of the Bay Area Rapid Transit system, the central county cities turned to spawn their own suburbs. The once outlying rural areas of Antioch, Oakley, and Brentwood continue to grow.

2.3.4 - City of Hercules

The City of Hercules transformed from a small industrial company town in the late 1800s into a city of suburban character dominated by detached single-family homes. The City encompasses a total area of 18.2 square miles (6.2 square miles of land, 12.0 square miles over water). The City underwent several periods of redefining its identity with the subsequent closures of factories and

refineries. Since the 1970s, the City has been heavily redeveloped into a suburban bedroom community that lies along the Interstate 80 corridor in western Contra Costa County.

Hercules is on the southeastern shores of San Pablo Bay, roughly 4 miles southwest of the Carquinez Bridge. Hercules is approximately 12 miles north of Berkeley, 18 miles north of Oakland, and 22 miles northeast of San Francisco. The City's shoreline runs northeast to southwest, with Refugio Creek flowing through its center in a northwest direction, ultimately empting into the San Francisco Bay.

Interstate 80 bisects the City roughly 1 mile inland from the coast. The interstate is the main highway between the cities of San Francisco and Sacramento. In addition, California State Route 4 insects the interstate within the city limits. Major arterial roads include San Pablo Road, which lies to the north of Interstate 80, and Refugio Valley Road, which runs in a northwest-southeast direction along Refugio Creek.

The City's history stems from the roots of a company town in the 1800s. Founded in 1881 by an explosives manufacturer, the Hercules Powder Company, the City's character resembles the once prominent industrial activities along the shoreline. The relative remote location and close vicinity to rail lines and waterfront made the area an ideal choice for manufacturing explosives. However, the company needed to diversify its manufacturing products following deadly explosions and development pressure. Company managers incorporated the town in 1900 and explosives manufacturing discontinued in 1964. The company focused its production line on anhydrous ammonia, a base for fertilizer, and other profitable enterprises. Subsequently, hundreds of acres of land became suitable for other purposes. Starting in 1974, real estate development companies began to develop the City into the bedroom community seen today.

The City's history reflects the roots that took hold in the Bay Area following the Industrial Revolution. From explosives manufacturing to refinery operations, the first housing subdivisions began in the mid-1970s that continued into the 1980s. New residential subdivisions accommodated increasing demand for housing and shopping centers with associated commercial businesses soon followed. Today, with almost 25,000 residents, the City continues to grow into a transit-oriented community.

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SECTION 3: RESULTS

3.1 - Records Search

3.1.1 - Northwest Information Center Search

On January 19, 2018 FCS staff conducted a records search for the project area and a 0.5-mile radius beyond the project boundaries at the NWIC located at California State University Sonoma. To identify any historic properties or resources, the current inventories of the NR, the CR, the California Historical Landmarks list, the California Points of Historical Interest list, and the California State Historic Resources Inventory were reviewed to determine the existence of previously documented local historical resources. Results from the NWIC indicate that seven resources have been recorded within 0.5 mile of the project area (Table 1). In addition, 12 area-specific survey reports are on file with the NWIC for the search radius (Table 2). The previous surveys assessed the majority of the project location, suggesting the project area has largely been previously surveyed for cultural resources.

Table 1: Cultural Resources within a 0.5-mile Radius of the Project Area

Resource No.	Resource Description	Date Recorded
P-07-000129	**CA-CCO-000248: Prehistoric Site** AP15 (Habitation debris)	1910
P-07-000267	**CA-CCO-000495: Prehistoric Site** AP02 (Lithic scatter); AP15 (Habitation debris)	1984
P-07-000476	**CA-CCO-000698/H: Prehistoric Building Site** AP02 (Lithic scatter); AP15 (Habitation debris); HP02 (Single family property); HP33 (Farm/ranch)	1907/1995
P-07-000515	**CA-CCO-000710H: Historic Structure** AH07 (Roads/trails/railroad grades)	1995
P-07-000516	**Prehistoric Survey** AP16 (Other)	1995
P-07-000806	**CA-CCO-000732H: Historic Structure** AH07 (Roads/trails/railroad grades); HP39 (Other)—railroad	1995/1996/1998/2004/2009/2016
P-07-004621	**Historic Building** HP02 (Single family property); HP33 (Farm/ranch)	1996
Source: NWIC Records Search, January 19, 2018		

Table 2: Previous Investigations within a 0.5-mile Radius of the Project Area

Report Number	Report Title/Project Focus	Author	Date
S-001634	Archaeological Survey Report, 04-CC-4 P.M. 0.2/1.3 04209—207241, Improvements to State Route 4 near Hercules	Mara Melandry	1979
S-001863	Archaeological Records Search and Field Survey, Town Center Commercial Development, Hercules, California	Theo N. Mabry	1980
S-001957	Archaeological Survey Report, 04-CC-4 P.M. 1.5, Proposed Drainage Systems Installation along Highway 4 near Hercules, Contra Costa County, 04229-910062	Diane C. Watts	1979
S-002577	Archaeological reconnaissance of a 55 acre area, project N-9 80150, City of Hercules, Contra Costa County (letter report)	William Roop	1981
S-014354	Archaeological Reconnaissance of the Proposed Highway 4 Reclaimed Water Pipeline and Pump Station, Contra Costa County, California	Michael Smith and Suzanne Baker	1992
S-015861	Report on the Archaeological Survey and Augering Program at CA-CCO-495, a Prehistoric Archaeological Site Found During Construction of 4-CC-4 P.M.	Lawrence E. Weigel and Margaret Buss	1984
S-018900	Historic Property Survey Report, Route 4 (West) Gap Project, P.M. 0.0/4.9, Charge Unit 275, EA Number 228020, Contra Costa County, California	William Self Associates, Inc.	1996
S-018900a	Archaeological Survey Report Route 4 (West) Gap Project, P.M. 0.0/4/9, Charge Unit 275, EA Number 228020, Contra Costa County, California	William Self Associates, Inc.	1996
S-018900b	Historic Architectural Survey Report, Route 4 (West) Gap Project, P.M. 0.0/4.9, Charge Unit 275, EA Number 228020, Contra Costa County, California	Ward Hill	1996
S-020698	Archaeological Field Inspection of the Claeys Ranch North Property, Hercules, Contra Costa County, California (letter report)	Miley P. Holman	1996
S-038251	Buried Archaeological Site Assessment and Extended Phase I Subsurface Explorations for the I-80 Integrated Corridor Mobility Project, Caltrans District 04, Alameda and Contra Costa Counties, California, 04-ALACC-80, P.M. ALA 1.99/P.M. ALA 8.04, P.M. CC 0.0/P.M. CC 13.49, EA 3A7761/EA 3A7771	Jack Meyer	2011
S-044872	Cultural Resources Constraints Study for the Replacement of 10 Poles on the Christie-Franklin No. 1 High Voltage Transmission Line, Contra Costa County, California	PAR Environmental Services, Inc.	2008
Source: NWIC Records Search, January 19, 2018			

3.1.2 - Native American Heritage Commission and Tribal Correspondence

On December 10, 2017, FCS sent a letter to the NAHC in an effort to determine whether any sacred sites are listed on its Sacred Lands File for the project area. A response was received on January 10, 2018 indicating that the Sacred Lands File failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC included a list of six tribal representatives available for consultation. To ensure that all Native American knowledge and concerns over potential TCRs that may be affected by the project are addressed, a letter containing project information and requesting any additional information was sent to each tribal representative on January 19, 2018. No responses have been received to date.

