

CALIFORNIA HIGH-SPEED TRAIN

Program Environmental Impact Report/Environmental Impact Statement

BAY AREA to MERCED

CULTURAL RESOURCES

ARCHEOLOGY

TECHNICAL EVALUATION

January 2004

Prepared for:

California High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration



U.S. Department
of Transportation
**Federal
Railroad
Administration**

CALIFORNIA HIGH-SPEED TRAIN PROGRAM EIR/EIS

BAY AREA to MERCED

Cultural Resources

Archeology

Technical Evaluation

Prepared by:

Far Western Anthropological Research Group, Inc.

January 2004

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Acronyms

APE	AREA OF POTENTIAL EFFECT
AUTHORITY	CALIFORNIA HIGH-SPEED RAIL AUTHORITY
CEQA	CALIFORNIA ENVIRONMENTAL QUALITY ACT
CHRIS	CALIFORNIA HISTORIC RESOURCES INFORMATION SYSTEM
CRHR	CALIFORNIA REGISTER OF HISTORICAL RESOURCES
COG	COUNCIL OF GOVERNMENTS
EIR	ENVIRONMENTAL IMPACT REPORT
EIS	ENVIRONMENTAL IMPACT STATEMENT
EPA	ENVIRONMENTAL PROTECTION AGENCY
FAA	FEDERAL AVIATION ADMINISTRATION
FHWA	FEDERAL HIGHWAY ADMINISTRATION
FRA	FEDERAL RAILROAD ADMINISTRATION
FTA	FEDERAL TRANSIT ADMINISTRATION
MTA	METROPOLITAN TRANSPORTATION AUTHORITY
NHPA	NATIONAL HISTORIC PRESERVATION ACT
NRHP	NATIONAL REGISTER OF HISTORIC PLACES
RTP	REGIONAL TRANSPORTATION PLAN
SHPO	STATE HISTORIC PRESERVATION OFFICER

1.0 INTRODUCTION

The California High-Speed Rail Authority (Authority) was created by the Legislature in 1996 to develop a plan for the construction, operation, and financing of a statewide, intercity high-speed passenger train system.¹ After completing a number of initial studies over the past six years to assess the feasibility of a high-speed train system in California and to evaluate the potential ridership for a variety of alternative corridors and station areas, the Authority recommended the evaluation of a proposed high-speed train system as the logical next step in the development of California's transportation infrastructure. The Authority does not have responsibility for other intercity transportation systems or facilities, such as expanded highways, or improvements to airports or passenger rail or transit used for intercity trips.

The Authority adopted a *Final Business Plan* in June 2000, which reviewed the economic feasibility of a 1,127-kilometer-long (700-mile-long) high-speed train system. This system would be capable of speeds in excess of 321.8 kilometers per hour (200 miles per hour [mph]) on a dedicated, fully grade-separated track with state-of-the-art safety, signaling, and automated train control systems. The system described would connect and serve the major metropolitan areas of California, extending from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego. The high-speed train system is projected to carry a minimum of 42 million passengers annually (32 million intercity trips and 10 million commuter trips) by the year 2020.

Following the adoption of the Business Plan, the appropriate next step for the Authority to take in the pursuit of a high-speed train system is to satisfy the environmental review process required by federal and state laws which will in turn enable public agencies to select and approve a high speed rail system, define mitigation strategies, obtain necessary approvals, and obtain financial assistance necessary to implement a high speed rail system. For example, the Federal Railroad Administration (FRA) may be requested by the Authority to issue a *Rule of Particular Applicability*, which establishes safety standards for the high-speed train system for speeds over 200 mph, and for the potential shared use of rail corridors.

The Authority is both the project sponsor and the lead agency for purposes of the California Environmental Quality Act (CEQA) requirements. The Authority has determined that a Program Environmental Impact Report (EIR) is the appropriate CEQA document for the project at this conceptual stage of planning and decision-making, which would include selecting a preferred corridor and station locations for future right-of-way preservation and identifying potential phasing options. No permits are being sought for this phase of environmental review. Later stages of project development would include project-specific detailed environmental documents to assess the impacts of the alternative alignments and stations in those segments of the system that are ready for implementation.

The decisions of federal agencies, particularly the Federal Railroad Administration (FRA) related to high-speed train systems, would constitute major federal actions regarding environmental review under the National Environmental Policy Act (NEPA). NEPA requires federal agencies to prepare an Environmental Impact Statement (EIS) if the proposed action has the potential to cause significant environmental impacts. The proposed action in California warrants the preparation of a Tier 1 Program-level EIS under NEPA, due to the nature and scope of the comprehensive high-speed train system proposed by the Authority, the need to narrow the range of alternatives, and the need to protect/preserve right-of-way in the future. FRA is the federal lead agency for the preparation of the Program EIS, and the Federal Highway Administration (FHWA), the U.S. Environmental Protection Agency (EPA), the U.S. Corps of Engineers (USACE), the Federal Aviation Administration (FAA), the U.S. Fish and Wildlife Service (USFWS), and the Federal Transit Administration (FTA) are cooperating federal agencies for the EIS.

A combined Program EIR/EIS is to be prepared under the supervision and direction of the FRA and the Authority in conjunction with the federal cooperating agencies. It is intended that other federal, state,

¹ Chapter 796 of the Statutes of 1996; SB 1420, Kopp and Costa.

regional, and local agencies will use the Program EIR/EIS in reviewing the proposed program and developing feasible and practicable programmatic mitigation strategies and analysis expectations for the Tier 2 detailed environmental review process which would be expected to follow any approval of a high speed train system.

The statewide high-speed train system has been divided into five regions for study: Bay Area-Merced, Sacramento-Bakersfield, Bakersfield-Los Angeles, Los Angeles-San Diego via the Inland Empire, and Los Angeles-Orange County-San Diego. This Cultural Resources Technical Evaluation for the Bay Area – Merced Region is one of five such reports being prepared for each of the regions on the topic, and it is one of fifteen technical reports for this region. This report will be summarized in the Program EIR/EIS and it will be part of the administrative record supporting the environmental review of alternatives.

1.1 Alternatives

1.1.1. No-Project Alternative

The No-Project Alternative serves as the baseline for the comparison of Modal and High-Speed Train alternatives (Figure 1). The No-Project Alternative represents the state's transportation system (highway, air, and conventional rail) as it existed in 1999-2000 and as it would be after implementation of programs or projects currently programmed for implementation and projects that are expected to be funded by 2020. The No-Project Alternative addresses the geographic area serving the same intercity travel market as the proposed high-speed train (generally from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego). The No-Project Alternative satisfies the statutory requirements under CEQA and NEPA for an alternative that does not include any new action or project beyond what is already committed.

The No-Project Alternative defines the existing and future statewide intercity transportation system based on programmed and funded (already in funded programs/financially constrained plans) improvements to the intercity transportation system through 2020, according to the following sources of information:

- State Transportation Improvement Program (STIP)
- Regional Transportation Plans (RTPs) for all modes of travel
- Airport plans
- Intercity passenger rail plans (California Rail Plan 2001-2010, Amtrak Five- and Twenty-year Plans)

As with all of the alternatives, the No-Project Alternative will be assessed against the purpose and need topics/objectives for congestion, safety, air pollution, reliability, and travel times.

**Figure 1:
No-Project Alternative – California Transportation System**



1.1.2 Modal Alternative

There are currently only three main options for intercity travel between the major urban areas of San Diego, Los Angeles, the Central Valley, San Jose, Oakland/San Francisco, and Sacramento: vehicles on the interstate highway system and state highways, commercial airlines serving airports between San Diego and Sacramento and the Bay Area, and conventional passenger trains (Amtrak) on freight and/or commuter rail tracks. The Modal/System Alternative consists of expansion of highways, airports, and intercity and commuter rail systems serving the markets identified for the High-Speed Train Alternative. Figure 2 shows the modal alternative for the Bay Area-to-Merced Corridor. The Modal Alternative uses the same inter-city travel demand (not capacity) assumed under the high-end sensitivity analysis completed for the high-speed train ridership in 2020. This same travel demand is assigned to the highways and airports and passenger rail described under the No-Project Alternative, and the additional improvements or expansion of facilities is assumed to meet the demand, regardless of funding potential and without high-speed train service as part of the system.

The additional improvements or expansion of facilities is assumed to meet the demand, regardless of funding potential and without high-speed train service as part of the system.

The Modal Alternative for the Bay Area-to-Merced region consists of two major sets of proposed improvements (see Figure 2):

- **Improvements to Highways:** Consisting of additional highway lanes to provide sufficient highway capacity and associated interchange reconfiguration, crossing bridge widening, ramp widening, cross street and intersection widening (Figure 1.1-2). Within the region, these improvements, therefore, would occur along proposed portions of Interstate (I) 5, I-880, I-580, I-80, and State Route (SR) 152. Table 1 lists the proposed highway improvements in the Bay Area-to-Merced region.
- **Improvements to Airports:** Primarily consisting of improvements to terminal gates and runways to provide sufficient landside and airside capacity and associated taxiways, ground access, parking, terminal and support facilities and airports that can serve the same geographic area and demand as the proposed High-Speed Train (HST) Alternative. Within the study area corridor, these proposed improvements would occur at San José International Airport and Oakland International Airport (Figure 1.1-3). Table 2 lists the airport improvements associated with the airports.

