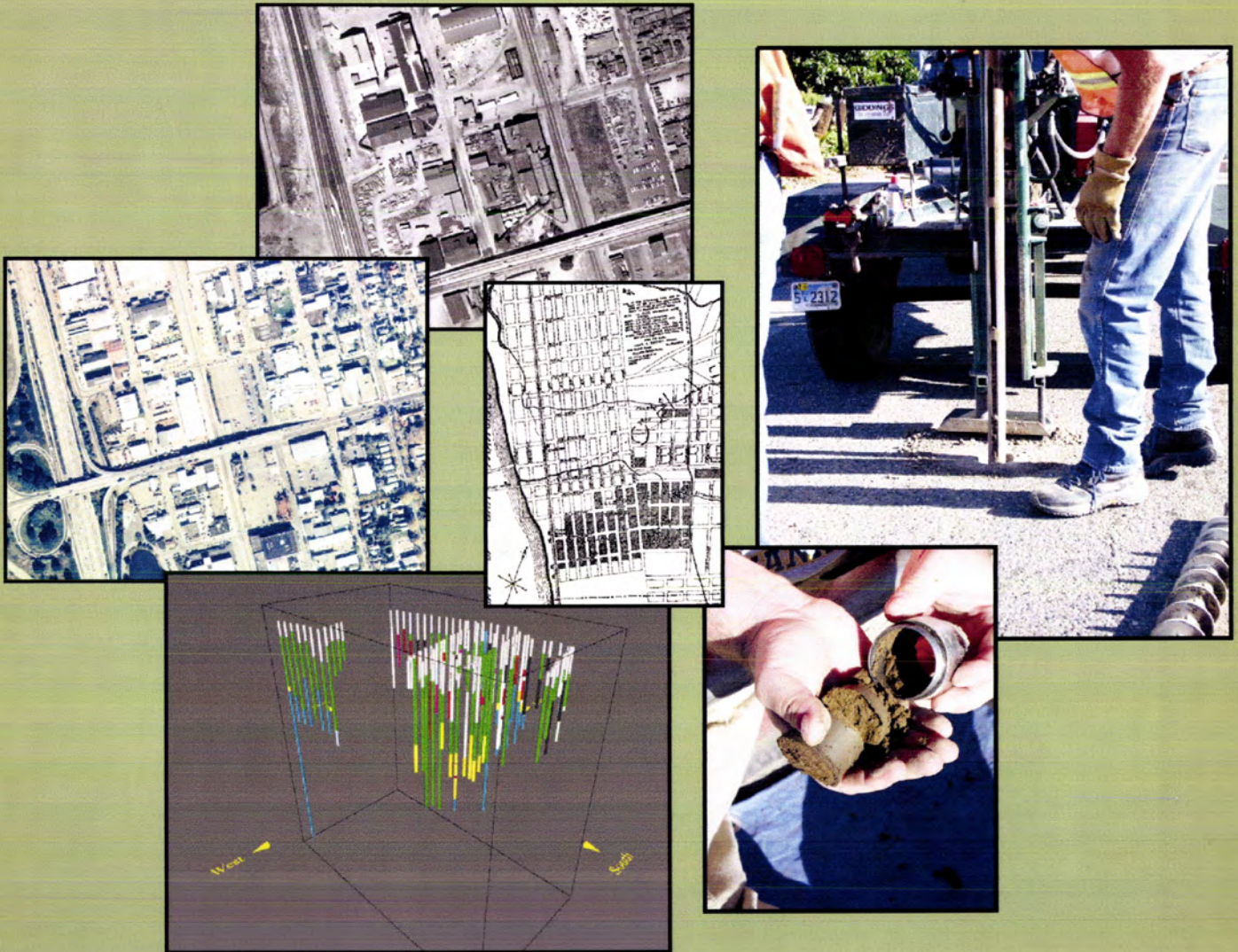




S-24591

# Cultural Resources Inventory, Significance Evaluation, and Effects Assessment for Capital Improvement Projects in Public Streets in the West Berkeley Redevelopment Area, City of Berkeley, Alameda County, California



Prepared by:  
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S-24591  
(see also S-26039)

**Cultural Resources Inventory, Significance Evaluation, and  
Effects Assessment for Capital Improvement Projects in  
Public Streets in the West Berkeley Redevelopment Area,  
City of Berkeley, Alameda County, California**

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Job 283

## National Archaeological Data Base Information

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**Submitted to:** City of Berkeley  
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**Contract Number:** City of Berkeley Contract Number BRA5141  
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**U.S.G.S. Quadrangles:** West Oakland

**Acreage:** Approximately 7 (17 linear blocks, curb-to-curb)

**Key words:** West Berkeley Redevelopment Area, City of Berkeley, West Berkeley Capital Improvement Projects, West Berkeley Shellmound, West Berkeley Site, CA-Ala-307, Ocean View, School House Creek Site, School House Creek, Strawberry Creek, National Register of Historic Places, California Register of Historical Resources, Eligibility Evaluation, Significance Evaluation, Effects Assessment, California Environmental Quality Act, Nels Nelson

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## Statement of Confidentiality

This report identifies the locations of historic properties. Disclosure of this information to the public may be in violation of both federal and state laws. Applicable U.S. laws include, but may not be limited to, Section 304 of the National Historic Preservation Act (16 USC 470w-3) and the Archaeological Resources Protection Act (16 USC 470hh). California laws that apply include, but may not be limited to, Government Code Sections 6250 *et seq.* and 6254 *et seq.* Furthermore, disclosure of site location information to individuals other than those meeting the U.S. Secretary of the Interior's professional standards or California State Personnel Board criteria for Associate State Archaeologist or State Historian II violates the California Office of Historic Preservation's records access policy.



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## Summary

Garcia and Associates (GANDA) completed a cultural resources inventory of the curb-to-curb area of 17 linear blocks (approximately 7 acres) in West Berkeley proposed for streetscape, parking, and rail stop improvements. The inventory was conducted to provide the City of Berkeley (City) with data to use in compliance with the California Environmental Quality Act (CEQA). The inventory included background research and a program of subsurface geoarchaeological coring.

One cultural resource, archaeological site CA-Ala-307, the West Berkeley Shellmound, was identified within the project area. This resource was evaluated for its eligibility for listing in the National Register of Historic Places. Based on the application of the National Register of Historic Places criteria, GANDA recommends that archaeological resource CA-Ala-307 is eligible for listing in the National Register of Historic Places under Criteria A, C, and D at the state level of significance and Criterion B at the national level of significance. California resources listed in the National Register of Historic Places are also included in the California Register of Historical Resources.

Since the specific design plans for the improvement projects are not known, a general effects assessment was completed. The capital improvement project proposed includes modifications to the streetscape, reconfiguration of parking, and improvements to the rail stop and transit plaza. These modifications include changes to lighting, drainage infrastructure, vegetation, and street width that would include subsurface disturbance. If such disturbance extended into cultural deposits, a significant impact would result. Such impacts can be avoided by limiting the depth of ground disturbance below contemporary grade or by filling to raise the grade to a level that would enable subsurface work to be above cultural deposits. If, however, cultural deposits cannot be avoided, the significant impact can be reduced to a less-than-significant level by implementing five mitigation measures that include archaeological data collection, Native American consultation, collections management, historical research, and commemoration.

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## Table of Contents

Statement of Confidentiality .....	i
Summary .....	ii
Table of Contents .....	iii
1.0 Introduction .....	1
2.0 Background Research and Field Study .....	3
2.1 Project Area .....	3
2.2 Background Research .....	3
2.2.1 Background Research Methods .....	3
2.2.2 Background Research Results .....	5
2.3 Coring Program .....	32
2.3.1 Coring Program Methods .....	32
2.3.2 Coring Program Results .....	37
2.4 Summary of Known Resources in the Project Area .....	39
2.4.1 CA-Ala-307, West Berkeley Site .....	39
2.4.2 School House Creek Site .....	42
2.4.3 Historic Period Resources .....	42
3.1 Criteria for Evaluation .....	43
3.2 Application of Criteria .....	43
Criterion A: Association with events that have made a significant contribution to the broad patterns of our history. ....	43
Criterion B: Association with the lives of persons significant in our past .....	44
Criterion C: Association with the distinctive characteristics of a type, period, or method of construction .....	45
Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history. ....	46
3.3 Integrity .....	47
Location .....	47
Design .....	47
Setting .....	48
Materials .....	48
Workmanship .....	48
Feeling .....	48
Association .....	49
3.4 Resource Evaluation .....	49
Criterion A .....	49
Criterion B .....	49
Criterion C .....	49
Criterion D .....	49
3.5 Recommendations .....	50
4.0 Impact Assessment .....	51
5.0 References Cited .....	55



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**Figures:**

Figure 1. Project Area .....	2
Figure 2. Core Locations & Numbers.....	34
Figure 3. Core Locations with Intact Cultural Deposits .....	38
Figure 4. Core Locations with Intact and Disturbed Cultural Deposits.....	41

**Tables:**

Table 1. Core Numbers and Locations .....	35
Table 2. Cores with <i>In Situ</i> Cultural Deposits .....	39

**Appendices:**

Appendix A: Correspondence	
Appendix B: City Policy for Encountering Native American Human Remains	
Appendix C: California Department of Parks and Recreation 523 Form	
Appendix D: Paleontological Report by LaRamie Soils Service, Inc.	
Appendix E: Core Profiles	

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## 1.0 Introduction

To assist the City of Berkeley (City) in complying with the California Environmental Quality Act (CEQA) for capital improvement projects in the West Berkeley Redevelopment Area, Garcia and Associates conducted a cultural resources inventory. The inventory included the curb-to-curb area of 17 linear blocks in West Berkeley proposed for streetscape, parking, and rail stop improvements (Figure 1). The area below these streets are also subject to on-going maintenance of underground infrastructure.

The term “cultural resources” is a more generic term for what are defined under federal environmental laws as “historic properties” and under California state environmental laws as “historical resources.” These resources can include, but are not limited to, archaeological sites from both prehistoric and historic times, historical places, important or exemplary buildings or engineered structures, modified landscapes, or locations of culturally important community events.

The California Environmental Quality Act requires that the lead agency for public projects, or private projects financed or approved by a public agency, assess the effects of the project on historical resources. For CEQA purposes (Title 14 CCR, Section 15064.5), historical resources are those that are:

- listed in, or eligible for listing in, the California Register of Historical Resources (Public Resources Code 5024.1, Title 14 CCR, Section 4850 *et. seq.*);
- listed in, or eligible for listing in, the National Register of Historic Places;
- included in a local register of historical resources, as defined in an historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code; or
- any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency’s determination is supported by substantial evidence in light of the whole record.

The CEQA only requires a project’s impacts to historical resources to be evaluated if the resource is considered to be significant (i.e., meets one of the criteria above). The function of this inventory report in the CEQA process is to identify cultural resources that are considered to be significant resources for CEQA purposes.



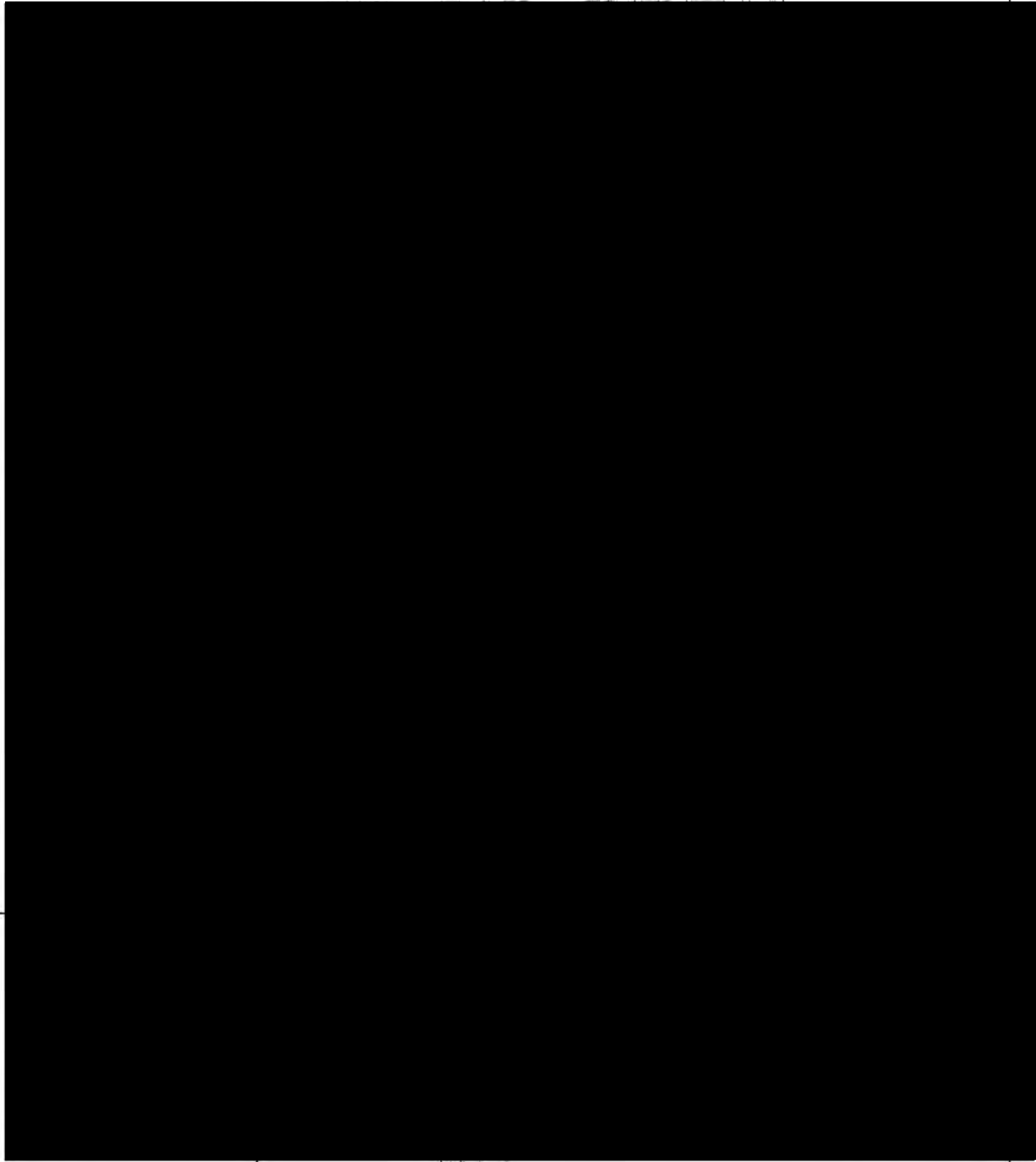
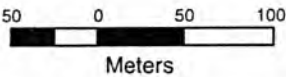


Figure 1. Project location



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## 2.0 Background Research and Field Study

### 2.1 Project Area

The project area was defined by the City to include the curb-to-curb area of 17 linear blocks that are the proposed locations of streetscape, parking, and rail stop improvements. These blocks are:

- Addison Street between 4<sup>th</sup> Street and Bolivar Drive,
- University Avenue between 5<sup>th</sup> Street and Eastshore Highway (East Frontage Road),
- Hearst Avenue between 4<sup>th</sup> Street and Eastshore Highway (East Frontage Road),
- Virginia Street between 2<sup>nd</sup> Street and 3<sup>rd</sup> Street (railroad),
- Eastshore Highway (East Frontage Road) between University Avenue and Hearst Avenue,
- 2<sup>nd</sup> Street between Virginia Street and Cedar Street,
- 4<sup>th</sup> Street between Addison Street and University Avenue, and
- 5<sup>th</sup> Street between University Avenue and Virginia Street.

### 2.2 Background Research

#### 2.2.1 Background Research Methods

A cultural resources records search (01-138) was conducted for the project area at the California Historical Resources Information System (CHRIS) on 23 February 2001. The search checked all available records on file at the Northwest Information Center of the CHRIS for a radius distance of ¼ mile from the project area boundary. These records included:

- California Historic Property Data File
  - National Register of Historic Places
  - California Register of Historical Resources
  - California Historical Landmarks
  - California Points of Interest
- Archaeological Site and Survey Records
- Various historical maps

The CHRIS record search identified CA-Ala-307 as the only resource in the project area. Additional architectural resources were located [REDACTED] as defined by the City. The CHRIS record search identified five previous cultural resources surveys in, or adjacent to, the project area.

To supplement the CHRIS record search, background research related to the project area was conducted by Garcia and Associates' historian James W. Jenks, M.A., RPH 575 and by the staff of Archaeological Mapping Specialists. Archaeological Mapping Specialists focused on historic map and image research and identified 16 maps and photographs with sufficient detail to assist in the location and interpretation of cultural resources and natural features. These maps also were



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used to understand historic period changes in the natural and cultural landscape of the project area. Repositories that were checked included:

- the University of California at Berkeley's Bancroft Library;
- the University of California at Berkeley's Earth Sciences Library;
- the California State Library;
- the Oakland Library;
- the Berkeley Architectural History Association;
- the Berkeley Historical Society; and
- the City of Berkeley Planning Department Archives.

Historical background research by Mr. Jenks focused upon textual, map, and oral history sources. Sources consulted included:

- the Bancroft Library, University of California at Berkeley;
- the Earth Sciences Map Library, University of California at Berkeley;
- the California Room, California State Library;
- the Berkeley Historical Society;
- the Berkeley Architectural Heritage Association;
- Stephanie Manning, Berkeley, CA
- Richard Schwartz, Berkeley, CA
- Ken Cardwell, Berkeley Historical Society;
- United States Bureau of Land Management, General land Office Maps.

Project archaeologist, Christopher Dore, consulted with the following individuals who had knowledge of archaeological resources in West Berkeley:

- Colin Busby, San Leandro, CA;
- Jakki Kehl, Byron, CA;
- Christopher Lintz, Austin, TX;
- Allen Pastron, Oakland, CA;
- Richard Schwartz, Berkeley, CA; and
- Kim Tremaine, Dixon, CA.

Additionally, Garcia and Associates contacted the California Native American Heritage Commission (CNAHC) by letter requesting a search of the Sacred Lands File and requesting a list of Native American individuals and organizations to contact for additional information. The CNAHC responded on 7 March 2001 with a list of 12 Native American representatives to contact regarding the potential project. These individuals and organizations, listed below, were contacted by certified letter on 9 March 2001. Copies of correspondence are included in Appendix A.

- Jean-Marie Feyling, Redwood City, CA
- Indian Canyon Mutsun Band of Costanoan (Ann Marie Sayer, Chairperson), Hollister, CA
- Jakki Kehl, Byron, CA
- Katherine Erolinda Perez, Stockton, CA

- 
- Majorie Ann Reid, San Jose, CA
  - Ella Rodriguez, Salinas, CA
  - Thomas P. Soto, Foresthill, CA
  - The Ohlone Indian Tribe, (Andrew Galvan) Mission San Jose, CA
  - Trina Marine Ruano Family (Ramona Garibay, Representative), Fremont, CA
  - Linda G. Yamane, Seaside, CA
  - Michelle Zimmer, San Jose, CA
  - Irene Zwierlein, Woodside, CA

All of these individuals were invited by the City to a follow-up consultation meeting held on 9 April 2001. Ms. Ella Rodriguez was the only invitee who attended. At the meeting, City staff and project anthropologist Christopher Dore discussed the West Berkeley project designs, typical Public Works projects, past projects in the region during which cultural resources were found, monitoring policies, and other issues related to work in and around sensitive sites. From this meeting, procedures were developed to follow if human remains were encountered during the cultural resources work on this project. These procedures can be found in Appendix B.

All of the above individuals also were invited to apply for a position to monitor during the coring portion of the project (see Section 2.3, below). Four applications were received and Ms. Irene Zwierlein and Ms. Michelle Zimmer were selected, employed by Garcia and Associates, and served as monitors on an alternating basis.

## **2.2.2 Background Research Results**

### **2.2.2.1 Environment**

#### **2.2.2.1.1 Modern Environment**

The San Francisco Bay region consists of a varied landscape of estuaries, plains, rolling hills, and rugged ridge lands. Dominating the landscape is the Bay itself, a fifty-mile long inland chain of salt-water estuaries (Milliken 1995:14). The eastern shore of San Francisco Bay is bordered by a broad, sloping plain, broken by isolated hills and ridges (Wallace and Lathrap 1975:1-2). Widely separated valleys, containing small streams which normally flow at all seasons, cut across this plain in an east-west direction. The plain extends gently upward to the Berkeley Hills, a prominent range 15 miles long and ten miles wide (Wallace and Lathrap 1975:2).

The local climate is typified by clear summer days and mild, cool winters (Josselyn 1983:21). The climate, sometimes classified as Mediterranean, consists of two seasons. The rainy season extends from late October to mid-April, a period during which 94 percent of the annual precipitation falls (Josselyn 1983:21). The dry season is influenced by cool marine air along the coast and hot, dry weather inland. A normal year in the Bay Area has a mean monthly temperature ranging from 12° to 17° C and an annual precipitation of 48 cm (Josselyn 1983:21). However, it is rare that a “normal” year occurs as weather patterns in the state follow extremes from drought to almost continuous winter rainfall (Josselyn 1983:21). The proximity of the



Pacific Ocean, the local topography, and the Bay itself contribute to further variation in the local climate (Josselyn 1983:21).

#### ***2.2.2.1.2 Paleoenvironment***

During the prehistoric period, the Bay Area featured a mosaic of plant communities ranging from salt marsh to redwood forest to grassland to mixed-evergreen woodland (Moratto 1984:221). The East Bay plain was predominantly grass covered, with patches of brush and coast live oak groves present (Wallace and Lathrap 1975:2; Chavez 1989). Vegetation was most dense along the freshwater drainages, which supported yellow willow, California laurel, California buckeye and coast live oaks (Wallace and Lathrap 1975; Chavez 1989).

Changes in the sea level during the Pleistocene and Holocene geological epochs have had a profound effect on archaeological sites in the San Francisco Bay Area. Fluctuations of the sea level during the Pleistocene, resulting from the extraction of water to form glacial ice, and from the return of the water when the ice melted, caused the sea at times to withdraw from the continental margin and at other times to inundate it (Howard 1962; Bickel 1978; Milliman and Emery 1968). This event is known as the Wisconsin Regression and the Holocene Transgression.

The sea level 30,000 to 35,000 years ago was near the present one (Milliman and Emery 1968). Subsequent glacier growth lowered the sea level to about -130 meters 16,000 years ago. At around 13,000 B.C., the coastal shoreline was more than 25 km west of San Francisco's present ocean beaches (Moratto 1984:219). The Holocene Transgression began at about 12,000 B.C. and the sea level rose rapidly until about 7,000 years ago, after which the rise was more gradual (Milliman and Emery 1968).

The San Francisco Bay is a relatively recent feature of the landscape. When the ice of the last glacial stage (Wisconsin Glaciation) began to melt, a large amount of water was returned to the oceans, causing the sea level to rise and flood in among the mountain blocks of the San Francisco Bay region. Prior to 9,000 B.C., San Francisco Bay was a large valley within which several smaller river valleys converged (Stright 1990:451; Josselyn 1983). At this time, the Sacramento River surged through the rocky gorge of the Golden Gate and then flowed across what is today the continental shelf, finally emptying into the ocean many kilometers west of the present shoreline (Moratto 1984:219). At 9,000 B.C., when the sea level was 65 to 70 meters below present mean sea level, the bedrock base of the Golden Gate became submerged (Stright 1990:451).

San Francisco Bay, as we now know it, was formed during a period of relatively rapid sea-level rise (average rate of two centimeters per year) between 9,000 and 6,000 B.C. (Stright 1990:451). After 4,000 B.C., when sea-level rise slowed to a rate of 0.1 to 0.2 cm/year, marshes began to develop around the bay. During this post-4,000 B.C. period, numerous shell middens were created as a result of human activity within the Bay Area (Stright 1990:451). In addition, rising sea levels may account for such archaeological phenomena as submerged sites, paucity of early cultural remains, and shifts through time in the use of particular food resources (Bickel 1978; Moratto 1984).



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Sea level curves are time-depth curves of relative land-sea level derived from dates and elevations (below present mean sea level) of sensitive sea level indicators such as submerged peat deposits, wood, and shell (Stright 1990:454). Fairbridge (1976) suggests that rather than a smooth curve, there was a rise and fall of sea levels during the middle-to-late Holocene. These minor fluctuations of sea levels, involving amplitudes of one to five meters, are thought to be due to factors such as geodesy (global spin rate), oceanographic processes, hydroisostatic loading, regional tectonic trends, etc. (Fairbridge 1976:359). Stright (1990:456) has noted that on the Pacific coast, sea levels during the late Wisconsinan and Holocene were greatly influenced by local tectonics.

A marked decrease in the rate of sea level rise occurred approximately 6,000 B.C. (Bickel 1978:11; Josselyn 1983:6). Eventually, sedimentation rates exceeded the sea level rise and extensive intertidal mudflats developed (Bickel 1978:11; Josselyn 1983:6). Many of the marshlands surrounding the Bay were established no more than 3,000 years ago (Moratto 1984:221).

The growth of marshes is of archaeological interest because most of the San Francisco Bay shell middens were located in close proximity to marshes (Nelson 1909; Bickel 1978). Marshes are particularly productive ecosystems. The area's prehistoric populations took advantage of this productivity by harvesting fish, shellfish, birds, and land mammals which live or feed in or near the marsh, as well as the marsh plants themselves (Bickel 1978:12).

The San Francisco Bay and its environs make up the largest contiguous tidal marsh system on the west coast of North America. The maximum extent of tidal marshes was documented by the United States Coast and Geodetic Survey between 1850 and 1897. Total acreage for marshes surrounding San Francisco, San Pablo, and Suisun bays probably exceeded 800 km<sup>2</sup> (Josselyn 1983:6). During historic times, Schenck (1926:157) reported extensive marshes to the south of Emeryville and to the north of West Berkeley.

The present day tidal wetlands have been greatly impacted by anthropogenic influences and we can now only infer how prehistoric marshes appeared (Josselyn 1983:6). The most dramatic changes occurred during the period of hydraulic mining for gold in the Sierra Nevada (1855 – 1884). At that time, large water guns were used to wash overburden and gold-containing deposits through sluiceways. The sediments flowed into streams and fine sediments reached Suisun and San Pablo bays causing widespread shoaling (Josselyn 1983:12). Court injunctions stopped the practice in 1884, but sediments probably continued to accumulate in the Bay through the early twentieth century (Josselyn 1983:12). The urbanization of the Bay Area in the post-World War II era has encroached substantially on the remaining tidal wetlands.

The flooding of the San Francisco Bay due to sea level rise has continued up to and since the human occupation of the area. Archaeological evidence for this phenomenon exists since the basal layers of a number of prehistoric shell middens are now below sea level. This can be accounted for by either rising sea levels or land subsidence or some combination of these factors.



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### 2.2.2.2 Ethnohistory

The West Berkeley site is situated within the *Chochenyo* territory of the Costanoan Indians (Levy 1978:485). Kroeber (1925:465) indicates two Costanoan villages in this general area: *Huchiu-n* and *Huime-n*. Costanoan, also known as Ohlone, is a member of the Utian language family. Costanoan is not a native term but rather is derived from the Spanish word *Costaños*, meaning coast people (Kroeber 1925:462). Chavez notes that the term Ohlone is preferred by modern Native Americans in the area (Chavez 1985:2).

The basic unit of Costanoan political organization was the tribelet, consisting of one or more socially linked villages and smaller settlements within a recognized territory (Moratto 1984:225). Principal villages were established at ecotones, that is, at the junctures of two or more biotic communities (e.g., oak woodland – bayshore marsh) (Moratto 1984:225).

Subsistence activities emphasized gathering berries, greens, and bulbs (especially soap root); harvesting seeds and nuts, of which the acorn was primary; hunting for elk, deer, pronghorn, and smaller animals; collecting shellfish; and taking varied fishes in stream, bay, lagoon, and open coastal waters (Moratto 1984:225).

Kroeber (1925) points out that the entire Costanoan territory where it fronted on the ocean or bay is lined with shell deposits. He states:

“San Francisco Bay in particular is richer in such remains than any other part of the State, except perhaps the Santa Barbara Islands. Many of these, and probably the upper layers of nearly all, must accordingly be ascribed to the Costanoans. Whether their possession of the district goes back as far as the earliest period represented by the lower levels of the largest shell mounds, a time estimated at 3,000 or more years ago, is entirely problematical. There is nothing to show that the Costanoan tribes were or were not then in their more recent seats.” (Kroeber 1925:466)

Based on linguistic and archaeological evidence, it is believed that Penutian-speaking peoples entered the Bay Area from the Sacramento River Delta region, displacing or replacing speakers of Hokan stock languages of the Bay Area, such as Esselen (Kroeber 1925; Moratto 1984:552). The proto-Costanoan homeland was probably located in the East Bay area, possibly in the Carquinez Straits vicinity (Moratto 1984:554). The Berkeley facies, or lower component at the West Berkeley site, may signal the arrival of early Costanoans in this area (Moratto 1984:554).

By around 1500 B.C., Costanoans occupied most of the east shore of San Francisco Bay, presumably displacing or assimilating older Esselen language speakers as they advanced (Moratto 1984:554). Moratto (1984:207) indicates that the Berkeley Pattern, including components previously assigned to the Middle Horizon, is attributable to the emergence of Costanoan peoples.



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### 2.2.2.3 Prehistoric Settlement Patterns

Shellmounds in the San Francisco Bay area range from sparse scatters of shell and heaps of shell adjacent to inland occupation sites to conspicuous, burial-associated and exceptionally-sized mounds containing many layers of finely crushed shell (Luby and Gruber 1999:96-97). Most San Francisco bay area shellmounds are distributed along the bayshore where freshwater streams empty into the bay (Lightfoot 1997:136). Moratto (1984:281) describes the “typical” bayshore village of 4000 to 2000 years ago as being located “in a marshside setting near a freshwater stream.” This sort of ecotonal location permitted the exploitation of the bay, mudflat, marsh, rocky shore, and inland zones (Moratto 1984:282). According to Moratto (1984:282), it is no accident that virtually all the early Berkeley Pattern settlements are located near coastal or bayshore marshlands since these productive ecosystems were able to sustain large aboriginal populations.

The classic large shellmounds, including the West Berkeley site, are all located within a strip of marshland three to seven kilometers wide, and appear to be clustered with smaller shellmounds into groups (Lightfoot 1997:136; Luby and Gruber 1999). The shellmound clusters are separated by several kilometers, and the relative timing of occupation within and between them is still under investigation (Lightfoot 1997; Luby and Gruber 1999:97). It appears that between twelve and twenty-four of the larger shellmounds once existed (i.e., those with basal diameters of 100 meters or more) (Luby and Gruber 1999:97). Lightfoot (1997) suggests that the large shellmound sites were repeatedly used as both residential locales and long-term repositories for the dead, and perhaps as socio-political centers.

Most large shellmounds were oval or oblong in plan, with deposits sometimes extending below the modern ground surface (Nelson 1909; Lightfoot 1997:131; Luby and Gruber 1999:97). Usually, the long axes of the mounds paralleled the shoreline or freshwater stream (Nelson 1909). Mound matrices are varied, but were primarily composed of crushed shell, soil, fire-cracked rocks, chipped and groundstone, clay items, animal bone, and burials (Gifford 1916; Lightfoot 1997:131; Luby and Gruber 1999:97). Lightfoot (1997:131) observes that the internal composition of the mounds varies greatly both within sites and between sites.

