CULTURAL RESOURCES BACKGROUND REPORT AND ARCHAEOLOGICAL SENSITIVITY MAP FOR THE CITY OF SANTA CRUZ GENERAL PLAN UPDATE

SANTA CRUZ, SANTA CRUZ COUNTY, CALIFORNIA

LSA

December 2006

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SANTA CRUZ, SANTA CRUZ COUNTY, CALIFORNIA

Submitted to:

Michelle King
Senior Planner
City of Santa Cruz
Planning and Community Development
809 Center Street
Santa Cruz, CA 95060

Prepared by:

Andrew Pulcheon, M.A., RPA #11693, RPH #581
E. Timothy Jones, M.A., RPA #15531
Michael Konzak, M.A., RPA #15877
LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801
(510) 236-6810
www.lsa-assoc.com

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December 8, 2006

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INTRODUCTION

LSA Associates, Inc. (LSA) prepared this cultural resources background report (report) to assist the City of Santa Cruz (City), California, in updating the City's General Plan. The report contains background information about the City's cultural resources and, as a subset of cultural resources, its paleontological resources. The report also contains archaeological and paleontological sensitivity maps to identify areas of resource sensitivity.

The purpose of this report is to (1) describe the archaeological, ethnographic, historical, and paleontological background of the City's General Plan Area (GP Area); (2) present maps of the GP Area's archaeological and paleontological sensitivity based on previous studies and known resources; and (3) review proposed General Plan policies for archaeological deposits and paleontological resources, and recommend, as appropriate, procedures to trigger site-specific study to address such resources in the planning process.

The cultural and paleontological resources background will form the basis for the City's cultural resources setting in the General Plan update. The archaeological sensitivity map identifies, at the parcel level, those portions of the GP Area that contain recorded archaeological deposits or that are sensitive for such deposits. The paleontological sensitivity map will identify geological units in the GP Area that are sensitive for paleontological resources. For the purposes of this report, cultural resources are sites, buildings, structures, objects, and districts that have traditional or cultural value for the historical or contemporary significance they possess. Paleontological resources, as a subset of cultural resources, represent the significant fossilized remains of prehistoric plant and animal life.[1]

The report begins with a basic description of the GP Area. The second and third sections describe the cultural resources and paleontological resources methods, respectively, used to prepare the report. The fourth section presents the legal context for cultural and paleontological resources in the GP Area. The fifth and sixth sections summarize the cultural resources and paleontological resources backgrounds, respectively. The seventh and final section of the report assesses the adequacy of the proposed General Plan policies for archaeological deposits and paleontological resources in the GP Area. Recommendations are made for the retention, removal, or modification of previous goals and policies, as well as for measures to trigger site-specific environmental review to identify archaeological deposits or paleontological resources in the GP Area.

GENERAL PLAN AREA

The GP Area comprises the City of Santa Cruz, and is located on nearly level to mountainous terrain on the northern end of Monterey Bay, Santa Cruz County, California (Figures 1 and 2). The GP Area contains 8,018 acres, and consists primarily of urban and parkland uses.

Elevation in the GP Area ranges from sea level to approximately 800 feet above mean sea level. Geologically, the project area lies on alluvial sediments along the San Lorenzo River, Quaternary marine deposits near the coast, and Tertiary marine deposits at higher elevations (Jennings and Strand 1958).

[1] Society for Vertebrate Paleontology, 1995. Conformable Impact Mitigation Guidelines. *Society for Vertebrate Paleontology News Bulletin* 163: January.

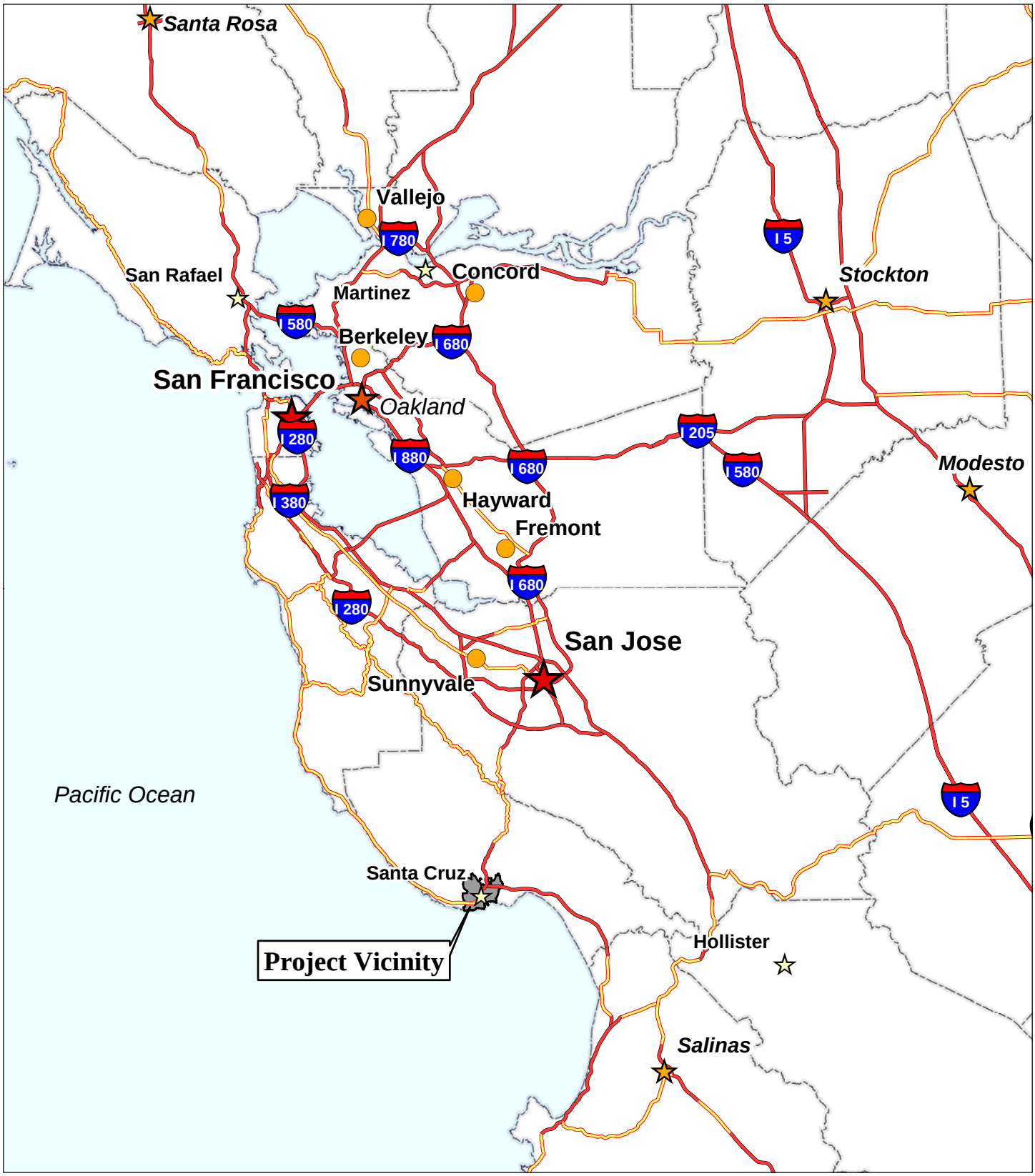

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FIGURE 1

Cultural Resources Background Report and Archaeological Sensitivity Map for the City of Santa Cruz General Plan Update City of Santa Cruz, Santa Cruz County, California

Project Vicinity

0 10 20
Miles

I:\CSN0601\GIS\Maps\Figure1-Vicinity.mxd (09/05/2006)

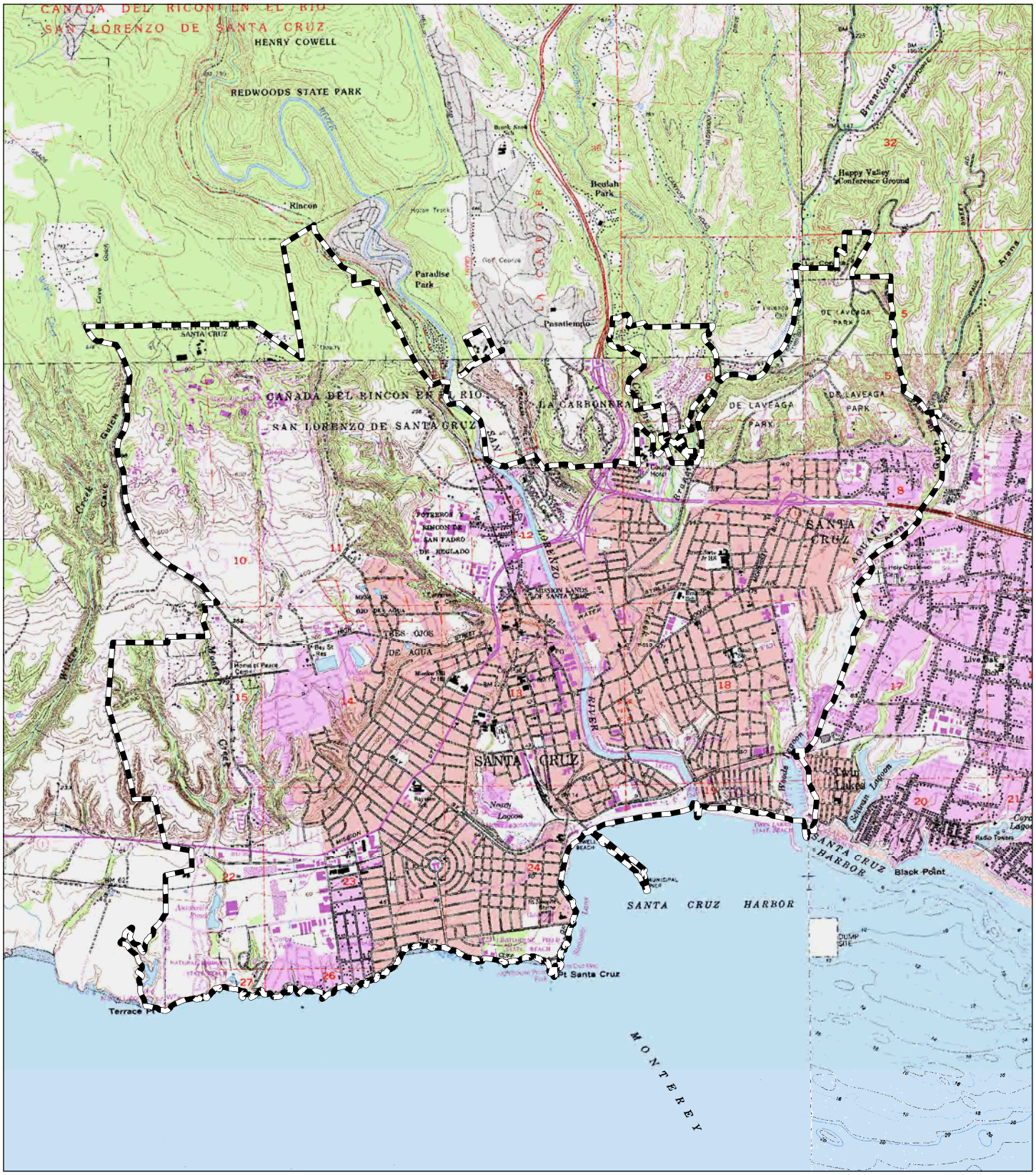

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FIGURE 2

PROJECT AREA (CITY LIMITS)

Cultural Resources Background Report and Archaeological Sensitivity Map for the City of Santa Cruz General Plan Update
City of Santa Cruz, Santa Cruz County, California

Project Area

N

0 2,000 4,000
FEET

USGS 7.5' Quad: Felton, Calif. 1995; Laurel, Calif. 1994; Santa Cruz, Calif. 1994; Soquel, Calif. 1994

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Soils in the project area include the Watsonville-Elkhorn-Pinto series, the Zayante series, the Ben Lomond-Felton-Lompico series, and the Aptos-Los Osos-Fagan series. Watsonville-Elkhorn-Pinto series soils are very deep, nearly level to moderately steep, well drained to somewhat poorly drained loams and sandy loams on marine terraces and old alluvial fans. Zayante series soils are very deep, moderately sloping to very steep, somewhat excessively drained coarse sand on hills and mountains in soils derived from sandstone or in marine deposits. Ben Lomond-Felton-Lompico series soils are deep and moderately deep, moderately sloping to very steep, well drained loams and sandy loams on mountains; derived from sandstone or granitic rock sources. Aptos-Los Osos-Fagan series are moderately deep and deep, moderately sloping to very steep, well drained loams derived from sandstone, shale, siltstone, or mudstone in the Santa Cruz Mountains and on the coast (Bowman and Estrada 1980).

Water sources in the GP Area include the San Lorenzo River, which flows through the middle of the City, and numerous perennial, intermittent, and ephemeral creeks and drainages. The original native flora was coastal prairie scrub mosaic, mixed hardwood forest, and redwood forest. Coastal prairie is a dense to somewhat open, medium tall bunchgrass community with many forbs, and the dominant plants are oatgrass and red fescue. Coastal scrub is an open to dense, broad-leaved evergreen community located in a narrow belt along the coast, and the dominant plant is coyote brush. Mixed hardwood forest is low to medium tall, broad-leaved evergreen forests with a mixture of broad-leaved deciduous and needle-leaved evergreen trees, and dominant plants are madrone, coast live oak, and canyon oak. Redwood forest is very tall, dense, needle-leaved evergreen forest mixed with some broad-leaved evergreen, medium tall trees, and dominants plants are Douglas fir and redwood. Vegetation in the project area today consists of a mixture of extensive residential and commercial landscaping, ornamental plants, domesticated grasses, and trees. Second- and third-growth redwood forest covers much of the uplands (Küchler 1977:23-24).

CULTURAL RESOURCES METHODS

In preparing this report and associated sensitivity map, LSA (1) conducted background research; (2) conducted a windshield field review; (3) contacted persons who may have information about undocumented archaeological deposits in the Santa Cruz area; (4) initiated SB 18 consultation with Native American tribal organizations; and (5) prepared an archaeological sensitivity map. Each of these steps is described below.

Background Research

Background research consisted of a records search, a literature review, and consultation with the Native American Heritage Commission, and was done to (1) identify documented archaeological deposits in the GP Area; (2) determine archaeological sensitivity of the GP Area; and (3) obtain background information about the cultural setting of the GP Area.

Records Search. LSA archaeologist Tim Jones, M.A., RPA #15531, conducted a focused records search for the GP Area on August 29-31, 2006, at Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California. The NWIC is the official state repository of cultural resource records and studies for Santa Cruz County. In addition to the NWIC records search, the City of Santa Cruz provided copies of the reports in their Archaeology Report Database for LSA review and analysis.

The purpose of the focused records search was to (1) identify recorded archaeological deposits in the GP Area; (2) characterize prehistoric settlement patterns as indicated by the distribution of archaeological sites; and (3) identify environmental variables (e.g., slope, distance to water) that correlate with the location of archaeological deposits to determine which portions of the GP Area have the potential for unidentified archaeological deposits.

The records search identified a total of 27 documented archaeological sites in the GP Area. Of the 27 sites, 20 are prehistoric archaeological sites and seven are archaeological sites with both a prehistoric and historical component. A total of 611 cultural resources studies have been done in the GP Area: 392 were identified by the records search, and 219 were identified from the City database review. All of the studies were reviewed by LSA to determine whether archaeological deposits were identified.

Literature Review. LSA reviewed publications, inventories, maps, and websites for archaeological, historical, ethnographic, and environmental information about the GP Area. The purpose of the literature review was to identify documented cultural resources (other than archaeological sites) in the GP Area for the background report, as well as identify locations of documented historical activity. As part of the literature review, LSA reviewed the following sources:

- *California Inventory of Historic Resources* (California Department of Parks and Recreation 1976);
- *Five Views: An Ethnic Historic Site Survey for California* (California Office of Historic Preservation 1988);
- *California Historical Landmarks* (California Office of Historic Preservation 1996);
- *California Points of Historical Interest* (California Office of Historic Preservation 1992);
- *National Register of Historic Places* (National Park Service, 2006)
- *Santa Cruz Historic Building Survey* (Page and Associates 1976);
- *Historic Context Statement for the City of Santa Cruz* (Lehmann 2000);
- *Historic Preservation in Santa Cruz* (City of Santa Cruz 2006).

In the GP Area, the literature review identified 671 historic building survey entries; 21 National Register of Historic Places listings (including two districts); one National Historic Landmark; 33 California Inventory of Historic Resources listings; two California Points of Historical Interest listings; 25 California Historical Landmark listings; and one Five Views listing.

The following publications and maps were reviewed for archaeological, ethnographic, and historical information about the GP Area:

- *Handbook of the Indians of California* (Kroeber 1925);
- "*Costanoan*" in Handbook of North American Indians, Volume 8: California (Levy 1978);
- *Historic Spots in California* (Hoover et al. 1990);
- *California Place Names: The Origin and Etymology of Current Geographical Names* (Gudde 1998);

- *Adobe Houses in the San Francisco Bay Region* (Bowman 1951);

Native American Heritage Commission

On September 12, 2006, LSA contacted the Native American Heritage Commission (NAHC) in Sacramento to request that the NAHC search their sacred lands file for any cultural resources in the GP Area. On September 25, 2006, the NAHC responded by faxed letter stating that the sacred lands file did not list cultural resources in the GP Area.

Windshield Field Review

The preliminary field reconnaissance was done to gain a sense of the historical development in the GP Area and identify, if possible, areas that may contain potentially significant archaeological deposits. Areas that appeared to have significant concentrations of historical architectural resources were reviewed.

Knowledgeable Persons Contacts

LSA contacted persons and organizations familiar with cultural resources in the GP Area. The purpose of the contacts was to obtain information about undocumented archaeological sites in the GP Area. LSA contacted the following individuals: Mr. Ed Silveira; Ms. Sally Morgan; Dr. Diane Gifford-Gonzalez; and Dr. Ruben Mendoza. LSA's contacts are briefly summarized below.

On October 5, 2006, LSA sent an email to Mr. Ed Silveira, founder of the Villa de Branciforte Preservation Society, requesting information about the location of archaeological deposits associated with the former Spanish settlement of Villa de Branciforte, which lay east of the San Lorenzo River in the GP Area. Mr. Silveira responded by voicemail to state that the Society was interested in assisting the City in identifying areas of archaeological sensitivity. On November 3 and 4, 2006, local Santa Cruz archaeologist Mr. Ben Curry, on the behalf of the Society, provided LSA historical maps depicting the location of buildings and structures associated with the Villa de Branciforte.

On October 5, 2006, LSA sent an email to Ms. Sally Morgan, Senior Environmental Planner, University of California, Santa Cruz (UCSC), requesting information about the location of archaeological deposits in the GP Area. Ms. Morgan responded by phone to state that she did not have specific information about archaeological deposits in the GP Area outside of the UCSC campus, but that several cultural resources surveys had been conducted on university property in recent years.

On October 9, 2006, LSA sent an email to Dr. Diane Gifford-Gonzalez, Professor of Anthropology, UCSC, requesting information about the location of archaeological deposits in the GP Area. Dr. Gifford-Gonzalez responded by email on November 12, 2006, stating the UCSC has no information about the location of archaeological deposits in the GP Area.

On October 13, 2006, LSA sent an email to Dr. Ruben Mendoza, Professor of Social and Behavioral Sciences at California State University, Monterey Bay, requesting information about the location of archaeological deposits in the GP Area, particularly deposits associated with the mission or Villa de Branciforte. No response has been received to date.

In addition to the above-described contacts, on September 28, 2006, Christian Gerike, M.A., RPA

#15630, presented the initial results of LSA's research to the City of Santa Cruz General Plan Advisory Committee. The purpose of the presentation was to apprise the Committee of LSA's research; provide recommendations regarding the adoption of proposed General Plan policies for cultural resources; and provide an opportunity for Committee members to ask questions about the identification and management of cultural resources in a legal context.

Senate Bill 18 Consultation Initiation

On behalf of the City of Santa Cruz, LSA contacted Native American tribes and tribal organizations pursuant to the requirements of California Government Code §65352.3 (implementation of Senate Bill 18).

On September 12, 2006, LSA sent a letter to the Native American Heritage Commission (NAHC) in Sacramento requesting a Senate Bill 18 consultation list. On October 4, 2006, LSA sent letters to the tribes and tribal organizations identified by the NAHC to notify them of their opportunity to consult with the City regarding the General Plan Update. Two organizations, the Pajaro Valley Ohlone Indian Council and the Amah Mutsun Tribal Band, responded affirmatively to the letters and requested consultation with the City pursuant to Senate Bill 18.

On November 3, 2006, representatives from the City and LSA met with representatives of the two tribal organizations: the Amah Mutsun Band of Ohlone/Costanoan Indians, represented by Mr. Valentin J. Lopez; and the Pajaro Valley Ohlone Indian Council, represented by Mr. Patrick Orozco. Mr. Rob Edwards, Director of the Archaeology Technology Program at Cabrillo College, accompanied Mr. Orozco. The City, LSA, and tribal representatives discussed the nature of the project, the potential for impacts to cultural places, and outlined a process for continued consultation pursuant to Senate Bill 18.

Archaeological Sensitivity Map

LSA prepared an archaeological sensitivity map for the GP Area based on the background research. The map was prepared in GIS format, and the sensitive areas were determined through geospatial analysis. A hardcopy of the sensitivity map is included in Appendix A, and an electronic GIS file has been transmitted to the City. Not all GIS layers prepared for the map are shown on the hardcopy map, but a narrative summary of all layers is included in Appendix B.

The results of LSA's research provided data on prehistoric site distribution and settlement patterns. Using these data, LSA identified those portions of the GP Area that are sensitive for prehistoric archaeological deposits. However, when historical maps were reviewed to determine historical archaeological sensitivity, it was evident that almost all portions of the GP Area have seen some type of historical land use, and some areas contain concentrations of historical activity (e.g., the City's urbanized, historical downtown). Based on this information, the GP Area can be considered sensitive for historical archaeological deposits. However, without detailed archival research that is beyond the scope of this study, the historical archaeological sensitivity of specific portions of the GP Area cannot be determined.