**Table 1: Proposed Modal Alternative Highway Improvements
Bay Area to Merced**

Highway Corridor	Segment (From – To)	No. of Additional Lanes ¹ (Total – Both Directions)	No. of Existing Lanes (Total - Both Directions)	Type of Improvement
Segment 1: Merced to San José				
SR 152	SR 99 to I-5	2	1-2	widening
SR 152	I-5 to US 101	2	1-2	widening
US 101	SR 152 to Gilroy	2	2-3	widening
US 101	Gilroy to I-880	2	2-5	widening
Segment 2: San José to San Francisco				
US 101	I-880 to Redwood City	2	4-5	widening
US 101	Redwood City to SFO	2	4-5	widening
US 101	San Francisco International Airport (SFO) to San Francisco	2	4-6	widening
Segment 3: San José to Oakland				
I-880	US 101 to Fremont/Newark	2	3-4	widening
I-880	Fremont/Newark to I-238	2	3-4	widening
I-880	I-238 to I-80	2	2-4	widening
Segment 4: I-580 to I-5 (via I-238)				
I-580	I-880 to I-5 (via I-238)	2	4-6	widening
Segment 5: San Francisco to Sacramento				
I-80	San Francisco to I-880	2	5-6	widening
I-80	I-880 to I-5 (Sacramento)	2	4-6	widening

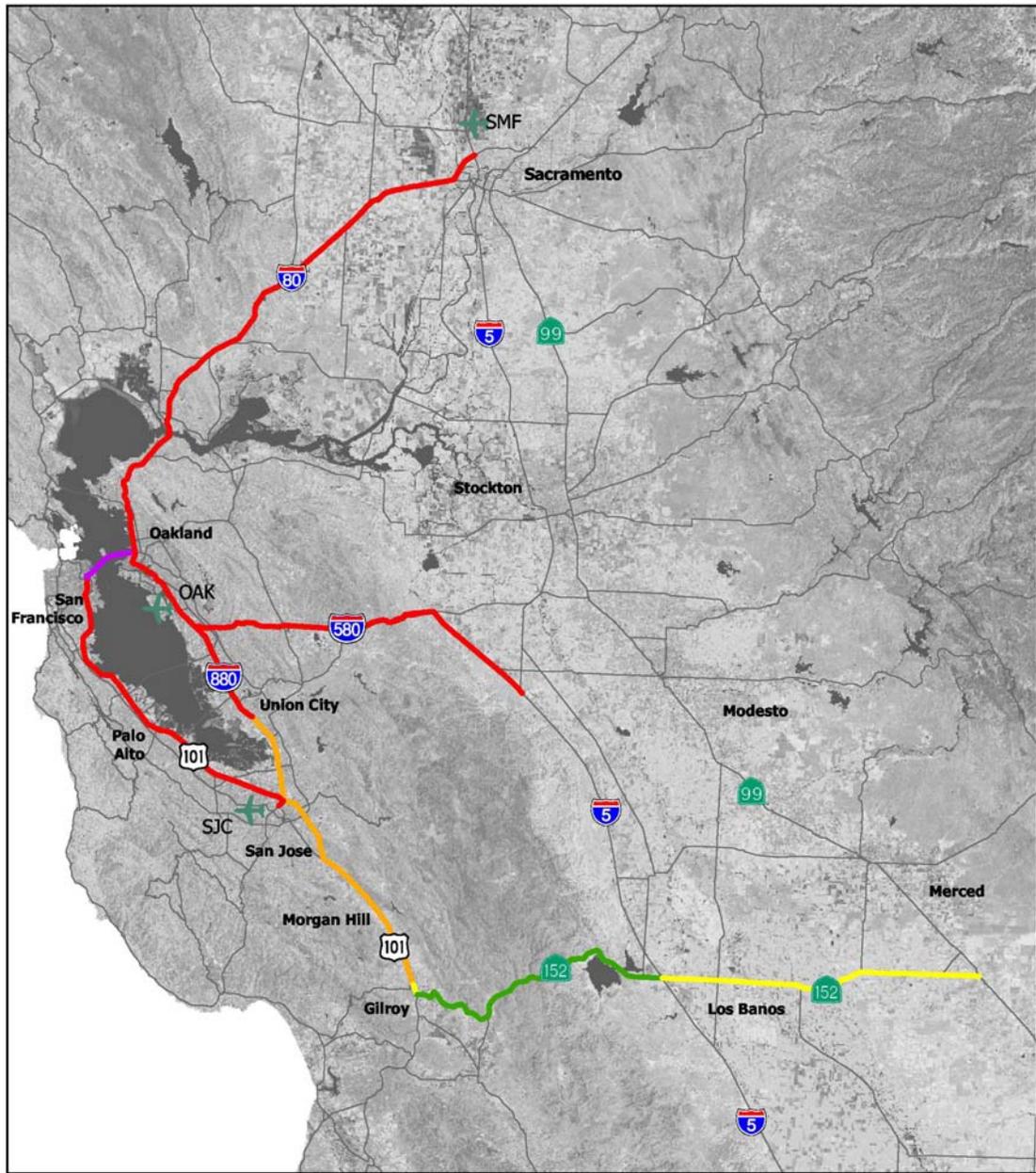
¹ Represents the number of through lanes in addition to the total number of existing lanes that approximate an equivalent level of capacity to serve the representative demand.

**Table 2: Proposed Modal Alternative Airport Improvements – Year 2020
Bay Area to Merced**

Airport Name	Additional Gates	Additional Runways
San José International Airport	14	one
Oakland International Airport	19	one

Source: Parsons Brinckerhoff, November 2002

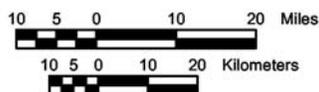
Figure 2: Modal Alternative – Bay Area-to-Merced Region



Source: Landsat 1985

March 11, 2003

California High Speed Train Program EIR/EIS



Legend

Existing Number of Lanes (both dir.)

- 12 Lanes
- 10 Lanes
- 8 Lanes
- 6 Lanes
- 4 Lanes

Modal Alignment Airports



**Modal Alternative
Bay Area to Merced Region**

Figure 1

1.1.3 High Speed Train Alternative

The Authority has defined a statewide high speed train (HST) system capable of speeds in excess of 200 miles per hour (mph) (320 kilometers per hour [km/h]) on dedicated, fully grade-separated tracks, with state-of-the-art safety, signaling, and automated train control systems. State of the art high speed steel-wheel-on-steel-rail technology is being considered for the system that would serve the major metropolitan centers of California, extending from Sacramento and the San Francisco Bay Area, through the Central Valley, to Los Angeles and San Diego. Figure 3 shows the High Speed Train Alternative for the Bay Area-to-Merced Corridor.

The High-Speed Train Alternative includes several corridor and station options. A steel-wheel on steel-rail, electrified train, primarily on exclusive right-of-way with small portions of the route on shared track with other rail is planned. Conventional “non-electric” improvements are also being considered along the existing LOSSAN rail corridor from Los Angeles to San Diego. The train track would be either at-grade, in an open trench or tunnel, or on an elevated guideway, depending on terrain and physical constraints.

For purposes of comparative analysis, the HST corridors will be described from station-to-station within each region, except where a by-pass option is considered when the point of departure from the corridor will define the end of the corridor segment.

The Bay Area-to-Merced corridor can be broadly divided into three regional segments. Each segment has several alternative alignments for all or a portion of the length of the segment. Each segment may be further subdivided for analyzing and reporting potential impacts. The various segment options, along with station locations, are described below.

1.1.3.1 Segment 1 – Merced to San José

In this segment, all alignments would be on an exclusive guideway with separate tracks for high-speed trains and would connect to the Sacramento-to-Bakersfield high-speed train corridor. Two separate corridors are being studied:

Corridor 1A. This corridor would run between Merced and San José, via Pacheco Pass and Gilroy. Two options for the alignment are being considered:

- Gilroy Option: This alignment would extend from Merced through the San Joaquin Valley and Pacheco Pass, through Gilroy, and then north along the Caltrain/Union Pacific Railroad (UPRR) rail corridor. Within this option, two suboptions are under consideration – the alignment of each is a reflection of the design speed.

Stations would include Los Baños (near I-5) in the San Joaquin Valley, Gilroy (near the existing Caltrain Station), and the existing San José (Diridon) Station.

- Gilroy Bypass Option: This alignment would extend from Merced through the San Joaquin Valley and Pacheco Pass and then north along the Caltrain/UPRR rail corridor.

Stations would include Los Baños (near I-5) in the San Joaquin Valley, Morgan Hill (near the existing Caltrain Station), and the existing San José (Diridon) Station.