Large shellmounds also have associated architectural features including: evidence of hearths, pits, housefloors, and ovens (Lightfoot 1997; Luby and Gruber 1999:97). Human burials, refuse from domestic activities, and evidence of tool manufacture are also present (Luby and Gruber 1999:97).

Most of the shellmounds were either reused frequently over long periods of time or were continuously occupied (Luby and Gruber 1999:96). The issue of whether the large shellmound sites were re-occupied continues to be debated (Lightfoot 1993,1997; Moratto 1984).

A number of other shellmound sites exist or existed relatively close to the West Berkeley site. These include: the Emeryville Shellmound (CA-ALA-309) (Uhle 1907; Schenk 1926); the Ellis Landing Shellmound (CA-CCO-295) located in the City of Richmond (Nelson 1909, 1910a); and the Stege Mounds (CA-CCO-297, -298, -299, and -300), also located in Richmond (Loud 1924).



Other types of sites, including bedrock milling stations, seasonal encampments, and specialized task sites were located at interior locations some distance from the large shellmounds (Lightfoot 1997; Parkman 1994). Parkman (1994:49) suggests that the locations of bedrock milling stations represent small spring and summer encampments focused on bulb and hard grass seed exploitation, and small fall camps focused on acorn exploitation.

#### 2.2.2.4 Prehistoric Chronology

The first regional chronology for the Bay Area was established by R. K. Beardsley in 1948 (Beardsley 1948, 1954a, 1954b) and was based on the typological chronology developed earlier for the Sacramento Valley (Lillard, Heizer and Fenenga 1939). Beardsley's three-horizon sequence for the San Francisco Bay shore and Marin coast paralleled that of the Sacramento Valley's Early, Middle, and Late Horizons. Beardsley fitted the San Francisco Bay and Marin coast sites into the classification developed for the interior and assumed that the two areas shared a common cultural tradition and that differences in material culture reflected local environmental adaptation (Beardsley 1948, 1954a, 1954b). Beardsley, based on artifacts accompanying burials, assigned the lower levels of Emeryville to the Middle Horizon and the remaining levels to the Late Horizon (Wallace and Lathrap 1975:5). Ellis Landing, Stege, and West Berkeley were ascribed to the Middle Horizon (Wallace and Lathrap 1975:5). More recent research (Wallace and Lathrap 1975) has indicated an Early Horizon component at the West Berkeley site. In fact, the prehistoric cultural record at the West Berkeley site extends from the Early Horizon period (ca. 2500 B.C.) to the Fernandez Facies of Phase II of the Late Horizon (ca. A.D. 500) (Wallace and Lathrap 1975; Busby and Bard 1978b). A recent chronological reassessment of the West Berkeley site indicates relatively continuous occupation from 3030 B.C. to A.D. 780 (Ingram 1998).

During the Early Horizon and the entire Middle Horizon, shellmounds and the associated bayshore-adapted culture are usually described as belonging to the Berkeley Pattern (Fredrickson 1974; Bennyhoff and Fredrickson 1994; Moratto 1984). The Berkeley Pattern reflects changes in subsistence from the earlier Windmill Pattern with an emphasis on acorns as a dietary staple (Moratto 1984:209). This change is evidenced by relatively more mortars and pestles, a well-developed bone industry, distinctive diagonal flaking of large concave-base points, and certain forms of Olivella and Haliotis beads and ornaments (Moratto 1984:209-210).

Along the bayshore, a regional specialization in the Berkeley Pattern emphasized the collection of shellfish from rich marshlands (Luby and Gruber 1999:96). Significantly, the West Berkeley site is the "type site" for the Berkeley Pattern, as defined by Fredrickson (1973:125a-126). Accordingly, the lower portions of the West Berkeley site represent the earliest known evidence of this pattern on the bayshore (Moratto 1984:261).

During the Late Horizon (A.D. 500 – 1500), shellmounds were associated with a broad set of characteristics termed the Augustine Pattern (Fredrickson 1974; Bennyhoff and Fredrickson 1994; Luby and Gruber 1999). The Augustine Pattern is characterized by the introduction of the bow, arrow, and harpoon; a general intensification of occupation resulting in larger, more densely occupied areas; increased social stratification; use of cremation for "wealthier" burials; and a continuing emphasis on intensive gathering of shellfish and acorns, but with more fishing

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and hunting (Fredrickson 1974; Bennyhoff and Fredrickson 1994; Luby and Gruber 1999:96). Bone awls were common, along with distinctive *Haliotis* and *Olivella* shell beads, and clam shell beads are introduced as a form of currency.

Along with the West Berkeley site, several other Bay Area sites have been dated to the Early Horizon, although the West Berkeley site currently represents the earliest dated representation of the horizon. A salvage archaeological operation undertaken at the University Village site (CA-SMA-77), near Palo Alto in San Mateo County, resulted in the discovery of artifacts assigned to an early San Francisco Bay period from ca. 1,500 B.C to 1,000 B.C. (Gerow 1968). While it corresponded to the Early Horizon of the Sacramento Valley, the Early Bay period was evidenced by a distinctive subsistence strategy and mortuary behavior (Gerow 1968). Another salvage archaeological effort at the Stone Valley site (CA-CCO-308) in Alamo, in Contra Costa County, yielded artifacts dating to the Early Horizon (Fredrickson 1966).

### 2.2.2.5 Known Resources

#### 2.2.2.5.1 CA-ALA-307, West Berkeley Site

From September to December 1907, archaeologist N.C. Nelson studied and numbered a total of 425 Bay Area sites with shellmounds (Nelson 1909). The West Berkeley site became #307.

R.K. Beardsley (1948b:90) described the West Berkeley site as “a fairly large and well known site near the shallow-water shore at Strawberry Creek, Berkeley.” He indicated that the site was “at least thirteen feet deep” and that “three or four of this total are implied to have been below present ground level” (Beardsley 1948:90).

The West Berkeley site was not officially recorded until 1949 when A.R. Pilling, using data from Nelson’s earlier survey, compiled the formal site documents. In the site record forms, Pilling estimated that the site measured approximately [REDACTED]

[REDACTED] He placed the archaeological deposit on the [REDACTED]

[REDACTED] (Pilling 1949).

William J. Wallace and Donald W. Lathrap, who investigated the West Berkeley site in the 1950s, described it as “one of the last of the great shellmounds which up to a relatively few years ago lined the eastern shore of San Francisco Bay” (Wallace and Lathrap 1975:1). They described the site as covering an [REDACTED] with its [REDACTED] (Wallace and Lathrap 1975:1). The height of the mound was given as 4.6 meters, although it was noted that originally the mound was higher before its peak had been cut down and leveled to serve as a base for a water tank (Wallace and Lathrap 1975:1). The site’s location was given as ‘[REDACTED]’ (Wallace and Lathrap 1975:1). To the west of the site stretched a broad tidal marsh which separated the bay shore from San Francisco Bay (Wallace and Lathrap 1975).



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## 1902 and 1904 University of California Excavations

The West Berkeley site was one of the first Bay Area shellmounds to receive scientific attention. In 1902, E. L. Furlong, working under the direction of John C. Merriam, conducted limited excavations at the site for the University of California (Wallace and Lathrap 1975:3). Although 265 artifacts were recovered, no field notes survived and no report was produced. Loud (1924:368) reported that the Furlong investigation resulted in the collection of 147 net sinkers, 136 other stone implements, and 54 artifacts of materials other than stone (Loud 1924:368). A 1938 letter from Furlong to Alex Krieger at the University of Oregon recalling the 1902 excavation concludes with a recollection that Furlong's work was conducted in the upper part of the mound (letter on file at the California Historical Resources Information System, Northwest Information Center).

Two years later, in 1904, Joseph Peterson excavated near the northeast corner of the site. A report of Peterson's excavation (Peterson 1904) was prepared and filed in the Museum of Anthropology (Wallace and Lathrap 1975:3). Loud reported that Peterson's excavation produced "12 sinkers out of 82 artifacts," referring to net sinkers (Loud 1924:368).

Representatives of the Museum of Anthropology continued to dig sporadically at the site (Wallace and Lathrap 1975:3). Local collectors also cut into the mound and a few of the artifacts eventually found their way into the Museum of Anthropology's collections. Other cultural and skeletal remains were uncovered and turned in by construction workers (Wallace and Lathrap 1975:3).

## U.C. Archaeological Survey 1950 and 1954 Excavations

Excavation of "the last intact portion of the West Berkeley shellmound" was carried out by the University of California Archaeological Survey from May 22 through September 6, 1950 (Wallace and Lathrap 1975). Industrial expansion at this time had threatened to completely destroy the site prompting the large-scale excavations (Wallace and Lathrap 1975:1). These excavations took place under the supervision of the Survey's director, Robert F. Heizer. Although a report on the excavations was completed in 1951, it was revised and updated in 1975 (Wallace and Lathrap 1975). This document, entitled *West Berkeley (CA-Ala-307): A Culturally Stratified Shellmound on the East Shore of San Francisco Bay*, was prepared by William J. Wallace and Donald W. Lathrap, and published by the University of California, Archaeological Research Facility in November, 1975.

Wallace and Lathrap provide the following description of the site as it appeared in 1950:

"The West Berkeley Site (CA-Ala-307), located at [REDACTED] in the City of Berkeley, California was one of the last of the great shellmounds which up to a relatively few years ago lined the eastern shore of San Francisco Bay. It had survived only because part of it was [REDACTED]. The midden lay only a [REDACTED] [REDACTED]. Just to the west stretched the broad tidal marsh which separated the bay [REDACTED]."

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shore from the wide expanse of water beyond. Much of the tidal land has long since been filled in.

The original dimensions and exact limits of the shellmound could not be determined because most of it had been removed. Land formerly overspread with the accumulated aboriginal refuse now lies under paved streets, railroad tracks, factory buildings, and storage yards. The mound seems to have covered an [REDACTED]

Approximately one half of the northern part of this had been scraped off and crushed limestone had become consolidated into a hard stratum, three to four feet thick. At its highest point the shellheap rose 15 feet above ground level and extended three feet below. Once it had been higher for the peak had been cut down and leveled to serve as the base for a water tank.” (Wallace and Lathrap 1975:1)

Although the mound had already been “greatly reduced in size when digging began, enough remained to give a fair sample” (Wallace and Lathrap 1975:7). After the growth of weeds and litter of factory debris covering the surface had been removed, excavation proceeded (Wallace and Lathrap 1975:7). A “cut 20 – 25 feet wide was then carried in along the site’s north-south axis” (Wallace and Lathrap 1975:7). Approximately 1,175 square feet of material was excavated to a depth of [REDACTED], depending on the thickness of the deposit (Wallace and Lathrap 1975:7).

In addition to the main trench, a ten-foot square pit was cut through the overburden of limestone at the north end and excavated through the midden deposit to sterile soil (Wallace and Lathrap 1975:7).

Early in 1954, an old factory building covering the western section of the West Berkeley mound was torn down, affording the Department’s class in archaeological field methods an opportunity for further work at the site. The class spent only two days, March 27 – 28, excavating. The results are reported in Wallace and Lathrap (1975:Appendix F). Wallace and Lathrap (1975:Appendix F) stated that “obviously the shellmound had been cut down considerably when the factory was constructed many years ago.” A total of 14 five-by-five foot pits were excavated. The depth of the deposit ranged from [REDACTED] “or perhaps slightly more, for in no place was absolutely sterile soil reached” (Wallace and Lathrap 1975:Appendix F). These excavations resulted in the recovery of 173 additional artifacts (Wallace and Lathrap 1975:Appendix F).

Wallace and Lathrap found that the bottom of the mound “rested on an underlying clayey material free of artifacts and shell, a compact yellow alluvium doubtless derived by wash from the nearby hills” (Wallace and Lathrap 1975:8). The internal structure of the West Berkeley site “proved strikingly similar to that described for the Ellis Landing shellmound” (Wallace and Lathrap 1975:8).



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Regarding the cultural sequences at West Berkeley, Ellis Landing, and Emeryville, Wallace and Lathrap (1975:55) offered the following scenario:

“These differences in content and stratigraphy permit an ordering of the cultural layers of the three shellmounds. On the basis of shared traits, the upper six feet of West Berkeley can be equated with the lower 10 – 14 feet of Emeryville and the bulk of Ellis Landing. The bottom 12 feet of West Berkeley, which produced items absent at the other two sites, has no direct counterpart though there is a possibility, based on the scanty evidence of a plentiful supply of net-sinkers and two stemmed projectile points, that the Ellis Landing’s deepest stratum overlaps somewhat. Conversely, the higher portions of Emeryville and Ellis Landing contained materials not represented at West Berkeley. Thus, it appears that West Berkeley appears to have been the first of the three localities to have seen human occupation with Ellis Landing occupied next and Emeryville last. There may have been a brief period when all three were inhabited simultaneously. West Berkeley became deserted first while people continued to live at both Emeryville and Ellis Landing for a lengthy span of time.” (Wallace and Lathrap 1975:55)

The West Berkeley site yielded a diverse assemblage of flaked stone tools, and items of ground, or polished, stone, as well as a variety of modified objects fashioned from shell, bone, and antler (Pastron 1999; Wallace and Lathrap 1975:9). The chipped-stone assemblage included a variety of projectile points, “knife blades,” flake and core scrapers and choppers. Recovered objects of ground, or polished, stone included mortars, pestles, a large number of net sinkers, charmstones, and pendants. Objects of modified bone included awls, flakers, pins, beads, and a single fishhook. The most ubiquitous items of modified shell consisted of *Olivella* shell beads as well as a variety of abalone beads and pendants (Wallace and Lathrap 1975:10).

The West Berkeley site contained large numbers of unmodified mammal, bird and fish bones, as well as an immense quantity of shellfish refuse (Wallace and Lathrap 1975; Pastron 1999). Faunal analyses from the West Berkeley site have indicated that at least 11 species of fish were taken, including thresher shark, leopard shark, bay ray, white and green sturgeon, king and silver salmon, jacksmelt, redbelt surfperch, black perch, and plain midshipman (Follett 1975:73; Moratto 1984). Numerous grooved or notched stones recovered from the site have been interpreted as sinkers suggesting the use of gill nets or seines (Follett 1975:80). Faunal remains suggest that Strawberry Creek may have supported a salmon run. Follett suggests that the silver (coho) salmon faunal remains may represent fish that were taken either in San Francisco Bay or in Strawberry Creek during their spawning migration from the sea (Follett 1975:79). Follett indicates that the occurrence of salmon in Strawberry Creek during the prehistoric period is supported by historic reports of salmon in nearby Temescal Creek, a similar stream (Follett 1975:79).

Shellfish remains were an important constituent of all levels of the West Berkeley mound (Greengo 1975:65). Recovered shellfish include: clams (*Clinocardium nuttalli*, *Macoma nasuta*, *Pholas pacifica*, and *Protothaca staminea*), mussels (*Mytilus edulis* and *Mytilus californianus*), oysters (*Ostrea lurida*), snails (*Littorina scutulata*, *Odostomia* sp., *Cerethidea californica*, *Olivella biplicata*, and *Thais lamellosa*), abalone (*Haliotis rufescens* and *Haliotis cracherodii*),



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and limpets (*Acmaea sp.*) (Greengo 1975:65). However, only three species occurred in proportions large enough to be significant (Greengo 1975:67). These were the bay mussel (*Mytilus edulis*), the west coast oyster (*Ostrea lurida*), and the mud clam (*Macoma nasuta*) (Greengo 1975:65).

Based on his analyses of molluscan remains from West Berkeley, Greengo (1975:67) concluded that ecological conditions changed during the period of the site's occupation. Greengo observed that in the lower portion of the midden, *Ostrea* constituted almost 50 percent of the shell content, to the virtual exclusion of *Macoma*. In the upper portions of the midden, however, *Macoma* exceeded *Ostrea* by over 26 percent (Greengo 1975:67). The clam is a mudflat inhabitant while the oyster favors a gravel bottom or a bed of its own shells (Greengo 1975:67). Greengo concluded that while the first 11 feet of the midden was accumulating, gravelly bottom conditions existed, while the upper six feet of the midden point to the existence of mud flats nearby (Greengo 1975:67).

Mammal species recovered from West Berkeley include: pronghorn antelope, elk, mule deer, harbor seal, bottle-nosed dolphin, sea lion, common dolphin, bay porpoise, coyote, sea otter, blacktailed jackrabbit, raccoon, badger, ground squirrel, striped skunk, wood rat, rabbit, and pocket gopher (Busby 1975:100-101). Based on his analysis of the mammalian faunal remains, Busby (1975:102) observed that the inhabitants of the West Berkeley site exploited primarily one land mammal, mule deer, and one marine mammal, the sea otter.

The skeletal remains of various bird species were abundant in the West Berkeley midden (Brooks 1975). Foremost amongst these were the Anseriformes of the family Anatidae or migratory ducks and geese (Brooks 1975:107). Murres and cormorants represent the next highest percentages of avifauna from the site (Brooks 1975:108). Brooks interpreted the avifauna as indicating that the prehistoric inhabitants of the site primarily made use of migratory winter waterfowl (Brooks 1975:108).

In addition to the recovered artifacts, a total of 95 more or less complete skeletons and a number of dissassociated human bones were exhumed (Wallace and Lathrap 1975:45). The majority of the burials (71 percent) lacked any accompanying grave goods. Most of the human burials were found in a loosely flexed position, a common practice in prehistoric California (Pastron 1999).

In addition to the 95 human burials, several examples of deliberately buried mammalian and avian species were encountered. These included a large portion of a coyote skeleton and the remains of a California condor (Wallace and Lathrap 1975:51). Ethnological, as well as archaeological, evidence suggest that the ritual killing and burial of various animals was a relatively common practice in prehistoric California (Pastron 1999).

Wallace and Lathrap (1975:55) noted at the time that only one other site in the Bay Area (the University Village site, near Palo Alto in San Mateo County) had yielded an assemblage comparable to that from West Berkeley's lower level. Artifacts from the deeper portion of West Berkeley, including rectangular *Olivella* and *Haliotis* beads and circular shell ornaments, projectile points and blades, and charmstones show many similarities to those obtained from Early Horizon settlements in the lower Sacramento Valley (Wallace and Lathrap 1975:56).

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Wallace and Lathrap (1975:56-57) placed two West Berkeley components within the Central California Taxonomic System. The older West Berkeley materials are considered as a component of the West Berkeley facies of the Early Horizon, while the upper level or latest West Berkeley component falls in the Middle Horizon but its assignment to a facies was unclear (Wallace and Lathrap 1975:57).

Wallace and Lathrap (1975:59) concluded the following about the West Berkeley site:

“As a concluding statement, it can be said that the West Berkeley shellmound proved to be of unusual significance to the understanding of San Francisco Bay’s prehistoric past. Not only has the midden’s excavation enriched the archaeological record with a considerable body of substantive data, but, more importantly, it extends knowledge of man’s presence in the bay region farther back in time by providing the first clear-cut evidences of Early Horizon occupation, hitherto recognized only at inland localities. Major and minor differences in detail distinguish the bayshore Early manifestation from its interior counterpart, though there can be little doubt of their generic affinities.” (Wallace and Lathrap 1975:59)

#### **David Chavez 1989**

David Chavez conducted an archaeological recovery program for the West Berkeley site as a part of a sanitary sewer project for the City of Berkeley (Chavez 1989). This program involved archaeological monitoring of all subsurface construction (sewer replacement) in the area between Hearst and University avenues and Second and Sixth streets. Subsurface midden deposits were located in three separate areas: on [REDACTED]

[REDACTED] (Chavez 1989). Recovered materials included human bone, flaked and ground stone artifacts, *Haliotis* shell beads and pendants, and bone artifacts including awls, flakers, and a single bird bone whistle (Chavez 1989). Based on these findings, Chavez concluded:

“The West Berkeley shellmound has been destroyed; however, it is apparent that subsurface remnants of the cultural deposit are present in the general vicinity of [REDACTED] ... Undisturbed West Berkeley cultural deposits could be present as well. Previous discussions regarding the importance of West Berkeley archaeological deposits indicate that the discovery of undisturbed remnants of the site would be a significant find. Archaeological investigation of such deposits could enhance the understanding of San Francisco Bay prehistory.” (Chavez 1989:27)

#### **Archeo-Tec 1999**

In 1999, Allen Pastron of Archeo-Tec placed and evaluated a total of 14 borings at “selected places within [REDACTED], located within

the [REDACTED] (Pastron 1999). At this time, Pastron reported that “the archaeological testing procedures uncovered no evidence to suggest that remnants of the West Berkeley Shellmound exist anywhere within the [REDACTED] (Pastron 1999).

### **Basin Research Associates 1999**

In 1999, Basin Research Associates performed a cultural resources review of a proposed project at the [REDACTED] in the City of Berkeley (Busby 1999). This report was based on archival data, published and unpublished reports, historic maps, boring logs, and a surface inspection of the site area (Busby 1999:1).

This study found that no significant cultural materials or concentrations of cultural materials appear to be present on the parcel based on a review of the archival data, the published site report, historic maps, cultural resource compliance reports and boring logs for projects immediately adjacent to the proposed development (Busby 1999:3). Busby observed that no surface indications of the West Berkeley site (e.g., the presence of a grey/black greasy midden sediment with a high percentage of shells and shell fragments) were visible either within or adjacent to the proposed project. Busby suggested that the data indicate a “very low to low potential for exposing significant subsurface deposits” associated with CA-Ala-307 during subsurface construction (Busby 1999:3-4).

### **Archeo-Tec 2000**

Allen Pastron of Archeo-Tec conducted additional pre-construction archaeological testing in 2000 within a portion of the proposed [REDACTED] Development Project in the City of Berkeley (Pastron 2000). This testing consisted of “the systematic placement, excavation and evaluation of 29 mechanical exploratory borings at selected places within the project area” (Pastron 2000:15). The borings consisted of excavations with a 24-inch diameter mechanical auger. The borings revealed a layer of historic period fill from the [REDACTED] (Pastron 2000:18). Regarding prehistoric cultural deposits, two discrete areas were identified based on the borings (Pastron 2000:19-22). Within the [REDACTED] of the parcel, prehistoric deposits were identified between the [REDACTED]

surface (Pastron 2000:19-20). The prehistoric deposits consisted of a dark gray/black silt, or silty clay, interspersed with flecks of charcoal, a relatively small quantity of fish and mammal bone, a few pieces of fire-affected rock, several possible stone artifacts and ubiquitous amounts of shell (Pastron 2000:20). Pastron concluded that “the recovered data are presently insufficient to determine whether the identified areas of prehistoric cultural sensitivity represent zones of primary or secondary archaeological deposition” (Pastron 2000:21). However, regarding the areal extent of CA-ALA-307, Pastron concluded:

“As discussed in detail by Appendix 2 below, it appears certain that the heart of the West Berkeley Shellmound (CA-ALA-307) was situated directly to [REDACTED]



of the present project area, across the [REDACTED]. Indeed, it appears that the center of the site was situated [REDACTED]. Nevertheless, there can be no doubt that the site's original horizontal boundaries were quite extensive, but never precisely determined (Wallace and Lathrap 1975:1-5). Given this, it is possible that the recently identified cultural deposit may represent an undisturbed, or at least minimally disturbed, remnant of the [REDACTED] of the West Berkeley Shellmound (CA-ALA-307)." (Pastron 2000:21)

### **Far Western Anthropological Research Group, Inc. 2000**

Far Western Anthropological Research Group, Inc. conducted a cultural resources survey for the Level (3) fiber optic route that [REDACTED] through the West Berkeley Shellmound site in 2000 (Nelson and Carpenter 2000).

Regarding the West Berkeley Shellmound site, Far Western Anthropological Research Group's *Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project* noted that "remains of the site (e.g., shell) can still be seen along the [REDACTED] in the city of Berkeley" (Nelson and Carpenter 2000:19). Nelson and Carpenter concluded:

"Far Western's survey noted midden and shell fragments at the [REDACTED] of [REDACTED]. Although this site has been greatly disturbed it is possible that intact deposits may remain below the surface." (Nelson and Carpenter 2000:20)

Far Western recommended avoiding the site by rerouting the cable or boring under the site.

#### **2.2.2.5.2 School House Creek Site**

In January 2000, Tremaine & Associates conducted archaeological monitoring during utility locating through CA-Ala-307 for the Level (3) fiber optic project (Tremaine 2000a). A total of 18 utility locations were excavated with depths ranging from [REDACTED] (Tremaine 2000a). The majority of the potholes contained relatively little, if any, shell and only four fragments of bone (Tremaine 2000a). Shell midden was located between [REDACTED] in [REDACTED] (Tremaine 2000a). According to Tremaine (2000a), this was expected since the location of these holes was [REDACTED]. In addition, "dark soil with concentrated shell" was found "[REDACTED]" (Tremaine 2000a). In conclusion, Tremaine noted that the fiber optic cable installation was "on the [REDACTED] of the West Berkeley Shell Mound" and that utility locating through the site "does not appear to have had a significant impact to this cultural resource" (Tremaine 2000a). Tremaine observed that the portion of the deposit impacted appeared to have been highly disturbed, and that the potholes contained modern trash such as nails, glass, and plastic throughout their entire depth (Tremaine 2000a). Nevertheless, Tremaine indicated that pockets of undisturbed midden could possibly exist elsewhere on the site (Tremaine 2000a).

Tremaine & Associates conducted a test excavation in February 2000 in order to locate the [REDACTED] boundary of the School House Creek site in West Berkeley (Tremaine 2000b). The School House Creek site was discovered approximately [REDACTED] during utility locating and trenching for a fiber optic cable (Tremaine 2000c). According to Tremaine (2000c), the boundaries of this site were not delineated, except roughly along a single [REDACTED] (Tremaine 2000c).

The purpose of this testing was to find an appropriate point where a bore for a fiber optic line could exit without causing damage to the site (Tremaine 2000b). This testing occurred outside of [REDACTED]. Two backhoe units and a pothole were excavated [REDACTED].

The first unit, excavated with a backhoe, was located [REDACTED] (Tremaine 2000b). A stratum defined as "ballast overburden" was present [REDACTED] intermixed with modern debris including glass fragments and metal scraps (Tremaine 2000b). Large granite cobbles were encountered [REDACTED], and instability of the soils forced this unit to be terminated (Tremaine 2000b). The second unit, described as a pothole, was excavated [REDACTED]. In this excavation, a granite boulder was encountered four feet below the surface (Tremaine 2000b). Also present in this area was a [REDACTED] [REDACTED] (Tremaine 2000b). This feature was interpreted as either a [REDACTED] (Tremaine 2000b).

No prehistoric materials were found (Tremaine 2000c). Tremaine concluded that, given the restricted nature of the testing program, it was not possible to delineate exact boundaries for the School House Creek site (Tremaine 2000b).

In May of 2000, Tremaine & Associates conducted a program of core sampling in order to determine the depth and limits of midden material discovered during trenching for a fiber optic cable between [REDACTED] in West Berkeley (Tremaine 2000c). Prehistoric midden material was discovered during trenching approximately [REDACTED] within the [REDACTED]. This area was located between the [REDACTED] [REDACTED] (Tremaine 2000c).

A total of 17 two-inch cores were excavated to a depth of [REDACTED] feet (Tremaine 2000c). Shell was present in only two of these cores and this suggested that "the midden recently identified during trenching is localized to a small area, and is likely secondarily deposited" (Tremaine 2000c).

## **2.2.2.6 Historic Period Overview**

### **2.2.2.6.1 Early Exploration**

Though occupied by indigenous peoples for millennia, the lands now known as "California" remained isolated from Europe and Asia until the early-sixteenth century. In 1519, explorer and *conquistador* Hernan Cortes and his army (contrary to orders from the Spanish governor of



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Cuba) invaded what is now Mexico to conquer the indigenous Aztecs and capture the wealth of the land and its people. "New Spain," as the region soon became known, quickly became the hub of Spanish colonial efforts in the New World. Cortes, hopeful of finding comparable wealth in the northern Pacific, authorized the first Pacific-area explorations and, in 1535, founded the first nonnative settlement in Baja (or Lower) California. At this time in history, California was believed to be an island, and though subsequent explorers proved that Baja California was a peninsula, the "island myth" proved difficult to dispel. Finally, in 1747, Ferdinand VI of Spain issued a royal decree that stated "California is not an island," which effectively ended the controversy (Gutierrez and Orsi 1998:105).

Inspired by Cortes' success in the region and hoping to find an uninterrupted waterway from the Pacific to the Atlantic, the Spanish dispatched Juan Rodriguez Cabrillo in 1542 to explore the northwest coast of New Spain. Though Cabrillo died before the nine-month expedition was completed, it is believed that the renowned seafarer sailed as far north as the Oregon border, and that he became the first European to see what was then termed Alta (or Upper) California (Paddison 1999:xi).

The next recorded major expedition along the Alta California coast was the 1579 voyage of the notorious English Captain Sir Francis Drake. Though there is conflicting evidence over where Drake actually halted his vessel for resupply and repair (Drake might have sailed as far north as central Oregon), it is generally thought that Drake stopped in Coast Miwok territory, at Pt. Reyes in what is now Marin County (Lightfoot and Simmons 1998:141). Drake, like Cabrillo and others that would follow, sailed unaware past the narrow, fog-shrouded entrance (later termed the Golden Gate) to San Francisco Bay. As a result, San Francisco Bay remained undiscovered by European navigators for nearly two more centuries.

In the late sixteenth and seventeenth centuries, treasure ships referred to as "Manila Galleons" sailed the Pacific between the Philippines and Acapulco in what was a grueling, seven-month voyage. The Spanish Crown considered establishing a port on the Alta California coast to support the galleons, and in 1602, ordered Sebastian Vizcaino to make the first detailed survey of the Alta California coast. Though Vizcaino probably sailed past the entrance to San Francisco Bay, he, too, remained completely unaware of the natural harbor. Vizcaino eventually anchored at Monterey Bay, and in subsequent reports to Spain, greatly exaggerated the quality of the natural harbor he found (Paddison 1999:xii). Clearly, Vizcaino feared the possible consequences to one who disappointed the Spanish Crown.

Despite Vizcaino's inflated recommendations, it took the Spanish almost 170 years to act. The so-called "Sacred Expedition" of 1769, led by Spaniard Gaspar de Portola and Franciscan Fray (or Father) Junipero Serra, was meant to begin the permanent settlement of Alta California, beginning in San Diego. The plan called for the Spanish to converge on San Diego by land and sea, and to use the newly established San Diego settlement as a base to begin further colonization and mission-building activities up the California Coast. With Vizcaino's recommendations in mind, the Spanish decided that the settlement of Monterey was the next objective (Paddison 1999:4-5).

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The Spanish Government felt that the advance of colonization up the Alta California coast would deter competing European powers (particularly Russia and England) from pursuing their own colonial schemes so close to new Spanish settlements. In reality, the Spanish strategy was only half-right. The English generally pursued colonization activities in eastern North America, had already fought a war against one European rival (France) for colonial dominance, and would soon be engaged in another conflict against their own North American colonial possessions. The Russians, however, continued commercial fur-trading activities up and down the western North American coast, from Alaska to San Diego. The trade in sea otter pelts, which the Russians had a near monopoly of, was simply too lucrative to abandon in the face of Spanish expansion. In 1812, The Russians established a colony popularly known now as “Fort Ross” on the Alta California coast in what is now Mendocino County. The fertile lands that surrounded the fort, suitable for both agriculture and cattle grazing, and the labor of local California Indians, the *Kashaya Pomo*, were meant to supply the starving Russian fur trading outpost of Sitka, where foul weather and poor soil quality made agriculture nearly impossible. The Russians, desperate for supplies and attempting to appear powerful to the Spanish, initiated contact with the Spanish settlement at San Francisco Bay (Schwartz, pers.comm. 2001). Though officially illegal, the Russians at Fort Ross and the Spanish in the San Francisco Bay Area engaged in trade to their mutual benefit (Pritchard 1990).