The following subsections describe the methods used for GIS georeferencing, site boundary delineation, sensitivity assessment, and parcel coding.

Georeferencing. Close sources of water were a major factor that Native Americans took into account in locating habitation and resource processing sites. The location and extent of modern water sources as shown on contemporary maps, however, can differ substantially from their historical configurations, and can lead to inaccurate assessments of archaeological sensitivity. These differences could be the result of natural processes, or could reflect cultural manipulation in the historic period (e.g., channelization, damming, diversion, etc.). Because of such variations, LSA's analysis sought to identify the original size, extent, and location of water sources prior to Euro-American contact, when the configuration of such water sources more closely matched environmental conditions in prehistoric times. For instance, if prehistoric sites are typically distributed within a certain distance of a watercourse, the use of that proximity to identify possible site locations today would be inaccurate if watercourses have since shifted locations due to human or natural modification.

To address this situation, LSA used historical maps to identify the pre-contact location and alignment of hydrologic features in the GP Area to achieve a higher level of accuracy in mapping archaeologically sensitive areas. Historic-period maps were geo-referenced using ESRI ArcGIS, wherein the original location and extent of water sources were digitized and overlain on an outline of the GP Area on USGS topographic maps. Georeferencing involved the use of prominent geographical features, such as peaks, bays, shorelines, waterways, and street intersections, to align historical maps to modern USGS topographic maps.

Water course information was taken from two sources to maximize the accuracy of the analysis. The alignments of larger watercourses were obtained from a variety of historic maps dating from 1854 to 1919. The alignment and locations of intermittent and perennial streams, ponds and small lakes, not present due to the scale of earlier maps, were obtained from modern hydrology GIS layers. Slope was analyzed through the use of modern computerized raster-graphs provided by the City.

Site Boundary Delineation. During the archival records search, archaeological site boundaries were hand traced from NWIC base maps. The hand-traced boundaries were later digitized in ESRI ArcGIS onto a USGS topographic map.

Sensitivity Assessment. LSA used GIS analysis to identify environmental variables that correlated with site location. Using two associative variables (distance to water and slope/elevation), the GIS was queried to identify sensitive areas in the GP Area.

The ArcGIS analysis showed that 83% of recorded archaeological sites in the GP Area lie within 300 meters (975 feet) of larger historical watercourses and smaller perennial and intermittent streams. When limited to just prehistoric archaeological sites or those sites with prehistoric components, the percentage increases to 85%. No recorded archaeological sites lie completely on a slope that is greater than 30°, and only 25% of recorded sites contain a slope of that magnitude within their boundaries.

The sensitivity analysis identified as archaeologically sensitive those parcels that lie on a slope less than or equal to 30° and that are within 300 meters (975 feet) of the maximum historical expanse of the larger watercourses. The archaeologically sensitive areas also include (1) parcels on which previous study identified (but did not formally record) archaeological materials; (2) parcels within 20 meters (65 feet) of recorded archaeological deposits; and (3) areas with concentrations of documented historical activity (e.g., the original Santa Cruz Mission lands and Mission Santa Cruz State Historic Park).

Parcel Coding. Individual parcels in the GP Area were coded according to their archaeological sensitivity. The coding was directly based on the GIS analysis and the location of recorded archaeological deposits. It should be noted that a parcel may contain a non-archaeological cultural resource (e.g., a historic building) regardless of its coding on the archaeological sensitivity map.

For each parcel, coding identifies one of four sensitivity values, as described below:

- Parcels with Heightened Archaeological Sensitivity

  These parcels are red on the sensitivity map. These parcels either (1) contain all or portions of a recorded archaeological deposit, as shown on NWIC base maps; (2) lie wholly or partially within a 20-meter buffer around the boundaries of a recorded archaeological deposit; or (3) contain archaeological materials identified by a professional archaeologist during prior study.

- Parcels with No Documented Archaeological Deposits, but within a Sensitive Area

  These parcels are pink on the sensitivity map. These parcels are not recorded as the location of archaeological sites as shown on NWIC base maps. However, these parcels are within the areas identified as sensitive by the GIS analysis.

- Parcels Previously Studied with Negative Results

  These parcels are blue on the sensitivity map. These parcels have been previously studied by a professional archaeologist with negative results (i.e., no archaeological deposits were identified). Some of these parcels, though studied with negative results, are located in sensitive areas.

- Parcels Not Previously Studied and Not within Sensitive Area

  These parcels are light blue on the sensitivity map. These parcels have not been previously studied by a professional archaeologist, and are not within the areas identified as sensitive by the GIS analysis.

PALEONTOLOGICAL RESOURCES METHODS

LSA conducted background research for the paleontological resources analysis. Background research consisted of a fossil locality search and a literature review, and was done to identify geologic units, fossil localities (i.e., a location at which paleontological resources have been documented), and the types of fossils that may be within or adjacent to the GP Area. Based on the results of the background research, LSA prepared a paleontological sensitivity map (Appendix D).

Fossil Locality Search. A fossil locality search for the GP Area was conducted online on September 24, 2006, using the Berkeley Natural History Museums online database, specifically those data from the University of California Museum of Paleontology, Berkeley.

The locality search identified 48 vertebrate fossil localities within five miles of Santa Cruz. These localities have yielded 786 recorded vertebrate fossil specimens, and are found in the Santa Margarita Sandstone, Santa Cruz Mudstone, Purisima Formation, and from the Late Pleistocene terrace deposits in and near the GP Area.

Literature Review. LSA reviewed paleontological and geological literature relevant to the GP Area. The review identified four geologic units in the GP Area known to contain fossils: Late Pleistocene alluvium; the Purisima Formation; the Santa Cruz Mudstone; and the Santa Margarita Sandstone. Please refer to the References Consulted section for a list of all literature reviewed.

Paleontological Sensitivity Map. LSA prepared a paleontological sensitivity map for the GP Area based on background research (Appendix D). The map was prepared in GIS format, and the sensitive geologic units were overlain on a USGS topographic quadrangle background.

LEGISLATIVE CONTEXT OF THE GENERAL PLAN AREA

The following subsection summarizes the legislative context for cultural and paleontological resources in the GP Area.

California Environmental Quality Act (CEQA)

CEQA applies to all discretionary projects undertaken or subject to approval by the state's public agencies (California Code of Regulations [CCR] Title 14(3) §15002(i)). CEQA states that it is the policy of the State of California to "take all action necessary to provide the people of this state with… historic environmental qualities…and preserve for future generations examples of the major periods of California history" (Public Resources Code [PRC] §21001(b), (c)). Under the provisions of CEQA, "A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment" (CCR Title 14(3) §15064.5(b)).

CEQA defines a "historical resource" as a resource which meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register;
- Listed in a local register of historical resources (as defined at PRC §5020.1(k));
- Identified as significant in a historical resource survey meeting the requirements of §5024.1(g) of the Public Resources Code; or
- Determined to be a historical resource by a project's lead agency (CCR Title 14(3) §15064.5(a)).

A historical resource consists of "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…Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing in the California Register of Historical Resources" (CCR Title 14(3) §15064.5(a)(3)).

CEQA requires that historical resources and unique archaeological resources be taken into consideration during the CEQA planning process (CCR Title 14(3) §15064.5; PRC §21083.2). If feasible, adverse effects to the significance of historical resources must be avoided, or the effects mitigated (CCR Title 14(3) §15064.5(b)(4)). The significance of an historical resource is materially impaired when a project demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its

eligibility for the California Register of Historical Resources. If there is a substantial adverse change in the significance of a historical resource, the preparation of an environmental impact report may be required (CCR Title 14(3) §15065(a)).

If the cultural resource in question is an archaeological site, CEQA (CCR Title 14(3) §15064.5(c)(1)) requires that the lead agency first determine if the site is a historical resource as defined in CCR Title 14(3) §15064.5(a). If the site qualifies as a historical resource, potential adverse impacts must be considered in the same manner as a historical resource (California Office of Historic Preservation 2001a:5). If the archaeological site does not qualify as a historical resource but does qualify as a unique archaeological site, then the archaeological site is treated in accordance with PRC §21083.2 (CCR Title 14(3) §15069.5(c)(3)). In practice, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource (Bass, Herson, and Bogdan 1999:105).

CEQA defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information; or
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC §21083.2(g)).

If an impact to a historical or archaeological resource is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). Mitigation of significant impacts must lessen or eliminate the physical impact that the project will have on the resource. Generally, the use of drawings, photographs, and/or displays does not mitigate the physical impact on the environment caused by demolition or destruction of a historical resource. However, CEQA requires that all feasible mitigation be undertaken even if it does not mitigate impacts to a less than significant level (California Office of Historic Preservation 2001a:3-4; see also CCR Title 14(3) §15126.4(a)(1)).

California Register of Historical Resources

The California Register of Historical Resources (California Register) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The California Register helps government agencies identify, evaluate, and protect California's historical resources (California Office of Historic Preservation 2001b:1), and indicates which properties are to be protected from substantial adverse change (PRC §5024.1(a)). Any resource listed in, or eligible for listing in, the California Register is to be considered during the CEQA process (California Office of Historic Preservation 2001a:4).

A cultural resource is evaluated under four California Register criteria to determine its historical significance. A resource must be significant at the local, state, or national level in accordance with one or more of the following criteria:

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

Resource Age. In addition to meeting one or more of the above criteria, the California Register requires that sufficient time must have passed to allow a "scholarly perspective on the events or individuals associated with the resource." Fifty years is used as a general estimate of the time needed to understand the historical importance of a resource (California Office of Historic Preservation 1999:3; CCR Title 14(11.5) §4852 (d)(2)). The State of California Office of Historic Preservation recommends documenting, and taking into consideration in the planning process, any cultural resource that is 45 years or older (California Office of Historic Preservation 1995:2).

Integrity. The California Register also requires a resource to possess integrity, which is defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association" (California Office of Historic Preservation 1999:2).

Period of Significance. The period of significance for a property is "the span of time when a property was associated with important events, activities, persons, cultural groups, and land uses or attained important physical qualities or characteristics" (National Park Service 1999:21). The period of significance begins with the date of the earliest important land use or activity that is reflected by historic characteristics tangible today. The period closes with the date when events having historical importance ended. The period of significance for an archeological property is "the time range (which is usually estimated) during which the property was occupied or used and for which the property is likely to yield important information" (National Park Service 2000:34). Archaeological properties may have more than one period of significance.

Eligibility. Resources that are significant, meet the age guidelines, and possess integrity will generally be considered eligible for listing in the California Register.

Public Resources Code §5097.5

California Public Resources Code §5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

Human Remains

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

Paleontological Resources

Paleontological resources are fossilized remains of plants and animals, and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources (Conformable Impact Mitigation Guidelines Committee 1995).

CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 also applies to paleontological resources (see above).

Santa Cruz General Plan and Historic Preservation Ordinance

The City's General Plan contains goals, policies, and programs for cultural and paleontological resources. The City also, as part of its status as a Certified Local Government, has a historic preservation ordinance. Table 2 lists the General Plan's existing goals, policies, and programs. The historic preservation ordinance is described below.

The historic preservation ordinance (HPO) provides for the protection, enhancement, and perpetuation of significant cultural resources in the GP Area. The HPO provides the statutory framework for local preservation decisions, and contains sections governing the following topics:

- Historic District Designation (Part 2, Chapter 24.06);
- Historic Landmark Designation (Section 24.12.420);
- Archaeological Procedures (Section 24.12.430);
- Procedure for Amending Historic Building Survey (Section 24.12.440);
- Procedure; New Construction in Historic Districts (Section 24.12.450);
- Historic Alteration Permit (Part 10, Chapter 24.08);
- Historic Demolition Permit (Part 11, Chapter 24.08); and
- Historic Overlay District (Part 22, Part 22, Chapter 24.10).

CULTURAL RESOURCES BACKGROUND

This section presents the results of LSA's research on the cultural resources background of the GP Area. The GP Area's prehistory is summarized first, followed by a description of the GP Area's ethnography and history. A brief description of the GP Area's architectural heritage is the final subsection.

Prehistory

The General Plan area is in the Monterey Bay Area, a cultural-historical geographic region which spans the central California coastline from Big Sur northward to just south of the San Francisco Bay (T. Jones 1993). The boundary of the cultural-historical region is approximate, but generally corresponds to southern Costanoan language groups (see below) and its convenience as a geographic area of analysis (Monterey Bay Area) for which chronology and cultural patterns can be developed and interregional comparisons made.

In contrast to the San Francisco Bay Area, where U.C. Berkeley archaeologists conducted extensive research at bayshore shell middens in the early 20th century, the Monterey Bay Area witnessed relatively little prehistoric archaeological research prior to 1970. Notable exceptions include excavations conducted by Saxe (1875) at CA-SCR-7, north of Santa Cruz, and Pritchard (1968) at CA-MNT-101, on the Monterey Peninsula, and various archaeological surveys conducted in the vicinity of Elkhorn Slough along the central Monterey Bay shoreline (Fisher 1935; Gifford 1913; Golomshtok 1922; Hill 1929; Wood 1930).

Our knowledge of Monterey Bay Area prehistory, however, has increased significantly since 1970 with the passage of environmental legislation, including the National Historic Preservation Act and the California Environmental Quality Act, which require agencies that fund, permit, or conduct projects consider project-related impacts to archaeological resources in the planning process. Since 1970, dozens of archaeological sites have been recorded and excavated in the Monterey Bay Area, providing insights into the chronology of the region, as well as information about the subsistence and settlement patterns of Native American groups.

The prehistory of the Monterey Bay Area is categorized according to temporal "periods." The period concept was introduced to California archaeology by David A. Fredrickson (1973:112-116) and refers to the general social, economic, and environmental adaptations of Native California populations during a given time in prehistory. Fredrickson's (1974) Paleo-Archaic-Emergent cultural sequence is commonly used to interpret the prehistoric occupation of Central California and is broken into three broad periods: the Paleoindian Period (10,000-6000 B.C.); the three-staged Archaic Period, consisting of the Lower Archaic (6000-3000 B.C.), Middle Archaic (3000-500 B.C.), and Upper Archaic (500 B.C.-A.D. 1000); and the Emergent Period (A.D. 1000-1800). T. Jones' (1993) updated period sequence, which integrates data from the central California coast, consists of the Paleoindian (9000-6500 B.C.), Millingstone (6500-3500 B.C.), Early (3500-1000 B.C.), Early/Middle Transition (1000-600 B.C.), Middle (600 B.C.-A.D. 1000), Middle/Late Transition (A.D. 1000-1200), Late (A.D. 1200-1500), Protohistoric (A.D. 1500-1769), and Historic (post A.D. 1769) periods.

Archaeological sites dating to the Paleoindian and Millingstone periods in the Monterey Bay Area are rare, and the components are poorly defined. Sites from these periods, however, have been identified north of Santa Cruz in Scotts Valley (CA-SCR-177) and at Elkhorn Slough (CA-MNT-229), and

include crescent shaped flaked tools (crescents), long-stemmed projectile points, cobble/core tools, and milling slabs and handstones. Data from these early periods suggest occupation of the Monterey Bay Area beginning as early as ca. 8000 B.C., and possibly earlier at the Scotts Valley site (Fenenga 1993:245-254). The Early and Early/Middle Transition periods (3500-600 B.C.) have been defined based on excavations at sites such as CA-MNT-387, -391, and CA-SCR-7, and includes assemblages containing thick rectangular, end-ground, and split *Olivella* beads; contracting-stemmed, square-stemmed, and side-notched projectile points; mortars and pestles; and handstones and millingslabs (Cartier 1993). Middle and Middle/Late Transition periods (600 B.C.-A.D. 1200) sites have been identified near Elkhorn Slough (CA-MNT-229) and near Salinas (CA-MNT-3). Sites from these periods include bowl and hopper mortars; long-stemmed, concave base, and side-notched projectile points. Archaeological evidence of the Late and Protohistoric periods (A.D. 1200-1769) is poorly represented in the Monterey Bay Area, although sites dating to this period have been identified in the Santa Cruz Mountains (CA-SCR-20) and within City of Santa Cruz limits (CA-SCR-160). Sites dating to these periods include schist, clamshell, and abalone disc beads; small side-notched projectile points; hopper and bedrock mortars; millingslabs; pestles; and handstones.

For over a quarter century, Native American settlement and subsistence patterns in the Monterey Bay Area have been understood in terms of a forager-collector model (Breschini and Haversat 1980; Dietz and Jackson 1981). This model, based on Binford's (1980) seminal ethnoarchaeological research, posits that, before 2,000 years ago, small mobile foraging groups characterized Monterey Bay Area settlement. These foraging groups established temporary residential bases near seasonally available resource patches and gathered food daily on an "encounter" basis, with no storage of food. Archaeologically, residential "forager" bases should reflect seasonal usage and exploitation of resources and a wide variety of artifacts and features representing various social, economic, and ritual activities. Foragers were eventually displaced by "collectors" who occupied year round or semi-permanent residential sites who, unlike foragers, did not relocate residential sites to seasonal resource patches. Instead, groups would leave the residential base to establish temporary sites where resources were collected, processed, stored, and returned to the village. The key distinction is that resources were moved to consumers in collector societies, while foragers followed resource patches as they became available. Breschini and Haversat (1980) have suggested that foragers represent Hokan groups who were later displaced by Penutian (ancestral Costanoan) groups who practiced a collector settlement strategy.

More recently, however, the validity of Binford's (1980) forager-collector model for understanding the subsistence and settlement practices from the Monterey Bay Area has been questioned (D. Jones 1992), and Native American settlement-subsistence patterns in the region are a research issue that future archaeological research may help to clarify.

To date, 27 archaeological sites with prehistoric components have been identified within the GP Area (Table 1). The vast majority of these sites have not been systematically studied, and much remains to be learned about the GP Area's earliest inhabitants. However, radiocarbon and obsidian hydration data indicate that present-day Santa Cruz was occupied beginning in the Early Period, from at least 1750 B.C. and quite possibly earlier (Bourdeau 1989).

Extensive archaeological excavations and analyses have been completed within the City at CA-SCR-93/H (Bourdeau 1986; Breschini and Haversat 1981) and CA-SCR-160 (Edwards and Simpson-Smith

Table 1. Recorded Archaeological Deposits in the General Plan Area

Trinomial	Primary Number	Resource Description
CA-SCR-12	P-44-000018	Habitation midden
CA-SCR-24/H	P-44-000030	Habitation midden; c. 1890s residence; historic refuse pits
CA-SCR-25	P-44-000031	Habitation midden
CA-SCR-80	P-44-000085	Lithic and shell scatter
CA-SCR-87/H	P-44-000091	Habitation midden; historic artifact scatter
CA-SCR-89	P-44-000093	Habitation midden
CA-SCR-93/H	P-44-000097	Habitation midden; Mission-period occupation site
CA-SCR-94	P-44-000098	Lithic scatter
CA-SCR-106	P-44-000110	Habitation midden
CA-SCR-114	P-44-000118	Habitation site with groundstone, flaked tools, and shell
CA-SCR-116/H	P-44-000120	Lithic scatter; Craig-Lorenzana Adobe
CA-SCR-142	P-44-000145	Lithic scatter
CA-SCR-145	--	Habitation midden
CA-SCR-160	P-44-000163	Habitation midden
CA-SCR-181	P-44-000183	Lithic scatter
CA-SCR-187	P-44-000189	Habitation midden
CA-SCR-200	--	Lithic and shell scatter
CA-SCR-261	P-44-000263	Habitation midden
CA-SCR-269/H	P-44-000271	Lithic scatter; ca. 1860s trash pit
CA-SCR-270/H	P-44-000272	Habitation midden; historic trash pits and scatter
CA-SCR-273/H	P-44-000274	Lithic, shell, and bone scatter; historical fill and trash scatter
CA-SCR-274	P-44-000312	Habitation midden
CA-SCR-276	P-44-000275	Habitation midden
CA-SCR-293	P-44-000286	Habitation midden
--	P-44-000302	Shell scatter
CA-SCR-356	P-44-000577	Habitation midden
CA-SCR-363	P-44-000594	Habitation midden

1991), sites which are considered eligible for listing in the National Register of Historic Places based on the important information they contain for understanding the prehistory of the region.[2]

Archaeological excavations at CA-SCR-93/H by Breschini and Haversat (1981) identified a major Native American occupation site that contains artifacts, including olive snail (*Olivella*) beads, an

[2] Sites which are eligible for listing in the National Register of Historic Places are also considered eligible for listing in the California Register of Historical Resources.

abalone (*Haliotis*) shell ring, mussel (*Mytilus*) shell fish hooks, and ground and battered stone; subsistence related detritus including fragmentary land mammal and fish bones; and human bone. Breschini and Haversat (1981:15) obtained a radiocarbon date of 1260 B.C. from shell at the site. Bordeau's (1986) subsequent excavation at CA-SCR-93/H obtained radiocarbon dates which indicate the site was occupied from at least 1750 B.C. to A.D. 190, providing evidence of the earliest known occupation within the City's limits. Bordeau's research suggests the site contains evidence of early Hokan group occupation, prior to their displacement or absorption by Penutian (ancestral Ohlone) groups.

Excavations at CA-SCR-160 identified a Late Period site dating from A.D. 1200-1450 (Edwards and Simpson-Smith 1991). The site includes fire hearths, midden soils—indicative of cooking fires—abundant Monterey chert debitage, drills and gravers possibly used to manufacture *Olivella* shell beads, diagnostic Desert Side-Notched and Coastal Cottonwood arrow points, shellfish and vertebrate faunal remains including mussel, perch, deer, seal, and elk. Given the absence or paucity of architectural remains (e.g., house pits or compacted floors), human burials, and imported "exotic" materials, it seems likely the site was used as a specialized camp or secondary village for a "collector" group.