Figure 3a: High Speed Rail Alternative – Bay Area-to-Merced Region

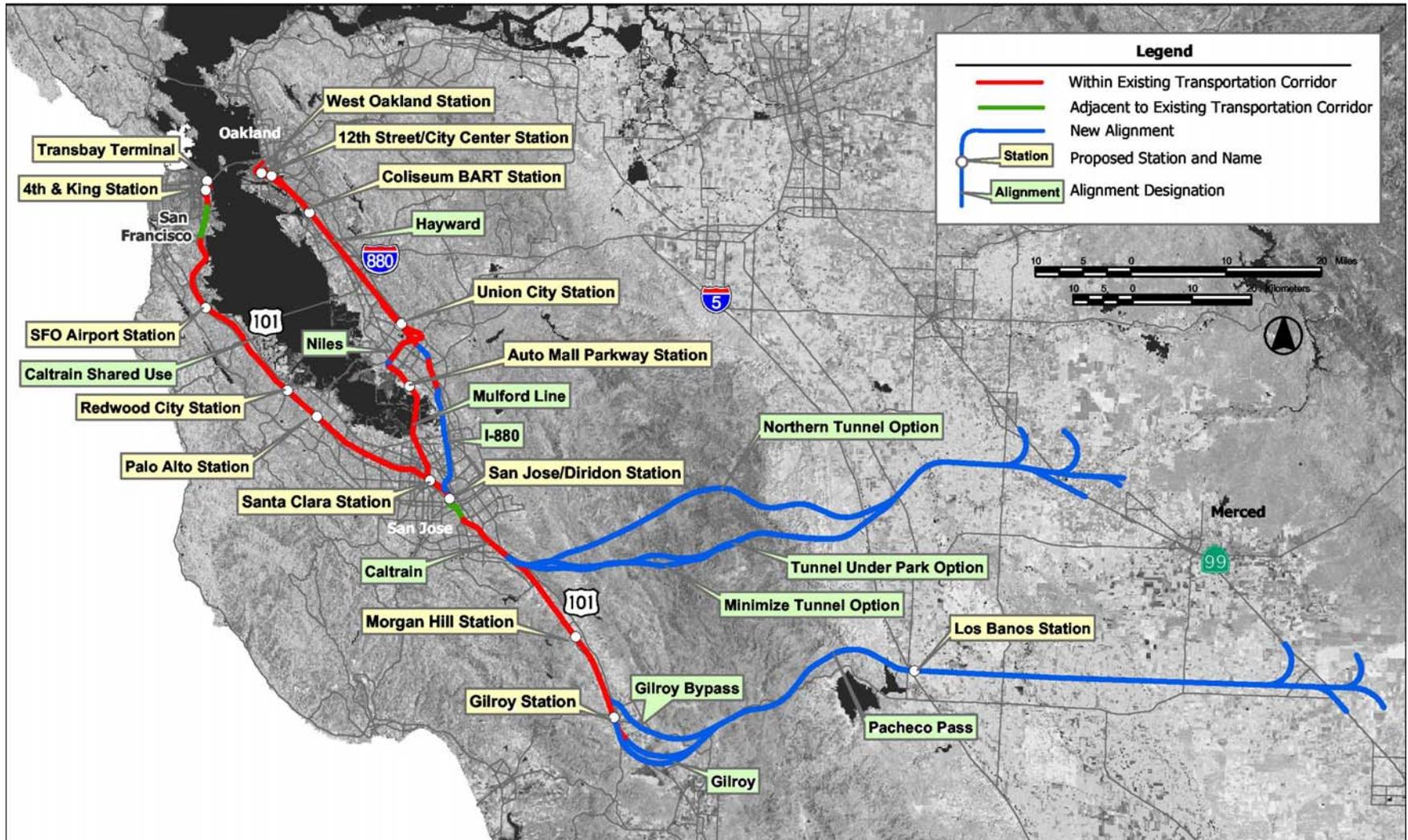
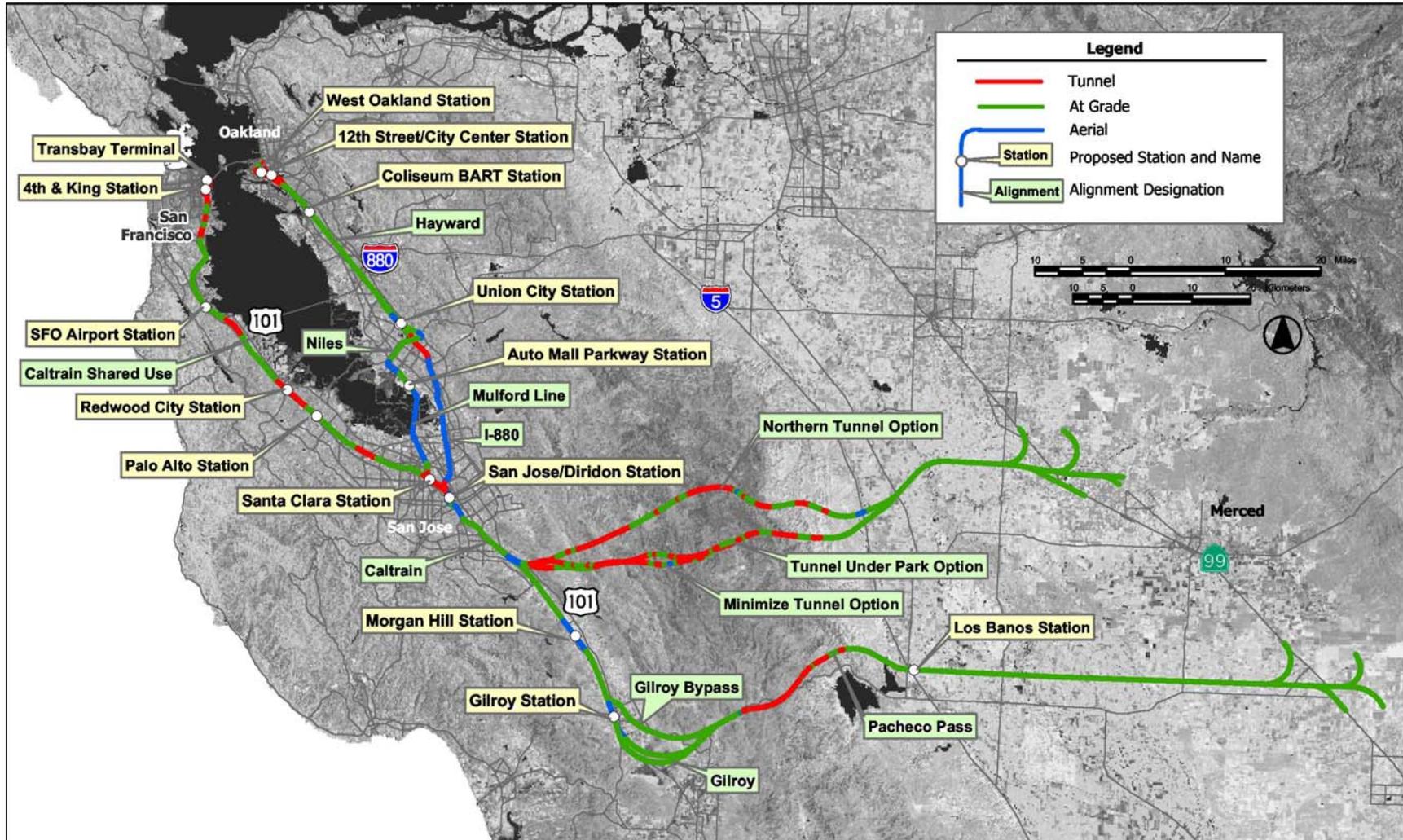


Figure 3b: High Speed Rail Alternative – Bay Area-to-Merced



Corridor 1B. This corridor would run between Merced and San José, via Atwater and across the Diablo Mountain Range and would include one station – at the existing San José (Diridon) Caltrain Station. Three options for the alignment are being considered:

- Northern Tunnel Option: This alignment would emanate from the BNSF rail corridor or the UPRR corridor near the town of Atwater, north of Merced. The alignment would extend west across the San Joaquin Valley passing north of the town of Newman. The tracks would cross the Diablo Mountain Range in a series of tunnels, passing north of Henry Coe State Park. The alignment then would connect with the Caltrain/UPRR rail corridor north of SR 85.
- Tunnel Under Park Option: This alignment is similar to the Northern Tunnel Option except that the segment through the Diablo Mountain Range would cross Henry W. Coe State Park primarily in tunnel. The alignment then would connect with the Caltrain/UPRR rail corridor north of SR 85.
- Minimize Tunnel Option: This alignment is similar to the Tunnel Under Park Option except that the segment through the Diablo Mountain Range would cross Henry W. Coe State Park primarily at-grade. The alignment then would connect with the Caltrain/UPRR rail corridor north of SR 85.

1.1.3.2 Segment 2 –San José to San Francisco

There is one alignment being considered in this segment; it would provide for high-speed trains sharing tracks with Caltrain commuter trains. The entire alignment would be grade-separated, and all Caltrain stations would have four tracks or by-pass tracks.

Stations would include an optional station at Santa Clara; a station in either Palo Alto or Redwood City; a station in Millbrae near the San Francisco International Airport; and in San Francisco, a station at Fourth and King streets and at the lower level of the proposed new Transbay Terminal.

1.1.3.3 Segment 3 –San José to Oakland

There are two options under consideration for the alignment in this segment.

- I-880 Option: From San José, this alignment would follow north along I-880 and then transition to UPRR's Hayward rail line.

Stations would include the planned Warm Springs Bay Area Rapid Transit (BART) Station in Fremont or the Union City BART Station; the Oakland Airport/Coliseum BART Station; and either the West Oakland Station or the 12th Street/City Center Station in Oakland.

- Mulford Line Option: From San José, this alignment would travel north along UPRR's Mulford rail line to the UPRR's Niles Line and then onto UPRR's Hayward line.

Stations would include the Auto Mall Parkway Station or the Union City BART Station; the Oakland Airport/Coliseum BART Station; and in Oakland, either the West Oakland Station or the 12th Street/City Center Station.

2.0 BASELINE/AFFECTED ENVIRONMENT

2.1 STUDY AREA (AREA OF POTENTIAL EFFECT) DEFINED

The study area for cultural resources is the Area of Potential Effect (APE) that was defined in consultation with the SHPO. At this programmatic Tier 1 level of analysis, the APE is the area within which information about the locations of archaeological sites was obtained from the Information Centers of the California Historical Resources Information System (CHRIS). No APE was defined for structures from the historical period because individual structures from the historical period were not identified during this programmatic Tier 1 level of analysis.

The APE for this undertaking is defined as 500 feet on each side of the centerline of proposed rail routes in non-urban areas and 100 feet from the centerline in urban areas. The APE for freeway routes and around airports is defined as 100 feet beyond the existing freeway right-of-way and 100 feet beyond the existing airport property boundary. The reason for using 100 feet for urban rail corridors, freeways, and airports is that very little additional right-of-way would be affected in these areas. The 500 feet on each side of the railroad centerline in non-urban areas provides information on wider corridors where additional right-of-way could be affected.