While Serra stayed behind in San Diego, the Sacred Expedition pressed on to Monterey by land. Portola, accompanied on this segment of the journey by Franciscan Father Juan Crespi (who recorded the journey in his diary) and a contingent of Spanish soldiers, descended on Monterey. When Portola’s caravan reached the coastline designated by Vizcaino as “Monterey,” they were astounded at what they saw. What greeted the expedition was a rocky, windswept coastline, hardly the “best port that could be desired,” as described by Vizcaino (Paddison 1999:5). Portola, convinced that an error in the latitude calculations had been made and that he would locate the “real” Monterey farther north, decided to continue. What his ragged and confused band eventually stumbled onto was the southern end of San Francisco Bay. With this discovery in 1769, the Portola expedition returned to its base in San Diego.

A seldom-noticed plaque on Berkeley’s Oxford Street is the remaining physical reminder of Spanish Lieutenant Pedro Fages’ 1772 expedition, the first known overland European explorations of the Berkeley region. Fages, accompanied by Fray Juan Crespi (in a return to the Bay Area), and a caravan of soldiers and servants, traveled north across the western Berkeley hills, including Strawberry Creek, on March 27, 1772. In lands close to the project area, the caravan discovered abandoned villages that appeared to have been recently occupied. Whether these villages were deserted to avoid the Spanish remains unknown (Schwartz 2001). Fages and Crespi encountered indigenous peoples on the southeast shore of San Pablo Bay (Milliken 1991:78), though it is unclear if those people were also the inhabitants of lands now referred to as West Berkeley.

The first recorded Anglo vessels to sail into San Francisco Bay were manned by Spanish explorers. In 1775, the *San Carlos*, commanded by Captain Juan de Ayala and accompanied, among others, by Fray Vicente Santa Maria, sailed into San Francisco Bay and dropped anchor behind Angel Island. For the next forty-five days, the crew of the *San Carlos* charted the various arms of the bay, including the West Berkeley coastlands and the now-termed Flemmings Point



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(Paddison 1999:83-97). While this crude map denotes very little detail of Bay landscapes, it remained the most accurate map of the San Francisco Bay until 1828. That year, the *HMS Blossom*, commanded by Captain William Frederick Beechey, made a substantial survey of the Bay. Beechey recorded the interior San Francisco Bay coastline, and measured bay water depth, noting that some of the most-shallow stretches of the Bay were located along the West Berkeley coastline. Waterways, such as Temescal and Strawberry creeks, are recognizable from Beechey's map, as are other Bay Area landmarks such as Grizzly Peak and Mount Tamalpais, then dubbed Table Mountain.

The *Ayala* expedition is also notable because it was the first recorded contact between Europeans and the Huchiun Indian band, a component of the Ohlone Indian tribe, who traditionally occupied the Berkeley area. Santa Maria recorded the first interactions, which took place onboard the *San Carlos* and at Angel Island on August 24, 1775 (Milliken 1991:90). The Franciscan described the first meeting between the Spanish and the Huchiun party (made up of men and boys) as positive, where goods were exchanged and attempts made to learn the other's language. Santa Maria also noted that the Huchiun interacted with the Spanish as equals, and did not view the explorers with fear, hostility, or as mere curiosities (Schwartz 2001). Finally, in a harbinger of times to come, Santa Maria taught the Huchiun men how to cross themselves (Milliken 1991:92).

Less than one year later, in 1776, Spanish Army Colonel Juan Bautista de Anza, accompanied by Spanish settlers, soldiers, and Franciscan Fray Pedro Font, left Monterey bound for the Bay Area, with orders to locate sites for a presidio and mission. Anza briefly traversed Huchiun territory, and finally stopped in the Carquinez Strait region. Both Anza and Font described passing abandoned villages (Schwartz 2001) in Huchiun lands (though these lands are thought to be north of the project area), but both revealed no details regarding encounters that may have occurred with Huchiun people (Milliken 1991:102).

#### **2.2.2.6.2 The Spanish/Mexican Period**

Despite these Spanish explorations of the Berkeley area, no local settlement resulted. During these initial forays into West Berkeley lands, the Franciscans did look for mission sites, but determined that coast lands were apt to flood, and that creeks along the shorelands were too deep to control (Schwartz 2001). Instead, the Spanish limited Bay Area colonization activities to the construction of missions in San Francisco (the *Mission Dolores*) in 1776, Santa Clara in 1777, San Jose in 1797, and San Rafael in 1817. The Spanish also established Bay Area *pueblos*, or secular agricultural villages, beginning with San Jose in 1777, and Yerba Buena (San Francisco) and Sonoma in 1835. The lone Bay Area Spanish *presidio*, or frontier fort, was established simultaneous with Mission Dolores, in 1776 (Paddison 1998:xxii). Together, missions and presidios defined Spanish efforts at colonial dominance in the New World. The Franciscans hoped indigenous peoples would voluntarily commit to Christianity. However, the missionaries were prepared to use all the available means, including military force, to secure Indian religious conversion.

The vast majority of Berkeley-area Huchiun people who became *neophytes*, or converted Christians, did so at Mission Dolores, rather than Mission Santa Clara or, after 1797, Mission



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San Jose. In the 1780s, Huchiun people, generally hostile to conversion, made occasional visits to the Mission San Francisco, with only a few remaining for religious conversion. However, by 1794-95, entire Huchiun villages were crossing San Francisco Bay, intent on religious conversion at Mission Dolores (Milliken 1991:202-203). The Franciscans at Mission Dolores sent Mission Indian (neophytes) back to their tribes to collect runaways and “to conquer the pagans” (Milliken 1991:203), a reference which seems more of an effort to preach Christianity to fellow tribespeople than to force conversion. The Spanish strategy worked well, at least among the Huchiun, though success was short-lived as devastating epidemics in 1795 and 1802 decimated the indigenous residents of Mission Dolores. By 1804, though some individuals remained (Schwartz 2001), Huchiun villages in the East Bay had disappeared, and the vast majority of Huchiun had relocated to Mission Dolores or had perished as a result of disease (Milliken 1991:265-271). Centuries of Huchiun occupation and use of coastal East Bay lands ended less than thirty years after first contact with the Spanish.

Throughout the late-eighteenth and early-nineteenth centuries, Spanish settlement activities remained confined to the San Francisco peninsula, or to the coastlands of the North and South Bay. However, in 1820, Luis Peralta, who walked to the Bay Area as a young member of the Anza Expedition, became a sergeant in the Spanish Army, and was given a substantial land grant by the Spanish governor of California in return for 45 years of military service (Schwartz 2001). However, the land grant was controversial, as the Mission Dolores controlled the lands that the Governor had given to Peralta. It took Peralta nearly two years to secure ownership (Schwartz 2001). From a Spanish perspective, Peralta, who had been stationed at the San Francisco Presidio, had served the Crown well, investigating reports of Indian resistance to the Spanish. Peralta also led raids against several Bay Area tribes, in attempts to recapture Mission Indian runaways (Milliken 1991:269). As a reward, Peralta became the first private-property owner in the history of the East Bay. Land grants such as Peralta’s also broke the tightly-controlled method of Spanish colonization, whereby immigrants settled at either pueblos, missions, or presidios. Now, lands were made available for private occupation (Schwartz 2001).

Peralta’s lands, known as *Rancho San Antonio*, predated an era of land grants by the Mexican government, who successfully revolted from Spain in 1822. The continuation of the Spanish land grant policy by Mexico was one important feature of Mexican rule in Alta California, and it was this policy that essentially broke the economic grip that the Franciscan missions had on the California economy. The Franciscan mission administrators owned and managed tremendous amounts of lands and cattle well into the nineteenth century. The missions were the main suppliers of the Presidios and Pueblos, and even traded with the Russian colony at Fort Ross. However, in the early-1830s, the new Mexican government secularized the missions and stripped them of their lands. These lands were, in turn, given to Mexican citizens and naturalized foreigners, known as *Californios*, for the purpose of encouraging immigration to Alta California. These immigrants received extensive property grants, or *Ranchos*, located in both coastal and interior regions of Alta California. In this way, Mexican dominion over all of California could advance (Gutierrez and Orsi 1998:178-181).

Luis Peralta’s grant, which was honored by the Mexican government, was immense at nearly 45,000 acres, and included what is today Oakland, Alameda, Piedmont, Emeryville, Berkeley, and portions of San Leandro and Albany (Plat Map 1877). Though Peralta himself never lived



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on the Rancho, he moved four sons onto the lands in 1841. One son, Jose Domingo Peralta, received the lands that included most of the present-day city of Berkeley and a portion of Emeryville. In 1841, Jose Domingo built an adobe home in what is now Albany, along upper Codornices Creek near Hopkins Street, approximately 1.5 miles northeast of the project area, though this structure was damaged in an earthquake later that year (Schwartz 2001). In 1851, he built a small, wood-frame house nearby, a home that was destroyed by fire in 1933 (Pastron 2000:4). The Peraltas built no known structures in the project area, as those lands seem to have been reserved for grazing by the Peralta cattle herds.

During the *Rancho* era, Jose Domingo and his brothers raised cattle, and took part in the hide and tallow trade that flourished in Alta California from the 1820s through the 1840s. It has been estimated that more than six million cattle hides and seven thousand tons of tallow were exported from California between 1826 and 1848 (Gutierrez and Orsi 1998:129-137). These hides were shipped to the eastern United States where manufacturers turned them into shoes and other leather goods. Tallow was made into soap and candles, and sold in markets all over the world. Above all, producers like the Peraltas needed access to maritime transports that could move their product to markets abroad. Their uniquely close proximity to one of the world's great natural harbors gave them a great advantage over ranchers located inland.

In some ways, the economic characteristics that existed in the project area during the *Rancho* era mirrored the commercial activities of Berkeley during the late-nineteenth and twentieth centuries. First, hides and tallow produced during the *Rancho* era were part of a global economy, as were goods produced later in an industrialized West Berkeley. Moreover, the profitability of hide and tallow and of industrialized goods depended on the availability of transportation systems to get the products to market. The favorable transportation conditions that aided the Peralta family in the nineteenth century continued, in the same general fashion, to benefit the growing industrialization of West Berkeley during the late-nineteenth and early twentieth centuries.

California's natural wonders were also the inspiration for literary romance and drama, which, in part, fueled the American need to possess the land. Richard Henry Dana's acclaimed *Two Years Before the Mast* is based on the diary Dana kept while at sea. First published in 1841, it is one of America's most famous accounts of life at sea. It contains a rare and detailed account of life on the California coast a decade before the Gold Rush. Dana and his shipmates visited the San Francisco Bay region and its occupants in December of 1840. While Dana failed to mention any interactions with Bay-region indigenous peoples, he did note the deteriorating condition of the Presidio, and the presence of Russian and United States-based trading vessels. Dana also proved prophetic. On December 27, his last day in San Francisco Bay, Dana wrote:

"If California ever becomes a prosperous country, this bay will be the center of its [sic] prosperity. The abundance of wood and water; the extreme fertility of its shores; the excellence of its climate, which is as near to being perfect as any in the world; and its facilities for navigation, affording the best anchoring grounds in the whole western coast of America-all fit for a place of great importance." (Dana 1841:192)

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### 2.2.2.6.3 *The American Period*

It was the American victory in the 1846-1848 Mexican-American War that ended Mexican rule in California and hastened the breakdown of the *Rancho* system. Soon after the United States Congress declared war on Mexico in 1846, U.S. Navy Commander John D. Sloat sailed a naval squadron to California and seized the major port cities, San Francisco Bay, and the small village of Yerba Buena. During the conflict, most of the fighting took place in the southern portion of California, or in Mexico, rather than in the Bay Area-region of Alta California (Gutierrez and Orsi 1998:341).

Under the 1848 Treaty of Guadalupe Hidalgo, which ended the war, Mexico ceded the territories of California and New Mexico to the United States. Article 10 of the treaty guaranteed that “all grants of land made by the Mexican government ...shall be respected as valid.” However, one of the first acts of Congress after California statehood in 1850 was to pass the California Land Act, by which each Spanish and Mexican land grant had to be reviewed by a land court and the U.S. attorney general for legal title. While the land court often approved the grants, the process took years, and was costly. Further, California state law enabled squatters to preempt uncultivated lands for which title was unconfirmed (Gutierrez and Orsi 1998:346-349).

The crush of immigration into the San Francisco Bay region ushered in by the discovery of gold in California brought the issue of squatters squarely before the Peralta family. The Peraltas, like other land grantees, were in the process of defending their claims against Anglo intrusion. However, the Peraltas could not hope to fend off an Anglo population intent on permanent settlement and commercial use. Land-hungry Anglo immigrants coming into the East Bay bought, leased, or in some cases, simply took portions of the tract once held by the Peralta family. Besides the loss of land, the Peraltas suffered tremendous losses of cattle to rustlers (Schwartz 2001). *Rancho San Antonio*, including the portion owned by Jose Domingo, was completely appropriated or sold off to various individuals by the mid-1850s (McArdle 1986:52-54). The Peraltas, like many other rancho owners, were land rich but cash poor, and simply did not have the resources or experience to effectively resist squatters or unscrupulous attorneys acting on behalf of affluent interests (Schwartz 2001).

The first known Anglo Americans to immigrate to the immediate vicinity of the project area were two sea captains, James H. Jacobs and William J. Bowen, who settled in the early 1850s and who may have illegally squatted on Peralta lands (Schwartz 2001). In 1853, Bowen built a roadhouse and stage stop, which he named “Ocean View,” along the main stage route on Contra Costa Road (today’s San Pablo Avenue), between Oakland and San Pablo, east of the project area (Pettitt 1926: 20). One year later, Jacobs built a dock (dubbed Jacobs Landing) and residence at the mouth of Strawberry Creek. From his dock, Jacobs sailed a small sloop between San Francisco and east bay shores, bringing goods back to Ocean View (Jorgensen-Esmaili 1982:1).

The town of Ocean View (as West Berkeley was originally named) was settled in 1853, the same year as the construction of the Bowen Roadhouse. The 1850s and 1860s saw a large amount of turnover in landholdings as controversy over land ownership continued and property rights cases moved in and out of court (Schwartz 2001). In 1855, John Everding and his partner August



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Rammelsburg founded what could be termed the first industrial concern in Ocean View/Berkeley, the Pioneer Starch and Grist, on today's Second Street between Addison Street and University Avenue. Everding and Rammelsburg planned to open their mill near what is now Mills College in Oakland. However, the two entrepreneurs realized that the access to shipping would be vital for success, and that transportation could be had quickly and easily from Jacobs Landing if the business was closer to the shoreline. Further industrial growth soon followed, when Zimri Brewer Heywood began construction of a lumberyard at the foot of Delaware Street (now Hearst Street) (Cerny 1994:16). By 1857, Ocean View contained 25 residences, a grocery store, hotel, saloon, a school on San Pablo Avenue, and a church, as well as a Sunday school. Jacobs and Heywood later combined resources to improve Jacob's dock into a commercial wharf, to be known as the "Jacobs and Heywood Wharf" (Jorgensen-Esmaili 1982:5).

Compared to San Francisco's population boom, detonated by the California Gold Rush, Ocean View remained quiet. From 1855 to 1860, approximately 60 individuals settled in the young community. Some of these were Irish immigrants, who worked small farms, or sought employment as day laborers. Irishman Michael Curtis was perhaps the first farmer in the area, owning 150 acres bounded by what is now University Avenue and Hopkins Street, and San Pablo Avenue and Curtis Street. The Irish community was remarkably close-knit and remained so through large kin-based networks. Curtis, for example, married Anne Dunnigan, the daughter of a fellow Irish farmer. One Curtis daughter married local Edward Brennan, and the Curtis-Brennan family is still represented today, most visibly through Brennan's Restaurant in West Berkeley (McArdle 1986: 70-71).

Swiss, Swedish, Scotch, German, Mexican, English, French, Danish and especially Chilean ethnic groups were also represented within the Ocean View community, and continued to arrive as Ocean View slowly grew. Second generation Americans also began arriving in Ocean View. Some of these new arrivals came to Ocean View with greater financial resources than their Irish counterparts, and thus were able to purchase larger land tracts and become employers to various local immigrant groups. As Ocean View slowly grew, the small community's center remained tied to the coast, near the project area. For example, Rosario Sisterna, a Chilean immigrant, came to Ocean View in 1855, and developed a large tract of farmland between Strawberry Creek and Alston Way. As Ocean View, and later Berkeley developed, those lands continued to be referred to as the "Sisterna Tract" (Jorgensen-Esmaili 1982:2-3).

The Civil War slowed immigration to the West Coast during the early to mid-1860s, and Ocean View remained a small, multi-ethnic community of farmers, artisans, mill laborers, and farm laborers. The village remained relatively unchanged until the 1870s, when rapid industrialization, the coming of the railroad, and the founding of a new campus of the University of California east of the small village forever altered the rural character of Ocean View. In the five-year period from 1873 to 1878 (when Berkeley became an incorporated town), Ocean View's population increased by tenfold (Jorgensen-Esmaili 1982:6).

Beginning in 1870, investors (with eyes on San Francisco to the west and Oakland to the south) began to focus on the development of Ocean View. J. Ross Browne, formerly the United States Minister to China, composed an 1870 letter to potential investor Ezekiel Brown. The letter, titled in part as a "Letter...in Relation to the Proposed Town Site of Lower Berkeley, and the Value of

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Property and Growth of Population In and Around Oakland,” glowingly described the potential for commercial, residential and industrial development in what Browne referred to as Lower Berkeley, or Ocean View. Browne described the growth of Oakland’s transportation networks such as railroad and ferry systems, and their inclusion as links in the transcontinental rail system to chart Lower Berkeley’s future growth. Browne confidently stated that Lower Berkeley would grow with Oakland, and that “with improvements...this place [Lower Berkeley] and the vicinity will assume a commercial importance second only to that of San Francisco” (Browne 1870:12).

The 1873 arrival of the University of California campus stimulated the growth of the community by increasing the need for Ocean View’s existent industrial products and services. The new university campus created a market for new commercial development in Ocean View. An initial consequence of this commercial and industrial growth was the loss, to development, of some of the small, family farms that characterized early Ocean View. While many small farms and ranches did last into the 1920s, most of those remaining were devastated by a 1924 Foot-and-Mouth disease outbreak (*Contra Costa Times* 2001). However, Ocean View and East Berkeley, where the campus was located, utterly lacked the housing for University faculty and students, as well as the means to control the seasonal flooding of Strawberry Creek.

To meet this need for development, the Berkeley Land and Town Improvement Association (BLTIA) was formed in 1874. The association was made up of local elites (including J. Ross Browne, University president Reverend Henry Durant, and James H. Jacobs) who began to plan street alignment, arrange land sales, and promote the development of lots at the foot of University Avenue. The Standard Soap Works, the Cornell Watch Company, the Wentworth Shoe Company (which occupied the same building as the Cornell Watch Co.), the California Ink Company, and the Griffin Glove and Tannery Company all opened for business in Ocean View (and in the project area) during the early-to-late 1870s (Schwartz 2001). Edward F. Niehaus opened a small cabinet shop in a shed leased from John Evarding during this time (Jorgensen-Esmaili 1982:8), and Henry Taylor bought land from Jacobs and Heywood to start a lumber yard (Schwartz 2001). Gradually, the growth of industry spurred the construction of housing in Ocean View, though the nation-wide Depression of the mid-1870s slowed the explosive commercial growth that lingered on Ocean View’s horizon.

The pier for the Berkeley-San Francisco Ferry wharf was built in 1874, at the foot of University Avenue, and Willow Grove Park was established by the BLTIA the following year. The park was bounded by University Avenue, Hearst Street, Third and Fifth streets. The Park, intended for community recreation, was established as the axis for BLTIA-sponsored residential development. The park was also the location of the West Berkeley site, an important archaeological resource containing Native American burials, artifacts, and food refuse. A shellmound, part of the site, was located [REDACTED]. During the period when Willow Grove Park was located on the site, much of the mound was removed for commercial use as garden fertilizer, chicken feed, and road grading material (Manning 1999:5).

The 1869 completion of the transcontinental railroad line had tremendous impact on the Bay Area. The Pacific terminus of the railroad was Oakland, and though the tracks traversed Ocean View, no station was constructed until 1878, when a stop was constructed at the intersection of Third and Delaware streets. Completion of the railroad did have a significant effect on the social



composition of the community. Chinese immigrants, newly unemployed after completion of the railroad, moved into rural and urban areas all over California, including Ocean View. These new arrivals were often forced by prejudice into menial jobs, such as laundry workers or unskilled laborers. At least one local firm, the Griffin Glove and Tannery Company, advertised that they would hire no Chinese workers (Pettitt 1926:16). The completion of the railroad also brought more German and Irish laborers into Ocean View, and the 1870s saw the first recorded settlement of African Americans (slaves of Napoleon Byrne) in the growing village (Jorgensen-Esmaili 1982:3).

In 1878, to avoid annexation by Oakland, Ocean View incorporated with the campus area (then known as "East Berkeley)," to become Berkeley, though the project area was still generally referred to as West Berkeley. Incorporation did not come easily, with the first halting steps toward municipal consolidation beginning in 1874, with a proposal for annexation by Oakland. That idea was quickly rejected by local residents. Spurred by the obvious need for public school facilities, sewer systems, and street grading and paving a group of property owners moved to incorporate the area into the City of Berkeley on December 1, 1877. The State Legislature was petitioned for a charter in 1878, and the request was granted on April 1, 1878. The town was zoned into three business districts: San Pablo Avenue in Ocean View, which had the closest access to the transcontinental rail line; Telegraph Avenue at Bancroft; and Shattuck Avenue at Center Street. During the economic recovery that began in the late 1870s and continued throughout the 1880s, Berkeley became a mix of residential, commercial (including churches and schools) and mixed industrial uses.

Public transportation in Berkeley began with horse-drawn stages. In 1873, the first coach on rails, still drawn by horse, connected the new University with Oakland via Telegraph Avenue. Three years later, steam power replaced the horse, and public service was extended to Shattuck Avenue. Closer to West Berkeley, transportation on San Pablo Avenue continued to be by stage until 1878, when the horse-drawn line that connected Oakland and Emeryville was extended to West Berkeley. In 1874, a second "horse car" line was planned along University Avenue, which would connect the University to the "Berkeley Ferry and Railroad Company," which began regular ferry service between San Francisco and Ocean View that same year. However, this line, called the "Claremont, University and Ferries Street Railway" did not go into operation until May 17, 1891. Though this street car line did provide a needed link between various residential and business districts, this transportation type was rendered obsolete virtually overnight; just five days later, the first electronic trolley entered Berkeley from Oakland via Grove Street. Further, by the time the Claremont, University, and Ferries Street Railway did begin operations, the trans-bay ferry service was defunct; however, the line did make connections with the local Southern Pacific service at the Third Street station.

One transportation line that affected Berkeley's development yet never went into service was the California and Nevada Railroad (CNRR). The right-of-way for this local, narrow gauge rail line (that appears on the birds-eye map (1891)) was acquired in 1881, with the intent of eventually establishing another transcontinental line to compete with the Central Pacific. However, the CNRR never got past Orinda, California, though the right-of-way was retained. Finally, in 1902, the Atchison, Topeka and Santa Fe Railway took over the right-of-way and used it to reach a terminal located at Fortieth Street and San Pablo Avenue in Oakland.

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Civic improvements marked West Berkeley's growth, with the installation of gas street lights in 1879, the establishment of a telephone exchange in 1882, and the introduction of electricity during the 1890s. By 1885, West Berkeley industries included the Niehaus Planing Mill, the Standard Soap Company, a cement works, a mine reduction works, a lubricating oil and kerosene works, a gunpowder factory, paraffine paint works, and a large lumber yard with a pier and rail spur that extended one-third of a mile into San Francisco Bay. Commercial enterprises included various grocers, blacksmiths, breweries and hardware outlets.

By the early-1880s, use of Willow Grove Park declined as the park itself fell into disrepair. An 1887 fire damaged much of the park (Schwartz 2001) and, in 1890, the park was subdivided and sold, and subsequent uses for the land were both residential and industrial. Several homes were built immediately following subdivision; though, by the turn of the century an oil refinery and a glass works were constructed along Hearst Avenue. However, these enterprises were short-lived. In 1895, Johann Spenger built his home, market and fish store on what was once a portion of Willow Grove Park, on Fourth Street north of University Avenue. In the 1930s, Spenger's fish market would evolve into one of West Berkeley's most important community landmarks, the well-known Spengers Restaurant. Edward Niehaus is another example of that era's dynamic growth. What began with partner and fellow German immigrant Gustavus Schuster as a small planing business in the 1870s evolved into a thriving concern by the late 1880s. In 1887, Niehaus Bros. and Co. purchased twenty acres of West Berkeley waterfront property (through which Strawberry Creek flowed), had constructed a separate wharf to land and store lumber, and became one of the largest employers in West Berkeley (Pettitt 1973:39).

The *Birdseye View of Berkeley, Cal. 1891*, a map drawn by a local real estate company, captures the mixed-use nature of West Berkeley. Several billowing smokestacks, a traditional symbol of thriving industry, originate from West Berkeley chimneys. Piers extend from the West Berkeley shoreline well into the Bay, while several trains, including the Central Pacific, the CNRR, and a municipal electric line crisscross the map. The map also depicts an artistic rendering of notable West Berkeley buildings, which include the Pioneer Starch Works, the Taylor Lumberyard, and the Standard Soap Works. The map was clearly designed to encourage residential settlement and commercial expansion. It also, perhaps unintentionally, depicts "Two Berkeleys:" one, the concentrated and industrial area west of San Pablo Avenue; and the second, east of San Pablo, depicted as a nearly pastoral setting of tree-lined streets, spacious residences on large lots, and statuesque University buildings.

Certainly, competition raged between the University area and West Berkeley prior to 1891. The first conflict occurred in 1868, before the University was even built. Efforts were underway to begin a horse car connection to Oakland along San Pablo Avenue to accommodate Ocean View commerce and residents. However, when plans for the University were announced, the route of the connection was shifted closer to the University site, along Telegraph Avenue. Further, when construction on North and South Hall began, businesses began to grow east of San Pablo Avenue. Trouble brewed again in 1873, with the opening of the University. The State Legislature passed a law which prohibited the sale of alcoholic beverages within two miles of the campus, creating a temperance zone which included Ocean View. When legislatures tried to remedy the situation in 1876 by shrinking the prohibition zone to one mile from campus, twenty-



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two saloons sprang up in West Berkeley seemingly overnight. The accompanying increase of alcohol-fueled crime and behavior in Ocean View was attributed to the presence of the University (Pettitt 1926:19-20). Episodes such as these cemented the divisions between the two communities, even after consolidation and incorporation in 1878.

To fit land use needs, Strawberry Creek has been modified, diverted, and culverted on several occasions since the late-nineteenth century. The 1852 U.S. Coast Survey map of San Francisco Bay shows Strawberry Creek flowing into what is perhaps a slough, or marshland. Within the area of the map that denotes the slough, the course of the creek is untraceable. One 1874 map depicts Strawberry Creek as crossing University Avenue from north to south at approximately Fifth Street, and entering the Bay south of both University Avenue and the newly-constructed San Francisco-Berkeley Ferry Wharf. However, another 1874 map produced by the BLTIA shows the creek north of University Avenue. An 1878 map (Carnall & Eyre 1878) shows Strawberry Creek flowing north of University Avenue, and flowing through Willow Grove Park before reaching the Bay.

A map depicting Berkeley watersheds from the late 1800s to modern day demonstrates that Strawberry Creek once flowed westward through a corridor just north of University Avenue, emptying into what was then coastal marshland (Sowers 1995). Generally, the marshland extended between Hearst Avenue and University, and as far inland as what is now Third Street (Sowers 1995). The human modification of Strawberry Creek began in the late 1850s when the lower part of the creek, a large marshy area, was filled. Changes continued in the 1870s, when the middle fork, located on University land, was drained. In 1883, the first large culvert was installed along a streambed located near Oxford Street to facilitate horse and wagon travel. Culverting continued from the 1880s through the early 1930s, when the federally-financed Works Progress Administration (WPA) finished culverting the last open stretches of the creek. By 1935, virtually the entire length of Strawberry Creek through the City of Berkeley was underground (Charbonneau 1987:5).

By 1900, West Berkeley had grown to just over 1,500 individuals. Diversity was reflected in the population, as West Berkeley contained several families of distinct ethnicity, though the largest minority population was Chinese, who ran two medium-sized vegetable farms. Beginning in 1900, an electric trolley line that linked West Berkeley, Emeryville, and Oakland replaced the original horse-car line that ran on San Pablo Avenue between West Berkeley and Oakland. By 1902 an electric line traversed University Avenue, between West Berkeley and the University. Another line was later extended to Richmond (Pettitt 1926:42-43).

By 1906, Berkeley was the fourth largest city in California. The damage inflicted on West Berkeley by the Great San Francisco Earthquake of that same year was mild compared to the disaster across the Bay, though impact from the earthquake was felt by the tremendous numbers of refugees who poured into Berkeley from San Francisco. This influx precipitated another residential and industrial boom, and by 1909, the town contained 84 industrial plants, while population grew from a pre-earthquake 13,000 to 40,000 by 1910 (Jorgensen-Esmaili 1982:10). Much of the industrial growth occurred on Third Street, along the Central Pacific rail line, which had spur lines into many factories. The 1909 completion of a major new 2,100-foot long harbor,

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which extended into deep Bay water, enabled local manufacturers to receive raw material and freight while efficiently shipping manufactured goods to market.

By 1919, West Berkeley boasted 113 manufacturing centers which were producing goods valued at approximately \$28 million dollars. A zoning map (City of Berkeley 1920) produced by the City of Berkeley depicts the wide variety of industrial, commercial and residential uses that existed in West Berkeley. The map describes seven different zoning districts, ranging from the Class 1 districts, illustrated as “single family homes, churches, apartments, and railroad stations,” to Class 7 districts that included “obnoxious or odor-producing factories, refineries, or tanneries.” In a display of municipal diversity, or perhaps chaos, West Berkeley was home to six of the seven classes, with only Class 7 excluded. Further, Berkeley zoning laws allowed Class 1 residential homes to be built in any other class, including next to the “obnoxious factories” of Zone 7. This created a rather haphazard mixture of cross-class, mixed-use buildings concentrated in small, urban area. For example, the Chinese who worked at the Standard Soap Works lived directly across the tracks from the plant, and Edward Niehaus built his Victorian mansion within sight of his planing mill (Cerny 1994:18).

In 1923, new zoning laws were introduced in Berkeley, with the area west of Fourth Street termed “M zones” for heavy industrial use, while the area between Fourth and Sixth streets was designated a “C zone” for light industrial or retail use. R zones were restricted for residential development, and the demographics of the local population underwent drastic changes. Wealthier citizens began to build homes in the R zones located in the nearby hills, while lower income individuals and families moved to west and central Berkeley (Cerny 1994:19). By the late 1920s, this organized mix of residential, commercial, and industrial uses was producing goods valued at over \$60 million annually.