Ethnography

Penutian groups settled around Monterey Bay at approximately 500 B.C., displacing earlier Hokan populations (Breschini and Haversat 1997). The descendants of the native groups who lived between the Carquinez Strait and the Monterey area prefer to be called Ohlone (Margolin 1978), although they are often referred to by the name of their linguistic group, Costanoan. Linguists have identified eight Ohlone languages (Shipley 1978). *Awaswas* was the name of the language spoken in the Santa Cruz area. *Awaswas* speakers' territory basically encompassed the San Lorenzo River watershed. The Ohlone, like most Native California groups, were organized according to politically independent land-holding groups referred to by anthropologists as "tribelets" (Kroeber 1932:258). There were approximately 40 Ohlone tribelets. Tribelets exchanged trade goods such as obsidian, shell beads, and baskets; participated in ceremonial and religious activities together; intermarried; and could have extensive reciprocal obligations to one another involving resource collection. "The Ohlones," writes Malcolm Margolin, "were not forty independent, isolated tribelets jealously guarding their frontiers. Rather, each tribelet was involved in a network of feasting, trading, and gift-giving" (1978:101).

The basic Ohlone social unit was the family household of about 15 individuals, which was extended patrilineally (Broadbent 1972; Harrington 1933:3). Households grouped together to form villages. Villages combined to form tribelets: " . . . an aggregate of villages in the largest of which lived the tribelet chief" (Heizer and Elsasser 1980:41).

At the time of the arrival of the Spanish and establishment of Mission Santa Cruz in 1791, Santa Cruz was within the territory of the Uypi tribelet. Mission records show that Chief Suquel—after whom the nearby community of Soquel was named— and his wife and two children were the first of the Uypi to be baptized at Mission Santa Cruz (Milliken 1995:259). Between 1791 and 1795, 103 Uypi were baptized at the mission, and the group was the first to be absorbed into the newly established mission. For the Ohlone, like other native Californians, the acorn was a dietary staple. Acorns were knocked from trees with poles, leached to remove bitter tannins, and eaten as mush or bread. Archaeologist Peter Schulz states, "It is largely to [acorn] exploitation that the high population densities and

complex social and economic organizations of [central California] are attributed" (Schulz 1981:1). The Ohlone used a range of other plant resources, including buckeye, California laurel, elderberries, strawberries, manzanita berries, goose berries, toyon berries, wild grapes, wild onion, cattail, amole, wild carrots, clover, and an herb called chuchupate. Animals eaten by the Ohlone and their neighbors included large fauna such as black-tailed deer, Roosevelt elk, antelope, and marine mammals such as sea lion, and sea otter; smaller mammals such as dog, skunk, racoon, rabbit, and squirrel; birds, including geese and ducks; and fish such as salmon, sturgeon, and mollusks. Frogs, toads, owls, eagles, and ravens were not eaten (Levy 1978:491-492).

Besides providing sustenance, the Bay Area's flora and fauna provided the Ohlone with raw materials. For example, the Ohlone built dome-shaped shelters which they thatched with ferns, tule, grass, and carrizo. The thatch was tied to the structure's frame with willow withes. The Ohlone also built small sweathouses, accommodating six to eight persons, which were dug into creek banks and roofed with brush; and circular dance areas, which were enclosed by fences woven from brush or laurel branches (Levy 1978:492). Plants, particularly sedge, were also woven into baskets. Basketmaking was generally done by women, who crafted cooking and storage containers, fish traps, and trays for leaching acorns. Tightly woven baskets, decorated with feathers or shell, were valued exchange items.

Animal bones, teeth, beaks, and claws were made into awls, pins, knives, and scrapers. Pelts and feathers became clothing and bedding, while sinews were used for cordage and bow strings. Feathers, bone, and shells were crafted into ornaments (Heizer and Elsasser 1980). Spire-lopped shells were created by removing the spire from the shell. Tinklers, long fairly thin pieces of modified abalone (*Haliotis*), were sewn onto dance regalia to 'tinkle' as a person performed.

History[3]

In July 1769, the governor of Baja California, Gaspar de Portola, departed with an expedition from San Diego to locate Monterey Bay and passed through present-day Santa Cruz. Shortly thereafter, in September 1791, Mission Santa Cruz was established on the banks of the San Lorenzo River. Mission Santa Cruz quickly absorbed the surrounding Ohlone population and, by 1796, included 523 neophytes. At its peak of operation, the Mission had 8,000 head of cattle and produced wheat, barley, beans, corn, and lentils for consumption and trade.

Another colonial institution, Villa de Branciforte, was established on the other side of the San Lorenzo River across from Mission Santa Cruz in 1797. The Spanish government established Villa de Branciforte to create a self-sufficient secular settlement populated by retired soldiers, craftsmen, and farmers who could mobilize and defend the coast of Alta California from foreign invasion. The colonial government generally viewed Villa de Branciforte as a failure, however. Early settlers generally lacked the skills to be self-sufficient farmers and when rumors spread that the French pirate, Hippolyte de Bouchard, had raided Monterey, the residents of Branciforte, instead of defending the Mission, responded by looting much of its assets. In 1834, the California missions were secularized, and Mission Santa Cruz lands came under the control of Villa de Branciforte.

[3] Information presented in the History section has been adapted from the *Historic Context Statement for the City of Santa Cruz* (Lehmann 2000) and the *Santa Cruz Historic Building Survey* (Charles Hall Page & Associates, Inc. 1976).

Commercial development of Santa Cruz and the surrounding region's natural resources was well under way by the time California became part of the United States with the signing of the Treaty of Guadalupe Hidalgo in 1848. Redwood logging began in 1841, when Joseph L. Major built a sawmill at Mount Hermon north of present-day Santa Cruz. By 1864, 28 sawmills had been established in Santa Cruz County. Logging continued in Santa Cruz County during the latter half of the 19th century, supplying builders in San Francisco, as well as the local lime and tannery industries. By the turn of the century, much of the useable timber had been logged, generating conservation efforts to save the remaining stands, including Big Basin Redwoods in 1902.
Lime quarrying was also an important industry in early Santa Cruz, which, like logging, developed in response to the growing demand for building materials during the post-gold rush construction boom in San Francisco. Two engineers from Massachusetts, A. P. Jordan and Isaac E. Davis, built the first lime kilns in 1853 at the corner of High and Bay streets and established a quarry within Rancho de la Canada del Rincon along the San Lorenzo River between Santa Cruz and Felton. The quarry was eventually sold to Henry Cowell, whose lime operation, along with the Santa Cruz lime operations, Holms Lime and I.X.L., constituted half of the state's lime production in the 1880s. By the 1890s, Santa Cruz's lime industry began to decline due to the depletion of cheap fuel brought about by extensive logging of the region and the development of cement which used a cheaper, less pure grade of limestone. Remains from the lime industry can still be seen on the University of California Santa Cruz campus.

Tanneries were also important to the City's early economy. By 1857, at least four tanneries were established in and near Santa Cruz: Kirby and Jones on Mission Hill, Porter Brothers in Soquel, C. Brown and Company on Laurel Street, and the Grove Tannery on River Street. The tanneries produced skirting, harness, belting, bridle, and sole leather. One of the largest tanneries was owned by A. C. Kron, who had purchased an operating interest in the Grove Tannery in 1867. By 1890, Kron had over 30 employees, a commission house on Clay Street in San Francisco, and a branch in Sydney, Australia. As with the lime industry, however, the local tanneries' overharvesting of local timber for barrel staves and fuel resulted in the industry's demise by the turn of the century.

These burgeoning industries also spawned the City's residential growth and infrastructure development during the 19th century. Beginning in the 1850s, Fred Hihn, who owned much of the area between Mission Hill and Beach Hill, developed land north of Lincoln Street. A water system was built in 1860, facilitating more residential and industrial growth. In the 1870s population grew by 50%, and housing and development expanded to the east side of the San Lorenzo River, the West Cliff area, Ocean View, and Riverside Avenue. Also during this time, Pacific Street emerged as the business center for Santa Cruz and fostered the City's first Chinatown. In 1889, the Circles area, located southwest of Neary Lagoon, was laid out by Fred Hihn for the Christian Church of California, and was the first major geometric planned area in the City. Although the 1890s were an economically depressed time for the City, the street railroad was electrified and expanded with houses built along lines that stretched from downtown to Soquel and Seabright.

The economic focus of the City gradually shifted to tourism nearing the turn of the century. The growth of local tourism was largely a result of railroad access to Santa Cruz County beginning in the late 1870s. Prior to this time, goods were transported and people accessed the area via ship or on narrow, rutted roads. Summer train traffic to Santa Cruz increased after 1894, when the City received national attention in *Harper's Weekly* as a tourist destination.

Perhaps more than any other individual, Fred Swanton was responsible for developing Santa Cruz's tourist industry. Swanton helped build the first three-story hotel in Santa Cruz in 1883, which was destroyed by fire five years later. Undeterred, Swanton helped establish the area's first telephone system in the 1880s, and the Santa Cruz Electric Light and Power Company in 1890. Swanton, with investors that included San Francisco financier John Martin and the Southern Pacific Railroad, formed the Santa Cruz Beach, Cottage, and Tent City Corporation. The corporation opened the Neptune Casino in 1904, but lost that enterprise to fire in 1906. The Casino was quickly rebuilt and reopened a year after the fire on June 15, 1907. Swanton built the Casa del Rey Hotel in 1910 across from the Casino to replace a "tent city," which had served as a popular tourist beach accommodation until that time. The Casa del Rey Hotel stood until the 1989 Loma Prieta earthquake, when it sustained extensive damage; it was demolished soon after. Although Swanton succeeded in promoting Santa Cruz as a tourist destination, his business enterprises were less successful, and he filed for bankruptcy in 1912. Also during the early 20th century, popular beach attractions were built, including the Scenic Railway roller coaster in 1908 and the Giant Dipper Roller Coaster in 1924.

World War II had a significant effect on the local economy. Tourism declined significantly in Santa Cruz due to travel restrictions and gasoline shortages. The Santa Cruz fishing economy, which was dominated by Italian immigrants, suffered as the result of Exective Order 9066, which established internment and relocation camps for Japanese, German, and Italian immigrants, including those who were United States citizens. Many Italian families were relocated inland from the waterfront and many of the fishing boats were abandoned or used in the war effort.

The commercial fishing industry never recovered after the war, although sport fishing remains a popular activity. The local tourist economy revived, with the boardwalk undergoing major renovations in the 1950s and again in 1981. The boardwalk, which remains the focus of Santa Cruz's tourist industry, continues to operate with a mix of historic and modern amusement park attractions.

Architectural Heritage

Architecture serves as the most obvious, visible reminder of Santa Cruz's early history, and there are several good examples of Santa Cruz's early mission-period, commercial, industrial, and residential developments throughout the GP Area. Lehman (2000) identifies five styles—and several substyles—of architecture in the City: Spanish Mission and Spanish Colonial Style (1791-1846), Salt Box (c. 1850-1870), Romantic styles (c. 1850s-1920), Victorian styles (c. 1880s-1900), and Eclectic styles (1895-1975). Mission period structures within the City consist of Mission Adobe at Santa Cruz Mission State Historic Park and the Craig-Lorenzana Adobe on Branciforte Avenue. The oldest frame house in the City at 109 Sylvar was constructed circa 1850, and is an excellent example of the Salt Box-style homes scattered throughout the City. Several examples of Romantic architecture are found throughout the City, including on Mission, Washington, Cedar, Center, and Locust. Victorian is perhaps the most impressive historical architecture seen in the City, with the best examples downtown on Walnut Avenue and adjacent streets, Ocean View, and on Mission Street. Eclectic styled architecture draws its inspiration from Classical, Medieval, and Renaissance styles. Good examples of Eclectic styles, which include Colonial Revival, Mission and Spanish Colonial Revival, Bungalow, Craftsman, Moderne, and Vernacular, can be seen on Mission, Walnut, West Cliff Drive, Escalona, and King.

PALEONTOLOGICAL RESOURCES BACKGROUND

This section describes the geological units in the GP Area[4], summarizes their physical structure, and discusses their paleontological sensitivity. The geological units are discussed below from the youngest to the oldest units, and are depicted on the paleontological sensitivity map in Appendix D.

Holocene Alluvium (Holocene: 10,000 years ago – Recent)

Holocene deposits are exposed in the GP Area flanking the San Lorenzo River, as well as along other streams in the city. Within the GP Area, alluvial deposits of this age can be divided into beach sand, basin deposits, and undifferentiated alluvial deposits (Brabb 1997). Beach sand is restricted to areas directly adjacent to the coast. This alluvium is well-sorted sand with local layers of pebbles and cobbles, and is commonly less that 20 feet thick. Basin deposits are found directly along water routes or directly inland from beach sands. This alluvium is rich in clay and organic materials, with local lenses of silty sand, and can be up to 90 feet thick directly under bodies of water such as lagoons or sloughs. The remaining undifferentiated alluvium is found farther inland from the coast and farther from bodies of water than basin deposits. The undifferentiated alluvium consists of moderately-sorted, heterogeneous sand, silt, and gravel, and can be up to 100 feet thick near the coast.

Holocene alluvium is considered moderately sensitive because it is underlain by highly sensitive geologic units, and the depths of the interface between the alluvium and the sensitive units is not known.

Late Pleistocene Alluvium (Pleistocene: 100,000 – 10,000 years ago)

Alluvial deposits of this age in the GP Area are on coastal terraces. These terraces form the majority of the low sloping regions of the GP Area. Younger Holocene alluvium on either side of the San Lorenzo River are underlain by large expanses of lowest emergent coastal terrace deposits made up of well-sorted marine sands that are up to 20 feet thick. The terrace deposits are not overlain by younger alluvial deposits as distance increased from the San Lorenzo River. Farther inland, at higher elevations, terrestrially-deposited terraces made up of poorly-sorted heterogeneous silt, clay, sand, and gravel are exposed in the low sloping regions of the GP Area.

Both vertebrate and invertebrate fossils are known from those alluvial deposits (Addicott 1966; Bell et al. 2004; Hertlein 1951; Savage 1951; Stirton 1951). Vertebrate fossils in Late Pleistocene alluvium are representative of the Rancholabrean land mammal age, of which many taxa are now extinct (Bell et al. 2004) and include, but are not limited to, bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians.

[4] The identification and excavation of fossils in or near the GP Area extends back to the 19th century. One of the earliest accounts of fossils on the west coast of the United States originated from British Surveyor Admiral Sir Edward Belcher. In 1827, Sir Edward Belcher wrote about "petrified bones of a cylindrical form" in the sea cliffs at Santa Cruz (VanderHoof 1951, p. 109-110). Belcher's account of the GP Area's paleontological sensitivity was bolstered by an August 5, 1865, Santa Cruz Sentinel article that reported the discovery of "petrified bones, teeth, and fossils of different kinds" in downtown Santa Cruz. The article went on to state that ". . . all along the coast above and below Santa Cruz, the chalk-rock and solid sand cliffs are perfectly indurated with fossil remains of petrified teeth and bones, of known and unknown animals, birds, fishes, and vegetations." On January 9, 1887, the Santa Cruz Surf reported the excavation of two 25-foot-long whale skeletons from one of the three bedrock geologic units that underlie the City of Santa Cruz (Perry 1977, 1993). This paleontologically sensitive geologic unit is exposed in the beach cliffs of the GP Area.

Late Pleistocene alluvial deposits are highly sensitive for paleontological resources.

Purisima Formation (Late Miocene to Pliocene: 7 – 2 million years ago)

Sediments of the Pliocene and Upper Miocene Purisima Formation are exposed throughout the GP Area. These marine sediments are 500 feet thick or thicker, and are made up of thick-bedded siltstone interbedded with blue-grey sandstone (Clark 1981; Brabb 1997; Powell 1998).

Where the Purisima Formation sediments are not exposed in the GP Area, they directly underlie the Late Pleistocene terrace deposits and the Holocene alluvium in areas where Late Pleistocene alluvium is not present. The Purisima Formation unconformably overlies the Santa Cruz Mudstone in the GP Area, and this contact is well exposed on the west side of Rincon Street and in the sea cliffs below West Cliff Drive at the type section of the Santa Cruz Mudstone (Clark 1981).

Purisima Formation fossils from Santa Cruz include numerous marine invertebrate taxa and vertebrate taxa that include, but are not limited to sharks, whales, seals, walrus, birds, and extinct sea cows (Repenning & Tedford 1977; Domning 1978; Clark 1981; Brabb 1997; Powell 1998).

The Purisima Formation is highly sensitive for paleontological resources.

Santa Cruz Mudstone (Late Miocene: 9 – 7 million years ago)

The Santa Cruz Mudstone conformably overlies the underlying Santa Margarita Sandstone, and is overlain unconformably by the Purisima Formation within the GP Area (Brabb 1997). The Santa Cruz Mudstone is exposed extensively in the western upland portion of the GP Area, as well as underlying the Purisima Formation outcrops along the beach. The type section of this formation is within the limits of the GP Area, and is approximately 500 feet thick (Clark 1981). This mudstone unit consists of medium- to thick-bedded and laminated siliceous organic mudstone that weathers to white and is locally referred to as “chalk-rock” (Clark 1981, p. 31).

The Santa Cruz Mudstone contains abundant siliceous marine microfossils (i.e., diatoms and sponge spicules) and pollens, while calcareous marine microfossils (i.e. foraminifers) and marine megafossils are more rare (Clark 1981). Fossil fish are known from this geologic unit, as well as shark teeth (including a fossil locality with city limits).

The Santa Cruz Mudstone is moderately sensitive for paleontological resources.

Santa Margarita Sandstone (Late Miocene: 12 – 9 million years ago)

Santa Margarita Sandstone is the oldest marine sedimentary geologic unit exposed in the GP Area. In the GP Area, this formation unconformably overlies older Miocene marine geologic units such as the Monterey or Lompico formations, or nonconformably overlies Mesozoic crystalline basement rock (Clark 1981; Brabb 1997).[5] Santa Margarita Sandstone is exposed in the western and northern

[5] An "unconformable" contact is two units of rock of different age in contact. There are a few different types of unconformable contacts: a "nonconformable" contact is specifically when a non-igneous unit contacts an igneous unit, and an "angular unconformity" is a unit of younger sediments deposited over dipping older sediments, and a "disconformity" represents a hiatus in deposition though the contact may look conformable.

portions of the city. This sandstone is thick-bedded to massive sandstone, very light in color from yellowish gray to brilliant white, and as much as 400 feet thick (Clark 1981; Brabb 1997).

Marine invertebrate fossils, including masses of pecten and oyster shells and broken shell debris, are found throughout the Santa Margarita Sandstone (Clark 1981; Chipping 1987). Vertebrate fossils from this formation are numerous in and near the GP Area. These vertebrate fossils are representative of the Clarendonian land mammal age and include, but are not limited to, sharks, fish, whales, seals, sea lions, extinct sea cows, and walrus, as well as terrestrial vertebrates such as camels, horses, birds, and mastodons (Savage 1951; Repenning and Tedford 1977; Domning 1978; Clark 1981; Bell et al. 2004).

Santa Margarita Sandstone is highly sensitive for paleontological resources.

Mesozoic Igneous and Metamorphic Bedrock (Mesozoic or Paleozoic: older than 65 million years ago)

These crystalline rocks form the base upon which all of the sedimentary rocks of the GP Area area lie. Exposures of these rocks are in the northwestern section of the GP Area. Locally, these rocks are primarily metasedimentary rocks (mostly quartzite and marble), though there are also exposures of gneiss and granite in northern and western Santa Cruz (Clark 1981; Brabb 1997).

Crystalline rocks like Mesozoic igneous and metamorphic bedrock do not generally contain fossils, and therefore have low paleontological sensitivity.

Paleontological Sensitivity Summary

Most sedimentary geological units in the GP Area are highly sensitive for paleontological resources. Though Holocene alluvium is generally considered too young to contain paleontological resources, this geologic unit is moderately sensitive for paleontological resources because it is underlain by sedimentary geologic units that have a high paleontological sensitivity. The crystalline rocks that underlie the sedimentary rocks of the GP Area have a low paleontological sensitivity because igneous and metamorphic rocks to not generally contain paleontological resources.

GENERAL PLAN POLICY RECOMMENDATIONS

This section presents LSA's policy recommendations for the GP Area. These recommendations were developed in consultation with City staff, and take into account guidance provided by the General Plan Advisory Committee (GPAC) during a meeting with GPAC on September 28, 2006. The purpose of these recommendations is to address the adequacy of the proposed General Plan policies for the identification and responsible management of cultural and paleontological resources in the GP Area. The objectives of the policy recommendations are to (1) ensure that the General Plan policies relating to cultural and paleontological resources accurately reflect, and contribute to the achievement of, the Vision Statement for Santa Cruz 2025; and (2) guide the City in meeting its responsibilities under the California Environmental Quality Act.

The following section briefly summarizes the guiding vision statements. Please refer to the preceding section entitled Legal Context in the GP Area for a summary of the legal context for cultural and paleontological resources in the GP Area. Following the vision statement summary, LSA's

recommendations for the previous and proposed General Plan Goals, Policies, and Programs for archaeological deposits and paleontological resources are discussed. Finally, general recommendations are made for archaeological permit conditions to trigger procedures appropriate for CEQA-level review, as well as for ongoing preservation activities in the GP Area.

Vision for Santa Cruz 2025

Vision statements assist a community in establishing its goals for the future, and embody the overall concept for what people want their City or town to be. Topics that a vision statement may address include, but are not limited to, what public places should look like, how neighborhoods should grow, and how the community views its natural and cultural resources. The Vision for Santa Cruz 2025 was adopted by the Santa Cruz City Council on February 28, 2006, and includes eight overarching statements about the preferred nature of the City. Two of these statements are applicable to cultural resources: Neighborhood Integrity and Housing; and Arts and Culture.

Neighborhood Integrity and Housing. This vision topic states that "We will maintain the identity and vitality of our neighborhoods, actively pursuing affordable housing for a diversity of households and promoting compatible livability and high quality design in new buildings, major additions, and redevelopment."

This vision statement is pertinent to new development in GP Areas with an identifiable historical character or visual cohesion. It is important that new development respect and take into account the architectural context in which it is built, especially with regard to historic districts, which often draw their significance from a shared setting. Stopping growth is not the objective; tailoring new growth to be sympathetic of the use, form, and setting of the existing context is.