Locations of easements and construction-related facilities, such as equipment staging areas, borrow and disposal areas, access roads, and utilities, have not yet been identified. Locations for these will be identified as part of the construction design program for the alternatives selected for more detailed analysis in the next phase of the project. Thus, these items are not considered in the program level Tier-1 analysis, but this information will be available for Tier-2 site-specific EIR/EISs. The APE will be modified to include these items as part of the Tier-2 analysis.

2.2 BRIEF CULTURAL BACKGROUND OF REGION

Archaeological evidence places prehistoric people in California as early as 8,000 to 12,000 years ago; however, the last 2,000 to 4,000 years are best documented. Given the environmental and ethnic variation found within California, no state-wide cultural sequence has been created. Instead regional chronological sequences have been developed, typically dividing human occupation into time periods (e.g., PaleoIndian, Early, Middle and Late Archaic, and Protohistoric). These regional sequences reflect changes in land use that were influenced by population growth (e.g., shift from small camps to village sites), technological change (e.g., shift from use of the atlatl to bow and arrow), and resource intensification (e.g., the intensive use of mortars and pestles and bedrock milling features). Change also resulted from population movements and displacements, and outside cultural influences (e.g., climate, sea-level rise, etc.).

Prehistoric archaeological site types identified in the Bay Area to Merced region include shell mounds, lithic and ground stone scatters, bedrock milling stations, house pits, cemeteries, and middens (refer to Appendix A). Artifacts found at these sites often include projectile points, lithic and ground stone tools, milling equipment, steatite, shell ornaments, and chipping debris.

The Bay Area to Merced region encompasses several ethnographic tribal territories. Ethnographically, the Bay Area is divided into lands east of the Carquinez Strait, ancestral to the Patwin, and those to the west, claimed by the Ohlones. The main political unit of the Patwin was the autonomous tribelet, which consisted of one primary and several satellite villages, all located within a well-defined territory. At the time of European contact, fishing, plant gathering, and hunting formed the basis of their economic system. Like other California groups, the primary staple was the acorn. The Ohlone, referred to by the

Spanish as Costanoan, occupied the east and southwest shores of the San Francisco Bay, continuing south toward lower Carmel River and eastward into Santa Clara and Salinas valleys. Their basic political unit was the tribelet, which usually included one or more permanent villages. Permanent villages were established near the coast and river drainages, while temporary camps were located in prime resource collecting areas. Several large villages are known to exist along the valley-mountain interface, particularly where perennial sources of water were available. Temporary hunting and gathering camps were used to exploit available resources. Further east, land extending from the divide of the South Coast Range and including San Joaquin Valley was considered Yokuts territory. Most Yokuts settlements are said to have been situated on low mounds on or near the edges of large waterways. Like the Patwin and Ohlone, the basic political unit for the Yokuts was the tribelet. Subsistence was based on fishing, hunting, and intensive collecting.

2.3 DATA SOURCES

The cultural resources study began with a records search of the project's APE at the CHRIS. As the project APE extends through a number of counties, it was necessary to compile data from the Northwest Information Center at Sonoma State University in Rohnert Park, the Central California Information Center at California State University - Stanislaus in Turlock, and the Southern San Joaquin Valley Information Center at California State University - Bakersfield. The records search included a review of topographic maps showing known sites, isolates, and surveys within the APE.

The APE for the HST corridor was plotted on a series of 7.5' topographic maps, based on the GIS-layer shape-file of the corridor's centerline that Parsons Brinckerhoff provided to Far Western. Thomas Guide Maps (Bay Area Metro Version 2003 and California Guide 2002) were used as base maps for the Modal Alternative, since they are more accurate and complete than USGS topographic maps regarding highway routes. The location of all previously recorded sites and isolates within the APE was transferred from Information Center maps to project maps, relevant site records were photocopied, and the results were tabulated (refer to Appendix A) with reference to corridor segment or sub-segment, general location, and resource type.

Subsequent to the records search, a team of four archaeologists well-versed in Bay Area and Central California archaeology (Dr. Wendy Nelson, Dr. William Hildebrandt, Mr. Jeff Rosenthal, and Ms. Amy Gilreath) reviewed APE maps and the records search results, to provide a subjective assessment of corridor segments' sensitivity.

A letter describing the project was sent to the Native American Heritage Commission in Sacramento. The letter provided project location information and requested a search of the Sacred Lands File to identify any traditional cultural properties that could be potentially impacted or affected by the project. In addition, lists of Native Americans to contact for the areas that could be affected by the project were requested. Letters were sent to the Native Americans on the contact lists provided by the NAHC. The letters provided information about the project and requested information about traditional cultural properties that the Native Americans believe could be affected by the project.

2.4 ARCHAEOLOGICAL SITES

Prehistoric archaeological sites in California are places where Native Americans lived or carried out activities during the prehistoric period before A.D. 1769. Prehistoric sites contain artifacts and subsistence remains, and may contain human burials. Artifacts are objects made by people and include tools (projectile points, scrapers, and grinding implements, for example), waste products from making flaked stone tools (debitage), and non-utilitarian artifacts (beads, ornaments, ceremonial items, and rock art).

Subsistence remains include the non-edible portions of foods, such as animal bone and shell, and edible parts that were lost and not consumed, such as charred seeds.

Historic archaeological sites in California are places where human activities were carried out during the historic period between and A.D. 1769 and 50 years ago. Some of these sites may be the result of Native American activities during the historic period, but most are the result of Spanish, Mexican, or Anglo-American activities. Most historic archaeological sites are places where houses formerly existed and contain ceramic, metal, and glass refuse resulting from the transport, preparation, and consumption of food. Such sites can also contain house foundations and structural remnants, such as window pane glass, lumber, and nails. Historical archaeological sites can also be non-residential, resulting from ranching, farming, industrial, and other activities.

The records search of the project's APE in the Bay Area to Merced region identified 109 archaeological sites: 95 prehistoric, 13 historic, and one site with prehistoric and historic archaeological components (Appendix A). Half of the prehistoric sites are habitation sites, variously referred to as shell mounds, shell middens, and large flaked and ground stone scatters with midden accumulations, but also including sites where house pits were noted. Many of these habitations sites (the shell mounds in particular) contain Native American burials. In fact, burials are noted on the site records for over 15% of the sites within the APE. Other types of sites identified within the APE from the records search include bedrock mortars, lithic scatters (e.g., sites containing general utility implements such as projectile points, bifaces, expedient flake tools, and debitage), ground stone scatters (e.g., sites containing milling equipment, including handstones, mortars, and pestles), and fire-affected rock scatters. The 13 historic archaeological sites identified within the APE include debris and features associated with 19th and early 20th century housing developments, farm complexes, and post-World War II trash dumps. The third location of the Mission Santa Clara de Asis, near the Santa Clara Train Station, corresponds to the one site where both prehistoric and historic components are present.

2.5 STRUCTURES FROM THE HISTORIC PERIOD

For Tier 1 analysis of historic period structures, see the Cultural Resources Technical Evaluation prepared by JRP Historical Consulting Services (March 2003).

2.6 TRADITIONAL CULTURAL PROPERTIES

Traditional cultural properties are places associated with the cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. Examples include "a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world" and "a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice" (National Park Service n.d.). Traditional cultural properties are identified by consulting with Native American groups that have a history of use of the project area.

The Native American Heritage Commission did not identify any traditional cultural properties that could be affected by the project in this region's APE. Native Americans contacted by letter have not yet identified traditional cultural properties that could be affected by the project in this region. However, consultations are on-going, and additional effort to identify potential traditional cultural properties will be appropriate as part of the subsequent Tier 2 studies.

3.0 METHODS FOR CULTURAL RESOURCES ANALYSIS

The cultural resources analysis for this program-level EIR/EIS is focused on a broad comparison of potential impacts to cultural resources along corridors for each of the alternatives (high-speed train and modal alternatives) and around stations. The potential impacts for each of these alternatives are compared with the No-Project Alternative.

3.1 DATA COLLECTION

An APE or study area was defined for the project. As described above, the APE for archaeological sites was defined as 500 feet on each side of the centerline of proposed rail routes in non-urban areas and 100 feet from the centerline in urban areas. The APE for freeway routes and around airports was defined as 100 feet beyond the existing freeway right-of-way and 100 feet beyond the existing airport property boundary.

Records searches were obtained from the appropriate Information Centers of CHRIS, as identified above. The records search identified locations for known archaeological sites within the APE. The number of archaeological sites within the APE for each alternative was tallied, providing a rough assessment of the potential impacts or effects for each alternative.

3.2 CEQA AND NHPA SIGNIFICANCE CRITERIA FOR CULTURAL RESOURCES

Under both state and federal guidelines for cultural resources, impacts are potentially significant only if the resource being impacted has been determined to be significant. Under federal guidelines (36 CFR 800.4) implementing Section 106 of the National Historic Preservation Act (NHPA), significant cultural resources are those that are eligible for the National Register of Historic Places (NRHP). The NRHP eligibility criteria (36 CFR 60.4) state that the quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, association, and:

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

In addition, the cultural resource must be over 50 years old unless it is exceptionally important.

In CEQA, significant cultural resources are called "Historical Resources". Historical resources are resources that are eligible for listing in the California Register of Historical Resources (CRHR) or that are listed in the historical register of a local jurisdiction (county or city). Generally, a resource shall be considered by a lead agency to be "historically significant" if the resource has integrity and meets the criteria for listing on the California Register of Historical Resources, as follows [Title 14, California Code of Regulations, Section 15064.5(a)(3)]:

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

As can be seen, the NRHP and CRHR criteria are almost identical. Any resource determined eligible for the NRHP is also automatically eligible for the CRHR. However, the CEQA definition of an Historical Resource also includes resources listed on local historical registers.

