CALIFORNIA HIGH-SPEED TRAIN

Program Environmental Impact Report/Environmental Impact Statement

Bakersfield to Los Angeles Region

CULTURAL RESOURCES TECHNICAL EVALUATION

January 2004

Prepared for:

California High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

CALIFORNIA HIGH SPEED RAIL AUTHORITY

U.S. Department of Transportation
Federal Railroad Administration

CALIFORNIA HIGH-SPEED TRAIN PROGRAM EIR/EIS

Bakersfield to Los Angeles Region Cultural Resources Technical Evaluation

Prepared by:

Applied EarthWorks, Inc.
for
P&D Consultants, Inc.

January 2004

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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.

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

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, 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 Bakersfield-to-Los Angeles 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 1.1-1). 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.

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

Figure 1.1-1
No-Project Alternative - California Transportation System

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. (Figures 1.1-2 and 1.1-3) 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.

1.1.3 High-Speed Train Alternative

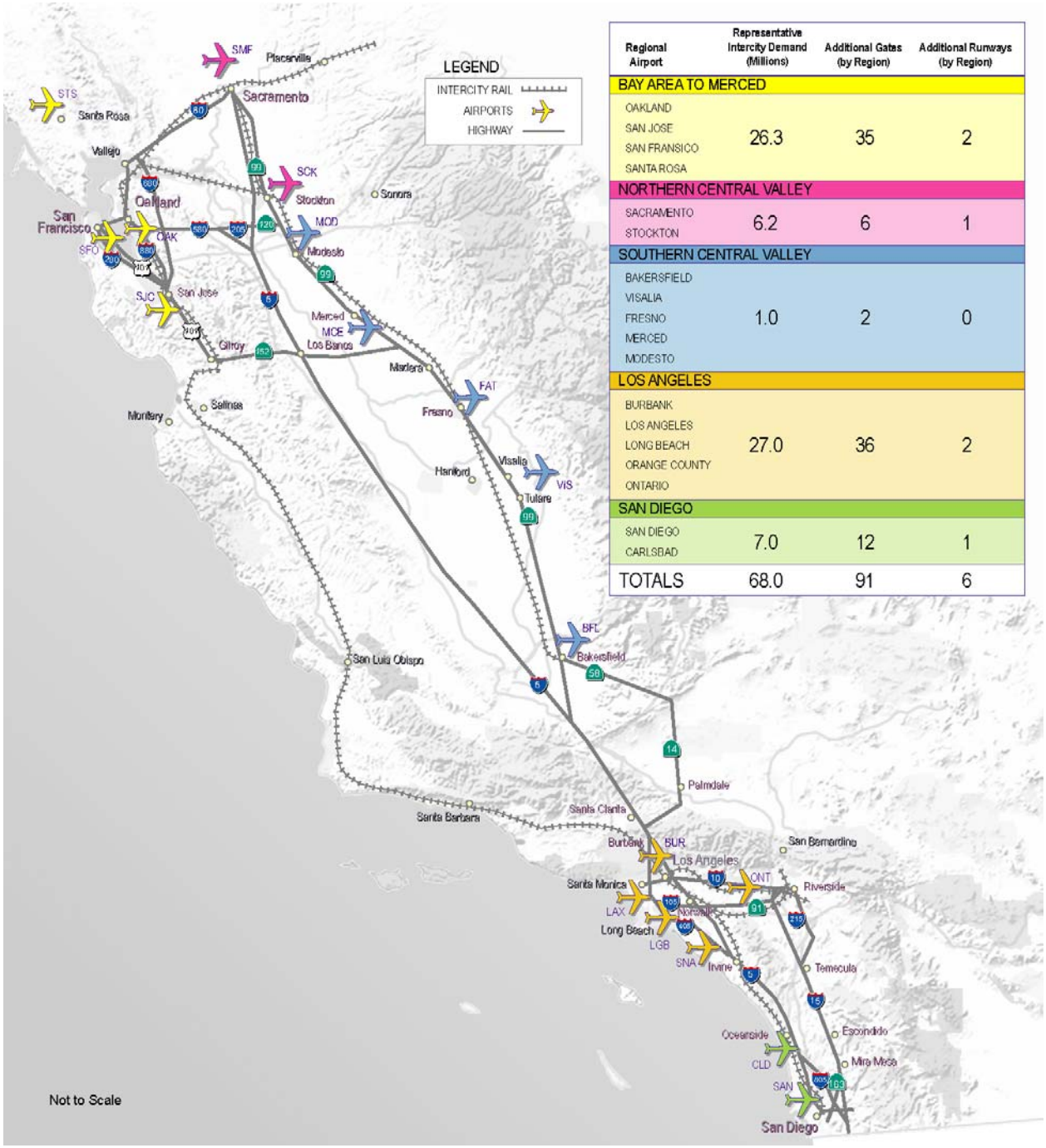
The Authority has defined a statewide High-Speed Train (HST) system capable of speeds in excess of 200 miles per hour (mph) (320 kilometers per hour [km/h]) on dedicated, fully grade-separated tracks, with state-of-the-art safety, signaling, and automated train control systems. State of the art high-speed 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 1.1-4)