The year 1923 proved to be a critical year for Berkeley in another way, when the Berkeley City Council voted to begin the landfill method of solid waste disposal. During the early years of Ocean View, solid waste was often fed to domestic animals, burned, or deposited in an empty lot or creek bed. By the turn of century, local officials had to limit the areas in which refuse could be dumped. In the early-twentieth century, city officials considered constructing an incinerator on the tip of Flemming’s Point. The new incinerator cost over \$60,000 to construct, and operating costs of over \$21,000 per year proved prohibitive to continued operation. By 1910, Berkeley contracted with a steamship company to have solid wastes hauled out to sea and dumped. However, this method was successful for only one year, after which the steamship sank. When 1923 arrived, Berkeley officials decided to make the fill-and-cover disposal method the answer to the local waste removal dilemma, oddly reminiscent of the prehistoric shellmound that once characterized the same lands. Fill and cover disposal began on five square blocks of city land immediately adjacent to the original shoreline; however, it eventually encompassed over 175 acres of tideland placed behind rock walls. This type of landfill continued until 1981, and considerably damaged the appearance and character of the West Berkeley beach (which had stretched from Delaware Street to Flemmings Point (Schwartz 2001)) and tidelands (Jorgensen-Esmaili 1982:4). Generally, the lands west of the Third Street rail tracks are composed of solid waste fill.



The 1930s saw an extended period of uncertainty and change for Berkeley, as it was all over the nation. During the Depression, the WPA, a New Deal initiative aimed at financing new public works, built the Aquatic Park, with the east shore of Aquatic Park essentially forming the remaining vestige of the natural coastline.

The Eastshore Freeway was also built during this decade, which provided a link to the newly constructed Bay Bridge. In addition, the Berkeley Yacht harbor was built during the 1930s, fashioned from the solid waste that had been dumped into the West Berkeley tidelands since the early 1920s (Jorgensen-Esmaili 1982:5-6). Within the project area, Frank Spenger converted his fishing business into a seafood restaurant, the first step in building the community landmark that the establishment remains today (Manning 1999:5).

World War II accelerated the industrial activity in West Berkeley. Large factories were devoted to wartime production, especially steel mills that supported the shipyards in Richmond. A few remaining farmlands, located north and south of the project area near Cordonices and Potter creeks, were developed into industrial sites to support the war effort. World War II also brought a wave of social diversity to West Berkeley, with large populations of African Americans and Hispanics arriving for work in war industries.

The 1950s introduced more zoning changes to West Berkeley. The City zoned the blocks west of Sixth Street as "Special Industrial," to encourage the development of heavy industry. The "West Berkeley Industrial Park," which covered twenty city blocks west of Sixth between University and Cedar was finally initiated in 1967, but the grand scope of the plan was never realized. In many ways, the plan harkened back to a time of heavy mixed-use municipal areas, as much of the area west of Sixth Street was already composed of mixed residential and commercial use (Jorgensen-Esmaili 1982:14-15).

As the late-twentieth century progressed, business strategies by developers that had long gone unchallenged now came under intense scrutiny by community groups. In 1971, citizens groups persuaded the City Council to reject plans for a retail complex along the West Berkeley waterfront, and a 1983 plan for a 3-million square feet waterfront redevelopment project was similarly defeated (Jorgensen-Esmaili 1982:10).

Changes in the West Berkeley economy have reflected economic changes nationwide, as heavy industries moved overseas and were replaced by service industry entities in the 1980s and 1990s. Presently, retail and restaurant businesses thrive in the project area, and the buildings which once housed heavy industry are subdivided into offices, retail spaces, and live/work uses.

## **2.3 Coring Program**

### **2.3.1 Coring Program Methods**

A pedestrian survey was determined to be an inappropriate method for identifying archaeological resources because the entire project area, with the exception of 2<sup>nd</sup> Street between Virginia and Cedar, had been paved. While a portion of 2<sup>nd</sup> Street was unpaved, this street had deposits of dirt

and gravel obscuring the natural ground surface. Alternatively, Garcia and Associates implemented a systematic sediment coring program designed to identify anthropogenic sediments in the project area and, if found, to determine their depositional context. LaRamie Soils Service was retained as geoarchaeological specialists for the coring.

A total of 124 sediment cores were attempted in the project area (Figure 2). Cores were spaced at an approximate systematic interval of 25 meters. This distance was based upon inferences regarding the size of prehistoric and historic sites in the vicinity of the project area as determined by Nelson (1910b) and work by Busby and Bard (1978a), Chavez (1989), Pastron (2000), and Tremaine (2000a, b). The amount of infrastructure under city streets necessitated deviating slightly from the idealized 25-meter interval to avoid obstructions. Of the 124 cores attempted, a total of 96 cores produced data on the natural and cultural sediments below the road.

Cores were extracted with a trailer-mounted, piston-driven, Giddings Soil Sampling device. To penetrate the concrete, asphalt, and road base materials overlaying sediments, a 4-inch drill was used. When the softer sediments were reached, the drill bit was exchanged with a 2-inch core capable of extracting intact sediment columns. The deepest core reached a depth of [REDACTED] and served to provide a baseline vertical context for subsequent cores. Most cores were in the [REDACTED] range and were terminated when an obstruction prevented penetration or when Pleistocene sediments were reached.

When cores were extracted, basic stratigraphic relationships were observed and recorded. Then, sediments were removed from the core tube and recorded in detail. The classification system for recording is described in Appendix D. When soil scientists had finished recording the cores, archaeologists divided the sediments by strata and screened them through ¼-inch hardware cloth to identify artifacts and ecofacts within sediment strata. Artifacts and ecofacts were counted, described, and photographed if they were diagnostic. All artifacts, ecofacts, and natural sediments were replaced into the cores. If there were insufficient sediments to fill the core holes, the holes were topped with clean sand. If there were “extra” sediments, they were taken to Garcia and Associates’ office and discarded.

Following the extraction of the cores, the holes were surveyed using the global positioning system. Differentially corrected positions reported here use the Universal Transverse Mercator coordinate system (Zone 10), the 1983 North American Datum, and are reported in meters. Accuracy testing conducted by Archaeological Mapping Specialists adjacent to the project area using the same equipment, settings, and acquisition time indicates that horizontal accuracies on the order of 30 centimeters were achieved. Vertical accuracies of approximately 2.5 meters were achieved but were not used since the project area’s vertical relief only varies by just over 3 meters. Core numbers and positions are listed in Table 1, below. Sediment descriptions and relationships can be found in various tables and figures in Appendix D.



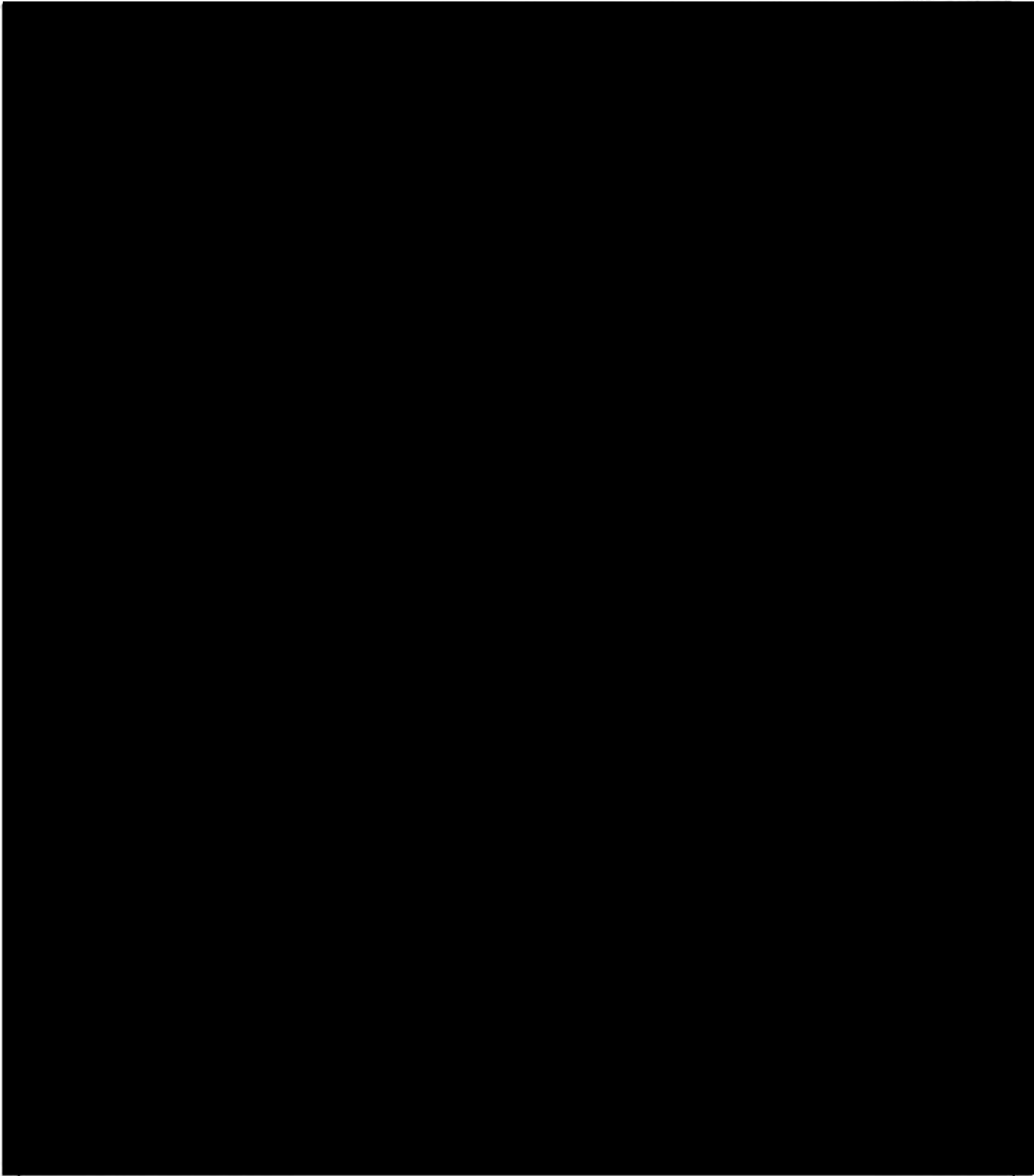
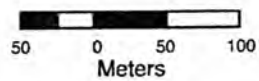


Figure 2. Core Locations.

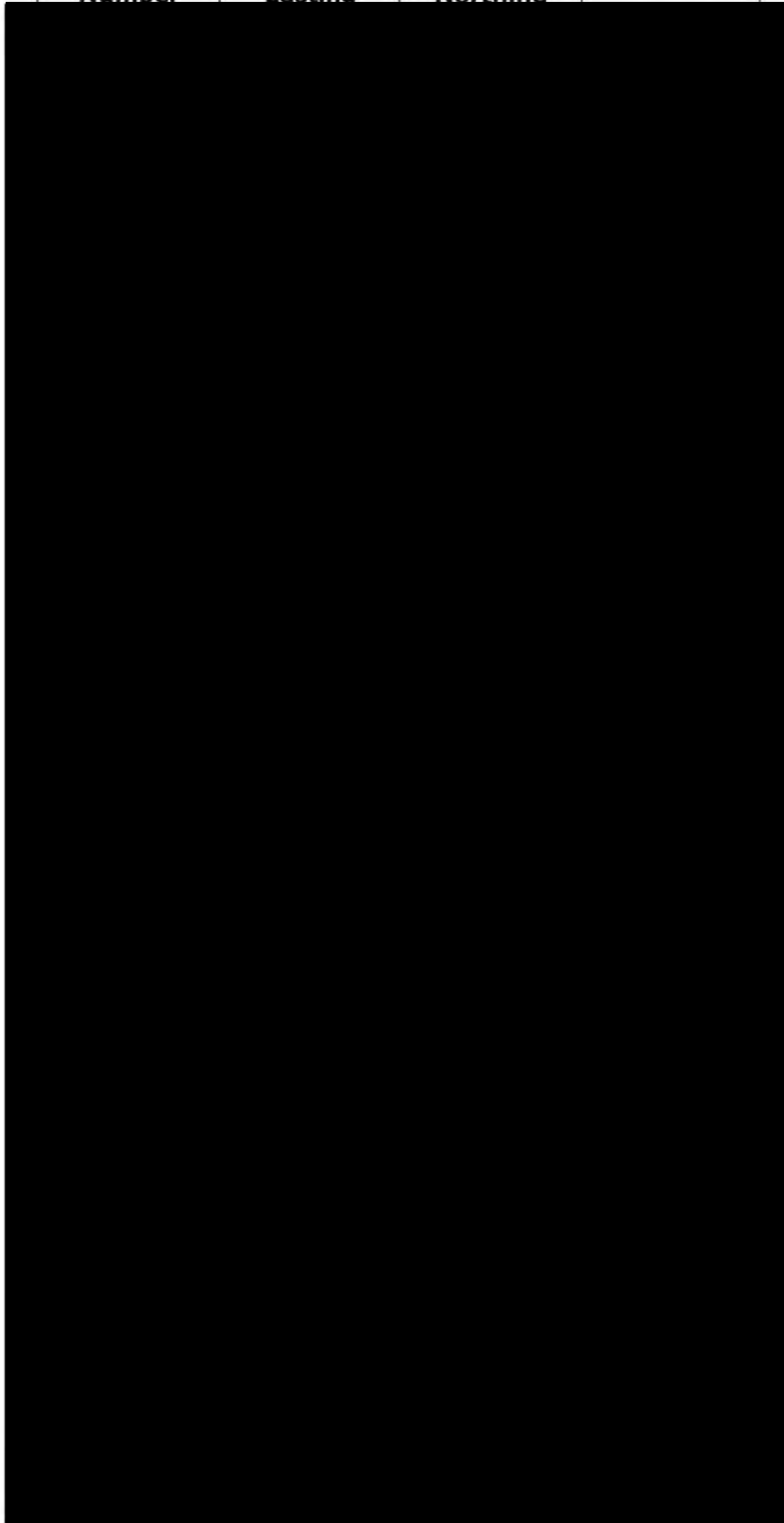


*Prepared by Garcia and Associates*

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Table 1. Core Numbers and Locations

Core Number	UTM Easting	UTM Northing	Street
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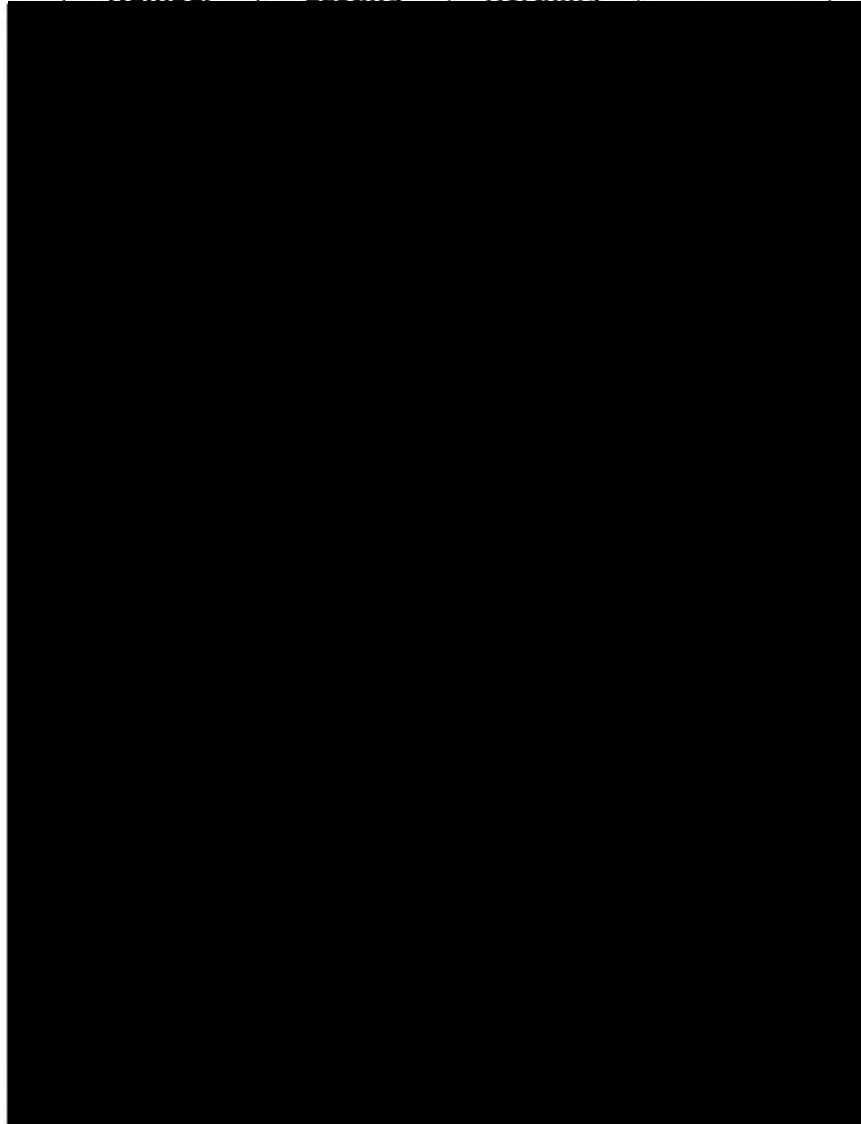


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Core Number	UTM Easting	UTM Northing	Street
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Core Number	UTM Easting	UTM Northing	Street
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### 2.3.2 Coring Program Results

The coring program produced a wealth of data pertaining to the natural and cultural depositional history of the project area. These data are important to an understanding of why the [REDACTED] was chosen as the location of the first large settlements of the East Bay shoreline in the middle Holocene (ca. 3000 B.C.). These data are fully described in Appendix D. In this section, only the cores having cultural sediments are discussed.

Thirty-three cores contained cultural sediments. Of these, 16 are interpreted as being in non-disturbed contexts (Figure 3). These *in situ* cores are summarized in Table 2, below.



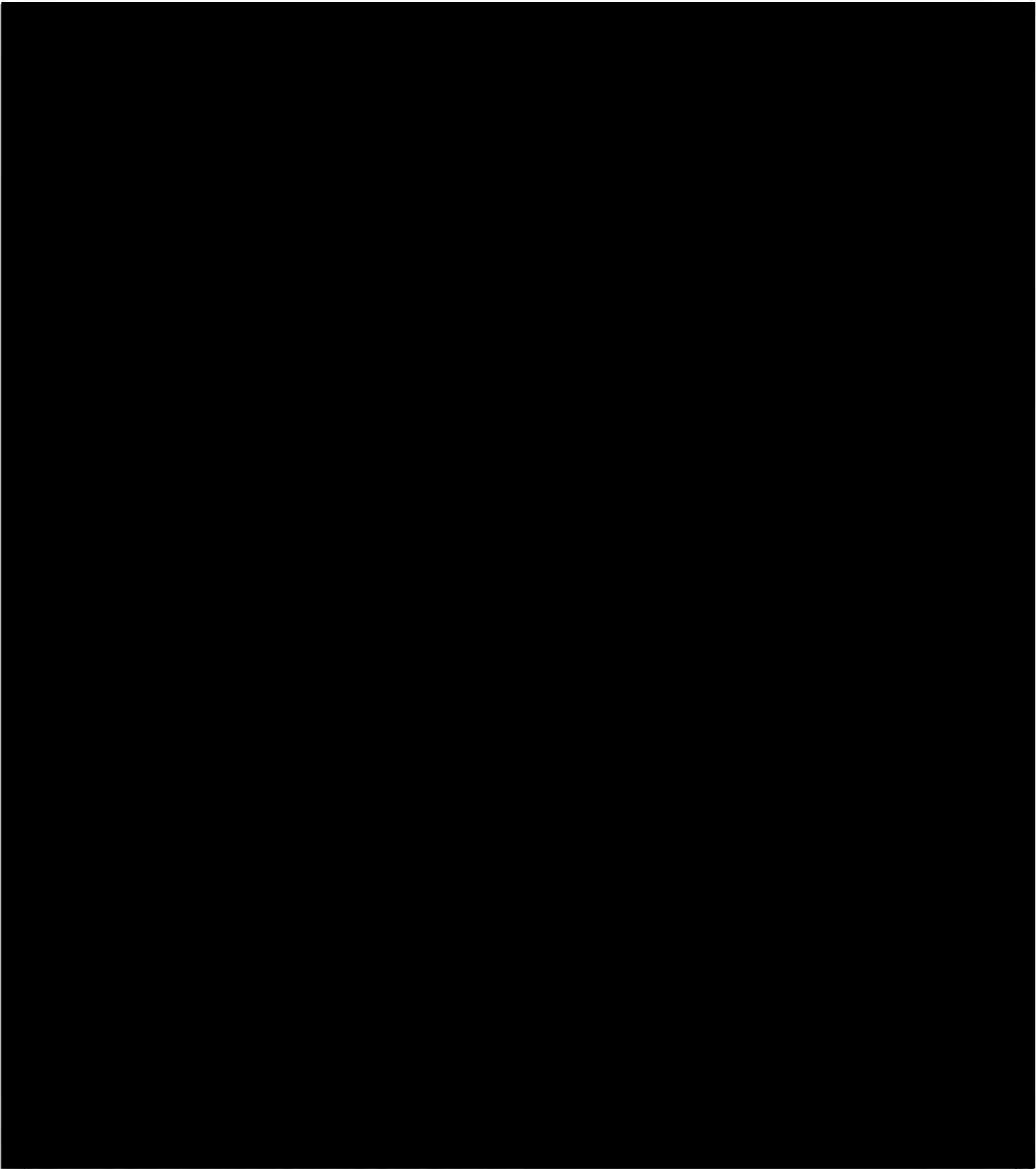
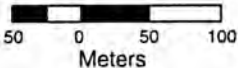


Figure 3. Core Locations with Intact Cultural Deposits.



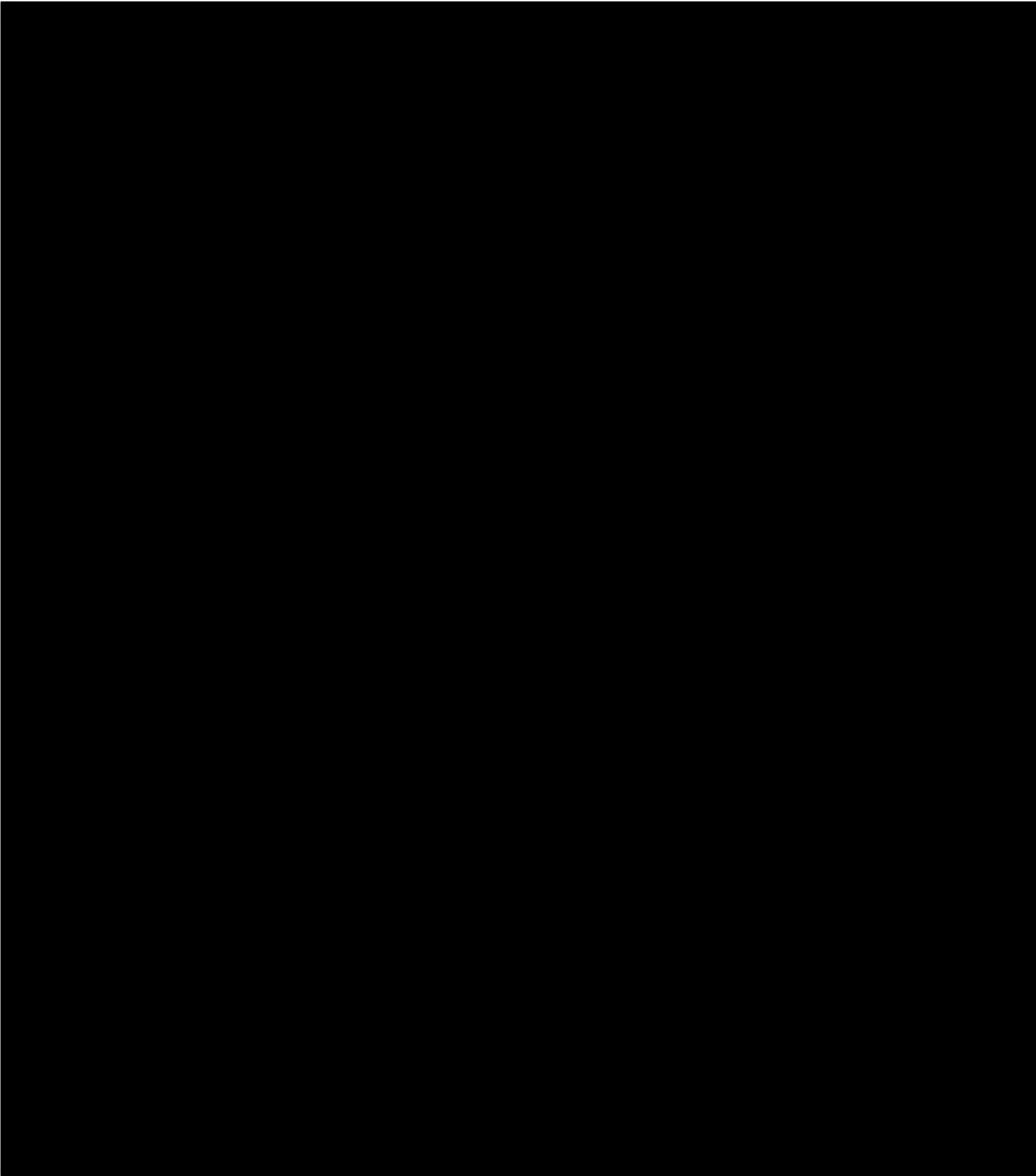
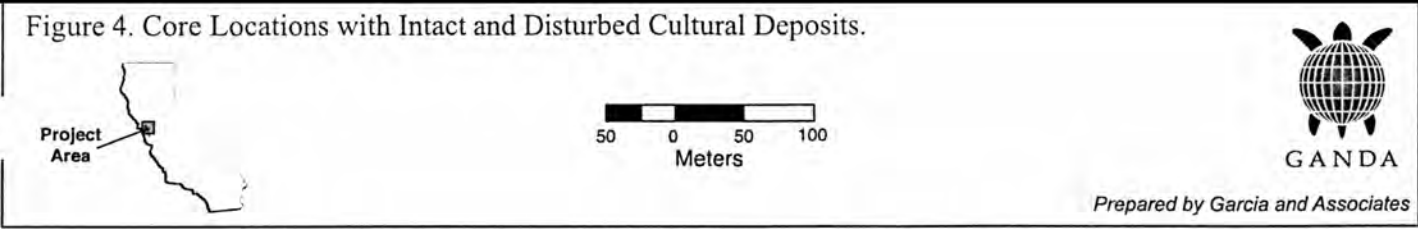


Figure 4. Core Locations with Intact and Disturbed Cultural Deposits.





## 2.4.2 School House Creek Site

While cores were placed on both sides of School House Creek [REDACTED], and along [REDACTED], no cultural deposits were located.

## 2.4.3 Historic Period Resources

A review of historic maps indicates three major changes in the road alignment of the project area. The first road in the project area was a road to [REDACTED] between, and parallel to, [REDACTED]. The second change was the [REDACTED]. The final change was the [REDACTED] during the [REDACTED]. No archaeological features or intact cultural deposits relating to the historic period were found in these, or other, parts of the project area.

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## 3.0 National Register of Historic Places Evaluation

Archaeological resource CA-Ala-307 has not previously been evaluated for its eligibility for listing on the National Register of Historic Places (National Register) or the California Register of Historical Resources (California Register). A [REDACTED] area that includes portions of this resource has been designated City of Berkeley Landmark 228. Since resources eligible for listing on the National Register are also considered eligible for listing on the California Register, the criteria of the National Register will be used here. Resources eligible for listing on the California Register are considered to be significant resources as defined by the California Environmental Quality Act.

### 3.1 Criteria for Evaluation

The types of properties eligible for listing in the National Register are buildings, sites, districts, structures, and objects (16 USC 470a). A property is eligible for listing in the National Register if it is:

- a) associated with events that have made a significant contribution to the broad patterns of our history; or
- b) associated with the lives of persons significant in our past; or
- c) embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- d) has yielded, or may be likely to yield, information important in prehistory or history.

Eligible properties must also possess integrity of location, design, setting, materials, workmanship, feeling, and association of those features necessary to convey their significance (36 CFR 60.4).

### 3.2 Application of Criteria

Archaeological resource CA-Ala-307 is classified as a site for this National Register evaluation. "A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archeological value regardless of the value of any existing structure" (36 CFR 60).

**Criterion A: Association with events that have made a significant contribution to the broad patterns of our history.**

**Settlement of San Francisco Bay (3000-1000 B.C.): State Level of Significance**

The West Berkeley site is the earliest human settlement on the edge of San Francisco Bay.



While the San Francisco Bay area was undoubtedly used by people since the Pleistocene/Holocene transition, increases in sea level during the late Pleistocene and early Holocene led to the formation and stabilization of San Francisco Bay, approximately 6,000 years ago. This stabilization of sea level caused the formation of estuaries along the Bay's edge, and this resource-rich environmental niche provided suitable habitat for human settlement. The movement of people into this environment began at approximately 3000 B.C. This initial settlement is represented by only seven sites in Alameda and Contra Costa counties (Lightfoot 1997:140) that were founded in the period from 3000 to 1000 B.C. The West Berkeley site is the earliest of these sites. The importance of the initial settlement is substantiated by the hundreds of subsequent village sites that, over the next few thousand years, filled in the edges of the bay. At the turn of the twentieth century, Nelson (1909) recorded 425 of these sites. This settlement pattern has persisted into the historic period and is the contemporary Bay Area settlement pattern.

Original absolute dates for occupation of the West Berkeley site were obtained from nine radiocarbon samples in 1956. These radiocarbon dates indicate that West Berkeley's occupation began prior to 2,000 B.C. and lasted for a period of approximately 1,000 years (Wallace and Lathrap 1975:58-59). Breschini et al. (1996:1) list eight radiocarbon dates from the West Berkeley site. These dates range in age from  $2700 \pm 300$  to  $3860 \pm 450$  years B.P. (Breschini et al. 1996:1). New radiocarbon dates, based on 15 pairs of charcoal and shell, now indicate that the West Berkeley site was occupied continuously from 3030 B.C. to A.D. 780 (Ingram 1998). These dates establish the West Berkeley site as the earliest known village site on San Francisco Bay.

## **Criterion B: Association with the lives of persons significant in our past.**

### **Nels Christian Nelson (A.D. 1906-1912): National Level of Significance**

The introduction and development of the stratigraphic method in American archaeology is credited to Nels Nelson (A.D. 1875-1964), in North America, and Manuel Gamio, in Mesoamerica (Willey and Sabloff 1974:89). Nelson's research in the Galisteo Basin of New Mexico in 1914 is generally acknowledged as the first significant stratigraphic archaeology in the Americas (Library-Anthropology Resource Group 1991:504). The foundation for this methodological development came from the earlier excavations at East Bay shellmound sites by Nelson, and others like Max Uhle, who were associated with the University of California at Berkeley. Additionally, Nelson's earliest, and most noted work, *Shellmounds of the San Francisco Bay Region* (Nelson 1909), summarizes over 3,000 miles of pedestrian survey and 425 archaeological sites (Library-Anthropology Resource Group 1991:504).