CEQA also contains a section addressing "unique" archeological resources and provides a definition of such resources (Public Resources Code, Section 21083.2). This section establishes limitations on the cost of mitigation and prohibits imposition of mitigation measures for impacts to archeological resources that are not unique. However, the CEQA Guidelines state that the limitations in this section do not apply when an archeological resource has already met the definition of a Historical Resource [Title 14, California Code of Regulations, Section 15064.5(c)(2)].

Impacts to NRHP eligible resources are adverse "when an undertaking may alter, directly, or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association" [36 CFR 800.5(1)]. Examples of adverse effects include physical destruction or damage to all or part of the property, alteration that is not consistent with the Secretary of the Interior's standards for the treatment of historic properties, removal of the property from its historic location, change in the type of use or of the physical characteristics of the setting, introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features, and neglect resulting in deterioration [36 CFR 800.5(2)]. Note that historic properties include prehistoric archaeological sites. Archaeological sites are usually adversely affected only by physical destruction or damage, whereas all of the examples can apply to historic buildings and structures.

Impacts to CRHR eligible resources, or resources listed on local registers, constitute a significant effect on the environment (significant impacts that must be disclosed in a CEQA environmental document) if the project may cause a substantial adverse change in the significance of a historical resource. "Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" [Title 14, California Code of Regulations, Section 15064.5(b)(1)]. Materially impaired means that the historical resource will be demolished or the physical characteristics of the resource that made the resource eligible will be adversely altered such that the resource would no longer be eligible for the CRHR nor listed in a local historical register [Title 14, California Code of Regulations, Section 15064.5(b)(2)].

3.3 RANKING POTENTIAL IMPACTS TO CULTURAL RESOURCES BY ALTERNATIVE

At this Tier 1 programmatic level of analysis, individual archaeological sites were not evaluated for eligibility. Instead, the archaeological sites identified as a result of the records search are assumed to be potentially eligible and the number of archaeological sites identified in the APE for each alternative is used as one indicator of the relative degree of potential impacts on cultural resources for that alternative,

should it be selected for construction. As a starting point, the presence of an archaeological site translated into a qualitative rank of high, and the absence translated into a rank of low. Then, the preparers' knowledge of regional prehistory supplemented the records search results. If, for example, numerous sites have been recorded along a particular river drainage, but the records search did not yield any in the APE for a particular alternative route, the preparer increased the ranking for that route.

In addition to the records search, the preparer's knowledge of the environment and prehistory of the region played a significant role in determining the potential (i.e., sensitivity) for archaeological sites along the various alignments. Sensitivity rankings were derived by considering the number of previously recorded sites and the degree of prior survey in and near the corridor, the types of sites identified, and different environments' potential for containing sites. For example, a portion of a particular alignment that crosses through an environmental setting with low potential for containing sites (e.g., marshy wetlands) or a portion that is well-surveyed and contains no sites in or near the APE received a low sensitivity ranking. A portion of a segment where no site has been previously noted that crosses through an environmental setting with attractant resources (e.g., streamside or bay shore settings) received a medium sensitivity ranking, irrespective of prior survey coverage. A portion containing previously identified sites within the APE received a high sensitivity ranking. If, however, the sites were few in number and of simple construct (e.g., a small flake scatter, an isolated tool), or they were already excavated or destroyed, that portion of the alternative was down-graded to medium sensitivity. Finally, if a portion had no sites identified within the APE but significant ones have been identified nearby, that portion was upgraded to high sensitivity. This was particularly appropriate for the West Bay (Caltrain) section, where shell mounds with burials exist near the corridor. In this fashion, all linear miles of the Modal and HST alternatives' corridors were classified as high, medium, or low sensitivity in regard to archaeological resources. A set of project maps depicting this most high-resolution classification for all portions of the corridor alignments was provided to Parsons Brinckerhoff.

The single score and sensitivity classification summarized on Table 4 for each major segment of the alternatives were reached using the subsequent calculations. The total number of miles within a segment that were classified as high sensitivity was multiplied by a factor of three; the total number of miles classified as medium sensitivity was multiplied by two, and the total number of miles classified as low sensitivity was multiplied by a factor of one. These three weighted values were added and then divided by the total number of miles for each major segment. This resulted in a final score ranging between 1.0 and 3.0. In assigning the final sensitivity rank, a value below 1.50 was classified as low sensitivity, values between 1.50 and 2.49 as medium sensitivity, and values ≥ 2.50 were considered high sensitivity.

By way of an example, the San Jose to Merced:Diablo Direct Rt. 130 alignment is 99.5 miles long, and originally 11.5 miles were classified as high sensitivity, 28.75 miles as medium sensitivity, and 59.25 miles as low sensitivity. Multiplied by their respective sensitivity factors, and added together, yields a total of 151.25. That value divided by the segment length of 99.5 miles produces a final score of 1.52 for the entire segment. That score falls within the range defined for medium sensitivity.

Traditional cultural properties were assessed on a presence/absence basis for each alternative route. If a traditional cultural property is present, it resulted in a "High" ranking for traditional cultural properties for that alternative route.

4.0 CULTURAL IMPACTS

Table 4 reports the final ranking assigned to each major segment of the alternatives, as well as the score obtained. Three broad patterns are evident from the data compiled for this analysis. First, no major segment of any alternative or design option received an overall High sensitivity ranking, though every segment does contain one or more short stretch that is highly sensitive, where a prehistoric site with

burials has been recorded in or near the corridor. These short stretches are depicted on the set of GIS maps. Second, the San Francisco/Oakland to San Jose segment of various alternatives (i.e., east and west Bay area) have overall higher archaeological sensitivity than the more southerly segments that extend from San Jose to Merced. Third, the five HST San Jose to Merced design options have nearly identical sensitivity scores, ranging narrowly from 1.41 to 1.58, a fair indication that each option traverses roughly comparable proportions of the same major environmental settings, the Santa Clara Valley, the Diablo Range, and the Central Valley.

4.1 NO-PROJECT ALTERNATIVE

Under the No-Project Alternative, future approved projects that would change the character of the existing conditions by 2020 would have the potential to impact cultural resources within or adjacent to the highways, rail corridors, and airports. It is generally the case that the location, magnitude of construction, and nature of impacts associated with projects subsumed by the No-Project Alternative equate with those of the Modal Alternative. For comparative purposes, the number of sites associated with the APEs of projects under the No-Project Alternative is an estimate based on the total number of known sites within the entirety of the Modal Alternative's APE. In the same vein, the combined data for northern and southern segments of the Modal Alternative serve as proxy data for estimating the overall sensitivity ranking of the No-Project Alternative. This analytical method produced an overall sensitivity score of 1.50 for the No-Project Alternative, the bottom thresh-hold of the medium sensitivity rank.

4.2 MODAL ALTERNATIVE

Using San Jose as the dividing point, the Modal Alternative is separated into a northern and a southern segment (Table 3). The APE for the San Francisco/Oakland to San Jose segment has a combined total length in excess of 300 miles and includes lands surrounding two airports, which contain a total of 32 known archaeological resources (Table 2; Appendix A). It received an overall sensitivity ranking of medium, producing a score of 1.52. The various interstate and state routes which comprise this segment traverse the east and west sides of San Francisco Bay, and much of this segment has been previously inventoried as a result of other transportation corridor-related cultural resources studies. Burials have been documented at 15.6% of these sites. The APE for the San Jose to Merced segment covers nearly 150 miles, and contains a total of 15 known archaeological resources, four of which are known to contain burials. However, little significance should be ascribed to the high proportion of known sites with burials along this segment. In contrast to the northern segment, far less inventory coverage exists for the southern segment, and sampling bias results in sites with burials being over-represented. Large, rich, heavily occupied prehistoric sites have the highest visibility, and such sites often contain burials; the more frequent short-term, limited habitation sites, sparse flake scatters, and such, are less obvious, and so are greatly under-represented in non-systematic survey. The southern segment received an overall sensitivity score of 1.46, only slightly less than the northern segment's score, but falling within the low rank.

No potential traditional cultural properties have yet been identified in the APE for the Modal Alternative.

Table 3: Detailed Analysis/Comparison of Impacts to Cultural Resources**Bay Area to Merced Region**

	Number of Archaeological Sites	Traditional Cultural Properties (Yes/No)	Overall Ranking (High, Medium, Low)
NO-PROJECT estimated as equivalent to Modal Alternative	47	no	Medium (1.50)
MODAL			
San Francisco/Oakland to San Jose (approx. Diridon Station)	32	no	Medium (1.52)
Modal Corridor includes U.S. 101 segments (SF to SFO, SFO to Redwood City, Redwood City to I-880), I-80 segments (SF to I-880, I-880 to I-5), I-880 segments (I-80 to I-238, I-238 to Fremont/Newark, Fremont/Newark to U.S. 101, U.S. 101 to San Jose [approximately Stockton Crossing]), and I-580 segments (I-880 to I-5 via I-238)	30	no	
Modal Airports – San Jose and Oakland Airports	2	no	
San Jose to Merced	15	no	Low (1.46)
Modal Corridor Includes U.S. 101 segments (San Jose to Gilroy, Gilroy to S.R. 152) and S.R. 152 segments (U.S. 101 to I-5, I-5 to S.R. 99)	15	no	
Modal Airports = None	0	no	
HST CORRIDOR & STATION OPTIONS			
San Francisco/Oakland to San Jose (Existing Diridon Station)	23 to 22	no	Medium (2.03 to 2.03)
Sub-option compares Oakland to San Jose via I-880 route to the Oakland to San Jose via Mulford route	23 to 22	no	
San Jose to Merced:Diablo Range Direct Rt. 130 Alignment	7	no	Medium (1.52)
San Jose to Merced:Diablo Range Direct Minimum Tunnel Alignment	21	no	Medium (1.58)
San Jose to Merced:Diablo Range Direct Increased Tunnel Alignment	22	no	Medium (1.54)
San Jose to Merced:Morgan Hill through Pacheco Pass	15	no	Low (1.48)
San Jose to Merced:Gilroy through Pacheco Pass	13	no	Low (1.41)

4.3 HIGH SPEED TRAIN ALTERNATIVE

The HST corridor and Station Options comparably divides into a northern and a southern segment.