3.2 - Pedestrian Survey

On January 11, 2018, FCS Senior Archaeologist Dana DePietro surveyed the project area for additional unrecorded cultural resources. The project site is located within the USGS Mare Island and Benicia 7.5 minute Quadrangle Map Township 2 North, Range 4 West Section 13 Latitude is 38° 00’ 44” North and 122° 15’ 25” West. The 7.1-acre project site is located near 1477 Willow Avenue and Palm Avenue intersection in the City of Hercules, Contra Costa County, California. The project site consists of two parcels designated by APNs 406-522-001 and 406-522-004. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north. The survey began in the northwest corner of the project site and moved east, inspecting each parcel for cultural resources using North-South transects from west to east, spaced at 15-meter intervals whenever possible.

The area has been subject to grading associated with the construction of Willow Avenue, Palm Avenue and the BNSF Railroad to the south, but largely consists of undisturbed soils across the project area. Soil visibility was moderate to poor across the site, ranging from 30 to 40 percent, which was due to grasses and light ground cover. Soils in sections of poor visibility were intermittently inspected using a hand trowel. Observed soils were largely composed of reddish brown soil with high clay content. Soils were interspersed with small (5- to 10-centimeter) stones primarily composed of quartz, schist, and basalt. Soils in the west of the project area were noticeably darker in color; however, they did not contain artifacts or materials consistent with midden soils.

Survey conditions were documented using digital photographs and field notes. During the survey, Dr. DePietro examined all areas of the exposed ground surface for prehistoric artifacts (e.g., fire-affected rock, milling tools, flaked stone tools, tool-making debris, ceramics), soil discoloration and depressions that might indicate the presence of a cultural midden, faunal and human osteological remains, and features indicative of the former presence of structures or buildings (e.g., postholes, standing exterior walls, foundations) or historic debris (e.g., glass, metal, ceramics). Particular attention was paid to areas closer to water and natural resources, including the seasonal drainage running along the northeast of the project area. The terrain within the project area also varies in height considerably, with four distinct hilltops running west to east. These hilltops adjacent to water and natural resources are traditionally considered to have higher potential for cultural sensitivity as they were attractive locations for prehistoric human settlement. These areas were closely inspected

for culturally modified soils or other indicators of potential historic or prehistoric resources. No historic or prehistoric cultural resources or raw materials commonly used in the manufacture of tools (e.g., obsidian, Franciscan chert) were found in these areas, nor were any observed elsewhere within the project site. Photographs from the pedestrian survey may be found in Appendix A.

3.3 - Paleontological Records Search

On January 19, 2018, consulting paleontologist Dr. Ken Finger performed a records search on the UCMP database for the Willow Glen project site in Contra Costa County. According to the conjoined parts of the geologic maps by Dibblee and Minch (2005, 2006), the Willow Glen project site is located mostly on the Miocene mudstones of the Monterey Formation (Tmc). At the eastern end of the site, Holocene alluvium (Qa) overlies either the Briones Sandstone (Tbr) or, more likely, the Monterey Formation (Tmc). Both of these Miocene units have the potential to yield significant paleontological resources.

The UCMP database records lists 32 vertebrate localities in the Monterey Formation, but the only one in Contra Costa County is V4616, about 3.5 miles north of the project site; it yielded a whale vertebra. Considering that the County has 28 invertebrate localities in the Monterey Formation, the local potential of this unit for vertebrate fossils appears to be quite low. In contrast, there are 26 vertebrate localities in the Briones Formation, the nearest about 3 miles north of the project site. The composite vertebrate assemblage recovered from the Briones Formation in Contra Costa County comprises 38 specimens—mostly unidentified boney and cartilaginous fishes, a few unidentified birds, and the extinct enigmatic marine mammal *Desmostylus hesperus* (including published specimens).

The Willow Glen project site will disturb Miocene deposits that are known to have yielded vertebrate fossils in Contra Costa County. The most likely unit to be impacted is the Monterey Formation, which in this County has yielded just a single vertebra. Less likely to be encountered is the Briones Formation in the site's subsurface. A copy of Dr. Finger's report may be found in Appendix F.

SECTION 4: SUMMARY AND RECOMMENDATIONS

4.1 - Summary

In accordance with CEQA regulations, FCS assessed the effects of development for the proposed project site. Results from the NWIC indicate that seven historic or prehistoric resources are on file for the search radius. In addition, 12 area-specific survey reports are on file with the NWIC for the search radius. The previous surveys assessed the majority of the project location, suggesting the project area has largely been previously surveyed for cultural resources. However, the results of the subsequent field survey were negative for additional cultural resources, as were the results of the NAHC Sacred Lands File search and subsequent correspondence with Native American representatives regarding potential TCRs that may be adversely affected by the proposed project.

The paleontological report identified the site as consisting of two Miocene units that have the potential to yield significant paleontological resources. The UCMP database lists 32 vertebrate localities in the Monterey Formation and 38 vertebrate specimens from the Briones Formation in Contra Costa County, the nearest about 3 miles north of the project site.

4.2 - Recommendations

4.2.1 - Cultural and Paleontological Resource Recommendations

Based on the results of the records searches, Native American correspondence, and pedestrian survey, FCS considers the potential for the project to have an adverse effect on historic or prehistoric cultural resources to be moderate. Seven resources have been recorded within a 0.5-mile radius of the project site, four of which are significant prehistoric resources. No additional resources were observed within the site boundaries over the course of the pedestrian survey; however, poor soil visibility and proximity to natural resources and terrain suitable for prehistoric settlement increase the potential for undiscovered resources to be present within the site boundaries. FCS therefore recommends that a qualified archaeologist be present during the initial phase of ground disturbance and grading in order to check for the inadvertent exposure of cultural materials. This may be followed by regular periodic or “spot-check” archaeological monitoring as needed, but full-time archaeological monitoring is not recommended at this time.

The Willow Glen project site will disturb Miocene deposits that are known to have yielded vertebrate fossils in Contra Costa County; however, the most likely unit to be impacted is the Monterey Formation, which in this County has yielded just a single vertebra. Paleontological monitoring of project-related excavations is therefore not recommended because they are unlikely to impact any significant paleontological resources. However, should any vertebrate remains be encountered, all construction-related activities should be diverted from the find until a professional paleontologist has properly recorded and evaluated and, if deemed appropriate, salvaged them in a timely manner. Recovered fossils should be deposited in an appropriate repository, such as the UCMP, where they will be properly curated and available for scientific research and education.

Additional procedures for the inadvertent discoveries of human remains and cultural resources are provided below.

4.3 - Inadvertent Discovery Procedures

4.3.1 - Accidental Discovery of Cultural Resources

It is always possible that ground-disturbing activities during construction may uncover previously unknown, buried cultural resources. In the event that buried cultural resources are discovered during construction, operations shall stop in the immediate vicinity of the find and a qualified archaeologist shall be consulted to determine whether the resource requires further study. The qualified archeologist and shall make recommendations to the Lead Agency on the measures that shall be implemented to protect the discovered resources, including but not limited to excavation of the finds and evaluation of the finds in accordance with Section 15064.5 of the CEQA Guidelines. Potentially significant cultural resources consist of but are not limited to stone, bone, fossils, wood, or shell artifacts or features, including hearths, structural remains, or historic dumpsites. Any previously undiscovered resources found during construction within the project area should be recorded on appropriate DPR forms and evaluated for significance in terms of CEQA criteria.