Nelson was a student at U.C. Berkeley from 1903, receiving his Bachelors degree in 1907 and his Masters degree in 1908. In 1910, Nelson was hired as an Instructor and Assistant Curator in U.C. Berkeley's anthropology department, a position he held until he left the area in 1912. The West Berkeley site, was the "home" site for Nelson and the other University of California at Berkeley archaeologists who were pioneering the stratigraphic method during the first decade of the century. In addition to the West Berkeley site being included in Nelson's shellmound survey,



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the first site-scale map of the site was made by Nelson in 1910 (Nelson 1910b). Nelson's map remains the only known map of this archaeological site.

**Criterion C: Association with the distinctive characteristics of a type, period, or method of construction.**

**The Early Horizon, Berkeley Facies Type Site (3030-800 B.C.): State Level of Significance**

The West Berkeley site is the "type site" for the Early Horizon, Berkeley Facies, as defined by Elsasser (1978:37-41), and suggested by Wallace and Lathrap (1975:57).

Type sites are those where the first, or most representative, example of something is found or defined. A horizon is defined as a broad cultural unit that can be arranged in a temporal sequence. The Early Horizon characterizes Central California, dates to approximately 5500-2000 B.C., and is defined by an extensive list of archaeological traits (Moratto 1984:181-183). A facies is a group of closely related archaeological traits that characterize a spatial variation. The Berkeley Facies represents the archaeological manifestation of the initial San Francisco Bay Region estuary adaptation. The Berkeley Facies maintains some traits from the Sacramento and San Joaquin rivers delta area (referred to as the Windmill pattern or culture) with new traits specific to San Francisco Bay. The Berkeley Facies is not to be confused with the Berkeley Pattern defined by Fredrickson (1973), based upon the Emeryville site (CA-Ala-309). A pattern is an atemporal definition of material traits reflecting a cultural adaptation.

The Berkeley Facies is represented in the [REDACTED] of the West Berkeley shellmound (Wallace and Lathrap 1975). The original radiocarbon dates from this portion of the deposit were 1745-925 B.C. New dates (Ingram 1998) place the dates of the Berkeley Facies at the West Berkeley site from 3030-800 B.C.

**San Francisco Bay Area Region Shellmounds (3030 B.C.-A.D. 780): State Level of Significance**

West Berkeley site contains the first example of mound building in the San Francisco Bay Area region.

The shellmound at the West Berkeley site was constructed continuously between 3030 B.C. and A.D. 780 (Ingram 1998). While mounds in the Bay Area were occupied in later time periods, the mound at the West Berkeley site appears to have been abandoned during a period of drier conditions and ecological change, as were at least four other sites in the Bay Area (Ingram 1998:108). The function of mounds from this period, including the mound at the West Berkeley site, have been attributed to providing dry ground above tidal fluctuations and creek flooding, bases for boat-based marine resource exploitation, long-term repositories for the dead, and territorial symbols (Lightfoot 1997:139). The creating of mounds through social ritual also has been suggested by Luby and Gruber (1999).

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The West Berkeley mound consists of multiple lenses of cultural, and culturally derived natural materials. Remains of architectural features including structures, fire hearths, and storage pits are incorporated in mound deposits, and human remains are abundant (Wallace and Lathrap 1975). Overall composition is approximately 23 percent shell, 8 percent stone, and 69 percent ash and sediment (Greengo 1975:67). At 6.1 meters in height, the mound at the West Berkeley site is considered to have been the second largest mound on San Francisco Bay (Ingram 1998:104).

**Criterion D: Has yielded, or may be likely to yield, information important in prehistory or history.**

**Subsistence, Settlement, Adaptation, and Paleoenvironment (3030 B.C.- A.D. 780): State Level of Significance**

The West Berkeley site has yielded information important in prehistory. The importance of this property was noted by Wallace and Lathrap (1975:59) based upon archaeological excavations in 1950 and 1954:

“As a concluding statement, it can be said that the West Berkeley shellmound proved to be of unusual significance to the understanding of San Francisco Bay’s prehistoric past. Not only has the midden’s excavation enriched the archaeological record with a considerable body of substantive data, but, more importantly, it extends knowledge of man’s presence in the bay region farther back in time by providing the first clear-cut evidences of Early Horizon occupation, hitherto recognized only at inland localities. Major and minor differences in detail distinguish the bayshore Early manifestation from its interior counterpart, though there can be little doubt of their generic affinities. The shellmound exploration also demonstrated cultural dynamics for the San Francisco Bay area in a firmer way than previously, proof being based on cultural stratigraphy in a refuse deposit of relatively great depth. The archaeological findings make it clear that change came slowly and was unspectacular. No vital alteration in the mode of existence was accomplished during the lengthy habitation period and the last West Berkeleyans lived in much the same fashion as the site’s earliest settlers.”

This archaeological site is not only important to the understanding of human adaptation to the natural environment, it also has been the source of important data on the prehistoric natural environment. Most notable are the studies by Lynn Ingram and her research group at the University of California at Berkeley who have used shell from the West Berkeley site to define precipitation episodes through the Holocene.

The West Berkeley site also has the potential to provide new data about the past. Many of the archaeological methods and techniques of today have been developed during the 47 years since this site was last excavated. These methods include advances and improvements in dating techniques, genetic testing applied to artifacts and human remains, soil chemistry and chemical



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testing, sourcing and compositional analysis of stone tools, quantification of data and computer aided patterns recognition, subsurface remote sensing, greater sophistication in faunal analysis and the recovery of faunal data, micro- and macro-botanical analysis, geoarchaeology and the ability to define a site's depositional history. The raw data on which to use these techniques are present at this site. Prior excavations have recovered faunal (including marine, terrestrial, and human) remains, stone tools and debitage, textiles, and cultural features (hearths, pits, and structures). While much of the data from the West Berkeley site, and particularly above ground mound deposits, have been destroyed from two centuries of disturbance, the basal portions of this site still exist in many places. Since this site is largely important as the oldest settlement in the San Francisco Bay Area region, these basal deposits are the most important deposits since they hold the answers to when, how, and why these first peoples chose this settlement location.

### **3.3 Integrity**

Properties that meet the criteria for eligibility must also possess integrity of location, design, setting, materials, workmanship, feeling, and association of those features necessary to convey their significance (36 CFR 60.4). It is not necessary to retain of all seven aspects of integrity to be eligible, nor is one (or more) aspect of integrity necessarily considered to be sufficient. Aspects of integrity are examined in the context of the features of significance and the relevance of particular aspects of integrity to these features.

#### **Location**

Location is the place where the historic property was constructed or the place where the historic event occurred (U.S. Department of Interior 1995:44). The West Berkeley site remains in its original location and thus retains integrity of location.

#### **Design**

Design is the combination of elements that create the form, plan, space structure, and style of a property (U.S. Department of Interior 1995:44). Integrity of design applies to the mound feature of the site as outlined under Criterion C in Section 3.2, above. While the mound at the West Berkeley site is historically important as the first example of a form and type of architectural construction and landscape modification that typified later settlement in the San Francisco Bay Area region, most of the elements that characterize its form, plan, space structure, and style have been lost, or at least are no longer visible. While cultural deposits at this site still exist, no data were collected by this study in the area covered by the mound, as determined by historic map analysis. Based upon the existence of subsurface cultural deposits at other off-mound locations at the site, it is likely that the base of the mound still exists buried below ground. It is possible that the basal portions retain the sufficient elements to define the form, plan, space structure, and style of the mound, at least in its early, and historically most important, construction episode. Integrity of design cannot currently be assessed definitively.



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## Setting

Setting is the physical environment of a historic property and refers to the character of the place in which the property played its historical role (U.S. Department of Interior 1995:45). Integrity of setting applies to the initial settlement of the San Francisco Bay Area region, 3000-1000 B.C., under Criterion A; association with Nels Nelson, (A.D. 1906-1912) under Criterion B; and the period of site occupation and use, 3030 B.C.-A.D. 780, under Criteria C and D. The physical environment of the [REDACTED] has changed dramatically through time, including during the period of occupation. The most extensive changes began in the late A.D. 1850s when the estuary at the mouth of the creek was filled, and continued into the middle twentieth century (A.D.). Thus, there is no longer integrity of setting for Criteria A, C, or D. The character of the site area has not changed substantially since Nelson first mapped the archaeological site in 1910. Both land use pattern and function have remained the same, as indicated by historic maps. Thus, the integrity of setting has been retained for the period of significance outlined under Criterion B.

## Materials

Materials are the physical elements that were combined or deposited during a particular period of time, and in a particular pattern or configuration to form a historic property (U.S. Department of Interior 1995:45). Material elements that constitute the West Berkeley site include the archaeological artifacts and features, faunal remains, and sediment matrix that form the cultural deposits. These items still exist at the resource and the integrity of materials is thus retained.

## Workmanship

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory (U.S. Department of Interior 1995:45). As was noted for the integrity of design, above, the integrity of workmanship for the mound feature may be present but no contemporary data exist for this feature. Integrity of workmanship exists in artifacts found in the cultural deposits of this property, and these artifacts include chipped and ground stone artifacts (both tools and jewelry), bone and shell beads, tooth pendants, and basketry (Wallace and Lathrap 1975:9-10).

## Feeling

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time (U.S. Department of Interior 1995:45). The changes to the physical environment (see integrity of setting, above) have destroyed any sense of place that relates to the resource's period of significance under Criteria A, C, and D. While the integrity of setting still exists for the period of significance under Criterion B, the use of that setting has been altered since 1912 by the substitution of more recent structures and the area no longer expresses its historic feeling from that period.

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## **Association**

Association is the direct link between an important historic event or person and a historic property (U.S. Department of Interior 1995:45). Like feeling, association requires the presence of physical features that convey a property's historic character. The changes to the physical environment, natural and urban, have destroyed any physical associations that relate to the resource's period of significance under Criteria A, B, C, and D.

## **3.4 Resource Evaluation**

### **Criterion A**

The West Berkeley site is the earliest known site of the initial settlements along the edge of the newly formed San Francisco Bay, a significant contribution to the broad patterns of history. The period of significance is 3000-1000 B.C. and, as the first settlement in this region, is eligible for listing under Criterion A at the state level of significance. The site retains integrity of location and materials, sufficient to uphold eligibility under this criterion.

### **Criterion B**

The West Berkeley site is associated with Nels Nelson, a person significant in the history of American archaeology. Nelson lived from A.D. 1875-1964; his association with the University of California at Berkeley was from 1903-1912. He began doing archaeological work in 1906 and was associated with Bay Area sites from that time until he left the area in 1912. His direct work at the West Berkeley site was conducted in 1910. This site is eligible for listing under Criterion B at the national level of significance. The site retains integrity of location and setting but lacks integrity of feeling and association. Location and setting are sufficient to uphold eligibility under this criterion.

### **Criterion C**

The West Berkeley site is the "type site" for the Early Horizon, Berkeley Facies. The site also contains the first example of mound building in the San Francisco Bay Area region. Both of these represent distinctive characteristics of a type, period, or method of construction. Thus, the site is eligible for listing under Criterion C at the state level of significance. The site retains integrity of location, materials, and design and these are sufficient to uphold eligibility under this criterion.

### **Criterion D**

The West Berkeley site has yielded information important in prehistory. The presence of undisturbed cultural deposits at the site indicates that it also has the potential to yield additional seminal information. Thus, the site is eligible for listing under Criterion D at the state level of



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significance. The site retains integrity of location and materials and these are sufficient to uphold eligibility under this criterion.

### **3.5 Recommendations**

Based on the application of the National Register of Historic Places criteria, above, Garcia and Associates recommends that archaeological resource CA-Ala-307 is eligible for listing in the National Register of Historic Places under Criteria A, C, and D at the state level of significance and Criterion B at the national level of significance.

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## 4.0 Impact Assessment

The City of Berkeley, as the lead agency under the California Environmental Quality Act (CEQA), must comply with the review process described in the State *CEQA Guidelines*, and is responsible for preparing environmental compliance documentation under the CEQA. Historical resources are considered to be part of the environment as defined by the CEQA.

Section 15064.5, Determining the Significance of Impacts to Archeological and Historical Resources, of the *Guide to the California Environmental Quality Act* (1991), defines the cultural sites and properties included under the term “historical resources.” For the purposes of the CEQA, such resources are defined under the following subsections:

- CEQA Section 15064.5, Subsection (a)(1). A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources.
- CEQA Section 15064.5, Subsection (a)(2). A resource included in a local register of historical resources, as defined in the Public Resources Code (Section 5020.1 (k)), or identified as significant in an historical resources survey meeting the requirements of the Public Resources Code (Section 5020.1 (g)), shall be assumed 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.
- CEQA Section 15064.5, Subsection (a)(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 to be an 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, including the following:
  - Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
  - Is associated with the lives of persons important in our past;
  - 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 value; or
  - Has yielded, or may be likely to yield, information important in prehistory or history.
- CEQA Section 15064.5, Subsection (a)(4). The fact that a resource is: 1) not listed in, or determined to be eligible for listing in, the California Register of Historical Resources; 2) not included in a local register (pursuant to the Public Resources Code); or 3) identified in an historical resources survey (meeting the criteria listed in the Public Resources Code) does not



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preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1 (j) or 5024.1.

The West Berkeley site, CA-Ala-307, meets the definition of a historical resource under two criteria. First, the resource is included in a local register of historical resources, as City of Berkeley Landmark 228. Second, the resource is being recommended by Garcia and Associates as eligible for listing on the National Register of Historic Places, and by extension, the California Register of Historical Resources. If the City of Berkeley concurs, this resource would be considered to be historically significant resource for CEQA purposes.

According to the CEQA (Section 15064.5 (b)), a project with an effect that may cause a substantial adverse change in the significance of an historical resources is a project that may have a significant effect on the environment. Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired. The significance of a resource is materially impaired when the physical characteristics that convey its historical significance are materially altered.

The archaeological deposits that constitute the West Berkeley site are the primary physical characteristics that convey the resource's historical significance and justify its inclusion in the California Register of Historical Resources. Physical demolition, destruction, relocation, or alteration of the archaeological deposits by the redevelopment projects would be a significant impact upon this resource. The capital improvement project proposed includes modifications to the streetscape, reconfiguration of parking, and improvements to the [REDACTED]. These modifications include changes to lighting, drainage infrastructure, vegetation, and street width that would include subsurface disturbance. If such disturbance extended into cultural deposits, a significant impact would result. Such impacts can be avoided by limiting the depth of ground disturbance below contemporary grade or by filling to raise the grade to a level that subsurface work would be above cultural deposits. The depths of cultural deposits in various streets can be found in other parts of this report.

The CEQA Guidelines Section 15126.4 state that:

“Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.”

Methods of preservation in place outlined in Section 15126.4 include

- planning construction to avoid archaeological sites;
- incorporation of sites within parks, greenspace, or other open space;
- covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site; and
- deeding the site into a permanent conservation easement.

If, however, cultural deposits cannot be avoided, the significant impact can be reduced to a less-than-significant level by implementing all of the following mitigation measures.

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**Mitigation Measure 1.** The recovery of a representative and statistically valid sample of data from the West Berkeley site, conducted according to the CEQA Guidelines Section 15126.4 (C) and (D). Mitigation must be completed 15 days prior to the initiation of construction and must be undertaken by a Registered Professional Archaeologist individual meeting The Secretary of the Interior's Proposed Historic Preservation Professional Qualification Standards for Prehistoric Archeology as published in the Federal Register on 20 June 1997. Mitigation will be considered complete when a final data recovery report for the resource is accepted by the California Historical Resources Information System. This measure mitigates for Criterion D.

**Mitigation Measure 2.** The City of Berkeley's City Policy for Encountering Native American Human Remains must be implemented for all aspects of the project. Mitigation will be considered complete when a letter certifying compliance with all policy-defined procedures is filed with the City of Berkeley's City Attorney and the Alameda County Coroner's office. The letter must be filed within 30 days of completion of the policy terms. This measure mitigates for Criterion D.

**Mitigation Measure 3.** Existing collections of archaeological and archival materials from the West Berkeley site, not limited to the University of California, will be researched and identified. Collections of materials will be cataloged, curated, and archived to the standards specified in 36 CFR 79, the *State of California Guidelines for the Curation of Archeological Collections* (1993), and the American Association of Museums' *The New Museum Registration Methods* (Buck and Gilmore 1998). Mitigation will be considered complete when a report of activities, inventory of materials, and material finding aid from the site is published and filed with public and academic libraries, and research institutions including the main and anthropological libraries of each campus of the University of California and California State University, main library of each of California's county library systems, historical societies of each California county, City of Berkeley library, and the California Historical Resources Information System. The report must be filed within four years of the initiation of capital improvement project construction. This measure mitigates for Criteria A, C, and D.

**Mitigation Measure 4.** Collections of archival materials relating to the work of Nels Nelson at the West Berkeley site, other San Francisco Bay Area archaeological sites, and his association with the University of California will be identified and compiled. This work will be undertaken by an individual meeting The Secretary of the Interior's Proposed Historic Preservation Professional Qualification Standards for History as published in the Federal Register on 20 June 1997. Mitigation will be considered complete when a report of activities, inventory of materials, material finding aid, and history are published and filed with public and academic libraries, and research institutions including the main and anthropological libraries of each campus of the University of California and California State University, main library of each of California's county library systems, historical societies of each California county, City of Berkeley library, and the California Historical Resources Information System. The report must be filed within two years of the initiation of capital improvement project construction. This measure mitigates for Criterion B.



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**Mitigation Measure 5.** A public monument must be erected within the boundaries of the resource identifying the resource, the reasons it is significant, and places to obtain additional information on the resource and collections from/about the resource. The City of Berkeley is required to maintain the monument in perpetuity. Monument replacement, substitution, or modification through time is acceptable provided that the monument continues to identify the resource, the reasons it is significant, and places to obtain additional information. Mitigation will be considered complete when the monument is installed, open to the public, and announced in the newspapers of general circulation in Berkeley. This mitigation must be completed within two years of the initiation of capital improvement project construction. This measure mitigates for Criterion A.

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## **Appendix A: Correspondence**

CALIFORNIA  
HISTORICAL  
RESOURCES  
INFORMATION  
SYSTEM



ALAMEDA  
COLUSA  
CONTRA COSTA  
DEL NORTE  
HUMBOLDT  
LAKE

MARIN  
MENDOCINO  
MONTEREY  
NAPA  
SAN BENITO  
SAN FRANCISCO

SAN MATEO  
SANTA CLARA  
SANTA CRUZ  
SOLANO  
SONOMA  
YOLO

Northwest Information Center  
Sonoma State University  
1801 East Cotati Avenue  
Rohnert Park, California 94928-3609  
Tel: 707.664.2494 • Fax: 707.664.3947  
E-mail: nwic@sonoma.edu

CULTURAL/HISTORICAL RESOURCES CONSULTANT RECORDS SEARCH REQUEST FORM

Date: 9 Feb 2001

NWIC File No.: \_\_\_\_\_

Name: Christopher DORE Phone: 415.458.5803 x116

Affiliation: Garcia and Associates

Address: 1 Saunders Avenue, San Anselmo, CA 94960-1719

Project: West Berkeley Capital Improvements

Street Address of Project: Various streets in West Berkeley (see map)

Quad: Oakland West County: Alameda

Please include the following information for the project area shown on the attached map. Circle and/or fill-in as necessary:

DATA BASE

List of Sites	within the project area	<u>yes</u> / no
	within a <u>1/4</u> mile radius	<u>yes</u> / no
List of Studies	within the project area	<u>yes</u> / no
	within a <u>1/4</u> mile radius	<u>yes</u> / no
Mapped Sites	within the project area	<u>yes</u> / no
	within a <u>1/4</u> mile radius	<u>yes</u> / no
Mapped Studies	within the project area	<u>yes</u> / no
	within a <u>1/4</u> mile radius	<u>yes</u> / no
Copies of entire Resource Records (site records)		<u>yes</u> / no
Copies of entire Study Reports		<u>yes</u> / no
Bibliographical References		<u>yes</u> / no

CONTINUED ON THE BACK >>>



## INVENTORIES

Please check:

within the project area

☒ yes ☐ no

within a 1/4 mile radius

☒ yes ☐ no

Historic Properties Directory, including:

National Register of Historic Places

California Register

California Historical Landmarks

California Points of Historical Interest

☒ yes ☐ no

California Inventory of Historic Resources:

☒ yes ☐ no

Other Historic Inventories, if applicable

☒ yes ☐ no

OTHER (e.g., historic maps, GLO Plats, Soil Survey Maps):

Please list:

All available historic maps & photos.

☒ yes ☐ no

CALIFORNIA  
HISTORICAL  
RESOURCES  
INFORMATION  
SYSTEM



ALAMEDA  
COLUSA  
CONTRA COSTA  
LAKE

MARIN  
MENDOCINO  
MONTEREY  
NAPA  
SAN BENITO  
SAN FRANCISCO

SAN MATEO  
SANTA CLARA  
SANTA CRUZ  
SOLANO  
SONOMA  
YOLO

Northwest Information Center  
Sonoma State University  
1801 East Cotati Avenue  
Rohnert Park, California 94928-3609  
Tel: 707.664.2494 • Fax: 707.664.3947  
E-mail: nwic@sonoma.edu

AGREEMENT OF CONFIDENTIALITY

FILE NO.: 01-138

I, the undersigned, have been granted access to historical resources data on file at the Northwest Information Center of the Historical Resources Information System. I understand the confidential nature of this information and will not disclose specific archaeological site locations to unauthorized individuals or in publicly distributed documents without written consent from the State Office of Historic Preservation.

I agree to submit to this Information Center completed site records and preliminary reports pertinent to the project(s) noted below no later than thirty days after completion of field investigation. Subsequent reports will also be forwarded, if applicable.

I understand that all services performed in-person and by Information Center staff are subject to a one hour minimum charge, thereafter increased by the half hour, and that payment must be remitted within thirty days of billing.

Failure to comply with the above agreement is grounds for denial of access to the historical resources data on file at the Northwest Information Center.

\*\*\* PLEASE SIGN AND RETURN THIS FORM. SEE ATTACHED INVOICE. \*\*\*

NAME: Christopher Dore SIGNATURE/DATE: \_\_\_\_\_  
AFFILIATION: Garcia and Associates  
ADDRESS: 1 Saunders Avenue, San Anselmo, CA 94960-1719  
TELEPHONE: 415-458-5803 FAX: \_\_\_\_\_  
PURPOSE OF RESEARCH: XX planning \_\_\_\_\_ scientific/academic \_\_\_\_\_ other  
PROJECT: West Berkeley Capital Improvements  
COUNTY: Alameda  
MAP: Oakland West 7.5'  
COMMENTS:

-----STAFF USE ONLY-----

Date request rec'd: Mail 2/14/01 Phone \_\_\_\_\_ Fax \_\_\_\_\_ In person \_\_\_\_\_  
Date of response: Mail 2/23/01 Phone 2/23/01 Fax 2/23/01 In person \_\_\_\_\_  
Staff processing: 2 hour(s) @ \$120/hour \$ 240.00  
\*\*\* CHECK IN: \_\_\_\_\_ CHECK OUT: \_\_\_\_\_ \*\*\*  
In person research: \_\_\_\_\_ hour(s) @ \$80/hour/person \$ \_\_\_\_\_  
Xerox/Computer Search: 480 page(s) @ \$.15/page \$ 72.00  
2.5 hour(s) @ \$30/hour \$ 75.00  
Fax @ \$10 minimum charge for up to 10 pages, \$1/page thereafter: \$ 10.00  
Other: \$ \_\_\_\_\_

Cancellation Fee\* @ \$40.00/person \$ \_\_\_\_\_  
\*to be paid if IC is not notified within 24 hours of scheduled appointment.

Rapid Response surcharge of 50% of total cost:

SUBTOTAL \$ \_\_\_\_\_  
SURCHARGE \$ \_\_\_\_\_

TOTAL \$ 397.00  
=====

Lisa C. Hagel  
Information Center Staff

Invoice No. 12227



CALIFORNIA  
HISTORICAL  
RESOURCES  
INFORMATION  
SYSTEM



ALAMEDA  
COLUSA  
CONTRA COSTA  
LAKE

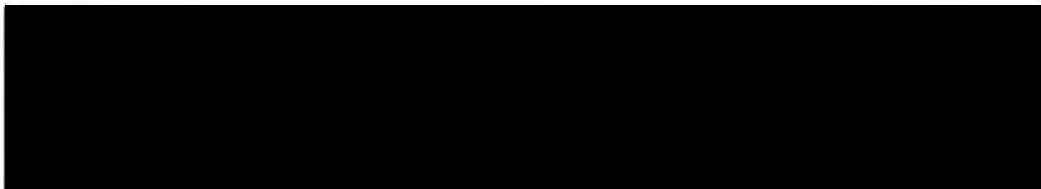
MARIN  
MENDOCINO  
MONTEREY  
NAPA  
SAN BENITO  
SAN FRANCISCO

SAN MATEO  
SANTA CLARA  
SANTA CRUZ  
SOLANO  
SONOMA  
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Rohnert Park, California 94928-3609  
Tel: 707.664.2494 • Fax: 707.664.3947  
E-mail: nwic@sonoma.edu

01-138

Comments:



Enclosed are copies of the above referenced site records and reports. Also copied the historic inventory indices for Berkeley and historic maps of the area.

Bibliographic references for the reports were faxed to your office.

Site and study locations are plotted on your map.

9 February 2001

Ms. Debbie Pilas-Tredway  
California Native American Heritage Commission  
915 Capitol Mall, Room 364  
Sacramento, CA 95814  
*VIA FACSIMILE TO 1.916.657.5390*

Re: Native American Contacts and Inventory Check in Alameda County

Dear Ms. Pilas-Tredway:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involves redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area. Please provide us with a list of representatives from the Native American community to contact regarding cultural resources on this project. Please also check your inventory of sacred lands for properties that may be affected by the project.

The project area is known to be the [REDACTED]. This site has a long history of disturbance from deliberate removal, looting, and archaeological excavations. Human remains have been documented at this site. The exact boundaries of this resource, however, are currently unknown. It also is not known whether any intact cultural deposits still exist at all. In addition to CA-Ala-307, there are significant architectural resources [REDACTED]. There is also moderate potential for the presence of archaeological resources from the historic period.

The cultural resources work we are undertaking will consist of a series of two-inch sediment cores to be extracted from the [REDACTED]. The preliminary locations of these cores are indicated on the enclosed map. This coring work is designed to identify anthropogenic sediments within the project area and to provide criteria upon which to evaluate these deposits as being in a primary or secondary context. Note that while the capital improvement project area will not expand beyond the area that is



GANDA

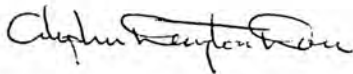


Garcia and Associates  
9 February 2001  
Page 2

indicated, the coring program may be extended beyond the work areas to provide a better distribution map. Additional cores, however, will not extend beyond the area contained by [REDACTED].

Please let me know if you have any questions or need additional information. Thank you.

Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure (map)

STATE OF CALIFORNIAGray Davis, Governor**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
SACRAMENTO, CA 95814  
(916) 653-4082  
Fax (916) 657-5390



March 7, 2001

Christopher Dore  
Garcia and Associates  
1 Saunders Avenue  
San Anselmo, CA 94960

RE: City of Berkeley for capital improvement projects – Alameda County

Sent By Fax: (415) 458-5829  
Pages Sent: 3

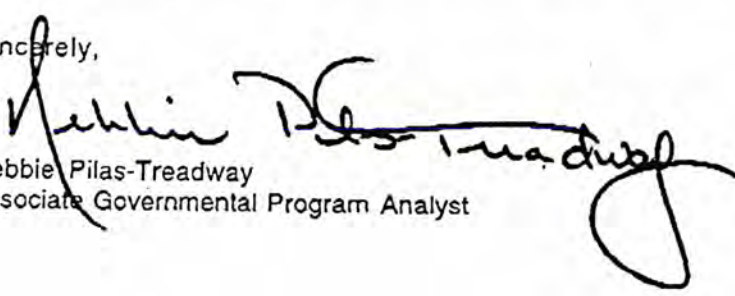
Dear Mr. Dore:

A record search of the sacred lands file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend other with specific knowledge. A minimum of two weeks must be allowed for responses after notification.

If you receive notification of change of addresses and phone numbers from any 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 me at (916) 653-4038.

Sincerely,

  
Debbie Pilas-Treadway  
Associate Governmental Program Analyst



**NATIVE AMERICAN CONTACTS**  
**Alameda County**  
**March 6, 2001**

✓ Jean-Marie Feyling 679 Cambridge Road Redwood City, CA 94061-1 (650) 364-1130	Ohlone/Coastanoan	✗ Katherine Erolinda Perez 1234 Luna Lane Stockton, CA 95206 (209) 941-1900 work	Ohlone/Costanoan Northern Valley Yokut Bay Miwok
✓ Marjorie Ann Reid 4869 Englewood Drive San Jose, CA 95129 (408) 253-4202	Ohlone/Coastanoan	✗ Linda G. Yamane 1195 B Rousch Ave Seaside, CA 93955 (831) 394-5915	Ohlone/Costanoan
✓ Ella Rodriguez PO Box 1411 Salinas, CA 93902 (831) 632-0490	Ohlone/Costanoan	✓ Michelle Zimmer 4952 McCoy Avenue San Jose, CA 95130 (408) 364-1391 - Home (408) 364-1393 - Fax (408) 210-8061 - Cell	Ohlone/Costanoan
✓ Irene Zwiernlein 789 Canada Road Woodside, CA 94062 (650) 851-7747 - Home (650) 851-7489 - Fax (408) 364-1393 - Cell	Ohlone/Costanoan	✓ Thomas P. Soto PO Box 269 Foresthill, CA 95631 (530) 367-4402 (530) 367-5083	Ohlone/Costanoan
✓ Jakki Kehl 5461 Beaver Lane Byron, CA 94514 (925) 516-1670	Ohlone/Costanoan	✗ Indian Canyon Mutsun Band of Costanoan Ann Marie Sayer, Chairperson P.O. Box 28 Hollister, CA 95024-0 (510) 637-4238	Ohlone/Costanoan

This list is current only as of the date of this document.

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

This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed capital improvement projects in the City of Berkeley, Alameda County.

NATIVE AMERICAN CONTACTS  
Alameda County  
March 6, 2001

The Ohlone Indian Tribe

Andrew Galvan

) Box 3152

Mission San Jose, CA 94539

(510) 656-0787 - Voice

(510) 882-0527 - Cell

(510) 656-0780 - Fax

chochenyo@AOL.com

Ohlone/Costanoan

Trina Marine Ruano Family

Ramona Garibay, Representative

37974 Canyon Hts. Drive

Fremont, CA 94536

(510) 792-1642

(510) 673-5029 - Cell

Ohlone/Costanoan

*This list is current only as of the date of this document.*

*Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7000.3 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.*

*This list is only applicable for contacting local Native Americans with regards to the cultural assessment for the proposed  
ital improvement projects in the City of Berkeley, Alameda County.*



9 March 2001

Ms. Jean-Marie Feyling  
679 Cambridge Road  
Redwood City, CA 94061-1

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Feyling:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

The State of California Native American Heritage Commission (NAHC) recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this study area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these other individuals.

We have already checked the records of the NAHC and the California Historical Resources Information System (CHRIS). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the immediate project area. The CHRIS has reported that the project area is known to be the [REDACTED].