The San Francisco/Oakland to San Jose segment encompasses approximately 180 miles, with 23 known archaeological resources located within its APE (Table 2; Appendix A). Between Oakland and San Jose, an I-880 route sub-option and a Niles Junction to Mulford route sub-option are under consideration.

While the latter sub-option would result in one less site within the APE than does the I-880 route sub-option, the two have a similar overall length, and produced an identical sensitivity score of 2.03, falling within the medium sensitivity rank.

Five options are being considered for the HST San Jose to Merced segment, ranging between approximately 100 and 125 miles in length. In spite of their roughly comparable lengths, the number of

known archaeological resources within their respective APEs range from as few as seven to as many as 22 (refer to Table 3). Such variability largely relates to the different amount of land previously surveyed along the different options' corridors. As summarized on Table 3, the sensitivity scores for the five options have a narrow span between 1.41 and 1.58. However, both options that cross through Pacheco Pass produced scores in the low sensitivity rank, while the three Diablo Range Direct options produced scores in the medium sensitivity rank. Of the two Pacheco Pass options, the actual score for the Morgan Hill route is 1.48, slightly higher than the 1.41 score achieved on the Gilroy option, suggesting that the latter is slightly less sensitive than the former. Of the three Diablo Range Direct options, the Minimum Tunnel option has a final score only slightly higher (1.58) than the Increased Tunnel option (1.54), which, in turn, is only slightly higher than the Rt. 130 option (1.52). As mentioned above, the similarity in the scores for the five options reflects the fact that the terrain traversed by one option is much like the terrain traversed by another option, and the archaeological sensitivity of the terrain is similar regardless of where one crosses the Diablo Range or the Central Valley. As such, no one of the five options for HST San Jose to Merced segments merits a preference.

Only one of the many stations has a known archaeological site within its surrounding APE. Site CA-SCL-30/H, the third location of the Mission Santa Clara de Asis, is near the Santa Clara Station. That site also extends into the Caltrain corridor.

No potential traditional cultural properties have yet been identified in the APE for the HST Alternative.

4.4 COMBINED CULTURAL RESOURCES TABLE

Table 4 shows the combined sensitivity rankings for all cultural resources including both architectural and archeological resources. See also *"Draft Bay Area-to-Merced Region Cultural Resources: Historic Architecture, Technical Evaluation,"* April 2003.

**Table 4: Detailed Analysis/Comparison Table/Impacts to Cultural Resources
Bay Area to Merced Region**

	Number of Arch. Sites	Percentage of Route Developed During Historic Periods	Estimate of Known Historical Resources in APE*	Historic Districts or Specific High Sensitivity Resources	Traditional Cultural Properties (Yes/No)	Overall Ranking (High, Medium, Low)**	
						Hist.	Arch.
NO-PROJECT Estimated as equivalent to Modal Alternative for historic architectural resources	47	See corridors listed under "Modal" alternative, below.	n/a	n/a	no	Medium	Medium (1.50)
MODAL							
Modal - San Francisco/Oakland to San Jose (approx. Diridon Station)	32				no	Medium	Medium (1.52)
Modal Corridor San Francisco/Oakland to San Jose includes: • US-101 segments (SF to SFO, SFO to Redwood City, Redwood City to I-880)	13	To 1899: 12.43% 1900-29: 29.06% 1930-58: 70.04%	To 1899: 1 1900-29: 2 1930-58: 2	US Naval Air Station Sunnyvale Historic District (Moffett Field)	no		
• I-80 segments (SF to I-880, I-880 to I-5)	8	To 1899: 4.70% 1900-29: 13.46% 1930-58: 20.69%	To 1899: 0 1900-29: 2 1930-58: 4		no		
• I-880 segments (I-80 to I-238, I-238 to Fremont/Newark, Fremont/Newark to U.S. 101, U.S. 101 to San Jose)	6	To 1899: 15.80% 1900-29: 20.07% 1930-58: 49.03%	To 1899: 2 1900-29: 2 1930-58: 3		no		

	Number of Arch. Sites	Percentage of Route Developed During Historic Periods	Estimate of Known Historical Resources in APE*	Historic Districts or Specific High Sensitivity Resources	Traditional Cultural Properties (Yes/No)	Overall Ranking (High, Medium, Low)**		
						Hist.	Arch.	
[approximately Stockton Crossing]),								
• I-580 segments (I-880 to I-5 via I-238)	3	To 1899: 2.07% 1900-29: 4.32% 1930-58: 9.96%	To 1899: 1 1900-29: 2 1930-58: 3		no			
Modal Corridor Bridges: San Francisco/Oakland to San Jose segment includes bridge structures (e.g. overpasses, interchanges, etc.) that date to the historic period. These 271 structures date to between 1900 and 1958.	0	n/a	To 1899: 0 1900-29: 4 1930-58: 267	Carquinez Bridge and Oakland-SF Bay Bridge listed on NRHP***				
Modal Airports –San Francisco/Oakland to San Jose includes: San Jose, Oakland, San Francisco, and Santa Rosa Airports. Mileage historically developed is based on approximate length of property developed by end of historic period – 1958.	2	Mileage historically developed (not %) San Jose: .41 mi Oakland: .27 mi San Francisco: .12 mi Santa Rosa: .11 mi	San Jose: 0 Oakland: 0 San Francisco: 6 Santa Rosa: 0		no			
Modal - San Jose to Merced	15				no	Low	Low (1.46)	
Modal Corridor San Jose to Merced includes US-101 segments (San Jose to Gilroy, Gilroy to S.R. 152) and SR-152 segments (US 101 to I-5, I-5 to S-99)	15	To 1899: 3.96% 1900-29: 3.12% 1930-58: 9.41%	To 1899: 5 1900-29: 5 1930-58: 11		no			
Modal Corridor Bridges: San Jose to Merced segment includes bridge structures (e.g. overpasses, interchanges, etc.) that date to the historic period. These 26 structures date to between 1900 and 1958.	0	n/a	To 1899: 0 1900-29: 4 1930-58: 22	No NRHP or CRHR listed bridges in this segment				
Modal Airports = None	0				no			
HST CORRIDOR & STATION OPTIONS								
San Francisco/Oakland to San Jose (to existing Diridon [Cahill] Station#)	23 to 22	SF to SJ To 1899: 35.53% 1900-29: 46.34% 1930-58: 99.55%	To 1899: 10 1900-29: 125 1930-58: 150	See below	no	High	Medium (2.03)	
Historic districts and specific high sensitivity resources, SF and Oakland to San Jose:	Many NRHP/CRHR eligible resources in historic downtown areas between and including San Francisco and San Jose. Former Southern Pacific Railroad stations on San Francisco peninsula (including Cahill [Diridon] Station Historic District* and Santa Clara Station Historic District); Redwood City Historic District. Four tunnels on Caltrain alignment appear to be eligible for the NRHP.							
Sub-options include Oakland to San Jose via I-880 route and Oakland to San Jose via Mulford route	23 to 22	Oak to SJ I-880 To 1899: 32.09% 1900-29: 37.66% 1930-58: 38.20% Oak to SJ Mulford To 1899: 34.52% 1900-29: 40.70%	Oak to SJ I-880 To 1899: 20 1900-29: 98 1930-58: 112 Oak to SJ Mulford To 1899: 30	Downtown Oakland Historic District; Oakland Waterfront Warehouse District; Cahill [Diridon] Station Historic	no	High	Medium (2.03)	

	Number of Arch. Sites	Percentage of Route Developed During Historic Periods	Estimate of Known Historical Resources in APE*	Historic Districts or Specific High Sensitivity Resources	Traditional Cultural Properties (Yes/No)	Overall Ranking (High, Medium, Low)**	
						Hist.	Arch.
		1930-58: 43.73%	1900-29: 102 1930-58: 117	District. Mulford route -- Alviso Historic District and Agnews Insane Asylum Historic District. #			
San Jose to Merced: Diablo Range Direct Rt. 130 Alignment	7	To 1899: 2.83% 1900-29: 3.17% 1930-58: 3.01%	To 1899: 1 1900-29: 4 1930-58: 5	Cahill (Diridon) Station Historic District	no	Low	Medium (1.52)
San Jose to Merced: Diablo Range Direct Minimum Tunnel Alignment	21	To 1899: 2.65% 1900-29: 3.14% 1930-58: 2.99%	To 1899: 1 1900-29: 4 1930-58: 7	Cahill (Diridon) Station Historic District	no	Low	Medium (1.58)
San Jose to Merced: Diablo Range Direct Increased Tunnel Alignment	22	To 1899: 2.69% 1900-29: 3.22% 1930-58: 3.07%	To 1899: 1 1900-29: 4 1930-58: 7	Cahill (Diridon) Station Historic District	no	Low	Medium (1.54)
San Jose to Merced: Caltrain/Morgan Hill/Pacheco Pass	15	To 1899: 3.14% 1900-29: 4.34% 1930-58: 5.70%	To 1899: 8 1900-29: 49 1930-58: 51	Historic resources in small towns of Santa Clara Valley, including Morgan Hill. #	no	High	Low (1.48)
San Jose to Merced: Caltrain/Gilroy/Pacheco Pass	13	To 1899: 4.07% 1900-29: 4.75% 1930-58: 6.38%	To 1899: 42 1900-29: 151 1930-58: 161	Historic resources in small towns of Santa Clara Valley, including Morgan Hill & Gilroy. #	no	High	Low (1.41)
<p>* The total number of historic resources that would require identification, evaluation, and effects analysis would depend greatly upon the final APE approved for the selected route. Once approved, the APE for historic architectural resources can reasonably be expected to be set to between 100 feet and 500 feet from centerline. This estimate assumes the possibility of the widest APE, or 500 feet from centerline for each alternative.</p> <p>** The overall ranking was derived from the relative percentage of historic development for each alternative segment and consideration of the number of known historical resources, as well as the preparer's knowledge of the area. The ranking methodology is described in further detail in Section 3.3.</p> <p>***The Carquinez Bridge and Oakland-San Francisco Bay Bridge are both listed on the National Register and both structures were undergoing replacement or seismic retrofit projects at the time of this Tier 1 analysis (February 2003).</p> <p># The Cahill (Diridon) Station Historic District is located with the APE for all HST alternative options.</p>							