If the resources are determined to be unique historic resources as defined under Section 15064.5 of the CEQA Guidelines, mitigation measures shall be identified by the monitor and recommended to the Lead Agency. Appropriate mitigation measures for significant resources could include avoidance or capping, incorporation of the site in green space, parks, or open space, or data recovery excavations of the finds.

No further grading shall occur in the area of the discovery until the Lead Agency approves the measures to protect these resources. Any archaeological artifacts recovered as a result of mitigation shall be donated to a qualified scientific institution approved by the Lead Agency where they would be afforded long-term preservation to allow future scientific study.

4.3.2 - Accidental Discovery of Human Remains

There is always the possibility that ground-disturbing activities during construction may uncover previously unknown, buried human remains. Should this occur, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed.

In the event of an accidental discovery or recognition of any human remains, Public Resource Code (PRC) Section 5097.98 must be followed. In this instance, once project-related earthmoving begins and if there is accidental discovery or recognition of any human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains to be Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the “most likely descendant” of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person

responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98, or

2. Where the following conditions occur, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:
   - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;
   - The descendent identified fails to make a recommendation; or
   - The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

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SECTION 5: REFERENCES

Beardsley, R.K. 1948. Cultural Sequences in Central California Archaeology. American Antiquity 14:1–28.

Beardsley, R.K. 1954. Temporal and Areal Relationships in Central California Archaeology. University of California Archaeological Survey Reports 24:1–62; 25:63–131.

Beck, W. and Y.D. Haase. 1974. Historical Atlas of California. University of Oklahoma Press. Norman, Oklahoma.

Bennyhoff, J. 1950. Californian Fish Spears and Harpoons. University of California Anthropological Records 9(4):295–338.

Bouey, P.D. and S.A. Waechter. 1992. Preliminary Report on Phase II Test Excavations at CA-SAC-133 near Sloughhouse, Sacramento County, California. Report to California Department of Transportation, District 3, Marysville, CA.

Chartkoff J.L. and K.K. Chartkoff. 1984. The Archaeology of California. Menlo Park: Stanford University Press.

Cook, S.F. 1955. The Epidemic of 1830–1833 in California and Oregon. American Archaeology and Ethnology, 43(3): 303–326.

Cook, S.F. 1976. The Population of the California Indians 1769–1970. University of California Press. Berkeley, California.

Derr, E.H. 1983. Archaeological Investigations at CA-SAC-16: Interpretations of a Middle/Late Horizon Village in the Lower Sacramento Valley of California. Master's thesis.

Dickel, D.N., P. D. Schulz, and H.M. McHenry. 1984. Central California: Prehistoric Subsistence Changes and Health. In Paleopathology at the Origins of Agriculture, edited by Mark Nathan Cohen and George J. Armelagos, pp. 439–462. Academic Press, Inc., Orlando, FL.

Fredrickson, D.A. 1973. Early Cultures of the North Coast of the North Coast Ranges, California. PhD dissertation.

Fredrickson, D.A. 1974. Cultural Diversity in Early Central California: A View from the North Coast Ranges. Journal of California Anthropology 1:41–53.

Gerow, B.A. 1954. The Problem of Cultural Sequences in Central California Archaeology. Paper presented at the Annual Meeting of the American Association for the Advancement of Sciences.

Gerow, B.A. 1974. Comments on Fredrickson's Cultural Diversity. The Journal of California Anthropology 1(2):239–246.

Gerow, B.A., with R. Force. 1968. An Analysis of the University Village Complex with a Reappraisal of Central California Archaeology. Stanford University Press. Stanford., California.

Hughes, R.E. (editor). 1994. Toward a New Taxonomic Framework for Central California Archaeology: Essays by James A. Bennyhoff and David A. Fredrickson. Assembled and edited by Richard E. Hughes. Contributions of the University of California No. 52, Archaeological Research Facility, Berkeley, CA.

Johnson, P.J. 1978. Patwin. In R.F. Heizer, vol. ed., Handbook of the North American Indians, Volume 8, California 350–360. Washington, DC: Smithsonian Institution.

Kroeber, A.L. 1925. Handbook of the Indians of California. Bureau of American Ethnology Bulletin 78. Smithsonian Institution, Washington, DC.

Lillard, J.B. and W.K. Purves. 1936. The Archaeology of the Deer Creek-Cosumnes Area, Sacramento Co., California. Sacramento: Sacramento Junior College, Department of Anthropology Bulletin 1.

Lillard, J.B., R.F. Heizer, and F. Fenenga. 1939. An Introduction to the Archaeology of Central California. Sacramento Junior College, Department of Anthropology, Bulletin 2.

McKern, W.K. 1922. Functional Families of the Patwin. American Archaeology and Ethnology 13(7)235–258. Berkeley, CA.

Moratto, M.J. 1984. California Archaeology. San Diego: Academic Press. Northwest Information Center (NWIC). Rohnert Park. File Number 05-1169.

Office of Historic Preservation (OHP). 2005. Instructions for Recording Historical Resources. Sacramento: Office of Historic Preservation.

Ragir, S.R. 1972. The Early Horizon in Central California Prehistory. Contributions of the University of California Archaeological Research Facility 15. Berkeley, CA.

Rawls, J.J. and W. Bean. 1993. California: An Interpretive History. McGraw Hill, San Francisco.

Robinson, W.W. 1948. Land in California. University of California Press, Berkeley.

RootsWeb.com. 2006. Website: www.rootsweb.com/cascgsi/soltimeline.htm.

Rosenthal, J.S. and G. White. 1994. Archaeological Investigations at the Pheasant Run Site, CA-Sol-363. Report to Kaufman and Broad of Northern California, Inc., Roseville, CA.

Schenck, W.E. and E. J. Dawson. 1929. Archaeology of the Northern San Joaquin Valley. American Archaeology and Ethnology 25:286–413.

The Virtual Museum of San Francisco (VMSF). 2006. California Notes. Website: http://www.sfmuseum.org/hist9/turrillgold.html.

United States Geological Survey (USGS). 1978. Denverton, California 7.5-Minute Topographic Quadrangle Map. Department of the Interior. Washington D.C.: US Government Printing office.

Appendix A: Pedestrian Survey Photographs

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Photograph 1: View of the project area; facing north.

Photograph 2: View of the project area; facing east.

Photograph 3: View of the project area; facing south.

Photograph 4: View of the project area; facing west.

Photograph 5: View of Palm Avenue and BNSF Railroad overpass along the western boundary; facing south.

Photograph 6: View from the center of the project area; facing west.

Photograph 7: View from the center of the project area; facing east.

Photograph 8: Overview of typical soil visibility across the project area.

Photograph 9: Detail of typical soil composition across the project site.

Photograph 10: Detail of darker soils devoid of cultural materials present in the far west of the project site.