[REDACTED]. This site has a long history of disturbance from deliberate removal, looting, and archaeological excavations. Human remains have been documented at this site. The exact boundaries of this resource, however, are currently unknown. It also is not known whether any intact cultural deposits still exist at all.

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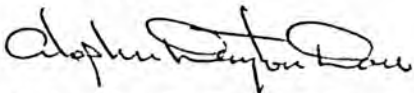
GANDA

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We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware that these resources exist. Feel free to contact me with any information, questions or concerns you may have. I will assume that if you do not respond to this information request by 15 April 2001, you do not have information to contribute.

Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

9 March 2001

Ms. Marjorie Ann Reid  
4869 Englewood Drive  
San Jose, CA 95129

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Reid:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

9 March 2001

Ms. Ella Rodriguez  
P.O. Box 1411  
Salinas, CA 93902

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Rodriguez:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure



9 March 2001

Ms. Irene Zwierlein  
789 Canada Road  
Woodside, CA 94062

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Zwierlein:

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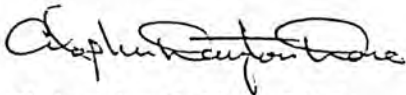
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Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

chrisd

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**Subject:** West Berkeley Capital Improvements Projects  
**Entry Type:** Phone call  
**Contact:** Irene Zwierlein  
**Start:** Mon 3/19/2001 1:25 PM  
**End:** Mon 3/19/2001 1:25 PM  
**Duration:** 0 hours

Dore received a voice mail message from Ms. Zwierlein saying that she has knowledge of the resources in the area and would like to talk. She asked me to call back the morning of 20 March.



chrisd

**Subject:** West Berkeley Capital Improvement Projects  
**Entry Type:** Phone call  
**Start:** Tue 3/20/2001 9:36 AM  
**End:** Tue 3/20/2001 9:38 AM  
**Duration:** 2 minutes  
**Categories:** Business

Dore returned the call of Ms. Zweirlein.

Ms. Zweirlein wanted to make sure I was aware of the unreported finds from the Level 3 project along the [REDACTED] vicinity. I told her that we had received notes and site records from Tremaine & Associates. Ms. Zweirlein also noted that she has six people available for monitoring if needed.

9 March 2001

Ms. Jakki Kehl  
5461 Beaver Lane  
Byron, CA 94514

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Kehl:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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human remains. There also are significant architectural resources [REDACTED]  
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archaeological resources from the historic period.

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Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure



chrisd

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**Subject:** West Berkeley Capital Improvements Projects  
**Entry Type:** Phone call  
**rt:** Tue 3/20/2001 8:10 AM  
**End:** Tue 3/20/2001 8:40 AM  
**Duration:** 30 minutes

Dore called Ms. Kehl to discuss the project.

Points made by Ms. Kehl:

- Native American monitoring definitely needed.
- There are shallow archaeological deposits in the area as evidenced by the [REDACTED]  
[REDACTED] Alternatives to digging should be reviewed (such as hanging lights from the over crossing).
- Notes from the Level 3 fiber project in the [REDACTED] may not be accurate.
- There has been midden found on both the [REDACTED].
- There is a deposit of bone (animal) at [REDACTED] that appears to be from the historic period.

We arranged to meet and walk the area on 29 March.



GARCIA AND ASSOCIATES  
1 SAUNDERS AVENUE  
SAN ANSELMO, CA 94960

GANDA

PLACE STICKER AT TOP OF ENVELOPE  
TO THE RIGHT OF RETURN ADDRESS  
FOLD AT DOTTED LINE

**CERTIFIED MAIL**



7099 3400 0015 4428 1344



Rt. \$ \_\_\_\_\_  
Carr Init. \_\_\_\_\_  
Date \_\_\_\_\_

☐ Not Deliverable As Addressed  
Unable To Forward

☐ Insufficient Address

☐ Moved, Left No Address

☒ Unclaimed ☐ Refused

☐ Attempted-Not Known

☐ No Such Street ☐ Number

☐ Vacant ☐ Illegible

☐ No Mail Receipts

☐ Box Closed-No Order

☐ Returned For Better Address

☒ Jakki Kehl

5461 Beaver Lane  
Byron, CA 94514



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1st NOTICE 3-10

2nd NOTICE 2/26

RETURNED 4/7

34960/1713

9 March 2001

The Ohlone Indian Tribe  
Andrew Galvan  
P.O. Box 3152  
Mission San Jose, CA 94539

Re: City of Berkeley Projects in West Berkeley

Dear Mr. Galvan:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

9 March 2001

Trina Marine Ruano Family  
Ramona Garibay, Representative  
37974 Canyon Hts. Drive  
Fremont, CA 94536

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Garibay:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure



9 March 2001

Ms. Katherine Erolinda Perez  
1234 Luna Lane  
Stockton, CA 95206

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Perez:

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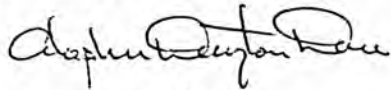
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Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

9 March 2001

Ms. Linda G. Yamane  
1195 B Rousch Ave.  
Seaside, CA 93955

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Yamane:

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Enclosure

9 March 2001

Ms. Michelle Zimmer  
4952 McCoy Avenue  
San Jose, CA 95130

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Zimmer:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

The State of California Native American Heritage Commission (NAHC) recommended that we contact you to provide an opportunity for you to contribute information about cultural resources in this study area. An important element of our investigation is to identify sites, resources, or locations of cultural importance to the local Native American community. We would appreciate receiving any information you have concerning these resources in the project area. If you cannot supply information but know of others who can, we would appreciate it if you would contact us with the names of these other individuals.

We have already checked the records of the NAHC and the California Historical Resources Information System (CHRIS). The NAHC reports that a search of the sacred lands file failed to indicate the presence of Native American cultural resources in the immediate project area. The CHRIS has reported that the project area is known to be the [REDACTED]

[REDACTED]. This site has a long history of disturbance from deliberate removal, looting, and archaeological excavations. Human remains have been documented at this site. The exact boundaries of this resource, however, are currently unknown. It also is not known whether any intact cultural deposits still exist at all.

In addition to [REDACTED], there is a new prehistoric site that is reported in the project area called the [REDACTED]. The spatial extent of this site has not been defined but it has been recorded as a prehistoric site with the potential for



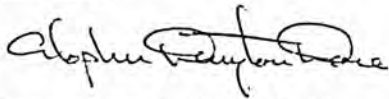
GANDA

human remains. There also are significant architectural resources [REDACTED]  
[REDACTED]. There is also moderate potential for the presence of  
archaeological resources from the historic period.

The cultural resources work we are undertaking will consist of a series of two-inch sediment cores to be extracted from the [REDACTED]. The preliminary locations of these cores are indicated on the enclosed map. This coring work is designed to identify anthropogenic sediments within the project area and to provide criteria upon which to evaluate these deposits as being in a primary or secondary context. Note that while the capital improvement project area will not expand beyond the area that is indicated, the coring program may be extended beyond the work areas to provide a better distribution map. Additional cores, however, will not extend beyond the area contained by [REDACTED]. Given the high probability of encountering human remains during this work, we will be requesting a most likely descendent from the NAHC as specified in Section 15064.5(d) of the CEQA Guidelines.

We encourage you to participate in this process. The potential impacts that this project may have on cultural resources important to the Native American community cannot be evaluated unless we are aware that these resources exist. Feel free to contact me with any information, questions or concerns you may have. I will assume that if you do not respond to this information request by 15 April 2001, you do not have information to contribute.

Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure



9 March 2001

Mr. Thomas P. Soto  
P.O. Box 269  
Foresthill, CA 95631

Re: City of Berkeley Projects in West Berkeley

Dear Mr. Soto:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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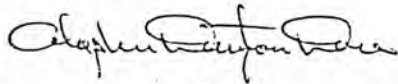
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Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

9 March 2001

Indian Canyon Mustun Band of Costonoan  
Ms. Anne Marie Sayer, Chairperson  
P.O. Box 28  
Hollister, CA 95024-0

Re: City of Berkeley Projects in West Berkeley

Dear Ms. Sayer:

We are providing cultural resources consulting to the City of Berkeley for capital improvement projects in the western portion of the city. The projects primarily involve redesigning street-scapes, parking, and the railroad platform. Work will only take place on city owned streets and in the railroad right-of-way. The project area is bound by [REDACTED]. I have included a map showing the project area.

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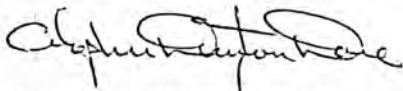


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Sincerely,



Christopher D. Dore, Ph.D.  
Cultural Resources Manager  
Anthropologist / Registered Professional Archaeologist

Enclosure

# PHONE CALL

FOR	<i>Chris</i>	DATE	<i>3/16</i>	TIME	<i>9:28</i> AM
M.	<i>Anna Marie Sayers</i>				
OF	<i>Traveltime Jackson (Oregon)</i>				
PHONE	<i>831-637-4238</i>		FAX		
MESSAGE	<i>16 - March 9th letter</i>				
SIGNED	<i>bg</i>	<input type="checkbox"/> TELEPHONED <input type="checkbox"/> RETURNED YOUR CALL <input checked="" type="checkbox"/> PLEASE CALL <input type="checkbox"/> WILL CALL AGAIN <input type="checkbox"/> CAME TO SEE YOU <input type="checkbox"/> WANTS TO SEE YOU			

Adams  
1154

**chrisd**

---

**Subject:** West Berkeley Capital Improvement Projects  
**Entry Type:** Phone call  
**Contact:** Anne Marie Sayer  
  
**Start:** Fri 3/16/2001 9:39 AM  
**End:** Fri 3/16/2001 9:49 AM  
**Duration:** 10 minutes  
  
**Categories:** Business

Returned a call from Anne Marie Sayer regarding Native American issues.

She noted that there are issues in the area and asked for a briefing on the nature of the redevelopment projects and the archaeological work that we are doing. A briefing was provided.

She expressed a concern that the [REDACTED] was inadequate based upon burials that were missed on a recent project in San Jose. I explained that our interval was based on previous archaeological data including auger testing by Archeo-Tec and Nelson's historic site map. These indicate that the site was quite large and, therefore, we believe that our interval is sufficient to define site boundaries.

She asked what the plans were for Native American involvement. I told her that it was the intent of the City to have a burial agreement in place with a MLD prior to any archaeological work as outlined in the CEQA Guidelines. She said that she believes a MLD won't be appointed until human remains are found. Given this, she suggested the City prepare a MOU with all individuals on the NAHC list.

She asked to be kept informed as this project develops.

She asked to be considered as a monitor for the project.

She asked for the City's contact person and I gave her Amalia Lorentz's name and phone number.



18 May 2001

Mr. Thomas P. Soto  
P.O. Box 269  
Foresthill, CA 95631

Re: Native American Monitor Needed

Dear Mr. Soto:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

The successful applicant will have extensive monitoring experience in the San Francisco Bay area, be registered with the California Native American Heritage Commission, and be available full time during the duration of the project. Duties of the position can be expected to include reviewing the monitoring guidelines and policies of the City of Berkeley, conducting on-site monitoring, completion of daily monitoring logs, and writing a final monitoring report. Delegating work responsibilities to others than the individual applicant will not be permitted.

Applications from subcontractors are welcome, though subcontractors must meet the requirements of both the City of Berkeley and Garcia and Associates. Subcontractors must provide application information for all individuals they intend to use on the job and work authorization will be given on an individual basis.

To apply, send a resume with a cover letter indicating availability for the month of June, references, and salary requirements to:

Christopher D. Dore  
Garcia and Associates  
1 Saunders Avenue  
San Anselmo, CA 94960-1719

Applications must be received by 30 May 2001. Email applications are encouraged if they are sent as Adobe Acrobat files to [cdore@garciaandassociates.com](mailto:cdore@garciaandassociates.com). Questions about the monitoring job or the application process can be directed to Christopher Dore at [cdore@garciaandassociates.com](mailto:cdore@garciaandassociates.com) or at 415.458.5803 x16.

Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA

18 May 2001

Ms. Ramona Garibay, Representative  
Trina Marine Ruano Family  
37974 Canyon Heights Drive  
Fremont, CA 94536

Re: Native American Monitor Needed

Dear Ms. Garibay:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA

18 May 2001

Ms. Michelle Zimmer  
4952 McCoy Avenue  
San Jose, CA 95130

Re: Native American Monitor Needed

Dear Ms. Zimmer:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager





18 May 2001

Ms. Irene Zwierlein  
789 Canada Road  
Woodside, CA 94062

Re: Native American Monitor Needed

Dear Ms. Zwierlein:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

The successful applicant will have extensive monitoring experience in the San Francisco Bay area, be registered with the California Native American Heritage Commission, and be available full time during the duration of the project. Duties of the position can be expected to include reviewing the monitoring guidelines and policies of the City of Berkeley, conducting on-site monitoring, completion of daily monitoring logs, and writing a final monitoring report. Delegating work responsibilities to others than the individual applicant will not be permitted.

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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA

18 May 2001

Ms. Katherine Erolinda Perez  
1234 Luna Lane  
Stockton, CA 95206

Re: Native American Monitor Needed

Dear Ms. Perez:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

The successful applicant will have extensive monitoring experience in the San Francisco Bay area, be registered with the California Native American Heritage Commission, and be available full time during the duration of the project. Duties of the position can be expected to include reviewing the monitoring guidelines and policies of the City of Berkeley, conducting on-site monitoring, completion of daily monitoring logs, and writing a final monitoring report. Delegating work responsibilities to others than the individual applicant will not be permitted.

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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



18 May 2001

Ms. Linda G. Yamane  
1195 B Rousch Avenue  
Seaside, CA 93955

Re: Native American Monitor Needed

Dear Ms. Yamane:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

The successful applicant will have extensive monitoring experience in the San Francisco Bay area, be registered with the California Native American Heritage Commission, and be available full time during the duration of the project. Duties of the position can be expected to include reviewing the monitoring guidelines and policies of the City of Berkeley, conducting on-site monitoring, completion of daily monitoring logs, and writing a final monitoring report. Delegating work responsibilities to others than the individual applicant will not be permitted.

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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA



18 May 2001

Ms. Ella Rodriguez  
P.O. Box 1411  
Salinas, CA 93902

Re: Native American Monitor Needed

Dear Ms. Rodriguez:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

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Sincerely,



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Cultural Resource Manager



GANDA

18 May 2001

Ms. Jakki Kehl  
5461 Beaver Lane  
Byron, CA 94514

Re: Native American Monitor Needed

Dear Ms. Kehl:

Garcia and Associates has been authorized by the City of Berkeley, California to hire an experienced Native American Monitor for an upcoming archaeological investigation in the vicinity of the [REDACTED]. This temporary job will last approximately two weeks, and is tentatively scheduled to begin on 5 June 2001. Applications are invited from all qualified candidates.

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Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA

18 May 2001

Mr. Andrew Galvan  
The Ohlone Indian Tribe  
P.O. Box 3152  
Mission San Jose, CA 94539

Re: Native American Monitor Needed

Dear Mr. Galvan:

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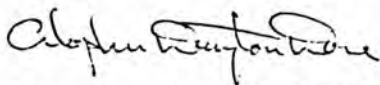
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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA



18 May 2001

Ms. Anne Marie Sayer, Chairperson  
Indian Canyon Mutsun Band of Costanoan  
P.O. Box 28  
Hollister, CA 95024

Re: Native American Monitor Needed

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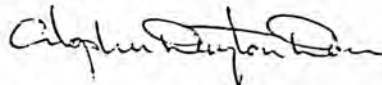
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Sincerely,



Christopher D. Dore, Ph.D. RPA  
Cultural Resource Manager



GANDA

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## **Appendix B: City Policy for Encountering Native American Human Remains**

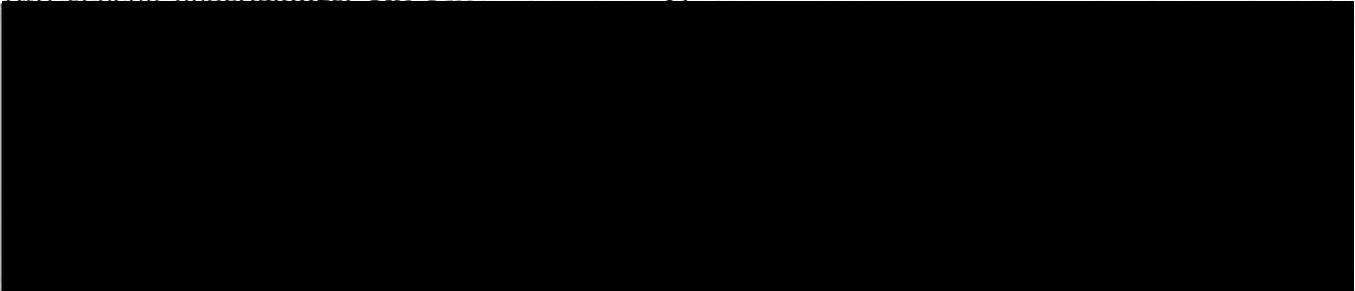
## Procedures when encountering Native American human remains during West Berkeley Projects work

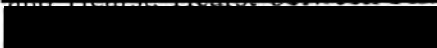
### A. DEFINITIONS

**Dissociated Human Remains.** Dissociated human remains are complete or fragmentary human bone or teeth that are isolated and cannot be clearly associated with any definable burial or cremation.

**Human Remains.** For the purpose of this agreement "human remains" refers to identified Native American burials or cremations and their associated funerary offerings. In cases where a burial pit cannot be clearly defined, artifacts in close proximity to the burial or cremation are considered funerary offerings. Close proximity is defined as within a horizontal distance of 50 cm and not more than 20 cm above or 10 cm below a recognized burial or cremation. A burial is defined as three or more associated human bones that show some reasonable level of articulation.

**West Berkeley Projects.** For purposes of this Agreement, the "West Berkeley Projects" consist of two general undertakings. The First are various types of street reconstruction and improvements on



 For purposes of this Agreement, the West Berkeley Projects include, but are not limited to, construction of the specified improvements and alterations themselves, as well as any archaeological investigations, geomorphological studies or other specialized analyses that may be deemed appropriate, as well as preconstruction testing, and any other ground disturbances related to the projects.

### B. GENERAL GUIDELINES

1. If human remains are encountered, they will be treated with the dignity and respect due them as the remains of people.
2. All federal and state laws and regulations that deal with the treatment and disposition of human remains and associated burial artifacts will be complied with fully.
3. Preservation *in situ* will be the preferred practice for human remains and associated burial artifacts. Thus, no human burials will be disinterred unless they are subject to disturbance by West Berkeley Project activities. If human remains are inadvertently encountered but are not subject to further West Berkeley Project disturbance, after the legal procedures have been complied with, the Most Likely Descendent (MLD) in consultation with the City will direct the subsequent procedure(s). This could involve archaeological documentation prior to reburial and leaving the remains as found.



4. Human burials encountered during West Berkeley Project activities that are subject to further disturbance will be exhumed archaeologically and reburied along with any associated burial artifacts in a place designated by the City for this purpose. Prior to reburial, documentation and non-destructive analyses of human remains and any associated burial artifacts will be discussed with the City and conducted according to the requirements of the most likely descendants. (Non-destructive analyses may be taken to mean analytical procedures such as observation, photography, measurement, and mapping, which do not involve permanent alteration of human remains or artifacts.)

5. It is understood that the City and its consultants will not purposely search for or excavate recognizable human cemeteries or burial grounds. However, it is recognized that burials may be unintentionally encountered during the normal course of test excavations.

6. Human remains that are not determined to be Native American through morphology, age, genetic traits, associated artifacts, or other scientific methods are not subject to the terms of this agreement. Determinations are to be made by the Alameda County Coroner in compliance with Section 7050.5 of the California Health and Safety Code and Sections 5097.98 and 5097.99 of the California Public Resources Code. Human remains that cannot be attributed to an ethnic or cultural group will be documented and reburied on-site.

#### **C. NATIVE AMERICAN PARTICIPATION**

As per the terms of Contract #5141, Garcia and Associates will appoint a Native American Monitor or Monitors to oversee archaeological and other Project activities that have the potential to disturb human remains in the area of their traditional cultural jurisdiction. The Monitor will be a subcontractor or employee of Garcia and Associates.

As per the terms of Contract #5141, Garcia and Associates will appoint a Native American Monitor or Monitors to monitor archaeological and other Project activities that have the potential to disturb Native American human remains in the area of their traditional cultural jurisdiction. The Monitor will be an employee or subcontractor of Garcia and Associates. The role of the Monitor will be to ensure that the procedures outlined in this document are fulfilled. Since the Monitor is under the supervision of Garcia and Associates' staff, non-compliance reports are to be made directly to the City of Berkeley's project manager who will have the authority to stop work and resolve non-compliance issues.

#### **D. GENERAL PROCEDURES**

1. Unless otherwise arranged with the City, all of the procedures listed herein will be undertaken in consultation with the appointed Monitor.

2. If human remains other than dissociated teeth or bones are encountered during West Berkeley Project activities, the responsible field supervisor will order that all work in the vicinity of any remains encountered be suspended until the City/contractor can comply with Section 7050.5 of the Health and Safety Code and Sections 5097.98 and 5097.99 of the Public Resources Code. In addition, the responsible field supervisor will notify the City.

3. The county coroner shall immediately be notified upon the discovery of human remains. (H&S Code §7050.5(b).) If the coroner determines that the remains are prehistoric Native American in origin, the Native American Heritage Commission (NAHC) shall be notified. (H&S Code §7050.5(c).)

4. In the case of a Native American interment(s) or human remains, the City shall consult with the NAHC, which shall identify the MLD for purposes of consultation. (Pub.Res. Code §5097.98.) The MLD shall have the City's permission to visit the site for purposes of making recommendations regarding the treatment and disposition of the human remains and any burial-associated artifacts. The MLD shall make recommendations to the NAHC within 24 hours concerning the treatment and disposition of the remains. The NAHC and the City will consult on the final disposition of the remains. The preferred practice for the treatment of burials and associated funerary offerings is to leave those remains in place, subject only to non-destructive recording and evaluation necessary to meet the legal requirements of Health and Safety Code section 7050.5. Additional non-destructive archaeological evaluation of the remains (i.e. determination of orientation, associated grave offerings, condition, and other pertinent archaeological information) will be conducted only after consultation with the MLD and landowner. The remains will be protected until reburial is completed.

5. In those cases where the remains will be disrupted by the proposed construction project or future maintenance activities, the remains and associated funerary offerings will be exhumed. The remains will be placed in a secure facility for that period of time necessary to complete any nondestructive analysis in consultation with the landowner and MLD. Destructive methods of analysis, such as radiocarbon dating and/or destructive analytical techniques applied to grave goods, will only be conducted with the approval of the City and the MLD.

6. Any burials and associated funerary offerings that are removed will be reinterred at a location mutually agreed upon by the City and the MLD. This location would preferably be the same archaeological site from which they were removed, if possible. Any human remains that are removed will be safely stored in a locked facility by the City within the project vicinity and reburied at the agreed upon location.

7. If dissociated human remains are encountered during the course of archaeological investigations in an area not likely to be disturbed by future West Berkeley Project activities, the appropriate authorities as prescribed in General Procedures ¶D.3 above will be notified. Human remains will be placed in unbleached cotton muslin bags or boxes with unbleached cotton muslin liners and, with permission of the Alameda County Coroner, removed to [REDACTED]. Chain of custody will be maintained. The remains will be documented as per standard archaeological procedures and reburied as per directive of the City.

8. In no case will non-jeopardized burials be exhumed for the purpose of continuing excavation nor will exposed burials be left unattended. The position, extent, and condition of the human remains will be ascertained by careful probing, trowel, and brushwork to determine the area extent of human remains. Each discovery will be documented and the extent of further investigation will be discussed with the City.

9. Analysis of human skeletal remains and any associated burial artifacts by non-destructive methods will be conducted in the field. Other methods, such as radiocarbon dating of bone, and or specific tests of burial artifacts, will be conducted only with the approval of the City or Monitor.

10. If any human burial, cremation, or other mortuary feature is discovered during West Berkeley Project construction or other non-archaeological West Berkeley Project activities, all work in the immediate vicinity, which might potentially affect the human remains and any associated artifacts, will

be halted until the required archaeological work has been completed. In the event of such discovery, notifications will be issued as per ¶D.3 and following and remains will be exhumed, studied, and reinterred in the manner described above.

11. In the event that a situation arises that is not anticipated or otherwise covered by these procedures, the Monitor may request that work in the immediate vicinity which might potentially affect human and funerary remains be stopped while consultation with the City and other participating parties is undertaken. Considering both the necessity to protect the human remains and any associated burial artifacts and the importance of maintaining work schedules, all reasonable steps will be taken to conclude this consultation process with a solution which is acceptable to all parties as quickly as possible. In no event should this exceed one working day or twenty-four hours.

12. It is further agreed that copies of all pertinent studies/reports prepared for scientific purposes during the course of the Project will be provided to the City for review (draft reports) and for the City and group files (final reports).

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5/11/01



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## **Appendix C: California Department of Parks and Recreation 523 Forms**



















CALIFORNIA INSTITUTE OF TECHNOLOGY  
PASADENA

Feb. 21, 1938

Mr. Alex D. Krieger  
Department of Anthropology  
University of Oregon  
Eugene, Oregon

My dear Mr. Krieger:

The work I did on the West Berkeley shell mound did not extend to any considerable depth. If my recollection does not play me false, it was a relatively [redacted] mound as to height and situated [redacted]. There were a good many burials in the part I worked, and I recollect both rather short and long types skulls, and I wondered at the occurrence.

I do not have clearly in mind the types of artifacts, only some ornamental shell, and some bone needles. I believe you will be safe in the conclusion that the specimens I collected came from the [redacted] if the mound. I am sorry I can give you no detailed data as to actual depth.

Very truly yours,

E. L. Furlong

ELF:M

5-7903



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## **Appendix D: Geoarchaeological Report by LaRamie Soils Service, Inc.**

# **LaRamie Soils Service, Inc.**

**217 Grand Avenue, Suite 1**

**P.O. Box 255**

**Laramie, Wyo 82073**

**[geomorph@laramiesoils.com](mailto:geomorph@laramiesoils.com)**

## **GEOARCHAEOLOGICAL INVESTIGATIONS CA-Ala-307 BERKELEY, CALIFORNIA**

Prepared for

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CULTURAL RESOURCES MANAGER  
GARCIA AND ASSOCIATES  
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Prepared by

**MICHAEL MCFAUL  
Dr. GARRY LEONARD RUNNING IV  
and  
MATTHEW WHITE  
GEOARCHAEOLOGISTS  
LARAMIE SOILS SERVICE**

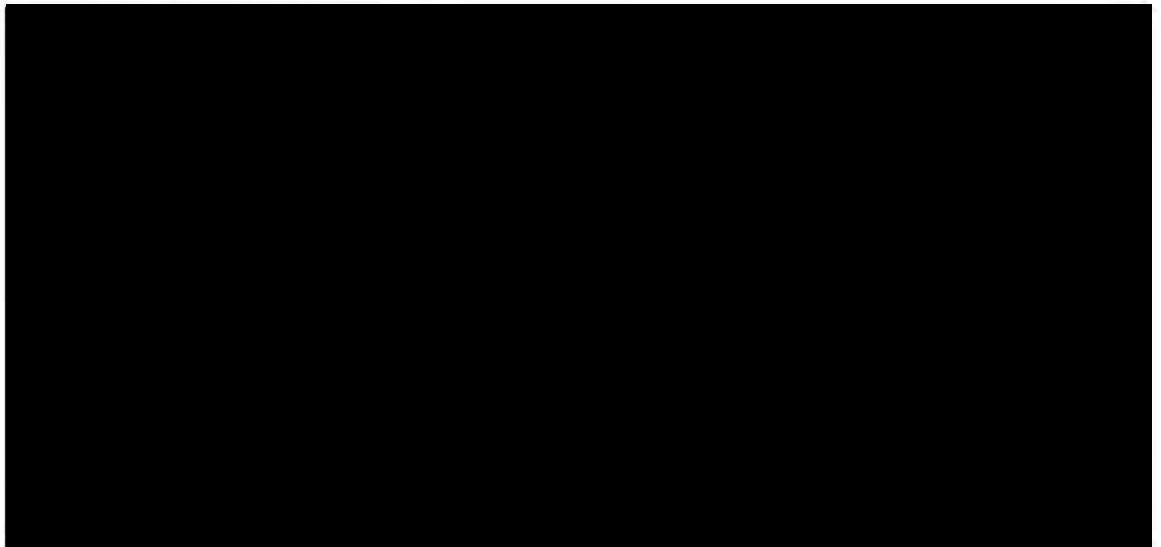
JANUARY 3, 2002

LRSS PROJECT 6-1-01

## EXECUTIVE SUMMARY

This report presents the results of subsurface geoarchaeological investigation conducted by LaRamie Soils Service, Inc. (LRSS) in the vicinity of the West Berkeley site in June and August of 2001. The investigation is part of Garcia and Associates' Cultural Resources Investigation, Significance Evaluation and Effects Assessment work being conducted for the City of Berkeley as part of the West Berkeley Capital Improvement Projects Environmental Initial Study (Garcia and Associates 2002; the report to which this study is appended). Geoarchaeological tasks were designed to assess: 1) the possibility that remnants of archaeological site CA-Ala-307 may be present in the study area, and 2) whether these sediments were *in situ* (primary) or redeposited (secondary). Specific tasks included subsurface sampling, describing, assessing subsurface soil/sedimentary/cultural relationships at 124 localities near CA-Ala-307. Sediments in the study area include; historic fills (Unit 1 road metal and Unit 2 older fill), terrestrial alluvial deposits (Pleistocene older alluvium, Holocene younger alluvium), and three facies of bay mud (near, offshore, and sand).

Thirty-three subsurface samples contained shell levels. Those 16 with primary or non-disturbed sedimentary contexts are:





Six shell levels below the [REDACTED] are associated with channel variant of the younger alluvium. Soil development and stratigraphy suggests they are *in situ*, but the relationship to CA-Ala-307 is not clear. For example, they represent a younger occupation. Additional archaeological evidence or absolute dating is needed.

Along [REDACTED] sediment characteristics are similar to those reported at CA-Ala-307 (Wallace and Lathrap 1975). This similarity suggests the lower shell level at FO-49 and the level at FO-47 are primary deposits. These levels may also be the terrestrial counterparts of those noted on bay mud <25 m to the west (Pastron 2000). The relationship of the upper shell level at FO-49 with CA-Ala-307 is less obvious. The level appears to be *in situ*, but it may represent a younger occupation of CA-Ala-307. The potential for disturbance of the upper level is high. It was the historic ground surface.

Stratigraphy of the two shell levels at S-69b (item "1" above) indicates that they are *in situ*. The presence of a soil horizon in the lower level suggests a terrestrial environment available to humans. The relationship of the upper shell level at S-69b to CA-Ala-307 is unclear. Shells are preserved in alluvial sediments implying redeposition however, it is possible they originated at CA-Ala-307. Additional research is needed to define these relationships. Shells at S-71c overlie bay mud similar to those noted by Pastron (2000).

Soil/sediment/shell relationships at H-53, H-56, H-58, H-59, H-60, and H-61 on [REDACTED] (item "2" above) are considered to be primary. They are similar to those noted at CA-Ala-307 (Wallace and Lathrap 1975). Although shell levels at these localities appear to be primary deposits, it is likely that those at the historic surface are disturbed.