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.

Figure 1.1-2
Modal Alternative - Highway Component

Figure 1.1-3
Modal Alternative - Aviation Component



Regional Airport	Representative Intercity Demand (Millions)	Additional Gates (by Region)	Additional Runways (by Region)
BAY AREA TO MERCED			
OAKLAND SAN JOSE SAN FRANSICO SANTA ROSA	26.3	35	2
NORTHERN CENTRAL VALLEY			
SACRAMENTO STOCKTON	6.2	6	1
SOUTHERN CENTRAL VALLEY			
BAKERSFIELD VISALIA FRESNO MERCED MODESTO	1.0	2	0
LOS ANGELES			
BURBANK LOS ANGELES LONG BEACH ORANGE COUNTY ONTARIO	27.0	36	2
SAN DIEGO			
SAN DIEGO CARLSBAD	7.0	12	1
TOTALS	68.0	91	6

Figure 1.1-4
High-Speed Train Alternative – Corridors and Stations for Continued Investigation

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 State Historic Preservation Officer (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 been 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/EIS's. The APE will be modified to include these items as part of the Tier-2 analysis.

2.2 CULTURAL BACKGROUND (PREHISTORIC, ETHNOGRAPHIC, AND HISTORIC) OF REGION

2.2.1 Prehistoric Background

The following section provides a brief overview of the prehistory of the Project region. Discussions of the putative "Early Man" Period and the scientifically established Paleo-Indian Period apply to all portions of the project region. Subsequent regional variations are then discussed for the Los Angeles Basin, the San Gabriel Mountains, Antelope Valley, the Tehachapi Mountains, and the southern San Joaquin Valley.

A. LOS ANGELES BASIN AND SAN FERNANDO VALLEY

"Early Man" Period

Several sites in southern California, the most well known of which is Calico Hills near Barstow, have been tentatively assigned to an "Early Man Period" with relative dates ranging from 12,000 years ago to as far back as 50,000 years ago (Moratto 1984[2]). Various geologic and experimental dating methods have been used to provide these extreme temporal assignments. Thus far, however, none of these "Early Man" sites have withstood scientific scrutiny. Improved dating techniques have usually demonstrated that very old dates based on experimental methods are flawed, and are much later than originally believed. Despite claims for artifacts of "Early Man" in the California deserts, it appears that existing evidence of humans in southern California is limited to the last 12,000 years.

[2] Moratto, Michael J., *California Archaeology*. New York: Academic Press, Inc., 1984.

Paleo-Indian Period ca. (12,000–7000 B.P. [ca. 10,000–5000 B.C.])