5.0 REFERENCES

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Appendix A

APPENDIX A. RECORDS SEARCH RESULTS

Segment/Site	Location (Township/Range and Section)	Site Type
HIGH-SPEED TRAIN ALTERNATIVE CORRIDOR AND STATIONS -- RECORDS SEARCH RESULTS		
Caltrain Corridor/SJ to SF and Hayward Line to the I-880/SJ to Oak		
CA-SCL-30/H	San Jose West, T 7S, R1E, Section 2	burials, habitation site
CA-SCL-8	Cupertino, T6S, R2W, unsectioned	large. occupation site
CA-SCL-22	Mountain View, T6S, R2W, unsectioned	occupation site
CA-SCL-707	Mountain View, T6S, R2W, unsectioned	shell midden
CA-SMA-233	San Mateo, T4S, R4W, unsectioned	shell midden
CA-SMA-232	San Mateo, T4S, R4W, unsectioned	shell midden
CA-SMA-309	San Mateo, T4S, R4W, unsectioned	shell mound
CA-SMA-4	San Mateo, T4S, R4W, unsectioned	large shell midden
P-41-498	San Mateo, T4S, R4W, unsectioned	shell midden
CA-SMA-317	San Mateo, T4S, R5W, unsectioned	shell mound
CA-SMA-102	San Mateo, T4S, R5W, unsectioned	shell mound
CA-SMA-343H	Montara Mountain, T4S, R5W, unsectioned	historic trash dump
CA-SMA-40	San Francisco South, T3S, R5W, unsectioned	large shell mound
P-43-624 (SCL-677)	Milpitas, unsectioned	burial
P-01-117 (ALA-343)	Niles, T4S, R1W, Section 28	large occupation site
P-01-27 (ALA-6)	Hayward, T2S, R1W, unsectioned	large shell mound
P-01-40 (ALA-20)	San Leandro, T2S, R3W, Section 27	shell mound w/burials
P-01-17	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
P-01-16	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
P-01-10521	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
P-01-10522	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
CA-ALA-17	Oakland West, T1S, R4W, unsectioned	bones and artifacts
CA-ALA-22	Oakland West, T1S, R4W, unsectioned	burial
Caltrain Corridor/SJ to SF and Hayward Branch: Niles Junction to the Mulford Line/SJ to Oak		
CA-SCL-30/H	San Jose West, T 7S, R1E, Section 2	burials, habitation site
CA-SCL-8	Cupertino, T6S, R2W, unsectioned	large. occupation site
CA-SCL-22	Mountain View, T6S, R2W, unsectioned	occupation site
CA-SCL-707	Mountain View, T6S, R2W, unsectioned	shell midden
CA-SMA-233	San Mateo, T4S, R4W, unsectioned	shell midden
CA-SMA-232	San Mateo, T4S, R4W, unsectioned	shell midden
CA-SMA-309	San Mateo, T4S, R4W, unsectioned	shell mound
CA-SMA-4	San Mateo, T4S, R4W, unsectioned	large shell midden
P-41-498	San Mateo, T4S, R4W, unsectioned	shell midden
CA-SMA-317	San Mateo, T4S, R5W, unsectioned	shell mound
CA-SMA-102	San Mateo, T4S, R5W, unsectioned	shell mound
CA-SMA-343H	Montara Mountain, T4S, R5W, unsectioned	historic trash dump
CA-SMA-40	San Francisco South, T3S, R5W, unsectioned	large shell mound
P-01-2267 (ALA-599)	Newark, T5S, R1W, Section 8	burials at 3 locations
P-01-27 (ALA-6)	Hayward, T2S, R1W, unsectioned	large shell mound
P-01-40 (ALA-20)	San Leandro, T2S, R3W, Section 27	shell mound w/burials
P-01-17	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
P-01-16	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
P-01-10521	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
P-01-10522	Oakland West, unsectioned Peralto Rancho	historic feature/ Cypress Project.
CA-ALA-17	Oakland West, T1S, R4W, unsectioned	bones and artifacts
CA-ALA-22	Oakland West, T1S, R4W, unsectioned	burial
Diablo Range Direct Rt. 130 Alignment/SJ to MER		
CA-SCL-690	San Jose West, T 7S, R1E, Section 20	burials, large prehistoric cemetery

APPENDIX A. RECORDS SEARCH RESULTS (CONT.)

CA-SCL-448	San Jose East, T 7S, R1E, unsectioned	shell scatter
CA-SCL-ISO-5	San Jose East, T 7S, R1E, unsectioned	chert flake
CA-SCL-347	Santa Teresa Hills	burials, flake tool scatter
P-43-249 (SCL-239)	Santa Teresa Hills	flaked stone scatter
C-1197	Santa Teresa Hills	unidentified prehistoric
P-50-1827	Crows Landing, T6S, R9E, Orestimba LG	large burial site

Diablo Range Direct Minimum Tunnel Alignment/SJ to MER

CA-SCL-690	San Jose West, T 7S, R1E, Section 20	burials, large prehistoric cemetery
CA-SCL-448	San Jose East, T 7S, R1E, unsectioned	shell scatter
CA-SCL-ISO-5	San Jose East, T 7S, R1E, unsectioned	chert flake
CA-SCL-347	Santa Teresa Hills	burial, flake tool scatter
C-1197	Santa Teresa Hills	unidentified prehistoric
P-43-189 (SCL-178)	Santa Teresa Hills, T8S, R2E	reburial area
CA-SCL-427	Morgan Hill, T8S, R2E, unsectioned	flake and tool scatter
C-827	Morgan Hill, T8S, R2E, unsectioned	flake and tool scatter
C-818	Morgan Hill, T8S, R2E, unsectioned	midden w/ grd. Stn.. & lithics
C-819	Morgan Hill, T8S, R2E, unsectioned	isolated artifact
P-50-28 (STA-358)	Wilcox Ridge, T7S, R6E, Section 31	habitation site
P-50-43 (STA-371)	Wilcox Ridge, T7S, R5E, Section 31	midden w/ grd. Stn.. & lithics
P-50-53 (STA-381)	Wilcox Ridge, T7S, R6E, Section 31	habitation w/house pits
P-50-36 (STA-366)	Wilcox Ridge, T7S, R6E, Section 31	midden w/ ground stone
P-50-23 (STA-353)	Wilcox Ridge, T7S, R6E, Section 31	midden w/ grd. Stn.. & lithics
P-50-417 (STA-334)	Orestimba Creek, T7S, R7E, Section 28	milling site (BRMs)
P-50-418 (STA-335)	Orestimba Creek, T7S, R7E, Section 28	historic rock alignment
P-50-403 (STA-320)	Orestimba Creek, T7S, R7E, Section 27	BRMs
P-50-401 (STA-318)	Orestimba Creek, T7S, R7E, Section 27	BRMs
P-50-402 (STA-319)	Orestimba Creek, T7S, R7E, Section 27	BRMs
P-50-1827	Crows Landing, T6S, R9E, Orestimba LG	burial site, large

Diablo Range Direct Increased Tunnel Alignment/SJ to MER

CA-SCL-690	San Jose West, T 7S, R1E, Section 20	burials, large prehistoric cemetery
CA-SCL-448	San Jose East, T 7S, R1E, unsectioned	shell scatter
CA-SCL-ISO-5	San Jose East, T 7S, R1E, unsectioned	chert flake
CA-SCL-2	Santa Teresa Hills	midden w/grd. Stn./shell/lithics
C-1197	Santa Teresa Hills	unidentified prehistoric
P-43-189 (SCL-178)	Santa Teresa Hills, T8S, R2E	reburial area
P-50-21 (STA-351)	Wilcox Ridge, T7S, R6E, Section 31	bedrock mortar
P-50-28 (STA-358)	Wilcox Ridge, T7S, R6E, Section 31	habitation site
P-50-27 (STA-357/H)	Wilcox Ridge, T7S, R6E, Section 31	midden w/lithics
P-50-26 (STA-356)	Wilcox Ridge, T7S, R6E, Section 31	habitation w/house pits
P-50-35 (STA-365)	Wilcox Ridge, T7S, R6E, Section 31	ground stone & house pit
P-50-53 (STA-381)	Wilcox Ridge, T7S, R6E, Section 31	habitation w/house pits
P-50-36 (STA-366)	Wilcox Ridge, T7S, R6E, Section 31	midden w/ ground stone
P-50-22 (STA-202)	Wilcox Ridge, T7S, R6E, Section 31	midden w/grd. Stn., lithics, hp
P-50-37 (STA-367)	Wilcox Ridge, T7S, R6E, Section 31	midden w/ ground stone
P-50-417 (STA-334)	Orestimba Creek, T7S, R7E, Section 28	milling site (BRMs)
P-50-418 (STA-335)	Orestimba Creek, T7S, R7E, Section 28	historic rock alignment
P-50-412 (STA-329)	Orestimba Creek, T7S, R7E, Section 27	BRMs & rockshelters
P-50-403 (STA-320)	Orestimba Creek, T7S, R7E, Section 27	BRMs
P-50-401 (STA-318)	Orestimba Creek, T7S, R7E, Section 27	BRMs
P-50-402 (STA-319)	Orestimba Creek, T7S, R7E, Section 27	BRMs
P-50-1827	Crows Landing, T6S, R9E, Orestimba LG	burial site, large