This study suggests the [REDACTED] boundaries of the site are not as inclusive as those shown in Leader (2001). This interpretation is based upon: 1) our understanding of previous research, especially that of Pastron (2000) and Wallace and Lathrap (1975), 2) the position of the bay mud, and 3) the extent of the older fan alluvium. We propose that CA-Ala-307 occupied a peninsula (Truitt and White locality) and the [REDACTED]. Finally, we suggest that the elevation of the peninsula above the estuary influenced site location by providing protection from late Holocene sea level increases.

## TABLE OF CONTENTS

<u>EXECUTIVE SUMMARY</u> .....	i
<u>GLOSSARY</u> .....	v
<u>PROJECT UNDERSTANDING AND APPROACH</u> .....	1
<u>RESULTS</u> .....	3
<u>OVERVIEW</u> .....	3
<u>SOIL/SEDIMENT UNITS</u> .....	6
<u>GEOARCHAEOLOGICAL MODEL</u> .....	12
<u>INDIVIDUAL TRANSECTS</u> .....	13
<u>SUMMARY AND RECOMMENDATIONS</u> .....	33
<u>CITED REFERENCES</u> .....	35

### Tables:

<u>Table 1. Soil/Sediment Unit Correlations</u> .....	7
<u>Table 2. Big Red in Older Alluvium</u> .....	11
<u>Table 3. Gleyed Variant of Big Red in Older Alluvium</u> .....	12
<u>Table 4. Off Shore Bay Mud</u> .....	12
<u>Table 5. Artifact Discoveries in Cores Surrounding CA-ALA-307, West Berkeley Site</u> ....	14



## GLOSSARY

alluvial deposits	Water-laid sediments. In the study area, two alluvial fan deposits or units are present: an "older" and "younger" fan alluvium.
anthropogenic	Anthropological deposits that may contain shells, charcoal, bone and other evidence of human activity. Matrix containing these materials also appears to have originated elsewhere.
argillic horizon	A subsurface soil horizon (symbol: Bt) characterized by accumulations of clay-size particles.
bajada	Coalescing alluvial fans form a surface called a "bajada." The bajada referenced in this study is the "upper surface." It consists of older alluvial fan sediments deposited at the foot of the Berkeley Hills.
"Big Red"	An informal name LRSS assigned to a strong, argillic paleosol developed in the older alluvial fill.
calcareous horizon	An accumulation of calcium carbonate (a salt) in a subsurface soil horizon (symbol: Bk).
clasts	An individual part of a given sediment unit whose shape, sorting, and abundance are important attributes in assessing sediment origin.
color	One of a number of characteristics used in the description of soils/sediments. This investigation uses Munsell terminology to define color value, chroma, and hue.
cumulic	Soil horizons that receive sediment input during soil formation. Surface of A horizons are commonly the recipient of such input (symbol: Acum)
effervescent	One of a number of characteristic used in the description of soils/sediments. The type of effervescence (violent, strong, slight) describes the reaction of the sediments to 10% HCl.
epipedon	The surface horizon of a soil (A horizon).
facies	Subdivisions of a given sediment unit. For example, there are three subdivisions, or facies, of the bay mud: near shore, far shore and sandy.
frequency	A numerical or quantitative measurement of sediment or soil attributes such as the clast types or carbonate enrichment.
Giddings Soil Probe	A cost-effective, subsurface sediment/soil sampling device.
gley	The end product of reducing conditions in a sediment profile associated with wet conditions. In this study, the gray, greenish gray and blackened gleys are the result of sea level increases.
Holocene	Name of the youngest Quaternary geologic epoch that dates from the last Ice Age (Pleistocene) to the present (ca. 11,500 BP to present).
interfluvial	Used in this report to describe the terrain between drainages such as the terrain dividing [REDACTED] creeks.
lower surface	An informal term given to a relatively flat low lying landform whose tread is approximately 1-1.5 m above sea level. This surface is best seen in the study area at [REDACTED]

mottled	Spots of different colored material in a given soil horizon that, in this study area, are associated with gleys developed under higher water tables.
paleosol	Used here to describe a buried and/or relic soil (i.e., "Big Red") that developed in the past on the upper surface.
palimpsest	Used in geoarchaeology to define a surface upon which there may be different-aged cultural components.
particle size	A characteristic used to describe sediments.
pedogenic	Attributes in a given sediment profile that are the result of soil development such as argillic, gley, and calcareous enrichment.
Pleistocene	The older of the two Quaternary geologic epochs. It dates from the Pliocene (ca. 1,500,000 BP) to the last glacial (ca. 11,500 BP).
preferred orientation	An attribute describing the direction of clasts in given sediment units. Similarity or dissimilarity in orientation is used as an indicator of sediment origin and in assessing artifact integrities.
sediment units	This investigation groups sediments into "geomorphic units" based upon similar characteristics. The units are subsequently used to assess such site aspects as age, context, and integrity.
shrink-swell	An attribute of some clays (smectites and montmorillonite) that causes them to shrink when dried and swell when wet.
soil horizons	A layer that approximately parallels the surface that has a set of characteristics that are the result of soil-forming processes.
soil profile	A vertical arrangement of soil horizons commonly consisting of A, B and C horizons.
terrain	Used here as a generic term to describe individual landforms or landform groups.
upper surface	A landscape or terrain developed on the older alluvium that is usually defined by the Big Red paleosol. A good example of the relationship between the upper surface and the lower surface is present at [REDACTED]

## PROJECT UNDERSTANDING AND APPROACH

Geoarchaeological investigations in the vicinity of the West Berkeley site (CA-Ala-307; see Nelson 1909) were implemented as part of the cultural resources inventory for the *Environmental Initial Study for West Berkeley Capital Projects* (Specification No. F-8788-00). Specific geoarchaeological tasks included the extraction and description of subsurface core/auger samples collected at 124 localities (Garcia and Associates 2000:8). These subsurface samples were collected by LaRamie Soils Service, Inc. (LRSS) at 25-meter intervals in city streets near the West Berkeley site (CA-Ala-307 in Nelson 1909) from June 7-15 and August 1-8, 2001. A Giddings Soil Sampling device was selected for sample extraction due to its versatility, reputation as a relatively non-disturbing method to locate and evaluate the potential of archaeological sites, and its "neighborhood friendliness."

A key objective of sample description was to define and assess the horizontal and vertical extent of disturbed (secondary) and non-disturbed (primary) cultural deposits. Soil/sediment attributes were described using accepted geological (Birkeland 1999), geoarchaeological (Waters 1992) and pedological (Catt 1990; Scheonberger et al. 1998, and Soil Survey Division Staff 1993) procedures. Assessments regarding both the primary and secondary extents of the shell mound were influenced by previous archaeological work at the site (Pastron 2000), in the vicinity (Tremaine 2000a and 2000b), and at other shell mound localities (Whittaker and Stein 1992; Julie K. Stein personal communication 1999). Inferences regarding the age and the potential of specific soils/sediments to be associated with CA-Ala-307 are based upon our understanding of stratigraphy, the rates of pedogenic development, relative age dating techniques, sea level changes (Moratto 1984) and geoarchaeology (McFaul 1990; McFaul et al. 1994; Smith and McFaul 1997; Running 1995, 1996a and 1996b; Running



et al 1997; Hopkins and Running 2000) and the work of others in the region (Jack Meyer, personal communication 2001).

## RESULTS

### OVERVIEW

The study area consists of a grid of city streets in the vicinity of archaeological site CA-Ala-307 that is bounded by [REDACTED]

[REDACTED]. An 1857 land ownership map of the site shows it to be on the [REDACTED] (City of Berkeley nd1). Today the [REDACTED] is gone, having disappeared beneath historic fills. Specifically, much of what Nelson (1909) included within the site boundaries is now beneath the urban West Berkeley landscape.

Terrestrial alluvial fan sediments flanking the Strawberry Creek estuary are derived from the Berkeley Hills and are part of the lower margins of a "bajada." LRSS has informally named this bajada the "upper surface." Viewed from the east, the modern landscape preserves a relatively gentle fan slope. However, historic construction has modified interfluvium between Strawberry and School House creeks, and their channels have been filled.

Within this relatively flat landscape, there is a remnant of a "lower surface" that is defined by its lower elevation. Both the upper and lower surfaces are present [REDACTED]

[REDACTED]. This intersection rests on the upper surface bajada [REDACTED]. The intersection of [REDACTED] [REDACTED] at approximately [REDACTED], is constructed on the lower surface.

With exception of the areas constructed on the filled estuary ([REDACTED] [REDACTED]), the remainder of the study area rests upon the older fan sediments of the upper surface. On the surface, it is difficult to discern fan and fill deposits because their elevations are approximately equal. The location of the [REDACTED] is a good example of this relationship. Historic records suggest it was constructed on the [REDACTED]

[REDACTED] (City of Berkeley nd2:4). Today, there is nothing near his home, [REDACTED] that resembles an estuary.

Geologic mapping by Radbruch and Case (1967) shows the CA-Ala-307 locality on undifferentiated Quaternary sediments. They describe these undifferentiated units as "covered and unrecognized San Antonio Formation (Quaternary alluvium), an unnamed gravel, sand and clay, as well as Temescal Formation (Quaternary alluvium)." Soil in the undifferentiated alluvium is strongly developed with shrink-swell properties, and it is as much as three feet thick (Radbruch and Case 1967). LRSS has informally termed the San Antonio Formation as "older alluvium" and its strong argillic paleosol as "Big Red."

Previous investigators describe the shellmound resting upon "a compact yellow alluvium doubtless derived from the nearby hills" (Wallace and Lathrop 1975:8). Interpretation of the cultural record suggests that the older alluvium pre-dates human occupation of CA-Ala-307 (ca. 3700 BP-1150 BP or 1700 BC to AD 800). Based upon the strength of Big Red's soil development (see Birkeland 1999), a Pleistocene age is assigned to this argillic (Bt horizon) paleosol.

Soil development in the younger alluvium is much weaker (A/C horizons). Comparing soil development suggests that: 1) Big Red [REDACTED] in the study area, at least, through the middle Holocene and 2) the younger alluvium is a Late Holocene deposit. During a brief on-site visit, Jack Meyer (6/14/01), a fellow geoarchaeologist, agreed that Big Red was Pleistocene paleosol. Because these relative age determinations suggest the paleosol pre-dates human occupation at CA-Ala-307, we used the older alluvium and its Big Red as markers to identify culturally sterile sediments [REDACTED].



Both geologic (Radbruch and Case 1967) and hydrologic (Sowers 2000) mapping show the Strawberry Creek estuary contained a willow grove. Sowers (2000) also depicts the estuary grading into a tidal marsh. By 1967, this estuary/marsh was filled with "mixture of rock and soil derived from nearby cuts or barrow areas... [that may contain] concrete, bricks, and miscellaneous refuse" (Radbruch and Case 1967). The floor of the estuary and San Francisco Bay are mapped as "bay mud." It is an olive-gray gleyed, clay that is, in part, silty, sandy, and peaty. It is important to remember that bay mud is simply the hydromorphic (see Birkeland 1999:134) or gleyed facies of the older alluvium drowned by increased Holocene sea levels (see Lauderback 1951:84; Figure 7).

Obviously, the presence of bay mud in terrestrial localities is strong evidence for a sea level increase. Such an example is the bay mud near Derby Street in Oakland (Radbruch and Case 1967). Moratto (1984:224, Figure 6.2) shows three episodes of sea level increases  $\leq 3$  m during the late Holocene occupation of CA-Ala-307 (3700 BP to 1150 BP). We feel that these sea level increases influenced human/land relationships at CA-Ala-307. Thus, we propose that the selected "upper surface" for CA-Ala-307 was influenced by the fact that its elevation would have helped protect occupants from late Holocene sea level increases.

This proposal does not preclude pre-historic midden from grading into the estuary (Pastron 2000). The photos from the 1950 excavations suggest it did (City of Berkeley nd1). It does provide:

- 1) A geoarchaeologically derived model to understand the spatial and temporal aspects of the West Berkeley site; and
- 2) Guidelines to interpret these aspects in a geologic and pedologic context.

George Lauderback's (1951:87) discussion of the Ellis Landing mound eloquently states a basic tenant of our model: "It is quite evident that when the natives first occupied this site they did not locate it where the waves at high tide would splash on them, nor would they have stayed there if the waters at high tide washed their mound..." (Also see Lauderback 1951:85, Figure 10.)

We also believe that the occupants of the Berkeley Shell Mound did not live under water and therefore consider the bay mud (gleyed older alluvium) as a culturally sterile deposit. The presence of such sediment in the core/auger samples thus provides a marker bed to help evaluate site extent.

### **SOIL/SEDIMENT UNITS**

Although their characteristics do vary across the study area, this investigation recognizes five sediment types. These include two historic fills (Units 1 and 2), two terrestrial alluvial fan deposits (older and younger alluvium) and bay mud. These sediment types are presented in Table 1 below and are indicated by the following abbreviations: Unit 1 = U1; Unit 2 = U2; Older alluvial fan = OA; Younger alluvial fan = YA; and Bay mud = BM.

The younger of the two historic fills is the Unit 1 road metal. The older Unit 2 historic fill commonly underlies it. Unit 2 consists of sediments derived locally. It often contains historic and prehistoric materials such as nails, bricks, glass and shells. Big Red, the very strongly developed, argillic paleosol, defines the older alluvium. In some of the [REDACTED] samples, shell-rich materials were mixed in a transition soil horizon (AB) of Big Red or at the base of an A horizon in younger alluvium welded onto Big Red.

Table 1. Soil/Sediment Unit Correlations

This Report <sup>3</sup>	Pastron (2000)		Radbruch and Case (1967)		Wallace and Lathrop (1975)	
	Stratum 1		Qaf		Qu	Disturbed powdery zone
	Not observed <sup>2</sup>		Qtc	Qt		Not observed
	Stratum 2		Qts			Darker zone with cultural materials
	Stratum 4		Qm			Not observed
			Qbm			
	Stratum 2 if culture bearing	Stratum 3 if sterile	Qsu			Underlying clayey material
						Yellow alluvium

Notes:

<sup>1</sup> These correlations are based on our interpretations and do not necessarily reflect the intent of the original authors, nor can we be certain our correlations are correct.

<sup>2</sup> "Not observed" is not meant to imply incomplete observations on the part of other authors. Rather, we acknowledge that the scope, methods, and specific objectives of our research varied from that of previous authors and direct correlations across all of them may not be appropriate.

<sup>3</sup> Though all our soil/stratigraphic units were not observed in any single core, we present them in stratigraphic order, youngest to oldest, in the leftmost column.

The younger alluvium exhibits upland and channel facies. Commonly, the younger alluvium mantles the older alluvium on the uplands and bay mud in the estuary. Both facies consist of reworked sediments derived from the older alluvium. On the uplands, a weak soil A horizon may be present in the younger alluvium; whereas in the channels, weak cumulic A and cambic B-horizons may be seen.

The final sediment unit observed in the study area is the black to greenish gray, gleyed bay mud. It is a hydromorphic (gleyed) phase of terrestrial alluvium. Based upon its colors and textures, LRSS has subdivided the bay mud into three facies: near shore, far shore, and sandy. The far shore facies is black colored and rich in clay. The near shore facies is less clay rich. The well-sorted sandy facies is discontinuous. Along [REDACTED] near-shore sands overlie the stripped Big Red paleosol. The elevation of the [REDACTED] bay mud indicates Big Red pre-dates [REDACTED] inundation.

Descriptions for each sediment type are provided below:



**Unit 1: historic road metal (see Quaternary artificial fill [Qaf] of Radbruch and Case 1967).**

Unit 1 owes its existence to street construction. This unit is approximately [REDACTED] thick and a stout auger is needed to penetrate it. Sediments consist of non-organic, massive, road metal that has the highest gravel and lowest clay content of all the deposits LRSS recognized. Clast lithologies are uniform in individual localities, similar in size and weathering (e.g., crushed with fresh facies). Depending upon their source, the sediments are massive but can be loose and weakly effervescent. Overall, the fine fraction or matrix exhibits a gravelly (60% well-sorted, angular, and unweathered) sandy (medium-coarse) loam texture. Colors vary, but their hues are less red and lower in value than other terrestrial units. When associated with asphalt, an asphalt impregnated fabric liner may underlie the gravels.

**Unit 2: historic fill under road beds (see Quaternary artificial fill [Qaf] of Radbruch and Case 1967)**

Composition of Unit 2 varies, but it is easy to identify it as fill where it overlies the argillic Big Red paleosol. This unit generally exhibits the following characteristics:

- 1) Most of the gravels are of the same lithology (like Unit 1);
- 2) The gravels lack bedding or preferred orientation;
- 3) It contains historical cultural debris (fragments of brick, window pane, bottle glass, metal objects);
- 4) It may also contain prehistoric materials;
- 5) The matrix is usually finer than Unit 1 but coarser (less clay) than all the other sedimentary deposits including LRSS's "younger alluvium;" and
- 6) Soil development is non-existent.

Clasts are usually 2 mm to 2 cm diameter (long axis), of various lithologies, subangular to subrounded, and usually weathered or brittle. Unit 2 appears to be composed of a

mixture of materials scraped from what was readily available. Thus, it also has the potential to yield shell fragments.

Unit 2 can be difficult to identify where it does not contain historical materials and where it is composed of sediments originating in adjacent younger or older alluvium. Keys to distinguishing Unit 2 are its absence of soil horizons and color values higher than Unit 1.

**Younger alluvium (see Temescal Formation [Qtz] in Radruch and Case 1967)**

There are two facies of younger alluvium: fan alluvium on the uplands and channel fill in Strawberry and School House creeks. On the [REDACTED] the younger alluvium is an equivalent of the Temescal Formation (Radruch and Case 1967). The uplands facies has more gravel and less clay than the older alluvium. Its matrix is brown to dark yellowish brown (10YR4/3 or 4/4) color. On [REDACTED] it was darker due to the presence of an organic enriched soil A horizon. Lithologies in the upland younger alluvium vary, probably reflecting their "older alluvium" source, and the gravels are often weathered. Tan, feldspar-rich igneous rocks crumble in hand. Dark igneous rocks break easily in hand. Tan sandstone is friable, and the crystalline lithologies have weathering rinds. Shales frequently exhibit a white patina while other fine-grained clasts may exhibit hematite stains on their surface. Gravel percentages vary from 15-20% and fine fraction has less clay than the older alluvium. Overall, clasts are subangular to subrounded, moderately well-sorted to poorly sorted, granule to coarse pebble size, and, at times, bedded.

The channel fill facies in Strawberry and School House creeks looks much like the younger alluvium on the upper surface. It is best defined by a weak soil profile consisting of a black (10YR2/1), over-thickened or cumulic soil A horizon. Gravels in channel fill are commonly coarser with depth. Due to the absence of evidence of active alluvial deposition, such as flood couplets, the channel fill facies appears to be a slowly

aggrading alluvial deposits. Sediments representative of a more active alluvial environment were noted in the [REDACTED] samples. These included point bar and channel lag deposits resting directly on bay mud. Fifty percent of the lag deposits were > 2mm diameter, with some clasts up to 3 cm in diameter. The precise age relationship between the facies is unknown. Their position suggests they are contemporaneous, but additional research is needed to fully assess their age and geoarchaeological importance. This research will also help us define the relationship of shell fragments seen in some of the younger alluvium to CA-Ala-307.

**Older alluvium (see San Antonio Formation, upper member [Qsu] in Radbruch and Case 1967)**

The reddish hued (7.5 to 10YR) older alluvium is a non-effervescent, plastic, and sticky to very sticky, silty clay that contains 15-20 % subrounded to subangular gravel. It is distinguished by a strongly developed argillic (Bt horizon) paleosol that LRSS informally refers to as "Big Red." Commonly, Big Red is truncated, lacking a soil A horizon. Along [REDACTED], cultural materials are, however, associated with the top of a transition soil AB horizon.

The presence of the argillic horizon suggests Big Red correlates with the Tierra soil series. It is a fine, montmorillonitic, thermic, Mollic Palexeralf, that is mapped in old alluvial fan sediments east of [REDACTED] (Welch 1981). The presence of the strongly developed paleosol also suggests that the older alluvium correlates with the upper member of the San Antonio Formation (Qsu) of Radbruch and Case (1967).

Big Red and its host alluvial sediments, together with its elevation, are the defining characteristic of the upper surface. This Pleistocene bajada is approximately [REDACTED] above mean sea level. Wallace and Lathrap (1975:8) suggest that site CA-Ala-307 was constructed on the upper surface.



**Table 2. Big Red in Older Alluvium**

Color	Dark brown 7.5YR3/2 (5), dark yellowish brown (10YR22/2 (3), brown 10YR4/3 (2), black 10YR2/1 (1)
Texture	silty clay (12), silty clay loam (4), clay loam (3), silt loam (1)
>2mm Fraction	subrounded, subangular, 15-20 volume (9)
Reaction	non-effervescent (7)
	Plastic (11)
	Sticky (11), very sticky (2), slightly sticky (1)
	Very firm (4), firm (4)
Other	Friable (1), sand = fine to very fine (1), moderately platy (1)
Locations of Big Red	

Note: Frequencies are provided in parentheses after each characteristic.

### Bay Mud (Qbm of Radbruch and Case 1967)

The non-calcareous bay mud is divided into near shore, off shore, and sandy, facies. The silty-clay-loam-to-clay-loam textured off shore bay mud grades with depth from greenish black (5GY2/1) to dark greenish gray and greenish gray (5GY with values in the 4-6/1 range). This facies is massive to faintly laminated and may contain few (0-2%) coarse sand to granule size subangular to subrounded clasts of various lithologies. Where present, the coarse clasts appear to exhibit horizontal bedding. The fine fraction is a sticky plastic and almost always wet or moist. Occasionally, LRSS noted a few very fine roots. The near-shore mud is also gleyed (5G to 5GY), but it is less black with values that grade from [REDACTED]. Along [REDACTED] where the sandy facies mantles Big Red, the dark gray (2.5Y4/1), well-sorted, fine, loamy sandy textured deposit lacks a coarse fraction.

**Table 3. Gleyed Variant of Big Red in Older Alluvium**

Color	Dark greenish gray 5G-5GY 3/1 gley (2), dark grayish brown 10YR4/2 2, greenish black 5G-5GY (1), dark yellowish brown (1), olive brown 2.5Y 4/4 (1)
Texture	Silty clay loam (3), silty clay (3), silt (1), silty loam (1)
>2mm Fraction	Angular to subangular (4)
Reaction	Non-effervescent (3)
	Plastic (4)
	Sticky (4), very sticky (1)
	Firm (1)
Other	Organic rich (2), friable (3), tight (1), very tight (1)

Note: Frequencies are provided in parentheses after each characteristic.

**Table 4. Off Shore Bay Mud**

Color	Dark greenish gray 5GY-5G 3/1 (8), greenish black 5G-5GY 2.5/1 (7), black 10YR2/1 (4), brown 10YR4/3 (1)
Texture	Silty clay (8), sandy clay loam (5), silty loam (4), Silty clay loam (3), clay (2)
>2mm Fraction	No clasts (4), few clasts (3), fine grained, angular, metamorphic gravels (1),
Reaction	Non-effervescent (9)
	Plastic (6), very plastic (3)
	Very sticky (3), slightly sticky (2), non-sticky (1)
	Friable (6), firm (1)
Other	Organic rich (6), Faint to very faint bedding (3), Coarse sand (1)
Offshore Bay Mud at	

Note: Frequencies are provided in parentheses after each characteristic.

## GEOARCHAEOLOGICAL MODEL

This model presents an interpretation of evolution of the West Berkeley landscape and an assessment of the potential for specific terrains to yield cultural materials. It is based upon our understanding of the subsurface soil and sediment characteristics noted at [REDACTED] sample localities and the work of previous researchers in the area.

The oldest deposit is the terrestrial older fan alluvium (San Antonio Formation, upper member). Transported down the School House and Strawberry Creek drainages the alluvium coalesces to form a low relief bajada LRSS has termed the "upper surface." The bajada underlies large segments of [REDACTED]

[REDACTED] Fan deposition was followed by the development of an argillic paleosol, LRSS's "Big Red." The results of previous geologic investigations (Radbruch and Case 1967; Louderback 1951) and the strength of the argillic Big Red suggests that this paleosol and its host fan alluvium are Pleistocene in age. Thus, they are older than the accepted age for the human occupation of North America and are culturally sterile.

After bajada construction, the drainages responded to sea level lowering by cutting a channel into the bajada. Channel incision corresponds with late Pleistocene-middle Holocene lower sea levels (Moratto 1984:222). Late Holocene (ca 6000-1000 BP) sea level increases subsequently flood this channel, creating an estuary overlooked by the bajada (see 1850 map of Leader 2001). Subsequent sea level fluctuations also resulted in the inundation of parts of the bajada in the vicinity of [REDACTED]. During the late Holocene, a second alluvial unit began to accumulate on the upper surface and in the estuary. Sediment from this second unit has the potential to yield buried cultural materials. After 1000 BP, sea level stabilized and the lower surface developed in the vicinity of [REDACTED].

We feel that sea level increases ca. 3700-1150 BP (Moratto 1984:222) influenced the selection of the bajada or upper surface for site CA-Ala-307. In turn, the depression of sea levels after ca. 1150 BP (Moratto 1984:222) may have also influenced resource availability and site abandonment.

## **INDIVIDUAL TRANSECTS**

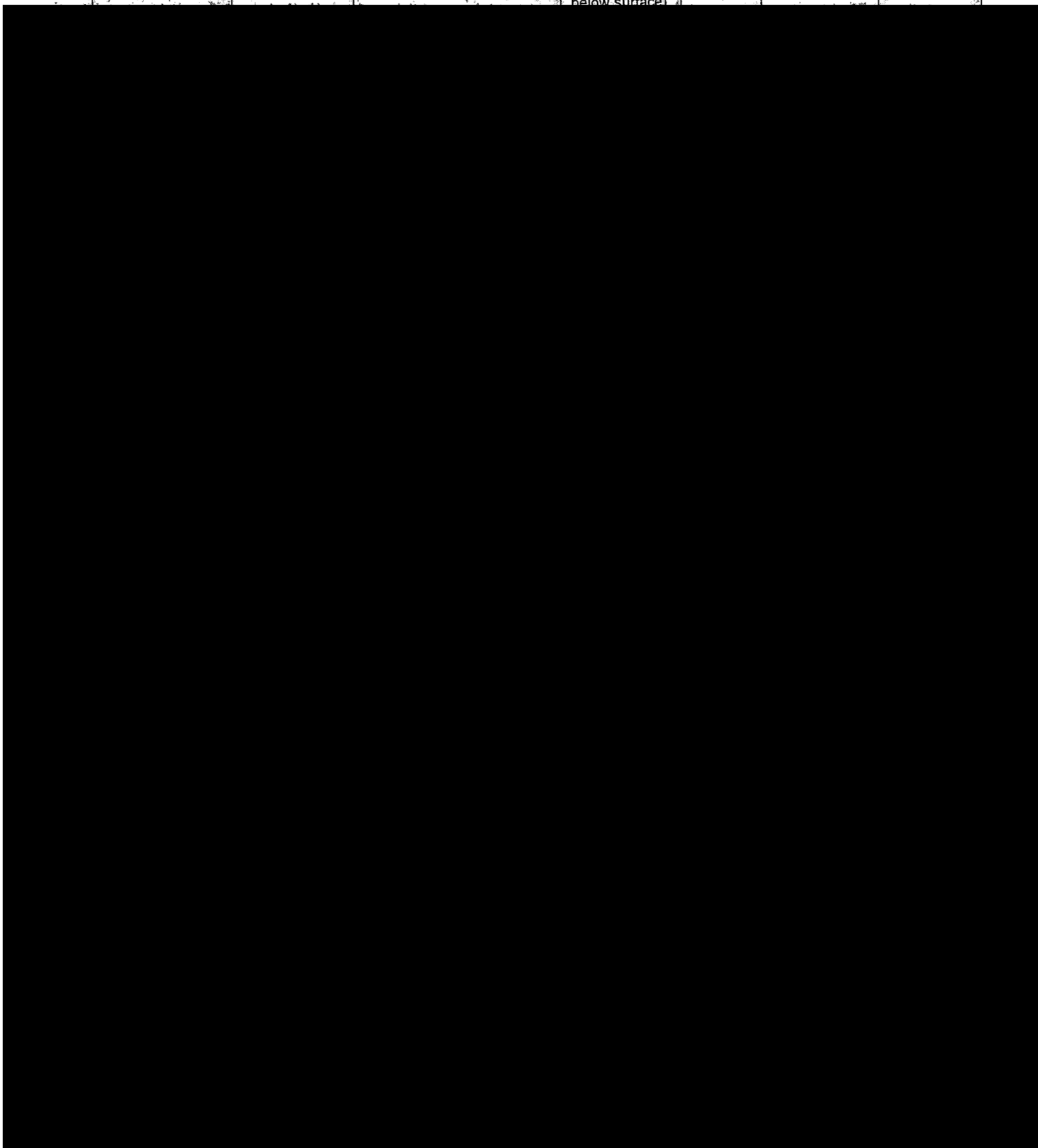
This segment of the report discusses soil/sediment/cultural relationships present in the individual transects. It also includes an interpretation of each transect's geoarchaeological importance. Specific to these interpretations are assessments regarding the relationship of individual shell levels to the West Berkeley site. A map