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Appendix B: Native American Heritage Commission Search Request/ Results and Native American Correspondence

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Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☑ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

☐ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

___ **General Plan** ___ **General Plan Element** ___ **General Plan Amendment**

___ **Specific Plan** ___ **Specific Plan Amendment** ___ **Pre-planning Outreach Activity**

Required Information

Project Title: 4673.0012 Willow Avenue Commercial Center

Local Government/Lead Agency: City of Hercules

Contact Person: Dr. Dana DePietro

Street Address: 1350 Treat Boulevard, Ste. 380

City: Walnut Creek **Zip:** 94597

Phone: 530-219-1432 **Fax:** _____

Email: ddepietro@fcs-intl.com

Specific Area Subject to Proposed Action

County: Contra Costa **City/Community:** Hercules

Project Description:

The project proposes the development of a storage facility with four buildings on APN 406-522-004, and a service commercial development with three buildings on APN 406-522-001. The total floor area of these seven buildings would be 146,488 square feet.

Additional Request

☑ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): Mare Island and Benicia (1980)

Township: 2N **Range:** 4W

Section(s): 13

Source: USGS Mare Island and Benicia 7.5' Quadrangles / T2N,R4W,sec13

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Record Search Map

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

January 10, 2018

Dr. Dana DePietro
FCS Intl

Sent by Email: ddepietro@fcs-int.com
Number of Pages: 3

RE: Willow Ave Commercial Center, Contra Costa County

Dear Ms. DePietro:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult**. If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.souza@nahc.ca.gov .

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

Native American Heritage Commission
Native American Contacts
1/10/2018

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amahmutsuntribal@gmail.com
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Ohlone/Costanoan

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Ohlone/Costanoan

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Ohlone / Costanoan

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Ohlone/Costanoan
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(916) 683-6000 Office

(916) 683-6015 Fax

Miwok

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produc ed.

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

This list is only applicable for contacting local Native American Tribes with regard to cultural resources assessments for the proposed: Willow Ave Commercial Center, Contra Costa County.

January 18, 2018

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
P.O. Box 360791
Milpitas, CA 95036

Subject: Proposed Willow Avenue Commercial Center Project IS/MND

Dear Chairperson Cambra,

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (IS/MMD) for the proposed Willow Avenue Commercial Center Project on behalf of the City of Hercules. The project site is located near 1477 Willow Avenue and Palm Avenue intersection. As part of the environmental review process, we are conducting a cultural resources assessment.

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager's apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north.

A Records Search Map with a 0.5 mile buffer around the site is enclosed for your reference. Surrounding land uses include the Valley Bible Church and the Valley Preschool and Daycare to the north. The California Department of Transportation operates a maintenance yard to the west, and single-family homes to the south. Land to the east is similarly undeveloped.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File search and a California Historical Resources Information System (CHRIS) search, neither of which produced results. FCS contacted the Native American Heritage Commission (NAHC), and they suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act. Project notification and consultation requirements are being handled by designated lead agencies under CEQA and NEPA. Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for Willow Avenue Commercial Center

January 18, 2018

The Ohlone Indian Tribe
Andrew Galvan, Chairperson
P.O. Box 3152
Fremont, CA 94539

Subject: Proposed Willow Avenue Commercial Center Project IS/MND

Dear Chairperson Galvan,

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (IS/MMD) for the proposed Willow Avenue Commercial Center Project on behalf of the City of Hercules. The project site is located near 1477 Willow Avenue and Palm Avenue intersection. As part of the environmental review process, we are conducting a cultural resources assessment.

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A Records Search Map with a 0.5 mile buffer around the site is enclosed for your reference. Surrounding land uses include the Valley Bible Church and the Valley Preschool and Daycare to the north. The California Department of Transportation operates a maintenance yard to the west, and single-family homes to the south. Land to the east is similarly undeveloped.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File search and a California Historical Resources Information System (CHRIS) search, neither of which produced results. FCS contacted the Native American Heritage Commission (NAHC), and they suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act. Project notification and consultation requirements are being handled by designated lead agencies under CEQA and NEPA. Please feel free to contact me at 925.357.2562 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for Willow Avenue Commercial Center

January 19, 2018

Wilton Rancheria
Raymond Hitchcock, Chairperson
9728 Kent Street
Elk Grove, CA 95624

Subject: Proposed Willow Avenue Commercial Center Project IS/MND

Dear Chairperson Hitchcock,

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (IS/MMD) for the proposed Willow Avenue Commercial Center Project on behalf of the City of Hercules. The project site is located near 1477 Willow Avenue and Palm Avenue intersection. As part of the environmental review process, we are conducting a cultural resources assessment.

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager's apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north.

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Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for Willow Avenue Commercial Center

January 18, 2018

North Valley Yokuts Tribe
Katherine Erolinda Perez, Chairperson
P.O. Box 717
Linden, CA 95236

Subject: Proposed Willow Avenue Commercial Center Project IS/MND

Dear Chairperson Perez,

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (IS/MMD) for the proposed Willow Avenue Commercial Center Project on behalf of the City of Hercules. The project site is located near 1477 Willow Avenue and Palm Avenue intersection. As part of the environmental review process, we are conducting a cultural resources assessment.

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager's apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north.

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Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for Willow Avenue Commercial Center

January 18, 2018

Indian Canvon Mutsun Band of Costanoan
Ann Marie Savers, Chairperson
P.O. Box 28
Hollister, CA 95024

Subject: Proposed Willow Avenue Commercial Center Project IS/MND

Dear Chairperson Savers,

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (IS/MMD) for the proposed Willow Avenue Commercial Center Project on behalf of the City of Hercules. The project site is located near 1477 Willow Avenue and Palm Avenue intersection. As part of the environmental review process, we are conducting a cultural resources assessment.

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager's apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north.

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Dana Douglas DePietro, Ph.D.
Senior Scientist, Archaeology
FirstCarbon Solutions
1350 Treat Boulevard, Ste. 380
Walnut Creek, CA 94597

Enc: Project location map for Willow Avenue Commercial Center

January 18, 2018

The Amah Mutsun Tribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Rd
Woodside, CA 94062

Subject: Proposed Willow Avenue Commercial Center Project IS/MND

Dear Chairperson Zwierlein,

FirstCarbon Solutions (FCS) is preparing an Initial Study/Mitigated Negative Declaration (IS/MMD) for the proposed Willow Avenue Commercial Center Project on behalf of the City of Hercules. The project site is located near 1477 Willow Avenue and Palm Avenue intersection. As part of the environmental review process, we are conducting a cultural resources assessment.

The City of Hercules is proposing to develop a commercial center consisting of a self-storage facility and automotive service center on an approximately 7.1-acre project site. The site contains two parcels and is currently vacant. The project site fronts Willow Avenue and the Burlingame Northern & Santa Fe (BNSF) Railroad right-of-way. The self-storage facility would consist of four buildings and the automotive service center would consist of three buildings, totaling approximately 150,000-square-feet. The four-building storage facility, including office and manager's apartment, would occupy the eastern portion of the project site. The automotive service center would occupy the western portion of the project site. Access to the project site would be provided by a single driveway off Willow Avenue, which would be located directly across from the driveway to the church and preschool to the north.