The earliest humans known to have occupied southern California are believed to have been highly mobile hunters and gatherers, called Paleo-Indians. Paleo-Indian sites within southern California were assigned by Rogers (1966)[3] to the San Dieguito Culture. The type site for the San Dieguito Complex is the C. W. Harris site, CA-SDI-149, located near Escondido, south of the Project area. The earliest cultural deposits at the Harris site have been dated to 9,000 years before present (B.P.). Moratto[4] (1984:92) notes that San Dieguito artifact assemblages are similar to those of Lake Mojave and other Paleo-Indian cultures in southern California. Moratto goes on to suggest that assemblages of this early era be divided into a Fluted Point tradition (12,000–10,000 B.P.) and, following Bedwell[5] (1970), a Western Pluvial Lakes Tradition (10,000-7000 B.P.). Tule Lake, in Kern County north of the Project area, has yielded more fluted point finds than in the remainder of California (Dillon 2002[6]); three fluted points have been found in Kern County; however, none have been recovered in Los Angeles County.

Perhaps the earliest evidence of human occupation in the Los Angeles region was recovered from the tar pits of Rancho La Brea. In 1914, the partial skeleton of a young woman was discovered in association with a mano (Merriam 1914[7]). During the early 1970s, complex chemical methods were used to decontaminate the human bone of intrusive carbon, and a treated collagen sample was dated at 9000 ± 80 B.P. (UCLA-1229 BB) (Berger et al. 1971[8]).

In addition, projectile points similar to the Lake Mojave and San Dieguito types as well as crescent shaped flaked tools, called crescentics, have been recovered at the Del Rey Bluffs immediately south of Ballona Lagoon, adjacent to a former mouth of the Los Angeles River (Lambert 1983[9]). The presence of these point types along the region's coast suggests connections with the cultures of the southeastern California desert regions.

The 7500 to 5000 B.P. Interval (Middle Holocene Period)

The Topanga Complex is perhaps the best known component of this time period in the Los Angeles area. Treganza and Bierman[10] (1958) identified two phases of the Topanga Complex during excavations at two sites in Topanga Canyon. Topanga Phase I, dated to earlier than 5000 B.P., includes scraper-planes, scrapers, choppers, core/cobble tools, an extensive ground stone tool assemblage, few projectile points, and secondary burials. Phase II, dated to ca. 5000-3000 B.P., is distinguished by small projectile points, incised and cogged stones (flat stones

3 Rogers, Malcolm J. *Ancient Hunters of the Far West.* Union-Tribune Publishing, San Diego, California. 1966

4 Moratto, Michael J., *California Archaeology*. New York: Academic Press, Inc., 1984.

5 Bedwell, S.F., *Prehistory and Environment of the Pluvial Fork Rock Lake Area of South Central Oregon*. Ph.D. dissertation, Department of Anthropology, Eugene, Oregon: University of Oregon, 1970.

6 Dillon, Brian D., California PaleoIndians: Lack of Evidence or Evidence of a Lack? In *Essays in California Archaeology, A Memorial to Franklin Fenenga*. Edited by William J. Wallace and Francis A. Riddell, pp. 110–128, 2002.

7 Merriam, C. H., Distribution of Indian Tribes in the Southern Sierra and Adjacent Parts of the San Joaquin Valley, California. *Science* 19:912–917, 1914.

8 Berger, R., et al., New Radiocarbon Dates Based on Bone Collagen of California Paleoindians. Berkeley: *Contributions of the University of California Research Facility* 12:43–49, 1971.

9 Lambert, V. A Surface Collection from the Del Ray Hills, Los Angeles County, California. *Journal of New World Archaeology* (5) 3: 7–19, 1983.

10 Treganza, A. E., and A. Bierman, The Topanga Culture: Final Report on Excavations, 1948. *University of California Anthropological Records* 20(2). 1958.

cut and shaped to resemble gears), and fewer core/cobble tools; reburial continues along with the introduction of extended burials.

Phase III, dated to ca. 3000–2000 B.P. (Johnson 1966:15, 20[11]), includes large rock-lined ovens, pressure-flaked points, core tools, mortars and pestles, and plentiful milling stones. Aside from the sites in Topanga Canyon, the only evidence of prehistoric occupation of the Los Angeles Basin dating to this interval is a discoidal or cogged stone occasionally recovered from sites dating to more recent periods of prehistory.