Arts and Culture. This vision topic states that "We will recognize and support our vital arts community, our unique historic areas and landmarks, our cultural heritage and resources, and our recreational facilities and community programs."

This vision statement is pertinent to the identification and management of archaeological deposits, candidate City landmarks, and locally significant historic districts. While this statement overlaps with the previous statement with respect to development in historic districts, it also explicitly refers to the City's responsibility to identify archaeological deposits and paleontological resources that may be damaged by the effects of planning decisions.

General Plan Goals, Policies, and Programs

The GPAC provided LSA with a condensed version of the former goals, policies, and programs for cultural resources, which consist of four new goals. This condensed version is the basis for LSA's comments and recommendations. The GPAC goals are summarized below.

- **CR 1:** Ensure the protection and proper disposition of archaeological and paleontological sites to preserve resources important to the community's heritage;

- **CR 2:** Designate, protect, and enhance those structures and landmarks contributing to the cultural, historic, and architectural character of Santa Cruz;[6]
- **CR 3:** Maintain adequate local museum and exhibition facilities; and
- **CR 4:** Support and encourage visual and performing arts exhibits, events, festivals, and classes throughout the community.

LSA's comments are specific to archaeological cultural resources and do not address goals, policies, and programs for built environment resources (e.g., historical buildings), museum facilities, or performing arts. Therefore, the recommendations below address only goal CR 1.

CR 1. This goal is broad in its consideration of archaeological deposits and paleontological resources. The process of identification, significance assessment, and impact mitigation is contained in this goal, collapsing several stages of resource management into one overarching goal. This goal provides general objective-oriented guidance for the treatment of archaeological and paleontological sites, and provides an administrative context for the use of the archaeological and paleontological sensitivity maps.

As part of the review of the General Plan goals, policies, and programs, LSA made recommendations for the retention, removal, or integration of each of the older goals, policies, and programs. Those policies and programs that are redundant, confusing, or too vague are recommended for removal or for consolidation. These recommendations are presented in Table 2. LSA's recommendations for the new goals and policies are contained in Table 3.

Permit Conditions

LSA's recommendations address the City's responsibility under CEQA to identify potentially significant impacts to archaeological deposits and paleontological resources. The recommendations enable the City to provide a permit applicant with clear, timely, and consistent requirements for parcels that contain, or may contain, archaeological deposits, or that may contain paleontological resources. The first recommendation below addresses the requirement for an archaeological study in portions of the GP Area that are sensitive for, but not known to contain, recorded archaeological deposits. The recommendations that follow describe procedures to address portions of the GP Area with heightened sensitivity (i.e., those parcels coded red on the sensitivity map). The final recommendation addresses portions of the GP Area with high paleontological sensitivity. Appendix C contains two flowcharts that describe the recommended sequence of actions for permit decisions involving parcel in archaeologically sensitive areas (those parcels coded pink and red on the sensitivity map).

[6] Although built environment analysis was not in the scope of this analysis, LSA offers the following comments on goal CR 2: This is a broad, inclusive goal. Proposed policy language should (1) identify the historical building survey as a primary indicator of "architectural character"; (2) give priority to updating the historical building survey at regular intervals; and (3) acknowledge that traditional, social, or cultural values are valid expressions of a resource's significance and may support a resource's eligibility in lieu of architectural distinctiveness.

Table 2: Previous Santa Cruz General Plan Goals, Policies, and Programs for Archaeological Deposits and Paleontological Resources

Goals	**Description**	**Comments/Recommendations**
CR 1: Archeological & Paleontological Resources	Ensure the protection and proper disposition of archaeological and paleontological sites to preserve resources important to the community's heritage.	Retain. Use as umbrella General Plan Goal for archaeological deposits. Replace the word "disposition" with "management." The proposed General Plan policies will create a nexus between a resource's importance and CEQA thresholds for significance and impacts assessment.
Policies	**Description**	**Comments/Recommendations**
CR 1.1	Support the acquisition and rehabilitation of archaeological sites for cultural and educational uses.	Remove. This policy is too vague, and lacks an implementation strategy and a funding commitment. Interpretive outreach is addressed in proposed General Plan Policy CR 1.6.
CR 1.2	Identify sensitive archaeological and paleontological sites early in land-use planning and/or development process so archaeological and paleontological resources can be given consideration during the conceptual design phase of private or public projects.	Incorporated. This policy is incorporated in proposed General Plan policy CR 1.1.
CR 1.3	Protect archaeological and paleontological resources after project approval by providing for the evaluation and proper disposition of the resources discovered in the course of a project.	Incorporated. This policy is incorporated in proposed General Plan policy CR 1.4 and 1.9.
Programs	**Description**	**Comments/Recommendations**
CR 1.1.1	Encourage, assist and recognize the efforts of individuals in the protection of archaeological resources.	Remove. This policy is laudable, but lacks an implementation strategy. This function could be undertaken by the proposed Archaeology Subcommittee (see ongoing preservation activities recommendations).
CR 1.1.2	Designate the City museum as a repository for archaeological resources. All artifactual materials taken on public lands shall be placed therein and owners of private properties shall be encouraged to donate such materials to the museum.	Remove. This policy has substantial start-up and operational costs. Costs would be even higher to maintain a curation facility to federal standards. The collection of artifacts from public lands should be discouraged.
CR 1.2.1	Update the archaeological paleontological sensitivity map and site information list as information becomes available.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.7.
CR 1.2.2	Evaluate the extent of on-site archaeological and paleontological resources through archival research, site surveys and necessary supplemental testing as part of the initial environmental assessment on each potentially significant site.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.1.

Programs	Description	Comments/Recommendations
CR 1.2.2.1	Research and site surveys must be performed by qualified professionals. A written report describing the archeological findings of the research or survey shall be provided to the City and the Archaeological Site Survey Central Coast Counties Regional Office.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.8. Archaeologists who conduct records searches agree to provide a copy of their results to the Northwest Information Center.
CR 1.2.2.2	Each project proponent shall be responsible for all costs associated with secondary identification and testing to determine the existence and extent of archaeological and paleontological resources in accordance with provisions of CEQA guidelines.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.1.
CR 1.2.2.3	Costs borne by the City for preliminary surveys on specific parcels will be recovered when building permits are obtained for said parcels.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.1.
CR 1.2.3	Develop a mitigation plan for proper site disposition prior to approval of any project that may adversely impact an archaeological site.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.2.
CR 1.2.3.1	All reasonable and feasible recommendations as to site disposition (mitigation plan) should be incorporated in information provided by the environmental review process. Mitigation techniques might include site preservation via relocation of project impacts (redesign of project), site preservation via burial of the site; salvage; site supervision during grading and utility trenching.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.2.
CR 1.2.3.2	Site preservation should be given the highest feasible priority.	Incorporated. This policy is incorporated in proposed General Plan Policy CR 1.2
CR 1.2.3.3	The Planning Director will review all reports for recommendations as to site disposition and if, in the opinion of the Planning Director, the recommendations are unusual, disproportionate, or inadequate, he/she may choose to request review and comment by an appropriate advisory group, agency, or expert.	Remove. This policy should be delegated this task to City staff with appropriate background in archaeology, or should be delegated to the proposed Archaeology Subcommittee.
CR 1.2.4	Require consultation of a Native American authority in the identification of burial or most sacred sites and include Native American participation in the development of, and recommendations for, site disposition and mitigation programs.	Incorporated. This policy is incorporated in proposed General Plan Policies CR 1.3 and 1.5.
CR 1.2.4.1	The mitigation plan submitted for a probable burial or sacred site must include Native American observers on site during earth-moving activities and must also reference the disposition of human remains in the case of a discovery.	Incorporated. This policy is incorporated in proposed General Plan Policies CR 1.3 and 1.5.
CR 1.2.5	Develop a mitigation plan for proper site disposition prior to approval of any project that may adversely impact a paleontological site.	Incorporated. This policy is incorporated in proposed General Plan Policy 1.9.

Programs	Description	Comments/Recommendations
CR 1.3.1	Upon discovery of an archaeological or paleontological resource, work must halt on a project and a mitigation plan be developed to determine the extent and value of the site and its proper disposition, prior to resumption of the project.	Incorporated. This policy is incorporated in proposed General Plan Policies CR 1.4 and 1.9.
CR 1.3.2	Require an archaeological observer on or in the vicinity of known sites for projects involving alterations, reconstruction or a new impact via earth-moving activities and for projects on or in the vicinity of known burial or most sacred sites, require a Native American observer during earth-moving activities.	Incorporated. This policy is incorporated in proposed General Plan Policies CR 1.1, 1.2, and 1.3

Table 3: Proposed Santa Cruz General Plan Update Goals and Policies for Archaeological Deposits and Paleontological Resources

Goals	Description	Comments
CR 1	Ensure the protection and proper management of archaeological and paleontological sites to preserve resources important to the community's heritage.	The word "disposition" was unclear and was replaced with "management." The proposed General Plan policies will create a nexus between a resource's importance and CEQA thresholds for significance and impacts assessment.
Policies	**Description**	
CR 1.1	CONDUCT PRIOR REVIEW. Condition use permits based on the subject parcel's archaeological sensitivity. Appropriate permitting requirements for sensitive parcels may include archaeological reconnaissance; presence/absence testing; archaeological monitoring; California Register eligibility evaluation; or data recovery mitigation. Require funding by permit applicant.	
CR 1.2	ADDRESS SIGNIFICANT IMPACTS TO ARCHAEOLOGICAL DEPOSITS. Require feasible measures to avoid, reduce, or mitigate impacts to archaeological deposits that meet the CEQA definition of historical or archaeological resources. Require funding by permit applicant. Wherever possible, archaeological resources should be preserved in place (i.e., potential impacts should be avoided), consistent with §24.12.430(1) of the Historic Preservation Ordinance.	
CR 1.3	OBTAIN STAKEHOLDER INPUT. Seek and consider the input of descendent communities and historical organizations during the design and implementation of archaeological treatment plans, especially with regard to the possibility of encountering human remains.	
CR 1.4	ADDRESS ACCIDENTAL DISCOVERIES. Treat accidental discoveries of archaeological deposits through implementation of §24.12.430 of the City's Historic Preservation Ordinance.	
CR 1.5	ADDRESS HUMAN REMAINS. Treat human remains in accordance with Health and Safety Code §7050.5.	
CR 1.6	DEVELOP INTERPRETIVE OUTREACH. Coordinate with the Historic Preservation Commission to develop interpretive outreach opportunities for prehistoric and historical archaeology in the GP Area. Interpretive programs may include, but are not limited to, on-site interpretive displays, brochures, multimedia presentations (videos, websites, traveling exhibits), archaeology lesson plans, and K-12 classroom field visits.	
CR 1.7	UPDATE ARCHAEOLOGICAL/PALEONTOLOGICAL SENSITIVITY MAPS. Update the archaeological and paleontological sensitivity maps at five year intervals.	
CR 1.8	ENSURE PROFESSIONAL QUALIFICATIONS. Require that archaeological work within the GP Area be conducted or directed by archaeologists listed in the Register of Professional Archaeologists.	
CR 1.9	ADDRESS SIGNIFICANT IMPACTS TO PALEONTOLOGICAL RESOURCES. Require feasible measures to avoid, reduce, or mitigate impacts to paleontological resources. Require funding by permit applicant. Wherever possible, paleontological resources should be preserved in place (i.e., potential impacts should be avoided).	

- **Incorporate the archaeological sensitivity map in permitting decisions for sensitive portions of the GP Area.**

  The purpose of the archaeological sensitivity map was to develop an up-to-date baseline for archaeological cultural resources in the GP Area, and to use this information to notify applicants early and consistently of the requirement for an archaeological study of their parcel. The archaeological sensitivity map was developed using the latest archival information about known and likely locations of archaeological deposits.

  LSA recommends the creation of a zoning overlay (Archaeological Sensitivity Zone) for those portions of the GP Area identified as sensitive for prehistoric archaeological deposits. The Archaeological Sensitivity Zone would condition use permits with the requirement for an archaeological study prior to permit issuance. This requirement would apply to archaeologically sensitive parcels (coded as pink); other recommendations would apply to parcels with heightened archaeological sensitivity (coded as red). The purpose of the Archaeological Sensitivity Zone is to provide clear requirements early in the permitting process, in conjunction with Section 24.12.430 of the City's Historic Preservation Ordinance: "Protection of Archaeological Resources."

  The study would determine if a parcel contains archaeological deposits that meet the CEQA definition of historical or archaeological resources, and, if so, whether such deposits may be impacted by the permitted action. The study would also recommend ways to avoid or offset potential impacts. No study would be required for those parcels in the sensitive areas that have already undergone an archaeological study with negative results (i.e., those parcels coded blue on the sensitivity map); however, the City's accidental discovery procedures would still apply for these parcels should a permitted use encounter unidentified archaeological deposits. LSA recommends that the study be conducted or directed by an archaeologist currently listed in the Register of Professional Archaeologists.[7]

  To maximize permitting flexibility, LSA recommends that the City create a small projects exemption list for proposed uses that will not be subject to the requirements of the Archaeological Sensitivity Zone. Qualifying uses would be exempt from the study requirement due to their minimal potential for impacting archaeological deposits. These uses would generally involve spot excavation to a depth of 12 inches or less below existing grade, or uses that have virtually no potential of resulting in significant impacts to archaeological deposits. Examples of possible exemptions include, but are not limited to: minor building additions, deck construction, excavation in soil that can be documented as previously disturbed, etc. If a use's potential for impact is minor, but still warrants a heightened review requirement, the City may elect to forego the archaeological study and instead require that an archaeologist review initial ground clearance and excavation to identify archaeological deposits prior to extensive ground disturbance. Those uses that qualify for a small projects exemption would still be conditioned with the requirement to identify, evaluate, and, if necessary, mitigate impacts to accidental archaeological discoveries. The small projects exemption list **would not** apply to permit decisions for areas with heightened archaeological sensitivity (i.e., those parcels colored red on the sensitivity map [see below for recommendations for areas of heightened sensitivity]).

[7] Registered Professional Archaeologists are identified by the use of the acronym RPA behind their names.

Portions of GP Area with Heightened Sensitivity. Parcels with recorded archaeological deposits are parcels with confirmed archaeological sensitivity. The use of such parcels has the potential to result in substantial adverse change in the significance of a CEQA-defined historical or archaeological resource. The sensitivity map (Appendix A) codes parcels solid red if they qualify under any of the following three conditions: (1) the parcel contains all or portions of a recorded archaeological deposit; (2) the parcel lies wholly or partially within a 20-meter (65-foot) buffer around the boundaries of a recorded archaeological deposit;[8] or (3) the parcel contains unrecorded archaeological materials identified by an archaeologist during prior study. The City can query the GIS map to differentiate between parcels that contain recorded archaeological deposits or that are within the buffer area, and parcels that contain unrecorded archaeological materials.

LSA's recommendations for the parcels with heightened sensitivity (i.e., those parcels coded solid red on the sensitivity map) are twofold: one approach addresses parcels with recorded deposits (parcels of Primary Sensitivity), and the other addresses parcels that are in the buffer area around recorded deposits or that contain unrecorded archaeological materials (parcels of Secondary Sensitivity). Each approach is discussed below, beginning with the parcels of Primary Sensitivity.

- **Require archaeological evaluation for parcels with Primary Sensitivity.**

  For proposed uses on parcels with Primary Sensitivity (i.e., those parcels with recorded deposits), if the use involves ground disturbance to any depth, LSA recommends that the City require the avoidance of impacts to recorded deposits through project redesign or the use of protective measures. If avoidance is not feasible, LSA recommends that the City require an archaeological evaluation of the deposit prior to the issuance of a permit to determine if the deposit is eligible for listing in the California Register. LSA recommends that the evaluation be conducted or directed by an archaeologist currently listed in the Register of Professional Archaeologists. For the purposes of this report, ground disturbance should be defined to include, but not be limited to: excavation, augering, grading, dredging, clearing, potholing, grubbing, and stump removal.

  The evaluation may be scaled to the magnitude of the resource, but should specifically determine: (1) whether the deposit constitutes a historical resource (as defined at PRC §21084.1) or an archaeological resource (as defined at PRC §21083.2(g)); and, if the deposit does comprise a historical or archaeological resource, (2) whether the proposed use will result in a substantial adverse change in the significance of the deposit (i.e., will a significant impact occur). If the City makes a finding that the proposed use will result in a significant impact, then LSA recommends that the City condition the issuance of the permit on the implementation of an archaeological treatment plan. The archaeological treatment plan should be developed in accordance with the recommendations of the evaluating archaeologist, and may include, but is not limited to, the following approaches: avoidance of the deposit; project redesign; deposit capping; and data recovery excavation.

  As part of the GIS component of the sensitivity map, LSA provided a layer containing the digitized boundaries of recorded archaeological deposits in the GP Area. The City can query the GIS to identify parcels with Primary Sensitivity; LSA recommends, however, that precise site boundaries not be disclosed to the general public.

[8] The buffer is provided to account for the possibility that unidentified portions of the recorded deposit may lie outside of its known boundaries and extend onto adjoining parcels.

- **Require presence/absence testing on parcels with Secondary Sensitivity.**

  For proposed uses on parcels with Secondary Sensitivity (i.e., those parcels within the buffer area around recorded deposits and those parcels containing unrecorded archaeological materials), if the use involves ground disturbance to any depth, LSA recommends that the City require a presence/absence investigation to determine if subsurface archaeological deposits are present on the subject parcel. LSA recommends that the presence/absence investigation be conducted or directed by an archaeologist currently listed in the Register of Professional Archaeologists. If no deposits are identified by the presence/absence investigation, the permit can be issued. If deposits are identified by the presence/absence investigation, LSA recommends that the City require the avoidance of impacts to the deposits through project redesign or the use of protective measures. If avoidance is not feasible, LSA recommends that the City require an archaeological evaluation of the deposits to determine if they are eligible for listing in the California Register. The evaluation should specifically determine: (1) whether the deposit constitutes a historical resource (as defined at PRC §21084.1) or an archaeological resource (as defined at PRC §21083.2(g)); and, if the deposit does comprise a historical or archaeological resource, (2) whether the proposed use will result in a substantial adverse change in the significance of the deposit (i.e., will a significant impact occur). If the deposit is a historical or archaeological resource, and if a significant impact on the deposit is likely, the City should condition the issuance of the permit on the implementation of an archaeological treatment plan in a manner similar to that described in the preceding recommendation.

Paleontologically Sensitive Portions of the GP Area. LSA's recommendations for paleotologically sensitive parcels involve the early notification of permit applicants.

- **Notify permit applicants of the potential for encountering paleontological resources on their parcels.**

  For proposed uses on parcels that are highly sensitive for paleontological resources (as depicted on the paleontological sensitivity map), LSA recommends that the City (1) officially notify the applicant of the potential for encountering paleontological resources during construction; and (2) ensure that the applicant provides written notice to the contractor and work crew of such potential, and ensure that they have a clear understanding of the requirement to stop work and contact the City if fossils are identified during construction.

  For proposed uses on parcels with moderate and low sensitivity, LSA recommends that the City maintain a standard contingency condition in the event of encountering paleontological resources. The standard contingency should provide for the evaluation of paleontological finds by a qualified paleontologist. If the find is significant, the City should require the treatment of the find in accordance with the recommendations of the evaluating paleontologist. Treatment may include, but is not limited to, specimen recovery and curation or thorough documentation.

Ongoing Preservation Activities

LSA's recommendations in this subsection address future City actions to (1) maintain a current archaeological and paleontological baseline for the GP Area; (2) create a local government body to review archaeology done in the GP Area; (3) develop a sensitivity map for historical archaeological

deposits; and (4) convene a local summit to review City policy on archaeology. These recommendations are discussed below.

- **Update the archaeological sensitivity map and paleontological sensitivity map at regular intervals not to exceed five years.**

  The accuracy of the archaeological sensitivity map depends on a current database. The City should update the map to identify archaeological deposits and studies in the GP Area that have been documented since the previous update (baseline starting date: August 2006). The update should be done at five-year intervals. The City should incorporate the updated information into the GIS database to refine the sensitivity map. For the paleontological sensitivity map, the City should conduct a fossil locality search to identify fossil localities recorded in the GP Area since the last update.

- **Create an Archaeology Subcommittee to assist the Historic Preservation Commission.**

  The GP Area contains a wealth of prehistoric and historical archaeological heritage. Some of the most important archaeological deposits are likely not yet identified, and will be encountered during future construction. Due to the GP Area's abundance of historically significant built environment resources, the Historic Preservation Commission is understandably focused on buildings, structures, and districts. However, recent high profile GP Area development projects with archaeological issues suggest the potential value of a review subcommittee with archaeological expertise to address issues as they arise.

  The subcommittee would serve an advisory capacity to advise the Historic Preservation Commission and City Council during the review of projects with implications for local archaeology. The subcommittee's responsibilities could include, but should not be limited to (1) reviewing the adequacy of proposed archaeological mitigation; (2) providing expertise to the City Council or any other City department or body on the identification, preservation, and management of archaeological deposits; (3) consulting with descendant communities during long-range and contingency cultural resources planning; (4) reviewing public outreach and information programs involving archaeology; (5) maintaining the City's list of qualified archaeological consultants; and (6) reviewing the nominations of archaeological deposits for local inventory register listing. The subcommittee should include at least one representative with expertise in prehistoric archaeology, one representative with expertise in historical archaeology, one representative from a local Native American organization (seat to be rotated among different tribal organizations), and one representative from the Santa Cruz Planning and Community Development Department.

  As part of its responsibilities, the subcommittee would maintain an ongoing relationship with tribal organizations concerning the identification and treatment of prehistoric archaeological deposits in the GP Area. A similar relationship would be established between the subcommittee and local historical societies and organizations. The subcommittee would comprise the City's official contact point and review body for projects with archaeological issues.

- **Prepare a preliminary sensitivity map for historical archaeological deposits.**

  LSA's archival research and visual review indicate that the GP Area is sensitive for historical archaeological deposits. However, further definition of the nature or likely location of

historical archaeological deposits was not within the scope of this study and was not undertaken. Parcel-specific archival research to determine historical archaeological sensitivity in the GP Area may be prohibitively costly due to the number of parcels involved and the extent of available information. However, general archival research could be done to identify portions of the GP Area with the potential to contain unidentified archaeological deposits.