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Senior Scientist, Archaeology
FirstCarbon Solutions
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Walnut Creek, CA 94597

Enc: Project location map for Willow Avenue Commercial Center

Appendix C: Personnel Qualifications

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FIRSTCARBON SOLUTIONS™

DANA DOUGLAS DePIETRO, PH.D.—Cultural Resources Lead (North)

OVERVIEW

- More than 15 Years' Experience in Archaeology and Cultural Resources

Education

- Ph.D., Near Eastern Art and Archaeology, University of California at Berkeley, 2012
- M.A., Near Eastern Art and Archaeology, University of California at Berkeley, 2005
- B.A., Archaeology and History (double major), University of California at San Diego, 2002

Fellowships and Awards

- Albright Institute Educational and Cultural Affairs Fellowship (2015)
- Katherine Davis Foundation Projects for Peace Prize (2012)
- International House Gateway Fellowship (2011-2012)
- The George Franklin Dales Foundation Fellowship for Archaeological Research (2011)
- CAORC Multi-Country Dissertation Research Fellowship (2010)

Dana DePietro, Ph.D. is a Registered Professional Archaeologist who meets the Secretary of Interior's standards for historic preservation programs in archaeology. Dr. DePietro has over 15 years of experience in all aspects of cultural resource management, including prehistoric and historic archaeology, paleontology, materials conservation, history of art and architecture, and community engagement. He has experience in compliance with the National Environmental Policy Act (NEPA), the California Environment Quality Act (CEQA), the National Historic Preservation Act (NHPA), and the Archaeological Resources Protection Act (ARAP). Dr. DePietro has completed cultural resource projects that have involved agency, client, Native American, and subcontractor coordination; treatment plans and research design development; archival research; field reconnaissance; site testing; data recovery excavation; construction monitoring; site recordation; site protection/preservation, mapping/ cartography; spatial analysis/GIS; laboratory analysis; materials conservation; artifact curation and exhibition; and report production. He has completed projects in California within the jurisdiction of the Bureau of Land Management (BLM) and other federal agencies requiring compliance with Section 106 of the NHPA. He has also completed projects throughout California under CEQA for state and local governments and municipalities, including the California Department of Transportation (Caltrans) and has worked with clients to insure deliverables meet and exceed the standards set by the State Historic Preservation Office (SHPO).

RELATED EXPERIENCE AND CLIENT SUMMARY

FirstCarbon Solutions

As the Lead Archaeologist/Cultural Resource Specialist for FCS, Dr. DePietro conducts evaluations and performs field documentation of historic and prehistoric cultural resources; prepares environmental impact reports (EIRs), cultural resources assessments (CRAs), DPR forms and Section 106 reports; conducts mapping, GIS analysis, and state and county record searches; leads archaeological surveys and field monitoring efforts; and coordinates with state, federal and tribal officials and institutions for a variety of FCS projects, including the following:

- Atherton Baptist Homes Master Plan/Phase II, City of Alhambra, Los Angeles County
- Biological and Cultural Resources Assistance 140-Acre Project Site Woodcrest, Riverside County, CA
- Blanchard Road Industrial EIR Project, City of San Jose, Santa Clara County, CA
- Bonadelle Tract 6120 AQ/GHG and Bio Tech Studies, City of Clovis, Fresno County, CA
- CEQA Analysis for Mayhew Way Project, City of Walnut Creek, Contra Costa County
- 2268 El Camino Real, Mountain View—II CEQA Compliance Checklist Project, City of Mountain View, Santa Clara County
- CEQA Documentation for New Science Building, City of Fairfield, Solano County
- CEQA Services for Clover Spring Open Space Preserve Project, City of Cloverdale, Sonoma County
- Chico Walmart Expansion Project, City of Chico, CA
- Cultural Resources Services for Froom Ranch/El Villagio Specific Plan, City of San Luis Obispo, CA
- Cultural Resource & Historic Evaluation for Sacramento Dome Theatre, City of Sacramento, CA
- Cultural Resources Services for Haven Berryessa Block 7 & 8 San Jose Flea Market, San Jose, CA
- Caltrans NEPA/CEQA Documentation and Permitting for the Dogtown Road Bridges Replacement Projects (San Domingo Creek, French Gulch, and Indian Creek), Calaveras County, CA
- Due Diligence for Meadowlark Project in Pleasanton, CA
- Due Diligence Services for the Montalcino Property, Napa County, CA
- Due Diligence Site Review for Parcel APN 68-241-30 located at 260 Bartlett Way Santa Cruz, CA
- Due Diligence Level IA Entitlements for the Boscell Road Osgood Project, City of Fremont, CA
- Trellis Residential Project EIR, City of Walnut Creek, CA
- El Dorado Materials Recovery Facility Remodeling Project, El Dorado County, CA
- Farmstand IS/MND, City of Healdsburg, CA
- La Paloma Winery Demo Project IS/MND, City of Clovis, CA
- Kaiser Dublin Medical Center EIR, City of Dublin, California
- Merced Gateway Master Plan Project EIR, City of Merced, CA
- Phase 1 Cultural Resource Assessment for 44 acres TTM No. 19992, Rancho Cucamonga, CA
- Bonadelle Tract 6120 Cultural Resources Study, City of Clovis, CA
- Professional Services to Support the Development of a Preferred Development Plan and Associated Regulatory Strategies for the Solano 360 Project, Solano County, CA
- Tassajara Parks EIR, Contra Costa County, California

Other Relevant Experience

The Society for Humanitarian Archaeological Research and Exploration

Dr. DePietro is the Founder and Executive Director of The Society for Humanitarian Archaeological Research and Exploration. He manages the projects, staff, and the daily operation of this not-for-profit organization. Dr. DePietro likewise establishes relationships with partner universities and institutions, writes grant proposals, supervises fundraising projects, and maintains accounts, financial records, and the organization's online presence.

University of California at Berkeley

Dr. DePietro was a lecturer at the University of California, Berkeley from August 2003 to January 2015. During his tenure, he prepared University-level source and lectures in the history of the modern and ancient Middle East, performed student advising and evaluation, and university administrative duties. Dr. DePietro provided resources and opportunities that empower people to critically engage with other cultures as well as with their own communities.

DANA DOUGLAS DePIETRO, PH.D.—Cultural Resources Lead (North)

Penn State University—Tel Akko Total Archaeology Project

Dr. DePietro was the Director of Community Engagement from 2013 to 2014 at the Penn State University for the Tel Akko Total Archaeology Project. He developed and executed a community engagement program, supervised staff and community participants, taught excavation and conservation techniques to groups of young people in Akko, and performed outreach, dialogue, and program developments in partnership[with community leaders.

Harvard University—Leon Levy Expedition to Ashkelon, Israel

Dr. De Pietro was the excavation supervisor during the summers of 2007-2013 for the Harvard University—Leon Levy Expedition to Ashkelon, Israel. He supervised the excavation and stratagraphic interpretation and instructed students in excavation techniques, data collection, photography, analysis, and publication.

Early Iron Age Cemetery Excavation—Dhamar, Yemen

Dr. De Pietro was the Area Supervisor during the summer of 2004 for the Early Iron Age Cemetery Excavation in Dhamar, Yemen. He supervised the excavation and stratagraphic interpretation, taught excavation techniques, strategy and implementation, field conservation, surveying techniques, data collection and analysis, and site management.