The 5000–1500 B.P. Interval (Middle to Late Holocene)

Within the Los Angeles Basin, few sites have been identified that can be placed within this interval of prehistory. As discussed previously, the Phase II and Phase III components at CA-LAN-2 in Topanga Canyon are dated to this period. In addition, several sites south of Ballona Lagoon on the Del Rey bluffs confirm a rather well developed Middle to Late Holocene presence (Van Horn 1987[12]; Van Horn and Murray 1985[13]).

The Post 1500 B.P. Interval (Late Holocene)

Most chronological sequences for southern California recognize the introduction of the bow and arrow by 1500 B.P., marked by the appearance of small arrow points and arrow shaft straighteners. Reliance on the bow and arrow for hunting along with the use of bedrock mortars and milling slicks mark the beginning of this period, dating from about 1500 B.P. (A.D. 500) to the time of Spanish contact (approximately A.D. 1769).

Diagnostic artifacts include small triangular projectile points, mortars and pestles, steatite ornaments and containers, perforated stones, circular shell fishhooks, and numerous and varied bone tools, as well as bone and shell ornamentation. Elaborate mortuary customs along with generous use of asphaltum and the development of extensive trade networks are also characteristic of this period. During the latter half of the late prehistoric occupation of the southern California coastal region, pottery, ceramic pipes, cremation urns, rock paintings, and some European trade goods were added to the previous cultural assemblage (Meighan 1954[14]).

Late prehistoric coastal sites are numerous. First settled approximately 2,000 years ago, the Arroyo Sequit Site (Curtis 1959[15], 1963[16]) is a late prehistoric occupation site and persisted until the Mission Period (ca. A.D. 1800–1830). Probably one of the richest sites in coastal southern California, the Malibu Site (CA-LAN-264) at the mouth of Malibu Creek also was occupied during this period (Walker 1951[17]).

---

11 Johnson, J. J., A Preliminary Survey of the Archaeological Resources of Lower Mill Creek. Davis, California: Ms. on file, Department of Anthropology, University of California, 1966.

12 Van Horn, D. M., *Excavations at the Del Rey Site (LAN-63) & Bluff Site (LAN-64), City of Los Angeles*. Sun City: Archaeological Associates, 1987.

13 Van Horn, D. M., and J. R. Murray, *The Loyola Marymount Archaeological Project: Salvage Excavations at LAN-61A-C*. Environmental Impact Report, July 30, 1985.

14 Meighan, C. W., A Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10(2):215–227, 1954.

15 Curtis, F., *Arroyo Sequit*. Archaeological Survey Association of Southern California, Paper No. 4. Los Angeles: Southwest Museum, 1959.

16 Curtis, F., *Arroyo Sequit: Archaeological Investigations in Leo Carrillo Beach State Park, Los Angeles County, California*. Sacramento: Department of Parks and Recreation, Division of Beaches and Parks. The Resources Agency, State of California Archaeological Report No. 9, 1963.

17 Walker, E. F., *Five Prehistoric Archaeological Sites in Los Angeles County, California*. Los Angeles: Publications of the F. W. Hodge Anniversary Publication Fund 6, 1951.

Increased hunting and widespread exploitation of acorns and holly-leaf cherry provided reliable and storable food resources. This, in turn, promoted greater sedentism, with related increases in population size, economic complexity, and permanent habitation. Related to this increase in resource utilization and sedentism are sites with deeper middens, suggesting centrally based wandering or permanent habitation. These habitations would have been the villages, or rancherias, noted by the early European explorers (Goldberg et al. 1999[18]). By 500 B.P. (A.D. 1500), strong ethnic patterns developed among native populations in southern California. This may reflect accelerated cultural change brought about by increased efficiency in cultural adaptation and diffusion of technology from the central coastal region of California and the southern Great Basin (Douglas et al. 1981:10[19]).