LSA recommends that the City prepare a preliminary historical archaeology sensitivity map organized by historic periods. Each period in Santa Cruz's history would correspond to a specific historical theme of land use, settlement, and civil government that identifies a discrete period of the GP Area's history. Research would then identify the extent of the built environment at the height of land development during a particular period, such as the Mexican period (1822-1846). Those portions of the GP Areas that contain built environment resources constructed during that period would be considered sensitive for subsurface archaeological deposits (e.g., abandoned, trash-filled wells; structural remains) associated with the above-ground buildings and structures. The map would be used to condition permits for actions located in areas sensitive for historical archaeological deposits. Depending on the location of a subject parcel relative to sensitive areas, more focused archival and property research may then be required to refine the parcel's historical archaeological sensitivity.

The preparation of the historical sensitivity map should be done in consultation with local archival repositories, especially the Special Collection and Archives of the McHenry Library, University of California, Santa Cruz.

- **Convene an advisory archaeology summit at five year intervals.**

  LSA recommends that the City convene an advisory archaeology summit every five years to discuss the status of General Plan policies for the management of archaeological deposits. The summit would afford the City, archaeologists, Native Americans, applicants, historical organizations, and other interested parties an opportunity to discuss any difficulties in meeting the goals of the General Plan, deliberate possible solutions to permitting inefficiencies, and establish priorities for the management of archaeological deposits in the GP Area during the next five years. The summit should focus on the performance of the City in meeting its cultural resource obligations under CEQA, and should result in a written report to the City's Historic Preservation Commission. The report should identify any problems encountered during the past five years and recommend steps to resolve such problems for consideration by the Commission.

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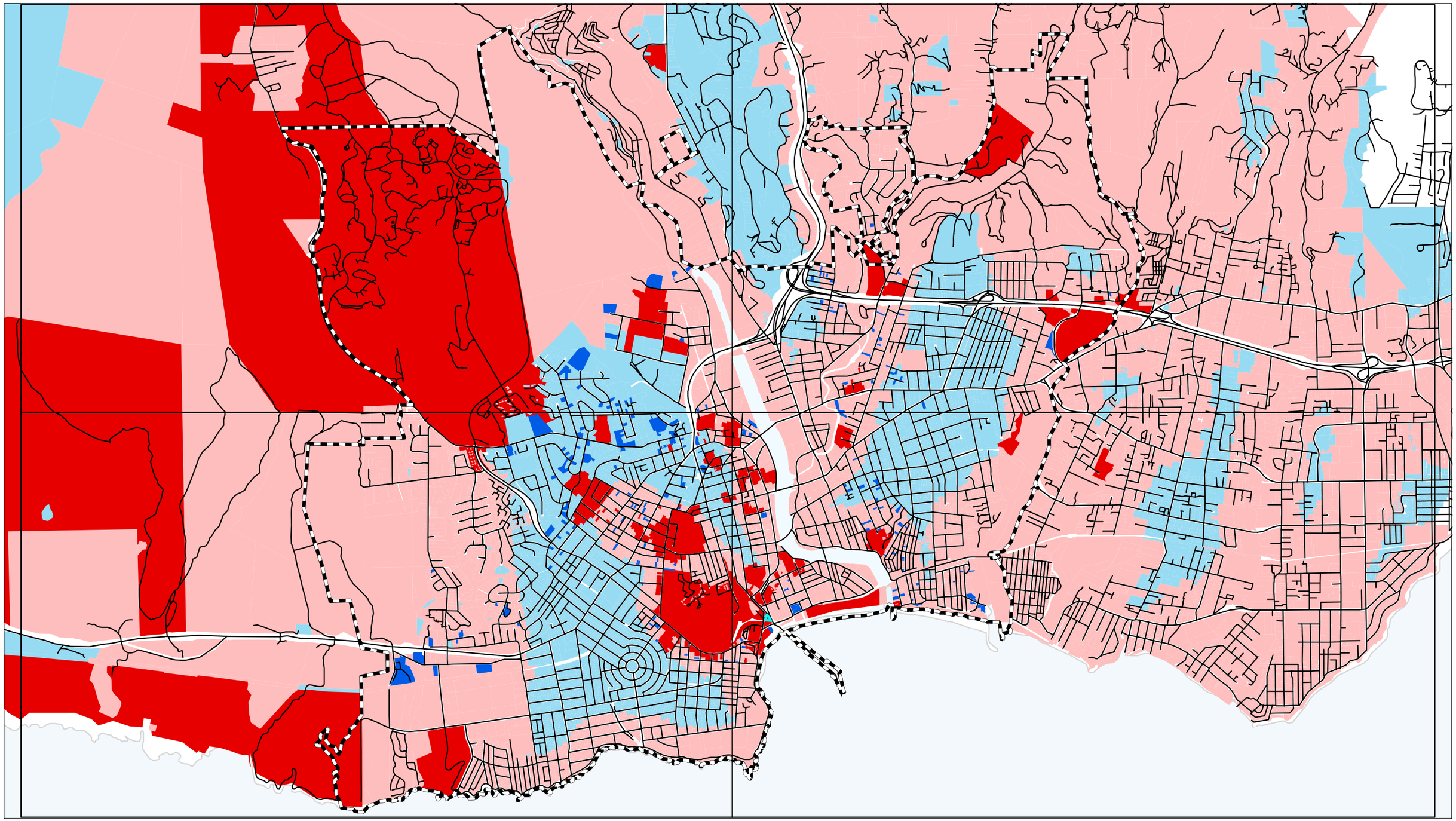
APPENDIX A

Archaeological Sensitivity Map



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Miles

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Sensitive
Not Sensitive
Heightened Sensitivity
Archaeological Deposits Not Identified
Project Area (City Limits)
Streets

Figure A	Figure B
Figure D	Figure C

Cultural Resources Background Report and Archaeological Sensitivity Map for the City of Santa Cruz General Plan Update
City of Santa Cruz, Santa Cruz County, California

Prehistoric Archaeological Sensitivity Map

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APPENDIX B

Summary of Archaeological GIS Layers
(not all layers shown on hardcopy map in Appendix A)

Cultural_Parcels.lyr

- Source file: Cultural_Parcels.shp; Legend: Cultural Parcels_Legend.lyr
- Constructed from Parcel layer supplied by the City of Santa Cruz.
- Parcels deemed sensitive if they lie within the archaeological sensitive area or 20 m from a known archaeological deposit.
- Contains three additional fields:
    - Arch_sens (archaeological sensitivity): Binary system 0 – negative sensitivity, 1 – positive sensitivity
        - Sensitivity based off of distance from water (both known streams and the largest extent of historic watercourses from geo-referenced historical maps).
    - Studies (previous archaeological studies): 0 – not studied, 1 – positive study, 2 – negative study
        - Based off APNs and maps from cultural resource studies provided by the Northwest information Center (NWIC) and the City of Santa Cruz.
    - PrevArch (previously identified archaeological sites): 0 – no site, 1 – known site
        - Based off of site boundaries from maps from the NWIC with a buffer of 20 meters (65 feet).

Sensitivity overlay.shp

- Contains a single polygon showing the archaeological sensitive areas.
- Sensitivity determined area as within 300 meters (975 feet) of both known streams and the largest extent of historic watercourses from geo-referenced historical maps within 20 meters (65 feet) of known archaeological deposits on a slope of 30° or less.

GPmap_Matchlines.shp

- Contains polygons used to delineate quadrants in the 5 General Plan maps showing parcel sensitivity.

Historic_watercourses.lyr

- Source: Historic_watercourses.shp
- Contains polygons traced from water courses based off of a 1854 Preliminary Survey of Harbors US Coast Survey map, a 1902 Santa Cruz, Calif. USGS 15 min topo, a 1914 Capitola, Calif. USGS 15 min topo and a 1919 New Almaden, Calif. USGS 15 min topo.

Prehistoric_sites.shp

- Prehistoric archaeological site boundaries within the city of Santa Cruz from NWIC's maps.

Multi_component_arch_sites.shp

- Boundaries of archaeological sites containing both prehistoric and historic-period components within the city of Santa Cruz from NWIC's maps.

Historical_archaeology_sites.shp

- Historical archaeological site boundaries within the city of Santa Cruz from NWIC's maps.

Prehistoric_sites_outside_SC.shp

- Prehistoric archaeological site boundaries within 1 mile of the city of Santa Cruz from NWIC's maps.

slope30percent.shp

- Contains a polygon file showing slopes of excess of 30 % within a 1 mile buffer of the city of Santa Cruz

Water_line.shp

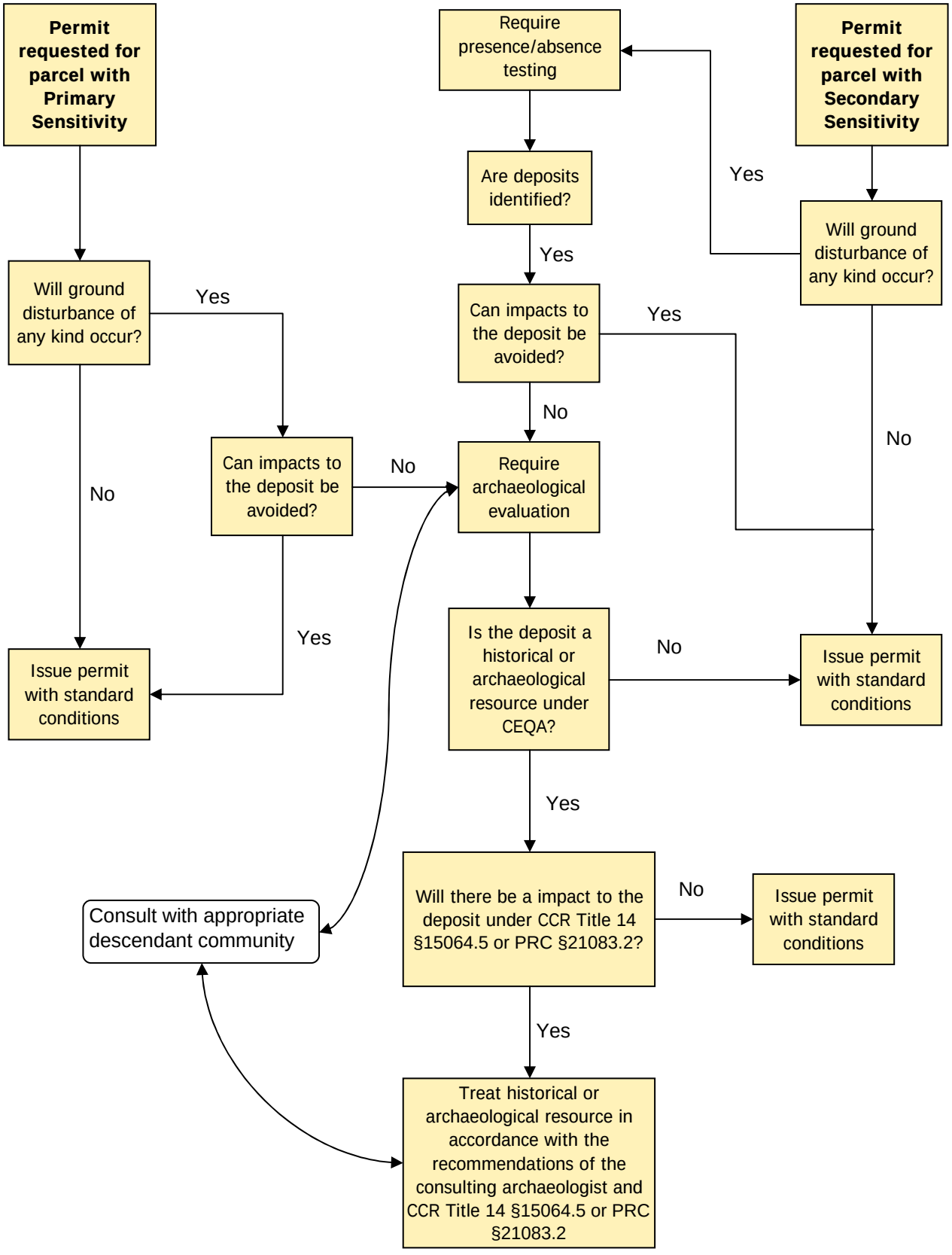
- From City of Santa Cruz Geodatabase
- Contains natural perennial and intermittent streams

APPENDIX C

Archaeological Sensitivity Map Action Charts

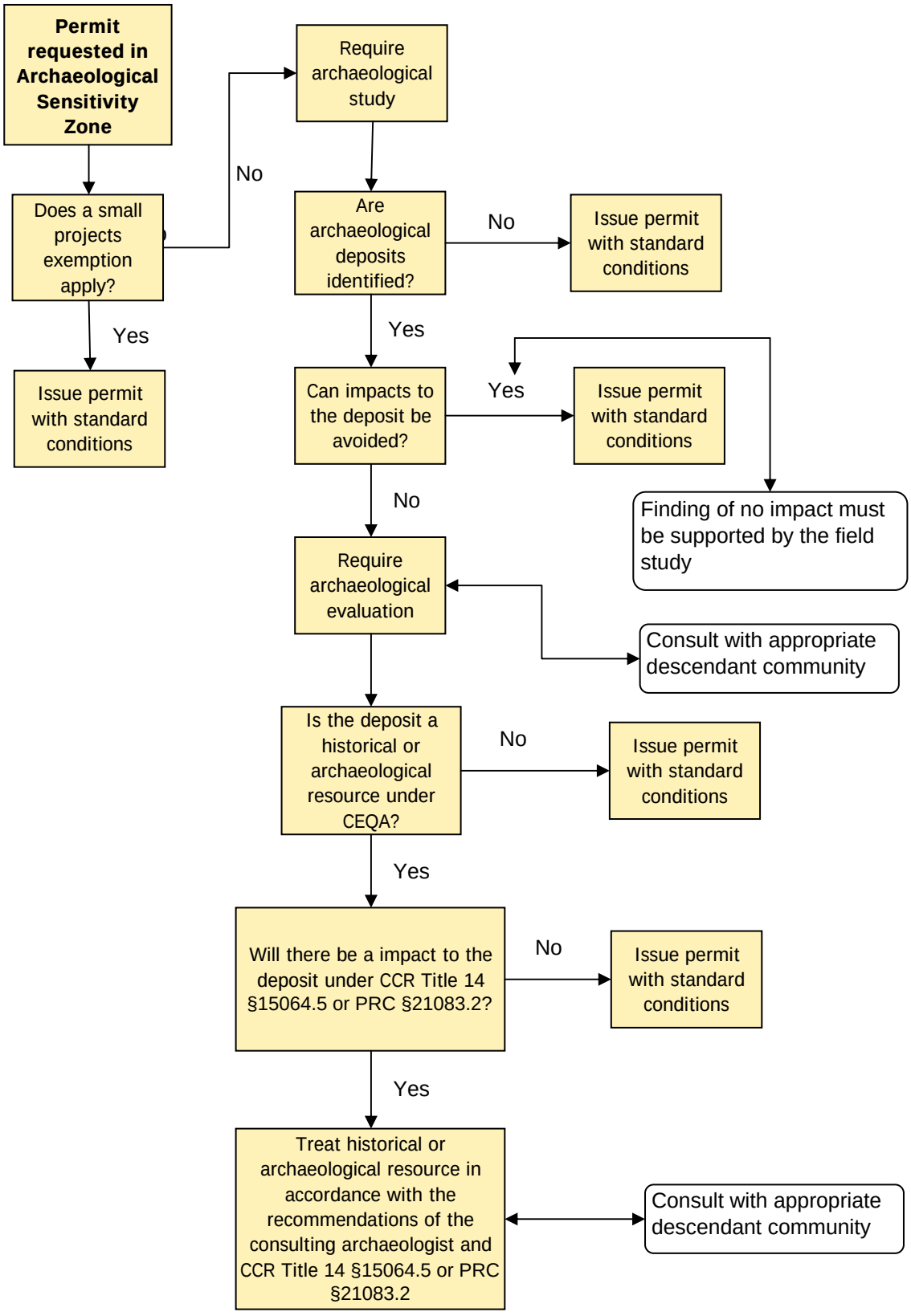
Archaeological Sensitivity Map Action Chart

Permits in the Zone of Heightened Archaeological Sensitivity (map color: red)



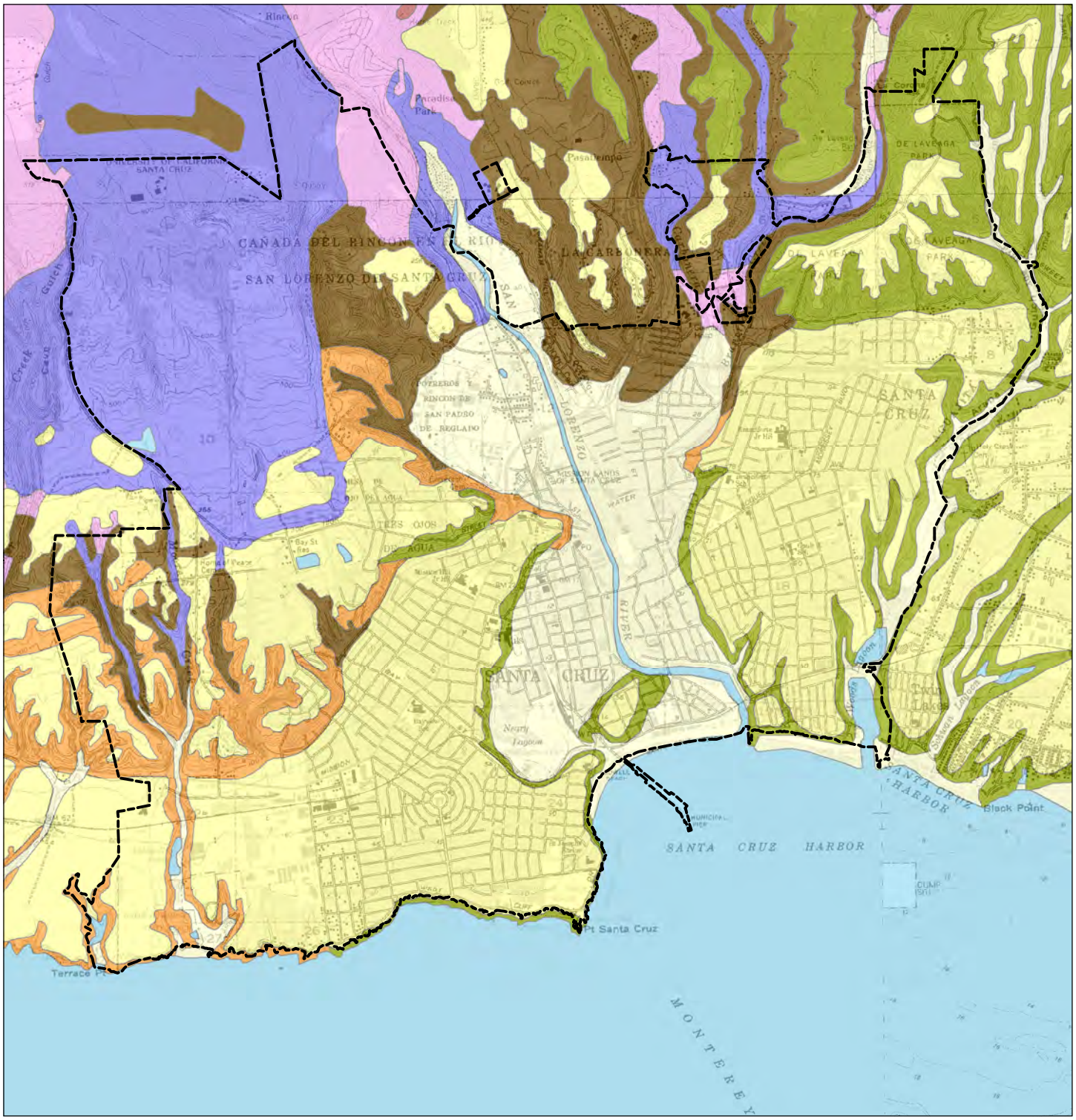
Archaeological Sensitivity Map Action Chart

Permits in the Archaeological Sensitivity Zone (map color: pink)



APPENDIX D

Paleontological Sensitivity Map



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Moderate Sensitivity

High Sensitivity

Low Sensitivity

- Holocene Alluvium
- Late Pleistocene Alluvium
- Purisima Formation (Late Miocene to Pliocene)
- Santa Cruz Mudstone (Late Miocene)
- Santa Margarita Sandstone (Late Miocene)
- Metamorphic Bedrock (Mesozoic or Paleozoic)
- Igneous Bedrock (Mesozoic or Paleozoic)
- Project Area (City Limits)

Cultural Resources Background Report and Archaeological Sensitivity Map for the City of Santa Cruz General Plan Update
City of Santa Cruz, Santa Cruz County, California

Paleontological Sensitivity Map

SOURCE: USGS Open-File Report 97-489

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HISTORICAL ARCHAEOLOGICAL REPORT FOR THE CITY OF SANTA CRUZ GENERAL PLAN UPDATE

SANTA CRUZ, SANTA CRUZ COUNTY, CALIFORNIA

Submitted to:

Michelle D. King, Senior Planner
City of Santa Cruz Planning and Community Development
809 Center Street
Santa Cruz, California 95060

Prepared by:

Andrew Pulcheon, M.A., RPA #11693, RPH #581
LSA Associates, Inc.
157 Park Place
Point Richmond, California 94801
(510) 236-6810

LSA Project No. CSN0902

LSA

August 18, 2009
(revised September 7, 2011)

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INTRODUCTION

This historical archaeological report and associated Geographic Information Systems (GIS) maps were prepared by LSA Associates, Inc. (LSA), for the City of Santa Cruz General Plan Update (GP Update), Santa Cruz, Santa Cruz County, California (Figures 1 and 2). The GIS maps were requested by the Santa Cruz Community Development Department to address the potential for historical archaeological deposits on parcels subject to permit application review. The memo and the GIS maps were prepared at a program-level of analysis. The term "GP Update area" is used in this report in reference to an area coterminous with the city limits of Santa Cruz, but the land under the jurisdiction of the University of California, Santa Cruz, are not subject to the recommendations herein.