Journal of Associated Graduates in Near Eastern Studies (JAGNES)

Dr. DePietro was the Associate Editor from August 2003 to May 2012 for the Journal of Associated Graduates in Near Eastern Studiers (JAGNES). He solicited and proofread submissions, fundraising, and advertisements.

"Travel Today: Egypt" Magazine

Dr. De Pietro was an Archaeological Correspondent from December 2002 to February 2005. He wrote magazine articles, conducted relevant interviews and research, and procured photos and images to compliment articles.

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Appendix D: Regulatory Framework

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REGULATORY FRAMEWORK

Government agencies, including federal, state, and local agencies, have developed laws and regulations designed to protect significant cultural resources that may be affected by projects regulated, funded, or undertaken by the agency. Federal and state laws that govern the preservation of historic and archaeological resources of national, state, regional, and local significance include the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and the California Environmental Quality Act (CEQA). In addition, laws specific to work conducted on federal lands includes the Archaeological Resources Protection Act (ARPA), the American Antiquities Act, and the Native American Graves Protection and Repatriation Act (NAGPRA).

The following federal or CEQA criteria were used to evaluate the significance of potential impacts on cultural resources for the proposed project. An impact would be considered significant if it would affect a resource eligible for listing in the NR or the CR, or if it is identified as a unique archaeological resource.

Federal-Level Evaluations

Federal agencies are required to consider the effects of their actions on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings under NEPA § 106. Federal agencies are responsible for initiating NEPA § 106 review and completing the steps in the process that are outlined in the regulations. They must determine if NHPA § 106 applies to a given project and, if so, initiate review in consultation with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer (THPO). Federal agencies are also responsible for involving the public and other interested parties. Furthermore, NHPA S106 requires that any federal or federally assisted undertaking, or any undertaking requiring federal licensing or permitting, consider the effect of the action on historic properties listed in or eligible for the NRHP. Under the Code of Federal Regulations (CFR), 36 CFR Part 800.8, federal agencies are specifically encouraged to coordinate compliance with NEPA § 106 and the NEPA process. The implementing regulations "Protection of Historic Properties" are found in 36 CFR Part 800. Resource eligibility for listing on the NRHP is detailed in 36 CFR Part 63 and the criteria for resource evaluation are found in 36 CFR Part 60.4 [a–d].

The NHPA established the NRHP as the official federal list for cultural resources that are considered important for their historical significance at the local, state, or national level. To be determined eligible for listing in the NRHP, properties must meet specific criteria for historic significance and possess certain levels of integrity of form, location, and setting. The criteria for listing on the NRHP are significance in American history, architecture, archaeology, engineering, and culture as present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. In addition, a resource must meet one or all of these eligibility criteria:

a.) Is associated with events that have made a significant contribution to the broad patterns of our history.

b.) Is associated with the lives of persons significant in our past.

c.) Embodies the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values, represent a significant and distinguishable entity whose components may lack individual distinction.

d.) That have yielded, or may be likely to yield, information important in prehistory or history.

Criterion D is usually reserved for archaeological resources. Eligible properties must meet at least one of the criteria and exhibit integrity, measured by the degree to which the resource retains its historical properties and conveys its historical character.

Criteria Considerations

Ordinarily cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions or used for religious purposes, buildings that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the NRHP. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

a.) A religious property deriving primary significance from architectural or artistic distinction or historical importance.

b.) A building or structure removed from its original location but which is primarily significant for architectural value, or which is the surviving structure most importantly associated with a historic person or event.

c.) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building associated with his or her productive life.

d.) A cemetery that derives its primary importance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events.

e.) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived.

f.) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance.

g.) A property achieving significance within the past 50 years if it is of exceptional importance.

Thresholds of Significance

In consultation with the SHPO/THPO and other entities that attach religious and cultural significance to identified historic properties, the Agency shall apply the criteria of adverse effect to historic

properties within the Area of Potential Effect (APE). The Agency official shall consider the views of consulting parties and the public when considering adverse effects.

Federal Criteria of Adverse Effects

Under federal regulations, 36 CFR Part 800.5, an adverse effect is found when an undertaking alters, directly or indirectly, any of the characteristics of a historic property that qualifies the property for inclusion in the NRHP in a manner that diminishes the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration will be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for listing in the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative.

According to 36 CFR Part 800.5, adverse effects on historic properties include, but are not limited to, those listed below:

- Physical destruction of or damage to all or part of the property.
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation, and provision of handicapped access, that is not consistent with the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties per 36 CFR Part 68 and applicable guidelines.
- Removal of the property from its historic location.
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance.
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization.
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long term preservation of the property's historic significance.

If Adverse Effects Are Found

If adverse effects are found, the agency official shall continue consultation as stipulated at 36 CFR Part 800.6. The agency official shall consult with the SHPO/THPO and other consulting parties to develop alternatives to the undertaking that could avoid, minimize, or mitigate adverse effects to historic resources. According to 36 CFR Part 800.14(d), if adverse effects cannot be avoided then standard treatments established by the ACHP may be used as a basis for Memorandum of Agreement (MOA).

According to 36 CFR Part 800.11(e), the filing of an approved MOA, and appropriate documentation, concludes the § 106 process. The MOA must be signed by all consulting parties and approved by the ACHP prior to construction activities. If no adverse effects are found and the SHPO/THPO or the ACHP do not object within 30 days of receipt, the agencies' responsibilities under § 106 will be satisfied upon completion of report and documentation as stipulated in 36 CFR Part 800.11. The information must be made available for public review upon request, excluding information covered by confidentiality provisions.

State-Level Evaluation Processes

An archaeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California per PRC § 5020.1(j) or if it meets the criteria for listing on the CR per California Code of Regulations (CCR) at Title 14 CCR § 4850.

The most recent amendments to the CEQA guidelines direct lead agencies to first evaluate an archaeological site to determine if it meets the criteria for listing in the CR. If an archaeological site is an historical resource, in that it is listed or eligible for listing in the CR, potential adverse impacts to it must be considered as stated in PRC §§ 21084.1 and 21083.2(l). If an archaeological site is considered not to be an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC § 21083.2, then it would be treated in accordance with the provisions of that section.

With reference to PRC § 21083.2, each site found within a project area will be evaluated to determine if it is a unique archaeological resource. A unique archaeological resource is described as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

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

As used in this report, "non-unique archaeological resource" means an archaeological artifact, object, or site that does not meet the criteria for eligibility for listing on the CR, as noted in subdivision (g) of PRC § 21083.2. A non-unique archaeological resource requires no further consideration, other than simple recording of its components and features. Isolated artifacts are typically considered non-unique archaeological resources. Historic structures that have had their superstructures demolished or removed can be considered historic archaeological sites and are evaluated following the processes used for prehistoric sites. Finally, OHP recognizes an age

threshold of 45 years. Cultural resources built less than 45 years ago may qualify for consideration, but only under the most extraordinary circumstances.

Title 14, CCR, Chapter 3 § 15064.5 is associated with determining the significance of impacts to archaeological and historical resources. Here, the term historical resource includes the following:

1. A resource listed in, or determined eligible by the State Historical Resources Commission, for listing in the CR (PRC § 5024.1; Title 14 CCR, § 4850 et seq.).
2. A resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in an historical resource survey meeting the PRC § 5024.1(g) requirements, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. 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 may be considered a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (PRC § 5024.1; Title 14 CCR § 4852) including the following:
   A. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
   B. Is associated with the lives of persons important in our past.
   C. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
   D. Has yielded, or may be likely to yield, information important in prehistory or history.