**Table 5. Artifact Discoveries in Cores Surrounding CA-ALA-307, West Berkeley Site**

Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located (centimeters; cmbs. = cm below surface)	Matrix Type	Disturbance	Discussion
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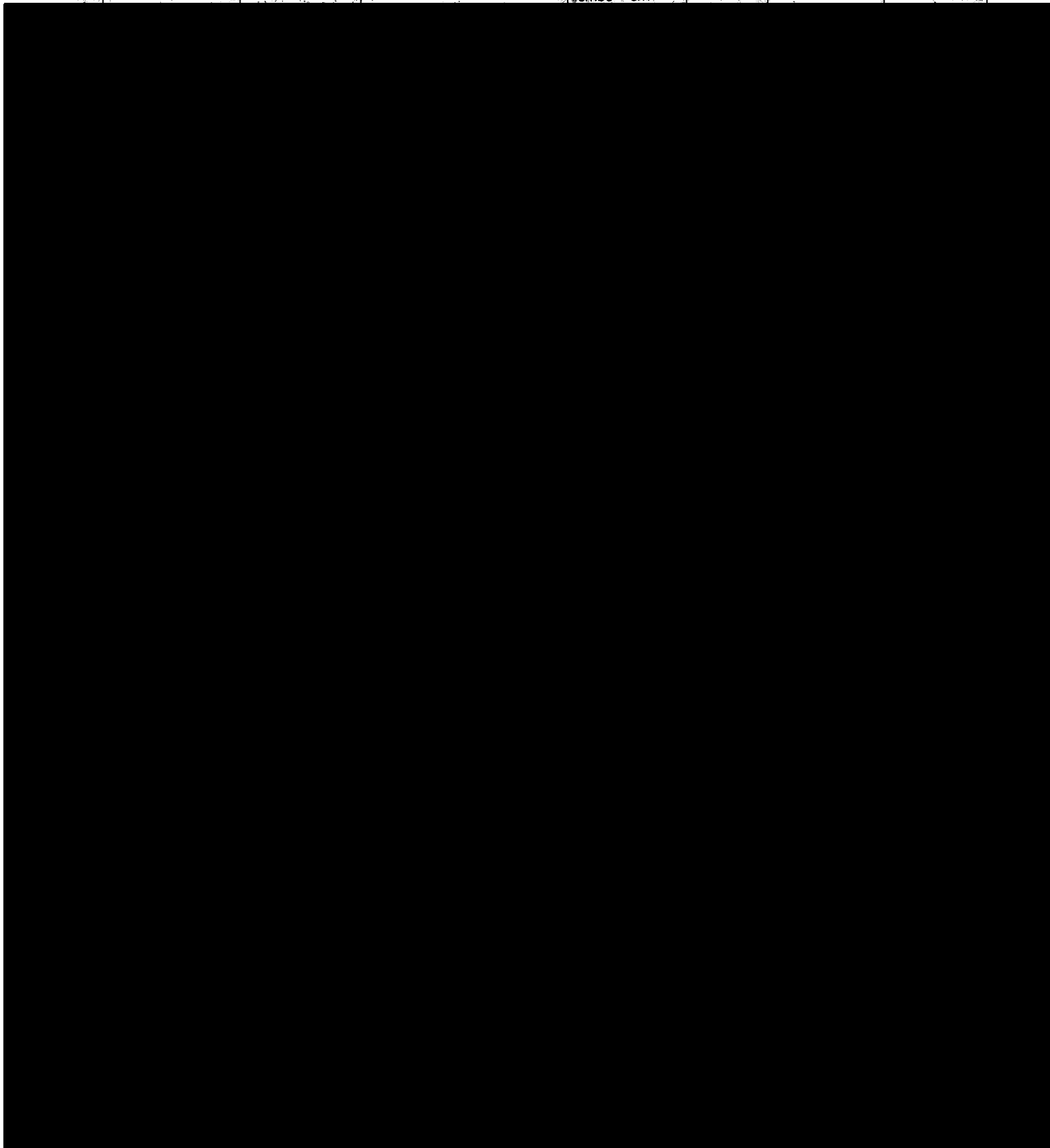
Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located (centimeters; cmbs = cm below surface)	Matrix Type	Disturbance	Discussion
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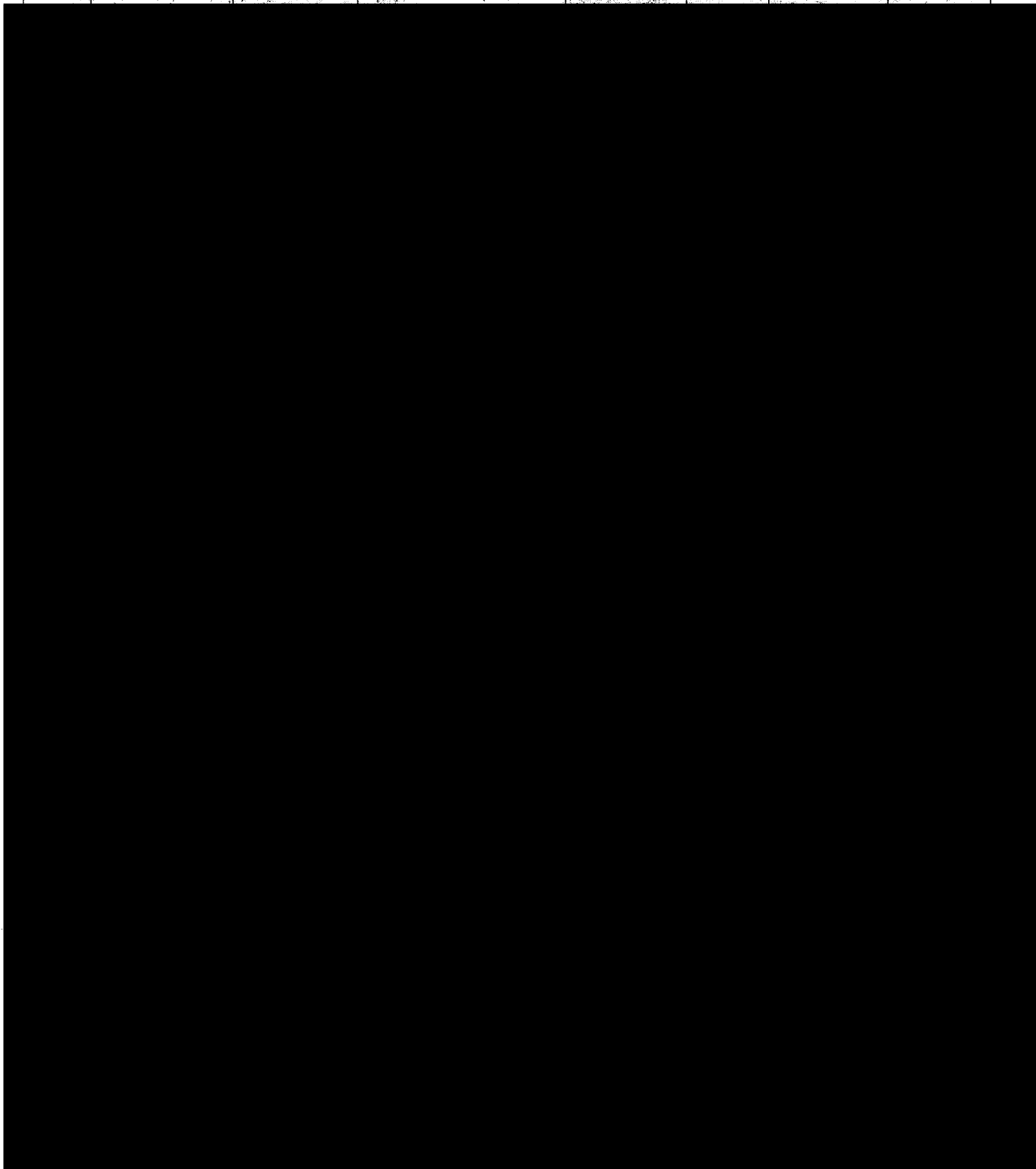


Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located (centimeters; cmbs. = cm below surface)	Matrix Type	Disturbance	Discussion
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Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located (centimeters; cmbs = cm	Matrix Type	Disturbance	Discussion
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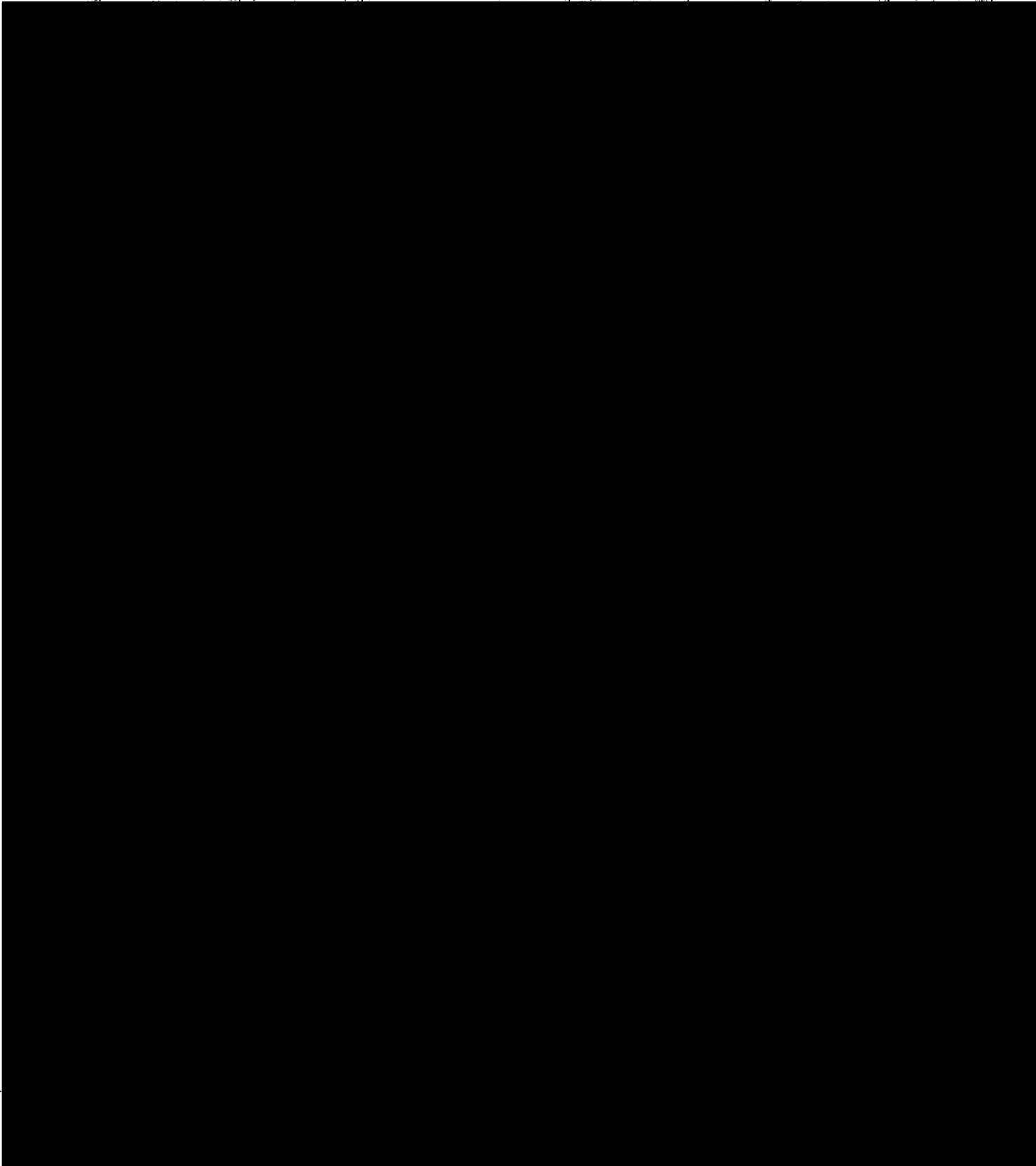


Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located: (centimeters; cmbs = cm	Matrix Type	Disturbance	Discussion
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Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located (centimeters; cmbs = cm	Matrix Type	Disturbance	Discussion
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Core #	Location	Prehistoric Artifact Types	Historic Artifact Types	Depth Located (centimeters; cmbs = cm	Matrix Type	Disturbance	Discussion
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**Core Numbers E-Add to E-95)**

Soil/sediment samples were collected at six [redacted]  
[redacted]. This [redacted]  
[redacted] traverses gleyed bay mud mantled by either one or both of the historic  
fills. Although the depth to the bay mud remained relatively constant (ca. 128 cmbs), it  
increased to 185 cm on this transect's northern margin. This depth increase suggests a  
channel was present in this area. A strong smelling, petroleum durative was noted in  
E-93. The potential of sediments beneath [redacted] to yield buried cultural  
materials similar to those at CA-Ala-307 is ranked low for two reasons:

- 1) LRSS did not recover either Shellmound or midden materials in the  
samples, and
- 2) During the occupation of CA-Ala-307, the [redacted] locality  
probably was inundated (see Leader 2001).



**Core Numbers S-1 to S-8)**

Other than variances in the thickness of the historic fill, the eight sampling  
localities across the [redacted] were

similar. Soil/sediment columns exhibited: historic road metal (Unit 1) over an older historic fill (Unit 2) and gleyed, near shore, bay mud. Toward the center of this transect (S-5), coarser near shore were interbedded with off shore bay muds. The near shore sediments were distinguished by thinly to thickly bedded, silts and sands. In addition, the bay mud is interfingered with coarser onshore sediments. Transect stratigraphy suggests a shallow, estuary environment recently buried by historic fill. The geoarchaeological potential of sediments along this segment of [REDACTED] is ranked low. None of the sample localities produced shells or cultural material similar to those recorded at CA-Ala-307. Similar to the [REDACTED] transect, this segment of the study area probably was inundated during the occupation of CA-Ala-307. Numerous historic materials (1900s) such as brick, glass, and nails were recovered in Unit 2.

**[REDACTED] Core Numbers V-9 to V-13)**

This transect did not yield any pertinent information. A large diameter (8') storm sewer was not located and we spent our time sampling historic Unit 1 and 2 sediments above the sewer. The only locality where we did not encounter sewer pipe was V-10a. Samples from this locality yielded historic fill over terrestrial sediments (>300 cmbs). Due to our inability to collect other samples, the potential of [REDACTED] sediments to yield cultural materials similar to CA-Ala-307 is unknown.

**[REDACTED] Core Numbers A-33 to A-41)**

Samples were collected at 13 localities across [REDACTED]. Sample collection across [REDACTED] was slowed by an abundance of buried sewers and utility lines. LRSS's difficulty with sewer-utility lines is apparent in the number of localities we sampled. Originally, LRSS was scheduled to test 10 localities, but needed 18 to obtain reliable results. A plethora of sewer-utility lines forced sample collection at [REDACTED] to be abandoned. Abandonment of [REDACTED] was especially unfortunate; this was the locality that may have yielded lower

surface sediments. Future researchers are asked to find, describe, and evaluate the potential of lower surface sediments to yield cultural materials.

[REDACTED] samples were dominated by older fan alluvium mantled by historic fill (see A-35x and A-40). Fill depths varied above the reddened, clay enriched, Big Red paleosol. No shell levels were encountered. The presence of older alluvium suggests this transect is near the [REDACTED]. Site Ca-Ala-307 was across the estuary on its northern bank. The geoarchaeological potential of the sediments below [REDACTED] is ranked low, due primarily to the absence of shell levels.

#### **[REDACTED] Core Numbers FI-12 to FI-31)**

Other than its northern (FI-12, FI-13) and southern (FI-30, FI-31b) margins, the [REDACTED] transect traversed older alluvium mantled by historic fill. Younger alluvium was present in the School House and Strawberry Creek drainages on the margins. In addition to fan gravels, the older alluvium was defined by the argillic Big Red paleosol. The presence and position of younger alluvium and Unit 2 historic materials suggests in-filling of channels on the transect margins. Surface elevations decreased from approximately 5.4 m (18') in the south to approximately 4.3 m (14') in the north. Two localities, FI-18a and FI-18b, were abandoned in Unit 2 fill 150 cmbs due to the presence of concrete.

A lengthy segment of this transect between [REDACTED] exhibits the gleyed variant of older alluvium. Like Radbruch and Case (1967), LRSS feels that the presence of the gleyed variant in a modern terrestrial setting is evidence of a sea level increase. Interestingly, when the depths to the gley sediments (FI-20: 50 cmbs; FI-21: 80 cmbs; FI-22: 125 cmbs; FI 23a and FI-23b: 78 cmbs; and FI-24: 57 cmbs) are subtracted from an approximate surface elevation (5.18 m or 17'), the elevation of the gleyed variant is approximately 3.93 to 4.68 m above sea level. These



elevations are approximately 0.93 to 1.68 m higher than the highest late Holocene sea level increases proposed by Moratto (1984). Additional elevation control is need to establish the validity of this statement. Sediments from the [REDACTED] transect have a low overall, geoarchaeological ranking. The entire transect lacked shells or other cultural materials similar to those noted at CA-Ala-307.

#### **[REDACTED] Core Numbers FO-42 to FO-52)**

A total of thirteen localities were sampled in the [REDACTED] transect. Three localities (FO-44a, FO-44b, and FO-44c) were abandoned after concrete materials were encountered in Unit 2 fill 83 cmbs. In profile, this transect exhibits a cross section of the former Strawberry Creek estuary. North from [REDACTED] (A-41), the sediments exhibit older and younger alluvium (FO-42, FO-43, FO-45) that grades into younger alluvium over bay mud (FO-46, FO-47), bay mud (FO-48), younger over older alluvium (FO-49), and older alluvium (FO-50, FO-51).

Shell levels were present at localities FO-47 and FO-49 in younger alluvium. Levels at FO-49 were at the top (100-115 cmbs [3.3-3.8']) and at the base (155-175 cmbs [5-5.75']) of a soil A horizon developed in the younger alluvium. The upper shell level at FO-49 is considered a partially disturbed primary deposit. This is due to the recovery of a 1.5 cm diameter brick fragment at 100 cmbs. It should be noted that this horizon was at historic ground surface. The single shell level at FO-47 (75-85 cmbs) is also considered a primary deposit with the potential to be disturbed. It was associated with the upper five centimeters of a very dark grayish brown (10YR3/2) colored soil A horizon developed in younger alluvium. This horizon exhibits an accumulation of pebbles in its upper 10 cm that implies erosion and suggests disturbance. The partial erosion of this horizon emphasizes the point that sediments at the historic surface have the potential to be disturbed.

The younger alluvium containing the lower shell level (155-175 cmbs) at FO-49 directly overlies older alluvium. Very fine bedding was recorded in the sediments overlying the shell level and the weak, fine, granular soil structure in the level itself. These are delicate geological and pedological characteristics that are easily destroyed. Their presence is an indicator that the basal shell level at FO-49 is a primary or *in situ* cultural deposit.

The position of the lower shell level at FO-49 near the top of the older alluvium is similar to that at the base of the cultural materials at CA-Ala-307 (Wallace and Lathrap 1975:8).

"The bottom of the mound rested upon an underlying clayey material.... a compact yellow alluvium doubtless derived by wash from the nearby hills. The undisturbed yellow soil graded upward into a darker zone, different in texture and appearance, still compacted but containing shell, charcoal, artifacts, and human and animal bones." (Wallace and Lathrap 1975:8)

Pastron (2000:3) recovered buried cultural materials less than [REDACTED]

[REDACTED] These materials were recovered [REDACTED] "directly atop" (Pastron 2000:77) gray/black bay mud. This cultural deposit "consists of dark gray/black silt, or silty/clay, interspersed with flecks of charcoal, a relatively small quantity of fish and mammal bone, a few pieces of fire-affected rock, several possible stone artifacts and ubiquitous amounts of shell" (Pastron 2000:20). He felt that this cultural deposit "may represent an undisturbed, or at least minimally disturbed, remnant of the eastern edge of the West Berkeley Shellmound..." (Pastron 2000:21).

The cultural levels in the [REDACTED] and the shell levels at [REDACTED] are different in three significant areas. First, the cultural levels in the [REDACTED] are more deeply buried than the shell levels on [REDACTED]. Second, the [REDACTED] shell levels are

associated with terrestrial sediments whereas those from the [redacted] directly overlie bay mud. Third, the context of the [redacted] lower shell level is very similar to that described by Wallace and Lathrap (1975:8) at CA-Ala-307. These relationships and the absence of historic materials in Pastron's samples suggest the shells from [redacted] (FO-49 and FO-47 [lower level]) and those from the [redacted] are contemporaneous. The [redacted] transect may represent a higher elevation terrestrial segment of a site that graded into an estuary. We recommend additional testing of this hypothesis.

The shell levels at FO-49 are problematic. First, the fact that there are two levels suggests a second occupation of CA-Ala-307. Second, the position of the brick on the upper level suggests disturbance. Third, it is possible that shells at the historic surface represent road metal or historic "landscaping." An example of such "landscaping" can be seen at [redacted]. Disturbance is also intriguing when considering that Nelson probably used such surface deposits to map site extent. We favor the upper shell level being a younger component in a primary context, but recommend additional research.

[redacted] Core Numbers U-77 to U-91)

Samples from the [redacted] transect were dominated by near shore and off shore bay mud overlain by discontinuous deposits of younger alluvium and historic fill (Units 1 and 2). Two localities were abandoned (U-90, U-91) and five (U-87a, U-87b, U-87c, U-89a, U-89b) others reached depths <50 cm. Considering the proximity of this transect to the viaduct and fact that the entire transect traverses estuary fill, encountering some impenetrable fill is not surprising. Six localities yielded shell levels (U-77 at 90-120 cmbs; U-78 at 50-65 cmbs; U-79 at 90-150 cmbs; U-80 at 90-140 cmbs; U-81 at 130-170 cmbs; and U-82 at 84-90 cmbs).

Locality U-86 also appeared very promising. The locality was less than [REDACTED] of the 1950s excavation. Expectations were high when shell-rich sediments were encountered at 100-120 cmbs. Recovery of brick fragments in the sediments below 120 cmbs made it clear that the shell level at U-86 is within Unit 2 historic fill. Locality U-86 is important. It emphasizes two points: 1) what was available nearby was often used as fill; and 2) shells are not always indicators of prehistoric activity.

The shell level (90-150 cmbs) at U-79 is preserved within younger alluvium that overlies bay mud. Shells in this level are associated with a black soil A horizon 90-120 cmbs that grades to a soil C horizon (120-150 cmbs). Similarity in clast type and size to FO-47 suggests the alluvium is a slope wash deposit derived from nearby older alluvium. The position of the shells suggest they are *in situ*, but their relationship to CA-Ala-307 is unclear. They may represent shells washed from the site to U-79. Additional research is recommended.

Shells in the 90-140 cmbs segment of U-80 are, like those in U-79, associated with younger alluvium that mantles bay mud. This level is considered to be a primary deposit that contains a weak soil (A/B horizons). Shells at U-81 (130-170 cmbs) were within the channel fill facies of the younger alluvium sandwiched between Unit 1 road metal and off shore bay mud.

The relationship of the shell-rich levels in the younger alluvium at U-80 or U-81 to CA-Ala-307 is difficult to assess. For example, why were similar cultural levels absent in the adjacent property (see Paston's 2000)? The context of the shell levels at U-79, U-80 and U-81 provides some insight. These levels are associated with the channel facies of the alluvium that contain a weak soil A horizon. The presence of the soil horizons is an indicator of terrestrial exposure and thus available to humans. Historic records show a willow grove in the estuary. Considering the change in the young alluvium from slope wash to channel fill between U-79 to U-81, it is very possible that the



shells represent a plume of cultural emanating from a terrestrial source (see FO-47). Additional dating is needed to clarify the relationship of these deposits to CA-Ala-307.

The shell level at U-82 (84-90 cmbs) is associated with the top of a partially truncated AB soil horizon developed in older alluvium. This shell level is considered primary because it is similar to that noted at CA-Ala-307 (Wallace and Lathrop 1975). There is a potential that this level may be disturbed since it was the historic ground surface prior to its burial. Its position suggests that the locality may be a small [REDACTED] extension of the small peninsula occupied by CA-Ala-307.

Shell levels east of [REDACTED] are, like U-80 and U-81, within the channel facies of the younger alluvium. Due to poor core sample recovery, all that can be said of the shell levels at U-78 is that they were within a blackened matrix of younger alluvium. Soil/sediment relationships 25 m south at U-77 are more informative. They are within a cumelic, soil A horizon that developed in a sandy clay loam textured, and overbank deposit of younger alluvium. The cumelic A horizon suggests deposition in a frequently flooded terrestrial environment. Because the shell lens is associated with such a terrestrial environment, it is probable the lens is a cultural deposit.

The [REDACTED] samples highlight the need to refine the relationship between CA-Ala-307 and the channel fill younger alluvium. Does it represent historic or prehistoric deposition? Are its shell levels reworked from CA-Ala-307? Do they represent contemporaneous occupation? LRSS favors the latter due to the presence of soil development and the fact the younger alluvium on the upper surface adjacent to CA-Ala-307 also contains cultural material. Additional dating and correlation is recommend.

**Core Numbers S-66 to S-71)**

Twelve localities were sampled in this segment of [REDACTED]. Expectations were high that we would locate remnants of CA-Ala-307. This was due to the fact that: 1) the shellmound had been mapped as crossing [REDACTED] (see Leader 2001: Figure 1874), and 2) we were very near the 1950s excavation site (Wallace and Lathrap 1975). Our results were mixed. Shell levels were encountered at S-69b (275-278 and 311-318 cmbs) and S-71c (155-180 cmbs).

As expected, all of the sample localities across this in-filled estuary yielded thick deposits of historic Unit 1 and Unit 2 fill over bay mud. In many cases, the historic fills contained materials difficult to penetrate with core or auger. Usually this was concrete, but creosote-treated wood at S-71a, S-70b, S-70a, and S-69b was very slow to sample. The extent of the treated wood across a 75m sampling area suggests a wooden wharf or a railroad spur near the estuary.

The bedded and dark colored sediments and shells at S-68 (92-145 cmbs) appeared to be *in situ* similar to those discussed at CA-Ala-307 (Wallace and Lathrap 1975). However, they are a historic secondary deposit. We drilled through a brick near the base of the shell level and recovered a nail in the sediments approximately 55-65 cm below this level.

Shell-rich sediments were recovered at two localities S-69b and S-71c. The upper lens at S-69b (275-278 cmbs and 311-318 cmbs) is within a dark greenish-gray (5GY3/1), finely laminated silt and very fine sand. It is separated from the lower shell zone by very faintly, laminated (2-4 mm thick), organic rich, silty clay. The lower shell zone contains many horizontally bedded shell fragments 1 to 1.5 in length. The shells are within a very dark brown (10YR2/1) colored soil A horizon. This horizon developed in a loamy matrix that contains many, unweathered granules and medium-to-small sized

(16-4 mm) pebbles. Shell levels at S-69b (275-278 cmbs and 311-318 cmbs) are *in situ* and probably originated at CA-Ala-307.

The existence of easily destroyed horizontal bedding indicates the shell lenses are *in situ*. The lack of soil horizons, however, implies that the upper shell level is an alluvial deposit. Conversely, evidence of soil development in the lower shell lens suggests availability to human habitation and that the lower level is a primary deposit. Archaeological evidence such as tools, charcoal, bone or dates from these levels is needed to firmly establish their connection to CA-Ala-307.

A shell level was noted at S-71c (155-180 cmbs) that contained shell fragments <1 cm long at S-71c within a poorly sorted matrix of near shore bay mud, sands, and granule-sized (2-4 mm diameter) materials. This looks like a cultural deposit similar to that noted by Pastron (2000).

[REDACTED]

#### **Core Numbers H-26 and H-27 and H-53 to H-66)**

West of [REDACTED], samples from this lengthy transect are dominated by thick historic fills over bay mud. East of [REDACTED] historic fills mantle older alluvium. The bay mud is especially deep at H-62 (>4.36 m) near the boundary of the estuary and the terrestrial sediments (H-61). This relationship suggests that, in this sector, the boundary of CA-Ala-307 is very sharp. Between [REDACTED], the substratum is older alluvium containing the argillic Big Red paleosol.

Two localities at the [REDACTED] intersection (H-26 and H-27) exhibited the gleyed variant of Big Red. The presence of gleyed sediments implies that, in times of increased sea levels, extensive segments of the upper surface were inundated.

Six localities (H-53, H-56, H-58, H-59, H-60, and H-61), between [REDACTED] [REDACTED], have primary shell deposits with characteristics similar to those noted at CA-Ala-307 (Wallace and Lathrup 1975). These levels are at the top of the older alluvium

(AB soil horizon; H-53 at 83-109 cmbs and H-58 at 31-53 cmbs) and in the younger alluvium that mantles it (A horizon; H-56 at 42-57 cmbs; H-59 at 51-71 cmbs; H-60 at 53-100 cmbs; and H-61 at 84-124 cmbs). Localities H-61, H-60, H-59 and H-58 are [REDACTED] [REDACTED] (see Leader 2000, Figure 1874). The presence of shell levels further to the east (H-56, H-53) and south (FO-49, FO-47) suggests that these boundaries need adjustment.

A sparse deposit of disseminated shell fragments was present in unweathered Unit 2 aggregate gravel 60-83 cmbs at locality H-53. A primary shell level also containing sparse shell fragments at 83-109 cmbs was associated with the truncated AB horizon of Big Red. The position of this level and the soil/sediment characteristics are similar to those noted by Wallace and Lathrap (1975). Because the deposit was at the historic ground surface, there is a potential for disturbance.

The sparse shell fragments at H-56 (42-57 cmbs) are associated with a soil A horizon developed in younger alluvium. The soil is recognized by its black color (10YR2/1) and the younger alluvium by its fan gravels. The position of this level and the sediment type are similar to those noted at CA-Ala-307 (Wallace and Lathrap 1975). Like H-53, its position at the historic ground surface suggests disturbance.

Shell fragments at H-58 (31-53 cmbs) are in a very dark brown (10YR2/2), silty clay loam textured AB horizon developed in older alluvium. The position of this level and the sediment type are similar to those noted by Wallace and Lathrap (1975). Similar to H-53 and H-56, the position of this horizon at the historic ground surface suggests disturbance.

Shells at H-59 (51-71 cmbs) are associated with a dark colored soil A horizon developed in younger alluvium. The younger alluvium is mantled by Unit 1 road metal and overlies older alluvium that contains the AB variant of Big Red. The position of this dark (10YR3/2) paleosol suggests it is similar to those noted by Wallace and Lathrap



(1975). Again, because it was at the [REDACTED], these sediments may be disturbed. This potential is increased by the absence of historic Unit 2 fill.

The shell level at H-60 (53-100 cmbs) is also a primary deposit within an A horizon developed in younger alluvium. Like locality H-59, the younger alluvium is mantled by Unit 1 road metal and overlies older alluvium containing the AB variant of Big Red. The potential for disturbance is high; Unit 2 sediments did not mantle the locality.

The position and composition of the shell level at H-61 suggest it is a primary deposit. Shells at 84-124 cmbs were disseminated within a very dark brown (10YR2/1) soil A horizon developed in younger alluvium. The alluvium directly overlies the AB horizon of Big Red. Similar to the other [REDACTED] shell levels in younger alluvium, there is a potential for historic disturbance.

## SUMMARY AND RECOMMENDATIONS

Primary *in situ* archaeological materials considered an extension of CA-Ala-307 are associated with the terrestrial deposits at H-53, H-56, H-58, H-59, H-60 and H-61 on [REDACTED] and at FO-49 and FO-47 on [REDACTED]. The physical characteristics of these localities are similar to those described at the West Berkeley site (Wallace and Lathrap 1975:8). The presence of two shell levels at FO-49 suggests multiple occupations. Proximity implies that the lower shell level at FO-49 is the terrestrial equivalent of those on bay mud to the west (Pastron 2000).

Shell levels at U-82, U-81, U-80, U-79, U-78, and U-77 are associated with weak soil A horizons developed in the channel variant of the younger alluvium. Soil and stratigraphic evidence suggests these are primary cultural deposits, but their age and relationship to the occupation of CA-Ala-307 is unclear. Sedimentary evidence at U-79 implies that the shell levels west of U-79 are part of a plume of cultural sediments emanating from the vicinity of FO-47. Additional research on this relationship is recommended.

Orientation and bedding indicate the shell levels at S-69b on [REDACTED] are within non-disturbed alluvium. It is probable that shells in the upper level are a secondary deposit. Evidence of soil development in the lower shell level suggests it is a primary deposit corresponding with the occupation of CA-Ala-307. Similar to those noted by Pastron (2000), shells at S-71c overlie bay mud.

Shell levels from the other sample localities are considered to be secondary deposits associated with historic fill.

Our study suggests the [REDACTED] are not as inclusive as those shown in Leader (2001). Evidence from [REDACTED] suggests the site extended further to the [REDACTED]. Interpretations of previous research, especially that of

Pastron (2000) and Wallace and Lathrap (1975), together with positions/extents of the bay mud and the terrestrial older alluvium, suggests that the samples from [REDACTED] (Pastron 2000) are not the [REDACTED] boundary of the site. The site appears to have occupied a [REDACTED]

[REDACTED]. Both the site elevation and the elevations of late Holocene sea level increases suggest that CA-Ala-307 was positioned to take advantage of the local peninsula's height and proximity to an estuary.

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## **Appendix E: Core Profiles**



































































































































































































































