The sections that follow include (1) a description of the methods used to prepare the GIS maps; (2) a brief overview of the history of the GP Update area to identify patterns of events that may have resulted in historical archaeological deposits; (3) a description of the types of archaeological deposits that may be present; (4) the potential for such deposits in the GP Update area; and (5) recommendations for permit review and conditions to address potential impacts to historical archaeological deposits.

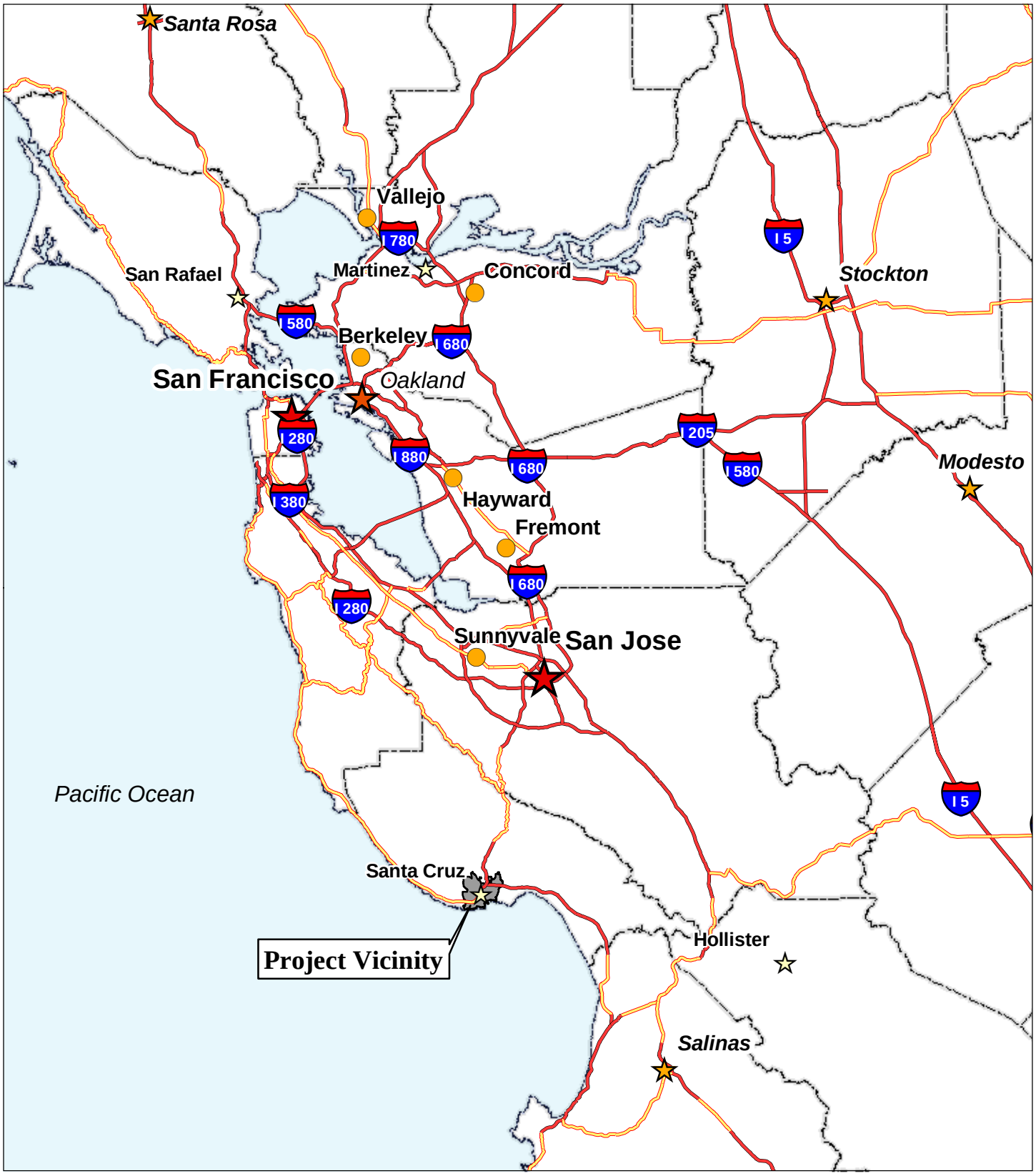
SCOPE OF THE REPORT

The GIS maps generated for this report (Appendix A) identify those portions of the GP Update area that either contain or are sensitive for historical archaeological deposits. Because the analysis is on a program level, the maps should not be used to confirm the presence or absence of historical archaeological deposits in a given parcel, other than for those parcels with recorded deposits. Nor should the maps be used to determine the status of any potential deposits under the California Environmental Quality Act (CEQA), or the likelihood that a project under review will impact such deposits. The GIS maps should be used during preliminary permit review to (1) notify applicants of the potential for encountering historical archaeological deposits; and (2) identify when a qualified professional archaeologist should be consulted to assess potential impacts. Please see the Conclusion and Recommendations section for details.

METHODS

LSA conducted background research to obtain the information used to prepare the GIS maps. Background research consisted of a review of maps on file at the City of Santa Cruz Public Library; the University of California, Santa Cruz, archives; and at County of Santa Cruz offices. The research was conducted to identify general historical trends in the growth and development of the GP Update area, from the founding of Mission Santa Cruz in 1791 to the modern day. The analysis incorporated the results of a records search conducted for the GP Update area at the Northwest Information Center of the California Historical Resources Information System in 2006 (Pulcheon, Jones, and Konzak 2006). A list of the sources reviewed by LSA is included in Appendix B.

This analysis was based entirely on map documentation obtained from archival sources. The GIS maps reflect the completeness and accuracy of the map data identified during the background research. Accordingly, the areas delineated on the GIS maps should not be interpreted as the *only*



LSA

FIGURE 1

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

Project Vicinity

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Miles

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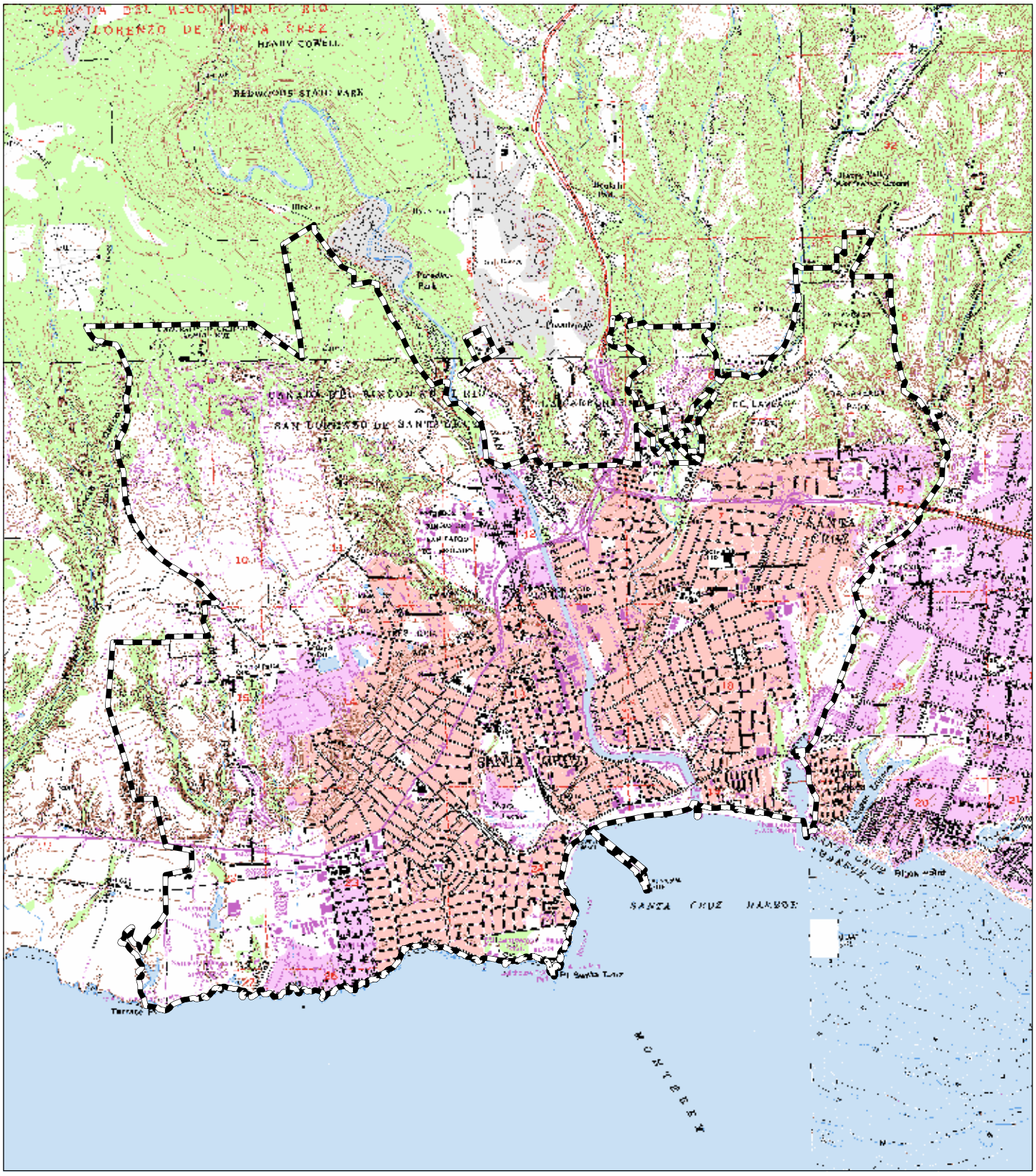

LSA

Project Area (City Limits)

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USGS 7.5' Quad: Felton, Calif. 1995; Laurel, Calif. 1994; Santa Cruz, Calif. 1994; Soquel, Calif. 1994

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FIGURE 2

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

Project Area

locations in which historical archaeological deposits could be found in the GP Update area. Historically, mapmakers often focused on the dominant cultural, political, or economic themes of their time period, which often resulted in the incomplete documentation or even omission of areas not associated with those themes. For instance, the dwellings and businesses of marginalized populations, such as Chinese immigrants, may not be accurately represented on period maps.

Archival Research

Research was done at the Martin Luther King Jr. Branch Library of the Santa Clara Public Library in the City of San José; the University of California, Santa Cruz, Map Room archives; and at Santa Cruz County offices.

Santa Clara County Library. On April 11, 2009, LSA conducted research in the California Room at the Martin Luther King Jr., Library in San José. The purpose of the visit was to review Sanborn Fire Insurance Company maps of Santa Cruz. Sanborn maps dating from 1886 to 1950.

University of California, Santa Cruz. On April 18, 2009, LSA conducted research in the Map Room at the Science and Engineering Library of the University of California, Santa Cruz. The purpose of the visit was to review historical maps of Santa Cruz to discern patterns of city development and delineate areas containing buildings and structures during the historic period.

Local Government Research. On April 18, 2009, LSA conducted research at the Santa Cruz County Assessor's Office; the Santa Cruz County Recorder's Office; and the Santa Cruz County Surveyor's Office in the City of Santa Cruz. The purpose of the visit was to review government records documenting the development of Santa Cruz. Records reviewed included subdivision parcel surveys, annexations, and property owner listings.

GIS Map Preparation

Several data sources were used to create the GIS maps in Appendix A. Site location data were obtained by previous background research conducted by LSA in 2006 for a prehistoric archaeological sensitivity map (Pulcheon, Jones, and Konzak 2006).

Map 1 depicts sensitive areas and areas of heightened sensitivity in the GP Update area (Appendix A, Map 1). Sensitive areas on the map (i.e., pink areas) consist of areas that at one time contained concentrations of buildings or structures from important periods of Santa Cruz's past. Areas of heightened sensitivity (i.e., red areas) consist of recorded historical archaeological deposits and a one-parcel buffer. Map 1 reflects information obtained from the 1928 edition of Sanborn Fire Insurance Maps, Spanish- and Mexican period maps and descriptions, information provided by the Villa de Branciforte Preservation Society, scholarly research, and information obtained from the Northwest Information Center of the California Historical Resources Information System.

Map 2 depicts Mission-period settlement in the GP Update area (Appendix A, Map 2). The polygons depict the historical Spanish- and Mexican-period development patterns in Santa Cruz. Map 2 was prepared based on historical information provided to LSA in 2006 by Mr. Ed Silveira of the Villa de Branciforte Preservation Society, as well as information obtained from the California Department of Parks and Recreation website for Santa Cruz Mission State Historic Park.

Map 3 depicts American-period development patterns at two points in time: 1866 and 1889 (Appendix A, Map 3). Map 3 was prepared based on a chronological map of the urban development of Santa Cruz (Goode 1982). Goode identified general development patterns in core areas of the GP Update area by determining the percentage of development in specific lots. For the purposes of Goode's analysis, a lot that had *any* level of development was coded as positive for historical development.

Map 4 depicts National Register of Historic Places historic districts in the GP Update area as of 2006, as well as historical buildings identified by City surveys (Appendix A, Map 4). Map 4 was prepared based on GIS layers provided to LSA in 2006 by the City of Santa Cruz. The historic districts and parcels with historical buildings could contain archaeological deposits associated with historically significant events or people at that particular location.

HISTORICAL BACKGROUND OF THE GENERAL PLAN UPDATE AREA[1]

In July 1769, the governor of Baja California, Gaspar de Portola, departed with an expedition from San Diego to locate Monterey Bay and passed through present-day Santa Cruz. Shortly thereafter, in September 1791, Mission Santa Cruz was established on the banks of the San Lorenzo River. Mission Santa Cruz quickly absorbed the surrounding Native American Ohlone population. By 1796, the mission included 523 neophytes. At its peak of operation, the Mission had 8,000 head of cattle and produced wheat, barley, beans, corn, and lentils for consumption and trade.

Another colonial institution, Villa de Branciforte, was established on the other side of the San Lorenzo River across from Mission Santa Cruz in 1797. The Spanish government established Villa de Branciforte to create a self-sufficient secular settlement populated by retired soldiers, craftsmen, and farmers who could mobilize and defend the coast of Alta California from foreign invasion. Overall, the colonial government viewed Villa de Branciforte as a failure, as early settlers were perceived to lack the the skills to be self-sufficient farmers. This interpretation, however, represents the generally held view of the Franciscan-based mission histories. Other sources[2] suggest that the residents were marginalized through efforts to invalidate their potential legal claims to former mission lands. Regardless of the differing interpretations, however, the California missions were secularized in 1834, and Mission Santa Cruz lands came under the control of Villa de Branciforte.

Commercial development of Santa Cruz and the surrounding region's natural resources was well under way by the time California became part of the United States with the signing of the Treaty of Guadalupe Hidalgo in 1848. Redwood logging began in 1841 when Joseph L. Major built a sawmill north of present-day Santa Cruz at Mount Hermon. By 1864, 28 sawmills had been established in Santa Cruz County. Logging continued in Santa Cruz County during the latter half of the 19th century, supplying builders in San Francisco, as well as the local lime and tanning industries. By the turn of

[1] Information presented in the History section has been adapted from the *Historic Context Statement for the City of Santa Cruz* (Lehmann 2000) and the *Santa Cruz Historic Building Survey* (Charles Hall Page & Associates, Inc. 1976).

[2] Accounts that provide another interpretation of the life and times of the early residents of Branciforte are presented in the *Branciforte Issue* of the Santa Cruz County History Journal (1997[3]) published by the Art and History Museum of Santa Cruz County.

the century, much of the useable timber had been logged, generating conservation efforts to save the remaining stands, including Big Basin Redwoods in 1902.

Lime quarrying was also an important industry in early Santa Cruz, and, like logging, developed in response to the growing demand for building materials during San Francisco's post-gold rush construction boom. Two engineers from Massachusetts, A.P. Jordan and Isaac E. Davis, built the first lime kilns in 1853 at the corner of High and Bay streets, then established a quarry within Rancho de la Canada del Rincon along the San Lorenzo River between Santa Cruz and Felton. The quarry was eventually sold to Henry Cowell, whose lime operation, along with the Santa Cruz lime operations Holmes Lime and I.X.L., constituted half of the state's lime production in the 1880s. By the 1890s, Santa Cruz's lime industry began to decline due to the depletion of cheap fuel brought about by extensive logging of the region and the development of cement that used a cheaper, less pure grade of limestone. Remains from the lime industry can still be seen on the campus of the University of California, Santa Cruz.

Tanneries were also important to the City's early economy. By 1857, at least four tanneries were established in and near Santa Cruz: Kirby and Jones on Mission Hill, Porter Brothers in Soquel, C. Brown and Company on Laurel Street, and the Grove Tannery on River Street. The tanneries produced skirting, harness, belting, bridle, and sole leather. One of the largest tanneries was owned by A.C. Kron, who had purchased an operating interest in the Grove Tannery in 1867. By 1890, Kron had over 30 employees, a commission house on Clay Street in San Francisco, and a branch in Sydney, Australia. As with the lime industry, however, the local tanneries' over-harvesting of local timber for barrel staves and fuel resulted in the industry's demise by the turn of the century.

These burgeoning industries also spawned the City's residential growth and infrastructure development during the 19th century. Beginning in the 1850s, Fred Hihn, who owned much of the area between Mission Hill and Beach Hill, developed land north of Lincoln Street. An incipient water system began to develop in 1860, facilitating more residential and industrial growth. In the 1870s the population grew by 50%, and housing and development expanded to the east side of the San Lorenzo River, the West Cliff area, Ocean View, and Riverside Avenue. Also during this time, Pacific Street emerged as the business center for Santa Cruz and fostered the City's first Chinatown. In 1889, the Circles area, located southwest of Neary Lagoon, was laid out by Fred Hihn for the Christian Church of California, and was the first major geometric planned area in the City. Although the 1890s were an economically depressed time for the City, the street railroad was electrified and expanded with houses built along lines that stretched from downtown to Soquel and Seabright.

The economic focus of the City gradually shifted to tourism nearing the turn of the century. The growth of local tourism was largely a result of railroad access to Santa Cruz County beginning in the late 1870s. Prior to this time, goods were transported and people accessed the area via ship or on narrow, rutted roads. Summer train traffic to Santa Cruz increased after 1894, when the City received national attention in *Harper's Weekly* as a tourist destination.

Perhaps more than any other individual, Fred Swanton was responsible for developing Santa Cruz's tourist industry. Swanton helped build the first three-story hotel in Santa Cruz in 1883, which was destroyed by fire five years later. Undeterred, Swanton helped establish the area's first telephone system in the 1880s, and the Santa Cruz Electric Light and Power Company in 1890. Swanton, with investors that included San Francisco financier John Martin and the Southern Pacific Railroad,

formed the Santa Cruz Beach, Cottage, and Tent City Corporation. The corporation opened the Neptune Casino in 1904, but lost that enterprise to fire in 1906. The Casino was quickly rebuilt and reopened a year after the fire on June 15, 1907. Swanton built the Casa del Rey Hotel in 1910 across from the Casino to replace a "tent city," which had served as a popular tourist beach accommodation until that time. The Casa del Rey Hotel stood until the 1989 Loma Prieta earthquake, when it sustained extensive damage and was demolished soon after. Although Swanton succeeded in promoting Santa Cruz as a tourist destination, his business enterprises were less successful, and he filed for bankruptcy in 1912. Also during the early 20th century, popular beach attractions were built, including the Scenic Railway roller coaster in 1908 and the Giant Dipper Roller Coaster in 1924.

World War II had a significant effect on the local economy. Tourism declined significantly in Santa Cruz due to travel restrictions and gasoline shortages. The Santa Cruz fishing economy, which was dominated by Italian immigrants, suffered as the result of Executive Order 9066, which established internment and relocation camps for Japanese, German, and Italian immigrants, including those who were United States citizens. Italian families were relocated inland from the waterfront and many of the fishing boats were abandoned or used in the war effort.

The commercial fishing industry never recovered after the war, although sport fishing remains a popular activity. The local tourist economy revived, with the boardwalk undergoing major renovations in the 1950s and again in 1981. The boardwalk, which remains the focus of Santa Cruz's tourist industry, continues to operate with a mix of historic and modern amusement park attractions.

HISTORICAL ARCHAEOLOGY[1]

Historical archaeology is a way of "supplementing and challenging the history we know through documents [and] reconstructing people's ways of life" (Little 2007:22). This disciplinary approach is a means of discovering relationships between human adaptive strategies, ideology, and patterned variability in the archaeological record by using multiple lines of documentary, oral, and material evidence. Historical archaeological site evaluations draw from theoretical perspectives of ethnic identity, culture contact, and reconstruction of past lifeways to address questions of architecture, land use and settlement patterns, environment, economic status, ethnicity, and cultural interaction. Obtaining information that does not exist in the historical record is one of the main objectives of historical archaeology.

Archaeologists are interested in the way sites form because it affects the interpretation and significance of archaeological deposits. When working in complex urban contexts, such as the GP Update area, it is important to understand archaeological deposits in terms of the events that created them, not merely through the artifacts they contain. In urbanized areas such as Santa Cruz, archaeological deposits are often created from changes on two levels: (1) those that result from the new use of a particular parcel due to the presence of a different commercial enterprise, occupant, or owner, or from modifications made by a continuing one; and (2) those produced by widespread responses to either natural disaster, such as floods or fires, or to municipal regulations governing

[1] Portions of this section and those that follow are taken or adapted from *Draft Archaeological Research Design, Testing, and Evaluation Plan: Heinlenville/San José Corporation Yard Project* (Anthropological Studies Center 2007); and *Archaeological Sensitivity Study and Testing Program for the Uptown Oakland Project, City of Oakland, Alameda County, California* (Pastron and Vanderslice 2005).

sanitation practices, water delivery and storage, or street and lot improvements. The latter transition is an important factor in identifying sensitive areas in Santa Cruz, because changes in the city's waste disposal and water service reduced the number of building occupants who relied on backyard privies and wells. These structures, often of great interest to archaeologists because of their contents, would not likely be constructed after the widespread availability of water and sewerage in the GP Update area.