Typically, archaeological sites exhibiting significant features qualify for the CR under Criterion D because such features have information important to the prehistory of California. A lead agency may determine that a resource may be a historical resource as defined in PRC §§ 5020.1(j) or 5024.1 even if it is:

- Not listed in or determined to be eligible for listing in the CR.
- Not included in a local register of historical resources pursuant to PRC § 5020.1(k).
- Identified in an historical resources survey per PRC § 5024.1(g).

Threshold of Significance

If a project will have a significant impact on a cultural resource, several steps must be taken to determine if the cultural resource is a "unique archaeological resource" under CEQA. If analysis and/or testing determine that the resource is a unique archaeological resource and therefore subject to mitigation prior to development, a threshold of significance should be developed. The threshold

of significance is a point where the qualities of significance are defined and the resource is determined to be unique under CEQA. A significant impact is regarded as the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource will be reduced to a point that it no longer meets the significance criteria. Should analysis indicate that project development will destroy the unique elements of a resource; the resource must be mitigated for under CEQA regulations. The preferred form of mitigation is to preserve the resource in-place, in an undisturbed state. However, as that is not always possible or feasible, appropriate mitigation measures may include, but are not limited to:

1. Planning construction to avoid the resource.
2. Deeding conservation easements.
3. Capping the site prior to construction.

If a resource is determined to be a "non-unique archaeological resource," no further consideration of the resource by the lead agency is necessary.

Tribal Consultation

The following serves as an overview of the procedures and timeframes for the Tribal Consultation process. For the complete Tribal Consultation Guidelines, please refer to the State of California Office of Planning and Research website.

Prior to the amendment or adoption of general or specific plans, local governments must notify the appropriate tribes of the opportunity to conduct consultation for the purpose of preserving or mitigating impacts to cultural places located on land within the local government's jurisdiction that is affected by the plan adoption or amendment. The tribal contacts for this list are maintained by the NAHC and is distinct from the Most Likely Descendent (MLD) list. It is suggested that local governments send written notice by certified mail with return receipt requested. The tribes have 90 days from the date they receive notification to request consultation. In addition, prior to adoption or amendment of a general or specific plan, local government must refer the proposed action to tribes on the NAHC list that have traditional lands located within the city's or county's jurisdiction. Notice must be sent regardless of prior consultation. The referral must allow a 45-day comment period.

In brief, notices from government to the tribes should include:

- A clear statement of purpose
- A description of the proposed general or specific plan, the reason for the proposal, and the specific geographic areas affected
- Detailed maps to accompany the description
- Deadline date for the tribes to respond
- Government representative(s) contact information
- Contact information for project proponent/applicant, if applicable

The basic schedule for this process is:

- 30 days: time NAHC has to provide tribal contact information to the local government; this is recommended not mandatory.
- 90 days: time tribe has to respond indication whether or not they want to consult. Note: tribes can agree to a shorter timeframe. In addition, consultation does not begin until/unless requested by the tribe within 90 days of receiving notice of the opportunity to consult. The consultation period, if requested, is open-ended. The tribes and local governments can discuss issues for as long as necessary, or productive, and need not result in agreement.
- 45 days: time local government has to refer proposed action, such as adoption or amendment to a general plan or specific plan, to agencies, including the tribes. Referral required even if there has been prior consultation. This opens the 45-day comment period.
- 10 days: time local government has to provide tribes of notice of public hearing.

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Appendix E:
NWIC Records Search Results

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Source: USGS Mare Island and Benicia 7.5' Quadrangles / T2N,R4W,sec13

FIRSTCARBON SOLUTIONS™

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Record Search Map

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-07-000129	CA-CCO-000248	Other - 259A; Resource Name - Nelson's Survey Map #259a	Site	Prehistoric	AP15	1910 (N. C. Nelson, [none])	
P-07-000267	CA-CCO-000495	Resource Name - WR-1 CT-0	Site	Prehistoric	AP02; AP15	1984 (L. Weigel, [none])	S-014354, S-015861
P-07-000476	CA-CCO-000698/H	Other - Claeys Ranch and Mound; Resource Name - Nelson No. 259; Other - Route 4 Gap Project	Building, Site, District	Prehistoric, Historic	AP02; AP15; HP02; HP33	1907 (N.C. Nelson, University fo California); 1995 (David Bieling, Karen Blom, Thomas Martin, Holman & Associates)	S-002458, S-013800, S-013808, S-017108, S-018900, S-046894
P-07-000515	CA-CCO-000710H	Resource Name - Hwy 4; Other - Segment of Route 4; OHP PRN - ADOE-07-97-003-00; OHP PRN - FHWA961211A	Structure	Historic	AH07	1995 (Ann Samuelson, William Self Associates)	S-018900
P-07-000516		Resource Name - Hwy 4 - 1; Other - Isolate, obsidian	Other	Prehistoric	AP16	1995 (Ann Samuelson, Lori Harrington, William Self Associates)	S-018900
P-07-000806	CA-CCO-000732H	Resource Name - Atchison, Topeka & Santa Fe Railroad; Other - ATSF-4; Other - ATSF-5; Other - ATSF-6; Other - ATSF-7; Other - C-Antioch North-1; Other - BEIR-2; Other - ATSF Railroad; OHP Property Number - 119709; OHP PRN - DOE-07-99-0002; OHP PRN - ADOE-07-97-004-00; OHP PRN - EPA981214A	Structure	Historic	AH07; HP39	1995 (Brian Hatoff, Woodward Clyde); 1995 (Brian Hatoff, Woodward Clyde); 1995 (Brian Hatoff, Woodward Clyde); 1995 (Brian Hatoff, Woodward Clyde); 1996 (Ward Hill, [none]); 1998 (S. Ashkar, Jones & Stokes Associates, Inc.); 1998 (Meta Bunse, JRP Historical Consulting); 1999 (S. Atchley, G. Roark, Jones & Stokes Associates, Inc.); 2004 (Josh Smallwood, CRM Tech); 2009 (J. Lang, GANDA); 2016 (Polly S. Allen, JPR Historical Consulting)	S-017993, S-020808, S-022929, S-030387, S-035861, S-043685, S-043849, S-046155, S-046889, S-046909
P-07-004621		Resource Name - #1 Claeys Ranch; Other - Route 4 Gap Project	Building, District	Historic	HP02; HP33	1996 (Ward Hill, [none])	S-002458, S-013800, S-013808, S-017108, S-046894