APPENDIX A. RECORDS SEARCH RESULTS (CONT.)**Caltrain/Morgan Hill/Pacheco Pass Alignment/SJ to MER**

CA-SCL-690	San Jose West, T 7S, R1E, Section 20	burials, large prehistoric cemetery
CA-SCL-448	San Jose East, T 7S, R1E, unsectioned	shell scatter
CA-SCL-ISO-5	San Jose East, T 7S, R1E, unsectioned	chert flake
CA-SCL-2	Santa Teresa Hills	midden w/grd. stn./shell/lithics
CA-SCL-571	Morgan Hill, 8S, 2E, unsectioned	fire-cracked rock scatter
CA-SCL-587	Chittenden, T11S, R4E, unsectioned	occupation site
CA-SCL-119	San Felipe, T11S, R5E, Llano del Tequista L.G.	residential site w/burials
P-43-993	San Felipe, T11S, R5E, Ausayamas y SF L.G.	isolated artifacts
ISOL-4B	San Felipe, T11S, R5E, Ausayamas y SF L.G.	ground stone cache
CA-SCL-121	San Felipe, T11S, R5E, Ausayamas y SF L.G.	BRMs
CA-SCL-117	Pacheco Peak, T10S, R6E, Ausayamas y SF	midden w/lithic scatter
CA-SCL-114	Pacheco Peak, T10S, R6E, Ausayamas y SF	isolated mortar fragment
CA-SCL-724	Pacheco Peak, T10S, R6E, Ausayamas y SF	midden w/grd. stn.. & fcr
P-43-1215	Pacheco Pass, T10S, R7E, San Luis Gonzaga	midden w/grd. stn.. & fcr
P-20-349	Chowchilla, T9S, R15E, Sections 26,25	large occupation site

Caltrain/Gilroy/Pacheco Pass Alignment/SJ to MER

CA-SCL-690	San Jose West, T 7S, R1E, Section 20	burials, large prehistoric cemetery
CA-SCL-448	San Jose East, T 7S, R1E, unsectioned	shell scatter
CA-SCL-ISO-5	San Jose East, T 7S, R1E, unsectioned	chert flake
CA-SCL-2	Santa Teresa Hills	midden w/grd. Stn./shell/lithics
CA-SCL-571	Morgan Hill, 8S, 2E, unsectioned	FCR scatter
CA-SCL-699	Chittenden, T11S, R4E, Las Animas L.G.	shell, lithics, grd. Stn.. scatter
CA-SCL-203	Chittenden, T11S, R4E, Las Animas L.G.	large occupation site
P-43-1445	Chittenden, T11S, R4E, Las Animas L.G.	iso pestle
CA-SCL-117	Pacheco Peak, T10S, R6E, Ausayamas y SF	midden w/lithic scatter
CA-SCL-114	Pacheco Peak, T10S, R6E, Ausayamas y SF	isolated mortar fragment
CA-SCL-724	Pacheco Peak, T10S, R6E, Ausayamas y SF	midden w/grd. Stn.. & fcr
P-43-1215	Pacheco Pass, T10S, R7E, San Luis Gonzaga	midden w/grd. Stn.. & fcr
P-20-349	Chowchilla, T9S, R15E, Sections 26,25	large occupation site

HST STATIONS

Transbay Terminal	none	
4th and King	none	
Millbrae	none	
Redwood City	none	
Palo Alto	none	
Santa Clara		
CA-SCL-30/H	San Jose West, T 7S, R1E, Section 2	habitation site w/burials
West Oakland	none	
12th Street/City Center	none	
Coliseum Bart Station	none	
Union City	none	
Fremont	none	
San Jose (Diridon)	none	
Morgan Hill	none	
Gilroy	none	

APPENDIX A. RECORDS SEARCH RESULTS (CONT.)

Highway Corridor/Site	Location	Site Type
MODAL ALTERNATIVE CORRIDOR AND AIRPORTS		
U.S. 101/SF to SFO		
CA-SMA-40	San Francisco South, Canada de Guadalupe LG	shell mound
P-41-95	San Francisco South, Canada de Guadalupe LG	shell midden
U.S. 101/SFO to Redwood City		
CA-SMA-321	San Mateo, T4S, R4W, Section 21	shell midden
CA-SMA-314	San Mateo, Pulgas LG	Hamilton Shell Mound
C-134	San Mateo, Pulgas LG	Hamilton Shell Mound
C-759	San Mateo, Pulgas LG	Hamilton Shell Mound
C-760	San Mateo, Pulgas LG	
C-789	San Mateo, San Mateo LG	Hamilton Shell Mound
C-790	San Mateo, San Mateo LG	Hamilton Shell Mound
C-808	San Mateo, Pulgas LG	Midden
U.S. 101/Redwood City to I-880		
SCL-439	Mountain View, T6S, R2W, Rincon de San Frans.	shell midden
P-43-32 (SCL-12)	Mountain View, T6S, R2W, Rincon de San Frans.	burials
P-1163	Milipitas, T6S, R1W, Section 26	shell midden, FAR
I-880/U.S. 101 to San Jose		
None		
U.S. 101/San Jose to Gilroy		
CA-SCL-242	San Jose East, Yerba Buena Land Grant	flaked stone tool/FAR scatter
CA-SCL-241	San Jose East, Yerba Buena Land Grant	flaked stone tool/FAR scatter
CA-SCL-732/H	Santa Teresa Hills, Santa Teresa Land Grant	burials, habitation/hist. debris
CA-SCL-732/H reburial	Santa Teresa Hills, Santa Teresa Land Grant	reburial site
CA-SCL-411H	Santa Teresa Hills, Santa Teresa Land Grant	historic farm complex
CA-SCL-178 reburial	Santa Teresa Hills, Santa Teresa Land Grant	reburial site
CA-SCL-178	Morgan Hill, La Laguna Seca Land Grant	burials, large habitation site
U.S. 101/Gilroy to S.R. 152		
None		
S.R. 152/U.S. 101 to I-5		
CA-SCL-119/SSN-24H	San Felipe, T11S, R5E, Llano del Tequisquita LG	flake scatter, midden
ISO-SCL-14	San Felipe, T11S, R5E, Ausaymas y San Felipe	hammerstone?
P-43-993	San Felipe, T11S R5E Ausaymas y San Felipe	milling gear
P-43-1214	San Felipe, T11S, R5E, Ausaymas y San Felipe	isolated pestles
CA-SCL-117	Pacheco Peak, Ausaymas y San Felipe LG	flake Scatter, FAR
CA-SCL-114	Pacheco Peak, Ausaymas y San Felipe LG	isolated mortar fragment
CA-SCL-31	Pacheco Pass, San Luis Conzaga LG	bedrock mortars, midden
S.R. 152 I-5 to SR 99		
P-24-350	Los Banos, T10S, R11E, Section 18	sparse lithic scatter, milling gear
I-80/SF to I-880		
None		

APPENDIX A. RECORDS SEARCH RESULTS (CONT.)**I-80/I-880 to I-5**

CA-ALA-310-313	Oakland West	series of 4 shell mounds
CA-ALA-307	Oakland West	large shell mound
P-01-83 (ALA-306)	Richmond	shell mound
CA-ALA-305	Richmond, T3N, R4W	shell midden
CA-SOL-41	Fairfield North	burial
CA-SOL-30	Fairfield North	flake scatter
CA-SOL-362	Allendale	historic debris (from structure)
P-48-8 (SOL-363)	Dixon	midden w/burials

I-880/I-80 to I-238

P-01-1788	Oakland West, unsectioned Peralta Rancho	historic features/Cypress Project
P-01-243	Oakland West, unsectioned Peralta Rancho	historic features/Cypress Project
P-01-244	Oakland West, unsectioned Peralta Rancho	historic features/Cypress Project
P-01-258	Oakland West, unsectioned Peralta Rancho	historic features/Cypress Project

I-580/I-880 to I-5 (via I-238)

P-01-80 (ALA-60)	Hayward, San Lorenzo (Castro) LG	milling gear, cupules, mortars
C-1396	Livermore	FAR scatter
P-01-2197	Livermore	historic debris (from structures)

I-880/I-238 to Fremont/Newark

P-01-2280 (ALA-600)	Newark, T4S, R1W, Section 25	burials, habitation w/cemetery
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I-880/FremontNewark to U.S. 101

P-43-624	Milipitas, Rincon de Los Esteros (white) LG	burial
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MODAL AIRPORTS**Oakland**

none

San Jose Airport

CA-SCL-430	San Jose West, T6S, R1W, Section 35	Old Mission site/lithic scatter
CA-SCL-478	San Jose West, T6S, R1W, Section 36	FAR scatter, one mano