POTENTIAL HISTORICAL ARCHAEOLOGICAL PROPERTY TYPES

Based on an understanding of the GP Update area, we can predict the general types of archaeological remains that may be present. Such deposits, should they be historically significant, could be disturbed by construction activities permitted by the City, resulting in a significant impact under CEQA. The categories of potential archaeological features and sites, known as archaeological property types, would have been created by the series of historic-era events and processes described in the historic overview. Table 1 below presents general property type categories for historical archaeological deposits in the GP Update area. Appendix C contains preliminary research themes and questions that may apply to historical archaeological deposits in the GP Update area.

Table 1: Potential Archaeological Property Type Categories

Property Type Category	Property Type
Industrial (e.g., factory, workshop)	Industrial building foundation/remains Industrial process remains Raw material, by-product, or waste accumulation
Service/mercantile (e.g., hotel, boardinghouse, general store, laundry, butcher shop)	Commercial building foundation/remains Sheet artifact concentration Specialized activity feature (e.g., boiler base, roasting oven) Artifact or by-product cache
Social (e.g., theatre, saloon, family/social organization office)	Social building foundation/remains Sheet artifact concentration Specialized activity feature
Residential (e.g., house, tenement)	Private residential building foundation/remains Wells and privies Sheet artifact concentration Artifact cache Activity area, yard, garden
Infrastructure/public space (e.g., bridge remains, conveyance structures, open space)	Fences, road segments Sheet artifact concentration Artifact cache Specialized activity feature or area

Domestic Occupation

Examples of this property type may occur in association with residences and other locations where people reside, such as boarding schools. These locations may be expected to contain deposits in the

form of either hollow-filled features or sheet refuse. Either type of deposit may contain information that could make them legally important.

Before the days of organized refuse collection, hollow features such as refuse pits and abandoned wells, cisterns, and outhouses (over privy vaults) were used as receptacles of the by-products of everyday living: discarded ceramics, food bones, containers of various materials, and broken or obsolete personal items. These discrete caches were often filled over a short duration and provide a snapshot in time of the residents who created the deposits. Domestic occupation sites also frequently contain deposits of sheet refuse, which is refuse that builds up on a horizontal plane. When these deposits are sealed either by intentional filling or covered by a building, they can yield assemblages that may be used for the same types of analysis as filled features. In addition, they can provide evidence of change through time that discrete caches cannot. The reconstruction of backyard use and identifying functional layout and previous vegetation may be possible by means of continuous pollen samples obtained from this type of deposit.

Several large fires occurred within the municipal limits of Santa Cruz, none greater or more destructive that the conflagration of April 12, 1894. The 1894 fire razed much of the downtown area, completely gutting many buildings. Because the contents of such buildings would have settled to the ground surface, these fire layers may contain a wealth of information. These deposits may provide a snapshot in time as the date of the fire could be used to chronologically define a discrete cache or hollow feature.

Domestic Architecture. These are the architectural remains of residences and domestic outbuildings, and often consist of foundations, wall footings, platforms, and collapsed wood buildings. Since many of the buildings were used for both domestic and commercial purposes, these categories will overlap. For brick buildings, the remains would take the form of footings. For wooden structures these may be found as brick footings, piers of brick, concrete, or stone, and wooden pilings or mudsills placed directly on the ground. Buildings whose characteristics are known from the historical record would generally not be considered legally important. With so little variation in some buildings there is limited research value once a sample of each type is investigated. Of greater importance are the modifications to these buildings, especially rear additions that are poorly documented in the historical record. While Sanborn maps may indicate the size and dates of changes through time, they only identify the materials used for wall and roofs, and not the actual building techniques. Modifications such as the creation of basements or cellars not identified on Sanborn maps could be considered legally important. For example, archaeological investigations within the community of Walnut Grove, California, uncovered basements (including niches for safes) that had been excavated under buildings and extended under sidewalks, none of which were identified on Sanborn maps. The remains of wood-frame or other structures throughout the GP Update area may contain information that does not exist in the historical record.

Commercial Occupation

Refuse caches and sheet deposits of refuse and fill, similar to resource types that occur on domestic sites, may also be expected on commercial sites in the GP Update area. The artifact collections, however, will reflect the orientation of the business that contributed to it. Many types of businesses were historically located within the GP Update area, including retail stores, butcher shops, bakeries, restaurants, dance halls, barber shops, lodging houses, saloons, tanneries, petroleum storage, livery stables, banks, department stores, theatres, auto repair, and foundries, among many others.

Collections contained in property types related to retail stores may be expected to consist of broken, spoiled, or otherwise unsalable goods. Lodging houses can be expected to have produced deposits that are similar in structure and function to those of domestic sites. Collections associated with service professions, such as barber shops, can be expected to consist of empty containers used in the trade and broken or obsolete equipment, along with personal items.

Commercial Architecture. For many of the retail and service establishments in the GP Update area, this category overlaps with domestic architecture. The legal status of this type of resource depends on the degree to which the architectural details are a matter of record. If the remains can yield previously undocumented information, then they could be considered legally important.

Social Occupation

Specialized activity features, refuse caches, and sheet deposits of refuse and fill, similar to resource types that occur on domestic and commercial sites, may also be expected on social sites.

Social Architecture. This type of site includes a variety of buildings used for social gatherings, including the dance halls, saloons, theatres, and social organizations. This type of site could consist of building adaptations or special building features, and information derived from their investigation would be similar to that of commercial and domestic architecture.

Infrastructure and Public Space

This property type includes both formal infrastructure and open spaces that were structurally less formal, yet still significant to the community. This property type does not include any refuse-filled deposits within outhouse features that would more likely be either domestic or commercial deposits. Infrastructure includes a variety of architectural elements, including those features related to settlement and urban development such as sewer lines, drain pipes, power lines, roads, hydrants, etc. The information for infrastructure is primarily architectural, but there may be refuse deposits deposited within the backfill of infrastructure features during construction. Infrastructure features often correlate to municipal utility maps, but where deviation occurs, it provides a means for addressing research issues such as the practical application of technology and development in specific contexts. As with architectural properties, such research domains are usually investigated by review of local histories, primary documents, or historical maps, but archaeological research can often provide significant complementary information.

The GP Update area contains locations that were open space through the years. These spaces may have been used for festivals, other community gatherings, gardening, or as playgrounds. Deposits in these locations may include sheet refuse, artifact caches, or specialized activity features. Oral-history research could be necessary to identify such use areas.

POTENTIAL FOR INTACT DEPOSITS

The variety of residential, commercial, and public infrastructure construction over the years has rendered Santa Cruz's subsurface conditions highly variable. This is not uncommon in settings in which long-term urban occupation has occurred, wherein residents modified their surroundings according to social, economic, and environmental imperatives of the times. For this reason, there are a

number of factors that affect the ability of a given location to contain intact historical archaeological deposits.

General Development Trends

LSA's research indicates that by 1890 Santa Cruz's downtown business district and adjacent residential districts were built out. By 1925, areas west of the downtown and along the beach were developed, corresponding to the marketing of Santa Cruz as a popular seaside recreation destination. By 1940, Santa Cruz grew to most of the extent of its present area. After WWII, development occurred in the southwestern and northeastern portions of the city. Recent development has occurred along the city fringes, most closely associated with the founding of the University of California, Santa Cruz campus in 1962.

Municipal Water and Sewerage

The majority of land within the GP Update area, with the exception of the extreme northeastern and western portions of the city, was serviced by reliable, large-scale water and sewerage when such municipal services were established. According to municipal records, funds were allocated in 1923 to construct a 39 million gallon water reservoir and distribution system improvements, and a pumping plant was constructed on the San Lorenzo River in 1928.[1] Santa Cruz's municipal sewer service had its origins in the 19th century, eventually extending service to 75% of city residents by 1917, with the remainder of the population using vault privies.[2] Following an advisory from the State Board of Health in 1917, a quarantine for swimming was established from the mouth of the San Lorenzo River to 1,000 feet north due to the risk of disease outbreaks from effluent discharges. In 1925, after several years of continuing unsatisfactory conditions, the City commissioned sanitary engineers to assess the current methods of sewage collection, treatment, and disposal. The assessment prompted municipal action, and by 1928 the City had completed the construction of a screening plant, interceptor and trunk sewers, and outfalls to improve the collection and disposal of sewage.[3]

LSA's analysis indicates that development that occurred after the mid-1920s in Santa Cruz was serviced by municipal water and sewerage. New buildings were not likely to rely on vault privies and wells for the sanitary and water needs of their occupants, and it is probable that that such structures were not constructed after the mid-1920s. Therefore, most of the GP Update area has the potential to contain vault privies and wells, although to a much lower degree in the extreme northeastern and western portions of the city.

Historical Archaeological Sensitivity

LSA's research indicates that most of the GP Update area has the potential to contain historical archaeological deposits. Some areas exceed this nominal potential and are categorized as sensitive, and other areas have heightened sensitivity due to the presence or proximity of recorded archaeological deposits. Several factors contribute to this sensitivity:

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[1] *Santa Cruz City Water Department Annual Report: 1978-79*, p. 4.

[2] *A Report on Public Health Aspects of the Sewerage System and Waste Discharges of the City of Santa Cruz*, p. 5. Prepared for Raymond C. Leer, M.D., Health Officer, Santa Cruz County. Prepared by State Department of Public Health, Bureau of Sanitary Engineering, March, 1954.

[3] *A Study of Sewage Collection Treatment & Disposal for Santa Cruz and Vicinity*, pp. 2-3. Prepared by Charles Gilman Hyde and Walter C. Howe, 1925.

- The GP Update area consists of a modern city with diverse historical and cultural roots extending back to seminal periods in California's history, both during and before statehood. The GP Update area contains an integrated community that represents a broad spectrum of historical development, with a diversity of activities, buildings, structures, objects, and districts that are likely to have associated archaeological deposits.
- The GP Update area has documented occurrences of archaeological deposits dating to the Spanish and Mexican periods in California. These eras are of high interest due to the relative paucity of intact, recoverable deposits associated with these periods. Sites associated with similar communities have had significant archaeological research value and have been found to be historically significant.
- A high level of documentation exists for the GP Update area—including sources such as the Sanborn Company maps, U.S. Census population schedules, newspaper articles, and oral histories—that provide information on both the configuration of the built environment, and the social development and configuration of the community. This level of documentation could allow for sophisticated and complex archaeological inquiry.

GEOGRAPHIC INFORMATION SYSTEMS MAPS

Appendix A contains GIS maps that graphically represent information about the land use history of the GP Update area. Each map is described below.

Map 1, Sensitivity Map. Map 1 depicts sensitive areas and areas of heightened sensitivity in the GP Update area (Appendix A, Map 1). It should be noted that all areas but the extreme northeastern and western portions of the GP Update area have the *potential* to contain deposits, but Map 1 shows those areas that are sensitive for historical archaeological deposits based on archival information. Sensitive areas on the map (i.e., pink areas) consist of areas that at one time contained concentrations of buildings or structures from important periods of Santa Cruz's past. Areas of heightened sensitivity (i.e., red areas) consist of recorded historical archaeological deposits and a one-parcel buffer. The sensitive areas subsume known archaeological deposits, as well as several areas in which archaeological deposits from particular eras are more likely to occur (e.g., the sensitive (pink) areas on Map 1 encompass recorded deposits (red areas) as well as the polygons for Mission-period and American-period development patterns on Maps 2 and 3). Because its land uses are administered by the state and are not subject to local regulation, the University of California, Santa Cruz, is not coded as sensitive (i.e., pink), even though recorded historical archaeological deposits and a one-parcel buffer (i.e., red) are within its boundaries.

Map 2, Historical Mission-Period Development Pattern. Map 2 depicts historical Mission-period development patterns in the GP Update area (Appendix A, Map 2). Map 2 identifies those areas with sustained residential, institutional, industrial, and commercial activity during the Spanish and Mexican eras, including the Santa Cruz Mission and Villa de Branciforte.

Map 3, Historical American-Period Development Pattern. Map 3 depicts American-period development patterns at two points in time: 1866 and 1889 (Appendix A, Map 3). Map 3 shows general development patterns in core areas of the GP Update area.

Map 4, Historic Districts and Historical Buildings. Map 4 depicts historic districts and identified historical buildings in the GP Update area as of 2006 (Appendix A, Map 4). The historic districts and parcels with historical buildings could contain archaeological deposits associated with historically significant events or people at that particular location.

CONCLUSION AND RECOMMENDATIONS

Most of the GP Update area has the *potential* to contain historical archaeological deposits. Some portions of the GP Update area are sensitive for the occurrence of such deposits, and Map 1 in Appendix A identifies these areas. The historical archaeological deposits could represent different phases of Santa Cruz's history and development, including Spanish colonial, Mexican, and American periods. Such deposits may be sufficiently intact to yield information important in the history of the city, which would qualify them for listing in the California Register of Historical Resources (California Register). Eligibility for listing in the California Register would require that a resource be considered a historical resource as defined at Public Resources Code §21083.2(g), and that significant impacts to the resource be avoided or mitigated to the degree possible.

LSA's analysis in this report cannot be used as the basis to determine if a given archaeological deposit qualifies as a historical resource under CEQA. That determination should be made by the City in consultation with a qualified professional archaeologist. The GIS maps accompanying this report (particularly Map 1) should be used as an indication of where development has a higher potential to encounter and disturb historical archaeological deposits. It is important to note that the maps do not reflect predictive certainty, but should rather be seen as a general planning tool. For this reason, it is possible that historical archaeological deposits could occur *outside* of the sensitive areas shown on Map 1, in which case development could result in impacts to such deposits. Similarly, development that occurs *inside* the sensitive areas will not necessarily result in impacts to significant historical archaeological deposits.

Preliminary Review and Screening

The determination of historical archaeological sensitivity requires an understanding of how archaeological sites are formed and how they are destroyed. On urban sites the historic ground surface is often buried, so an archaeologist must rely on other means to predict the types of potential archaeological deposits and their likelihood of survival. The following questions should be considered when determining whether historical archaeological deposits may be present in a given project area. The first two questions pertain to formation of archaeological deposits and the last to survivability.

- Did the site's occupants engage in activities that would have created features or durable remains in sufficient quantity for archaeological analysis (e.g., household, blacksmith, laundry, store, warehouse, industrial process)?
- Was the area in question occupied before or during a transitional event, either regulatory (e.g., city water/sewer installation), natural (e.g., fire/flood), or personal (e.g., death or household moving) in nature?

- Is there evidence that archaeological remains created by these events or processes may have survived to the present (e.g., absence of deep basements, the presence of protective concrete surface)?

Many portions of the GP Update area meet the conditions described above, suggesting that potentially important archaeological deposits could be present. These conditions are a general indicator of sensitivity, however, and qualified professional archaeologists should be retained when issues arise on a project-specific basis, including questions of resource significance, impact assessment, and mitigation methodology. Appendix C contains a number of preliminary research themes and questions that could be applicable to assessing the significance of different historical archaeological property types in Santa Cruz.

Permit Condition Recommendations

Permit applications that call for *substantial ground disturbance* within the GP Update area should be conditioned upon approval. The permit review and conditions described below address three levels of project approvals: (1) applications city wide; (2) applications in sensitive areas; and (3) applications in areas of heightened sensitivity. These recommendations are tailored to the potential for an application to result in an activity that results in an impact, and are supported by the standards established by the Historic Preservation Element of the administrative draft of the GP Update.[1] Pertinent GP Update standards include Policy HA1.2, which specifies the protection or management of archaeological resources early in the land use process; and Goal HA1.2.1, which calls for the preparation of informational materials for property owners to address cultural resources and development planning strategies. The level of effort required to address the potential for impacts increases with the likelihood of encountering deposits.

To define the scope of permit review, the City may elect to create a small-project exemption for permit applications that involve only minor ground disturbance. The review exemption should include activities that the City determines have a negligible potential for impacting historical archaeological deposits.

Appendix D contains an action chart that shows the recommended review process for each of the review levels described below. LSA recommends that City staff refer to the action chart in Appendix D and the Map 1 in Appendix A to identify when, and at what level, permit review for potential impacts to historical archaeological deposits should occur.

Citywide Approvals. This recommendation is linked to Map 1 in Appendix A, and applies to permits applications for projects anywhere within the GP Update area. As part of these approvals, the City should impose a standard condition for the identification of archaeological deposits during ground disturbance. As part of the standard condition, the City should clearly and explicitly notify the permit applicant of the *potential* for encountering historical archaeological deposits during ground disturbing activities. Permit approvals and/or subdivision maps should be annotated to include this standard condition, and should be accompanied by a handout that contains:

[1] *City of Santa Cruz General Plan 2030 Administrative Draft, February 27, 2009.* Available at: < http://www.ci.santa-cruz.ca.us/pl/gp/PDF/GP%20Drafts/Draft%20GP%202-27-09.pdf>.

(1) a brief statement of the importance of environmental compliance, the laws that address archaeological deposits, and the reasons for reporting finds;

(2) color photographs of common types of historical archaeological deposits that may be encountered; and

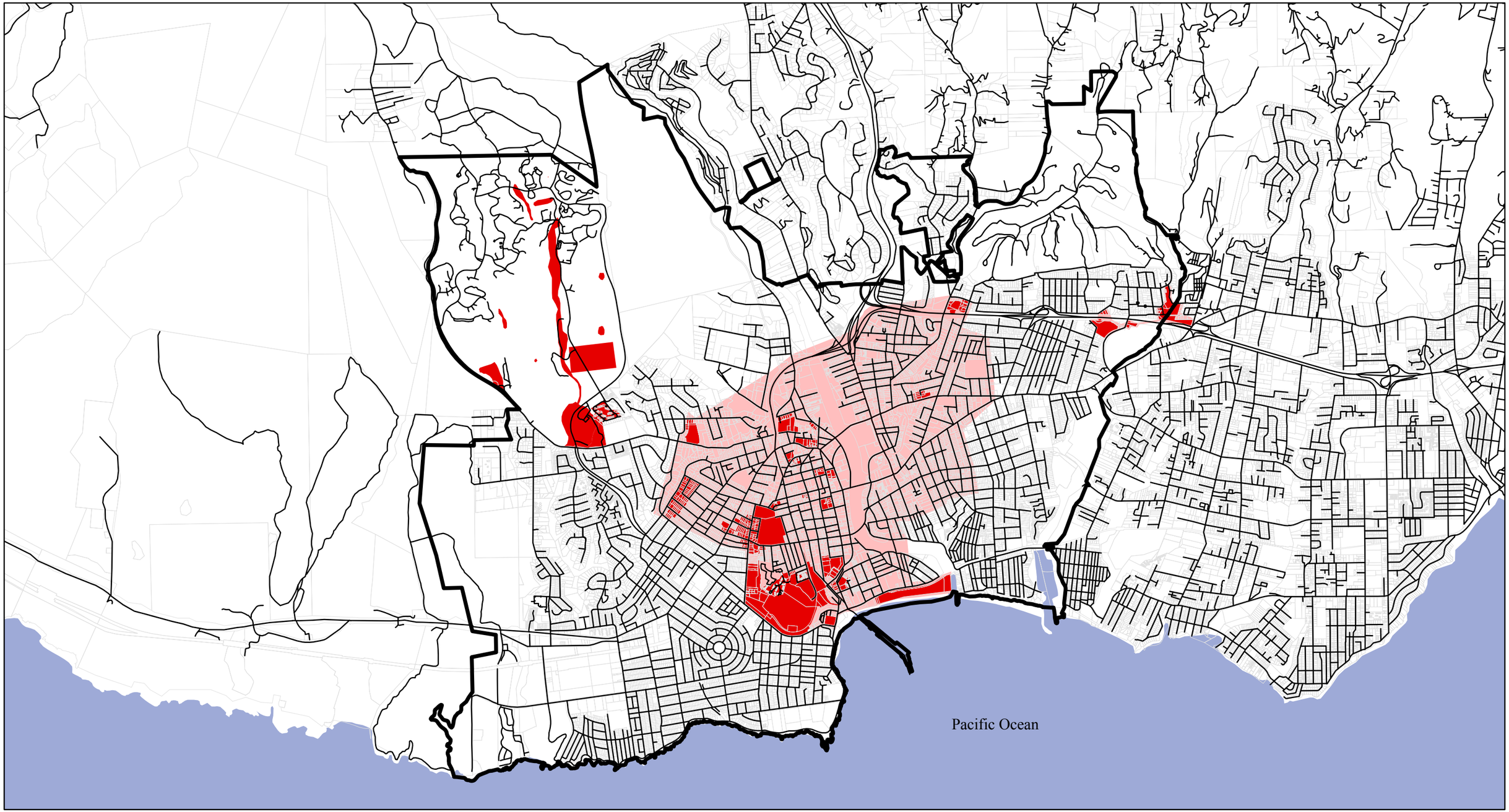
(3) notification procedures in the event that intact deposits are encountered, including city staff names and contact numbers.

Sensitive Areas (Map Color Pink). This recommendation is linked to Map 1 in Appendix A, and applies to permits applications for projects in parcels coded as sensitive (pink). For these projects, the City should require a parcel-specific assessment by a qualified professional archaeologist to determine the potential for impacts to historical archaeological deposits. At a minimum, this assessment should consist of a review of historical maps and geotechnical or other information about subsurface conditions on the parcel. Based on the review, the archaeologist should render a professional opinion about (1) the potential for intact archaeological deposits to occur in the project area; (2) whether such deposits may be encountered and disturbed by construction; and (3) whether additional study is warranted to address the potential for impacts (e.g., further archival research, construction monitoring, pre-construction test excavation, etc.). This review should provide the basis for the City's determination regarding the potential for archaeological impacts under CEQA, and the feasible recommendations resulting from the review should be implemented by the City.