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-001634	Caltrans - 04209-207241	1979	Mara Melandry	Archaeological Survey Report, 04-CC-4 P.M. 0.2/1.3 04209 - 207241, Improvements to State Route 4 near Hercules	Caltrans, District 04	
S-001863		1980	Theo N. Mabry	Archaeological Records Search and Field Survey, Town Center Commercial Development, Hercules, California	Archaeological Planning Collaborative	
S-001957		1979	Diane C. Watts	Archaeological Survey Report, 04-CC-4 P.M. 1.5, Proposed Drainage Systems Installation along Highway 4 near Hercules, Contra Costa County, 04229-910062	CalTrans District 4	
S-002577	Submitter - ARS 81-36	1981	William Roop	Archaeological reconnaissance of a 55 acre area, project N-9 80150, City of Hercules, Contra Costa County (letter report)	Archaeological Resource Service	
S-014354		1992	Michael Smith and Suzanne Baker	Archaeological Reconnaissance of the Proposed Highway 4 Reclaimed Water Pipeline and Pump Station, Contra Costa County, California	Archaeological/Historical Consultants	07-000267
S-015861		1984	Lawrence E. Weigel and Margaret Buss	Report on the Archaeological Survey and Augering Program at CA-CCO-495, a Prehistoric Archaeological Site Found During Construction of 4-CC-4 P.M.	Caltrans	07-000267
S-018900	Caltrans - EA 228020	1996	James M. Allan and William Self	Historic Property Survey Report, Route 4 (West) Gap Project, P.M. 0.0/4.9, Charge Unit 275, EA Number 228020, Contra Costa County, California	William Self Associates, Inc.	07-000476, 07-000513, 07-000514, 07-000515, 07-000516, 07-000517, 07-000518
S-018900a		1996		Archaeological Survey Report Route 4 (West) Gap Project, P.M. 0.0/4/9, Charge Unit 275, EA Number 228020, Contra costa County, California	William Self Associates	
S-018900b		1996	Ward Hill	Historic Architectural Survey Report, Route 4 (West) Gap Project, P.M. 0.0/4.9, Charge Unit 275, EA Number 228020, Contra Costa County, California		
S-020698		1996	Miley P. Holman	Archaeological Field Inspection of the Claeys Ranch North Property, Hercules, Contra Costa County, California (letter report)	Holman & Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-038251	Caltrans - EA 3A7761; Caltrans - EA 3A7771	2011	Jack Meyer	Buried Archaeological Site Assessment and Extended Phase I Subsurface Explorations for the I-80 Integrated Corridor Mobility Project, Caltrans District 04, Alameda and Contra Costa Counties, California, 04-ALA-CC-80, P.M. ALA 1.99/P.M. ALA 8.04, P.M. CC 0.0/P.M. CC 13.49, EA 3A7761 / EA 3A7771	Far Western Anthropological Research Group, Inc.	
S-044872		2008		Cultural Resources Constraints Study for the Replacement of 10 Poles on the Christie-Franklin No. 1 High Voltage Transmission Line, Contra Costa County, CA	PAR Environmental Services, Inc.	

Appendix F:
Paleontological Records Search Results

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Kenneth L. Finger, Ph.D.
Consulting Paleontologist

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January 19, 2018

Dana DePietro
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

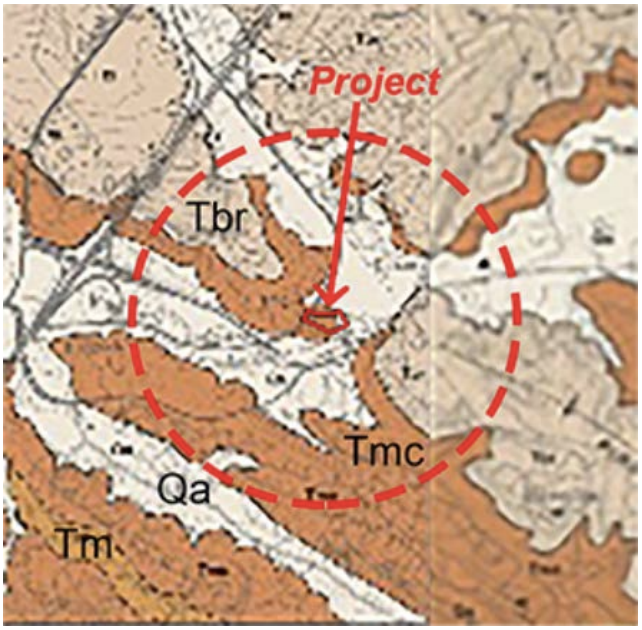
Re: Paleontological Records Search: Willow Glen Project (4673.0012), Contra Costa County, California

Dear Dr. DePietro:

As per your request, I have performed a records search on the University of California Museum of Paleontology (UCMP) database for the Willow Glen project in the vicinity of Luzon, Contra Costa County. The project site is on undeveloped land just south of where Willow Avenue crosses over the John Muir Parkway. It is located on the on the eastern edge of the Mare Island Quadrangle (1985 USGS 7.5-series topographic map), in the vicinity of Luzon. On Google Earth imagery, it appears that this is relatively undistiurbed, sparsely vegetated, gently rolling, terrain.

Geologic Units

According to the conjoined parts of the geologic maps by Dibblee and Minch (2005, 2006) shown here, the Willow Glen project site is located mostly on the Miocene mudstones of the Monterey Formation (Tmc) At the eastern end of the site, Holocene alluvium (Qa) overlies either the Briones Sandstone (Tbr) or, more likely, the Monterey Formation (Tmc). Both of these Miocene units have the potential of yielding significant paleontological resources.



Key to mapped units

Qa	Surficial alluvium (Holocene)
Tbr	Briones Sandstone (late Miocene)
Tmc	Monterey Fm clay shale and siltstone, massive to vaguely bedded (middle to late Miocene)
Tm	Monterey Fm, siliceous shale, mudstone, & diatomite, bedded to massive (middle to late Miocene)

Records Search

The record searches for the Willow Glen project were performed on the UCMP database. The database lists 32 vertebrate localities in the Monterey Formation, but the only one in Contra Costa County is V4616, about 3.5 miles north of the project site; it yielded a whale vertebra. Considering that the County has 28 invertebrate localities in the Monterey Formation, the local potential of this unit for vertebrate fossils appears to be quite low. In contrast, there are 26 vertebrate localities in the Briones Formation, the nearest about 3 miles north of the project site. The composite vertebrate assemblage recovered from the Briones Formation in Contra Costa County comprises 38 specimens, mostly unidentified boney and cartilaginous fishes, a few unidentified birds, and the extinct enigmatic marine mammal *Desmostylus hesperus* (including published specimens).

Remarks and Recommendations

The Willow Glen project site will disturb Miocene deposits that are known to have yielded vertebrate fossils in Contra Costa County. The most likely unit to be impacted is the Monterey Formation, which in this County has yielded just a single vertebra. Less likely to be encountered is the Briones Formation in the site's subsurface. I do not recommend a paleontological walkover survey of the site because its surface is disturbed. I also do not recommend paleontological monitoring of project-related excavations because they are unlikely to impact any significant paleontological resources. However, should any vertebrate remains be encountered, all construction-related activities should be diverted from the find until a professional paleontologist has properly recorded and evaluated it, and, if deemed appropriated, salvaged it in a timely manner. Recovered fossils should be deposited in an appropriate repository, such as the UCMP, where they will be properly curated and available for scientific research and education.

Sincerely,

Reference Cited

Dibblee, T.W., Jr., and Minch, J.A., 2005. Geologic map of the Mare Island quadrangle, Contra Costa, Solano, Marin, & Sonoma Counties, California. Dibblee Foundation Map DF-145, scale 1:24,000.

Dibblee, T.W., Jr., and Minch, J.A., 2006. Geologic map of the Vine Hill and Honker Bay quadrangles, Contra Costa and Solano counties, California. Dibblee Foundation Map DF-191, scale 1:24,000.