Areas of Heightened Sensitivity (Map Color Red). This recommendation is linked to Map 1 in Appendix A, and applies to permits applications for projects in parcels coded as areas of heightened sensitivity (red). Prior to permit approval, an archaeologist should determine the potential for impacts to historical archaeological deposits. If impacts are likely, the archaeologist should assess the significance of the recorded deposit that may be affected, and determine if it qualifies as a CEQA-defined historical resource (see Public Resources Code §21084.1) or a unique archaeological resource (see Public Resources Code §21083.2(g)). Field study should be conducted as part of the assessment for parcels containing recorded archaeological deposits (i.e., in the red areas, but not within the one-parcel buffer). Sufficient background research and/or field study should be done to substantiate the impact determination, and may include, but is not limited to, pre-construction test excavation, construction monitoring, or an initial inspection of exposed ground surfaces after modern overburden is removed. The archaeologist should render a professional opinion about (1) the significance of the archaeological deposit in question; (2) whether the deposit will be encountered and impacted by construction; and (3) treatment options in the event that the deposit is significant and will be impacted. This review should provide the basis for the City's determination regarding the potential for archaeological impacts under CEQA, and the feasible recommendations resulting from the review should be implemented by the City.

APPENDIX A

Geographic Information Systems Maps



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General Plan Update Area (City Limits)

Sensitive

Hightened Sensitivity

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

Sensitivity Map, Map 1

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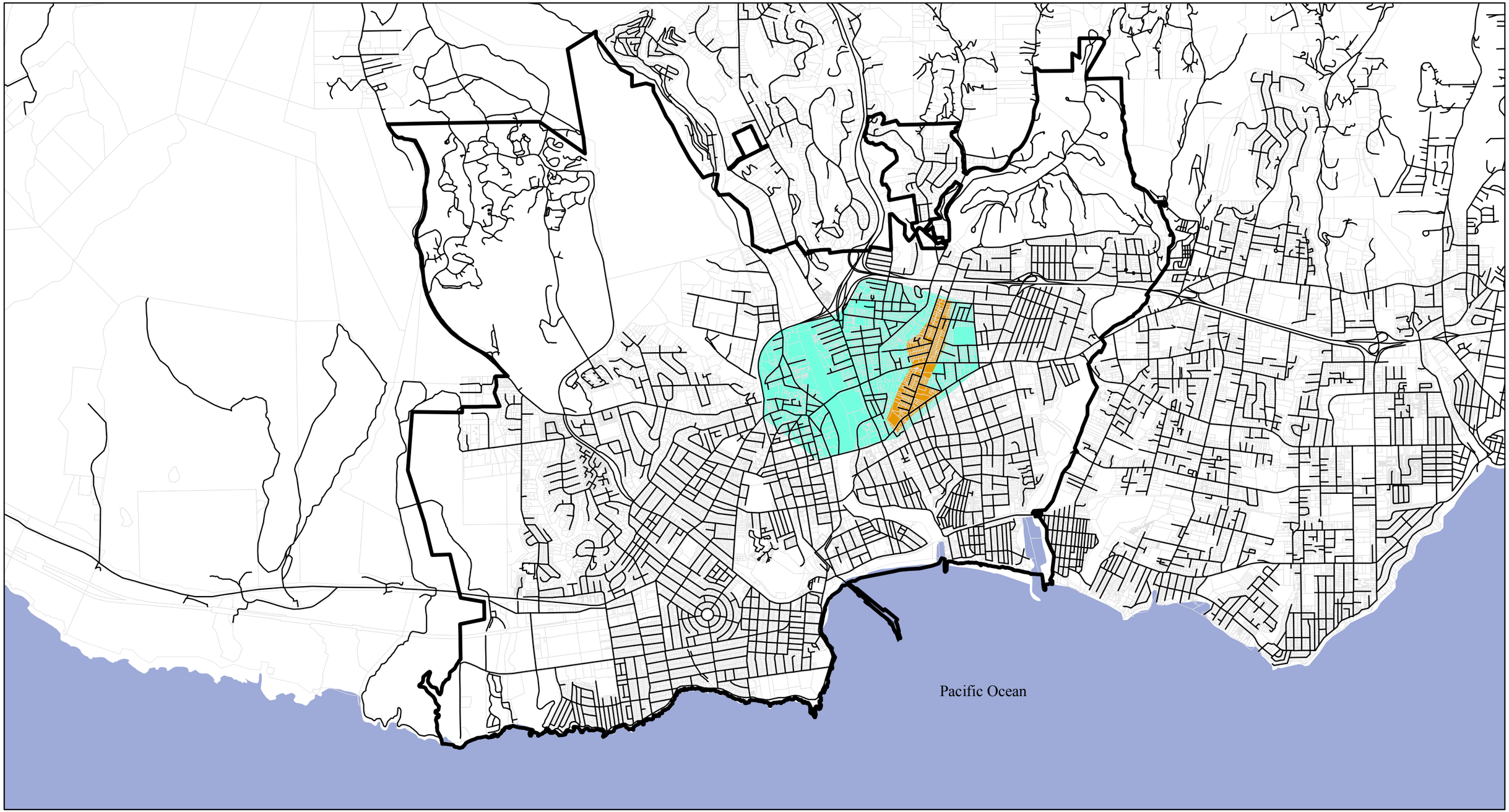

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Villa de Branciforte

Mission-Period Settlement

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

Historical Mission-Period Development Pattern, Map 2

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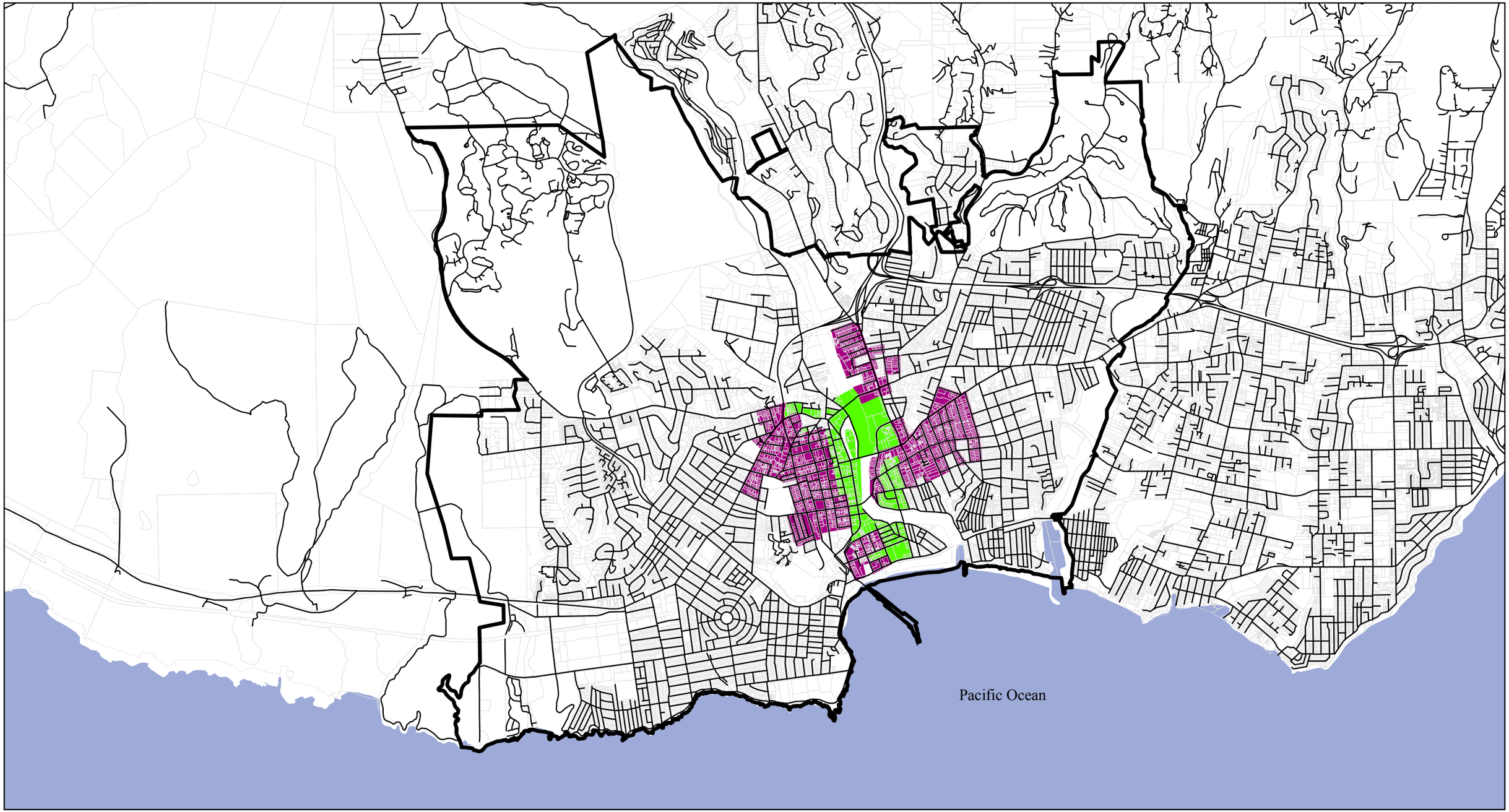

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General Plan Update Area (City Limits)
Extent of American-Period Development as of 1866
Extent of American-Period Development as of 1889

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

American-Period Development Pattern, Map 3

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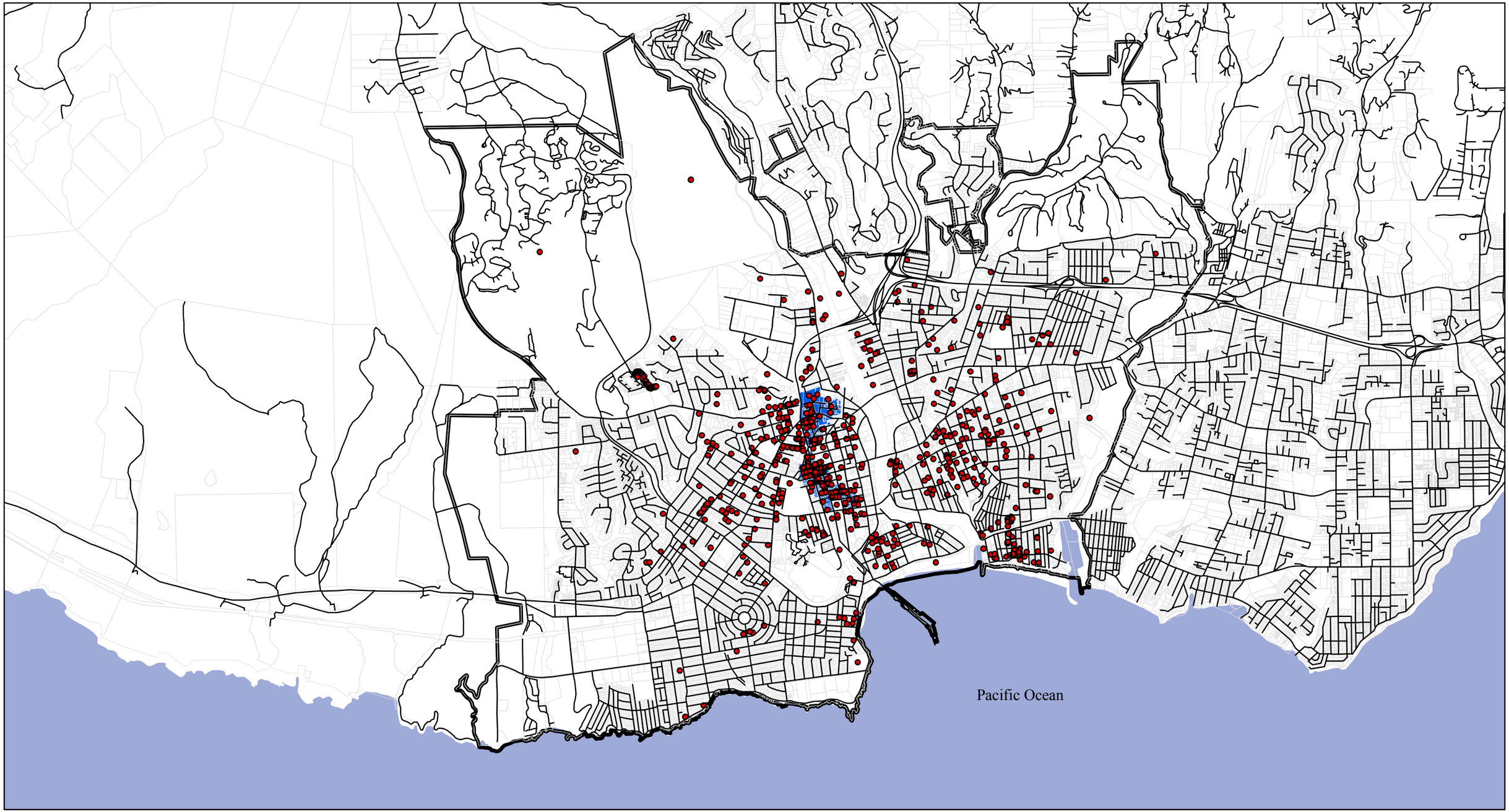

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Historical Building

Historic Districts

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

Hisoric Districts and Historical Buildings, Map 4

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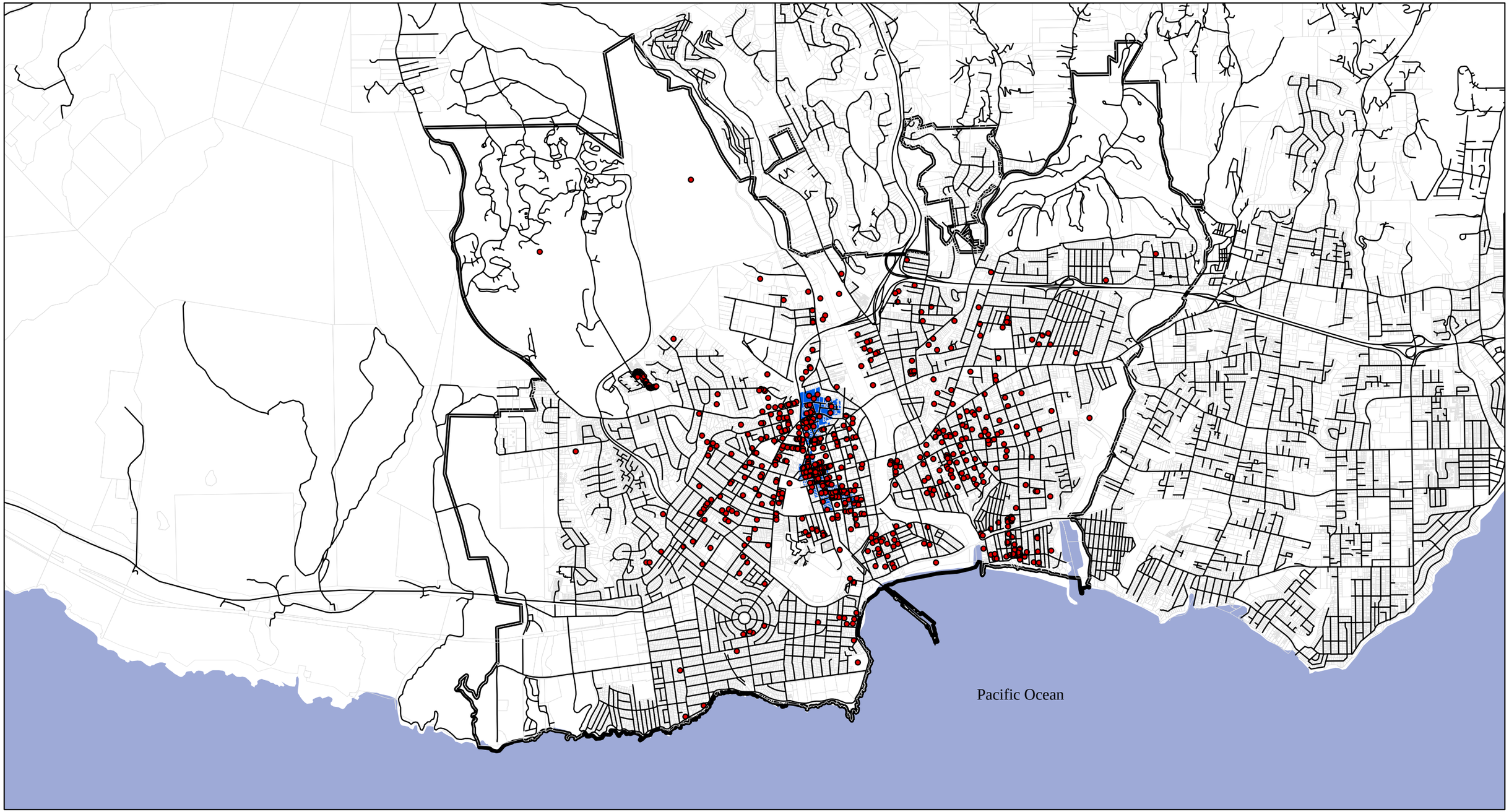

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Historical Building

Historic Districts

Historical Archaeological Report

City of Santa Cruz General Plan Update
Santa Cruz, Santa Cruz County, California

Historic Districts and Historical Buildings, Map 4

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- *Reynolds Addition to Santa Cruz.* Map Book 7, Page 12, Glide 310.
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- *Map of the City of Santa Cruz, California, Complied from Official Surveys* (Damkroeger 1888). On file Map Room, Science and Engineering Library, University of California, Santa Cruz.
- *Chronological Map Showing Street Development of Santa Cruz* (Goode 1986). On file Map Room, Science and Engineering Library, University of California, Santa Cruz.
- *Chronological Map Showing Spatial City Development* (Goode, Brian 1986, map accompanying senior thesis). On file Map Room, Science and Engineering Library, University of California, Santa Cruz.

APPENDIX C

Preliminary Research Themes and Questions

Preliminary Research Themes and Questions

Property Types	Research Themes	Research Questions
INDUSTRIAL		
Structural remains (e.g., building foundation, boiler mounts)	Reconstructing specific industrial and manufacturing processes.	Does this feature contain evidence of undocumented or poorly understood industrial or manufacturing processes?
	Documenting working conditions and industrial pollution.	Is there evidence of industrial pollution or other hazards that may elucidate working conditions?
Raw material, waste, by-products, or waster accumulation	Reconstructing specific industrial and manufacturing processes.	Is there evidence of undocumented or poorly understood industrial or manufacturing processes?
	Assessing the relationship between the availability of a technology and its acceptance.	Does the property contain evidence of local innovation or "appropriate technology" as opposed to the adoption of standardized tools and materials?
MERCANTILE		
Structural remains (e.g., store/warehouse foundation, cellar)	Documenting store and warehouse construction to assess vernacular influences and innovative design elements.	Does the property reflect innovation in design or construction? Does the property reflect popular/conventional design and/or construction techniques or regional, ethnic, or vernacular tradition? Is there evidence of expedient construction using whatever was at hand? How did the physical structure of the site evolve from the formally planned arrangement of its creator to a living space? What kinds of buildings and structures were erected during this process?
Artifact accumulation (sheet refuse, hollow refuse-filled feature)	Reconstructing trade networks across time and space to assess both commodity flow and its implications for the relative participation of communities in markets on a variety of scales. Documenting the availability of specific types of artifacts at particular times and places as prerequisites for studies of consumerism.	How does the material culture indicate participation in trade networks? How wide were those trade networks? What were the characteristics of those trade networks? What range of artifacts was available at this time and place? Was the stock oriented toward the preferences of a particular class or ethnic population? To what extent do items stocked in the store reflect local consumer preferences versus product availability?
INFRASTRUCTURE		
Structural remains (e.g., road segments, perimeter fences, etc.)	Documenting local vernacular solutions in the construction of public facilities.	Does the property reflect popular/conventional design and/or construction techniques or regional, ethnic, or vernacular tradition? Is there evidence of expedient construction using whatever was on hand?
Ad hoc open public space, activity areas	Documenting the evolution in use of planned spaces.	How did the physical structure of the site evolve from the formally planned arrangement of its creator to a lived space? What structures were erected during this process? What informal or unsanctioned activities were carried out here?

Property Types	Research Themes	Research Questions
	Assessing the relationship between urbanism and environmental change and degradation.	How was the natural environment modified to create the property? Is there pollen evidence of floral succession? How was vacant land used?
Sewer, waste accumulation (e.g., municipal refuse dumps)	Documenting local vernacular solutions as well as illicit activities in the construction of private infrastructure.	How does this feature relate to municipal ordinances regarding infrastructure improvements? How does this feature relate to the plans authorized by its owner and local authorities? For example, was sewer and water service available, or did residents devise ad hoc solutions to disposal problems?
	Assessing the relationship between the availability of technologies and their local acceptance.	Was this an ad hoc or designed structure and would its design or location have been considered up to date? What was the relationship between this property's period of use and contemporary science (e.g., germ theory and the rise of the public health profession)?
SERVICE		
Structural remains (e.g., laundry boiler base)	Reconstructing undocumented architectural features of specialized buildings and structures.	What buildings or structures were at this location, how were they built, and how did they function?
Waste accumulation (e.g., sheet refuse, hollow refuse-filled features)	Aiding middle-range theory by defining the archaeological correlates of well-documented contexts.	What services trade was carried out at this location? What are the archaeological expressions of this trade?
	Reconstructing context-specific historic foodways and dietary patterns, as well as the local expression of national and international trade.	To what degree did this business's waste disposal practices conform to contemporary standards and understandings of disease? How did these practices affect public health? What foodways did customers and/or employees practice at this business? How did the class, ethnicity, or gender of its clients affect this business's practices? What range of durable goods was available for sale? Which goods originated locally and which from further afield?
	Problematizing historically constructed identities by documenting poorly understood ways of life.	What were residents' lives like? How separate were their public and private lives? How do the remains of personal accoutrements broaden our understanding of a household or particular population? Were the lives of laborers and workers significantly different depending on profession?

Table taken from *Draft Archaeological Research Design, Testing, and Evaluation Plan: Heinlenville/San José Corporation Yard Project* (Anthropological Studies Center 2007).

APPENDIX D

Permit Review Action Chart

APPENDIX F-2

Permit Review Action Chart

Permit Review Citywide, in Sensitive Areas, and in Areas of Heightened Sensitivity