B. ANTELOPE VALLEY AND TEHACHAPI MOUNTAINS

Lake Mojave Period (ca. 12,000–7000 B.C. [ca. 10,000–5000 B.C.])

The cultural sequence for the Antelope Valley and the Tehachapi Mountains differs from other areas of the Project, since this region is on the eastern edge of the Mojave Desert. The archaeology of the high desert of the Antelope Valley is similar, initially, to the Great Basin, where pluvial lakes provided rich environments for large game hunting. The Western Pluvial Lakes Tradition (10,000–7000 B.P.) in this portion of the Project area is identified as the Lake Mojave Period (10,000-5000 B.C.). Named for ancient Mojave Lake, the Lake Mojave cultural complex lithic artifacts include percussion flaked end and side scrapers, keeled scrapers, perforators, round scrapers, flake knives, oval knives, foliate points, Lake Mojave type points, crescents or crescentics, and Silver Lake type points. Milling tools are rare to non-existent on Lake Mojave Period sites.

Pinto Period (ca. 7,000–4,000 B.P. [ca. 5000–2000 B.C.])

The Pinto Period is marked by a gradual transition from wet pluvial conditions to arid desert conditions during the terminal Pleistocene and Early Holocene. It may be that the Mojave Desert was not occupied by humans between 7,000 B.P. and 6,000 B.P., a hot and dry period occurring before a wetter period. The Pinto Period is considered primarily to be contemporaneous with this wetter climatic condition.

Pinto Period sites located in the desert tend to be sparse temporary camps, and are rare. Sites known from the Pinto Period in southern California, including sites in Death Valley, Salt Springs, the Stahl Site in Owens Valley, sites in Pinto Basin in Joshua Tree National Monument (Warren 1984[20]), and two sites in Diamond Valley Lake (Goldberg et al. 2002[21]). Pinto Period sites are associated with the margins of pluvial lakes and with now-extinct springs. Pinto-series projectile points, crudely made stemmed or basally-notched dart points, are the most distinctive artifact type of the Pinto Period. Other artifacts found at Pinto Period sites include large leaf-shaped

18 Goldberg, S. K., et al., *The Metropolitan Water District of Southern California Headquarters Facility Project. The People of Yaanga?: Archaeological Investigations at CA-LAN-1575/H*. Altadena, California: Submitted to Union Stations Partners on behalf of The Metropolitan Water District of Southern California, Los Angeles, 1999.

19 Douglas, R. C., et al., Archaeological, Historical/Ethnohistorical, and Paleontological Assessment, Weir Canyon Park-Road Study, Orange County, California. Tustin, California: Larry Seeman Associates. Ms. On file, University of California Institute of Archaeology, Los Angeles, 1981.

20 Warren, Claude N., The Desert Region. In *California Archaeology*, by M. J. Moratto. Orland and London: Academic Press, 1984.

21 Goldberg, S. K., et al., *Metropolitan Water District of Southern California, Eastside Reservoir Project: Final Report of Archaeological Investigations, Vol. IV: Synthesis of Findings*. Hemet, California: Applied EarthWorks, Inc., November 2001. Submitted to The Metropolitan Water District of Southern California, Los Angeles.

knives, thick, split cobble choppers and scrapers, scraper-planes, and small milling slabs and manos. With the exception of the Stahl Site, most known Pinto Period sites are small surface deposits of lithic artifacts, suggestive of temporary and perhaps seasonal occupation by small groups of people. At the Stahl Site, excavations have documented midden-altered sediments more than one meter deep containing evidence of several occupations (Warren 1984[22]).

Artifacts associated with this period include shouldered stemmed point series, leaf-shaped bifaces, and heavy scrapers, made mostly from basalts. A few milling slabs and manos are found on these sites suggesting a broadening of the subsistence strategy to include hard seeds or grasses (McGuire and Hall 1988[23]; Warren 1980[24]).

Gypsum Period (ca. 4000–1500 B.P. [ca. 2000 B.C. to A.D. 500])

The Gypsum Period is one of cultural intensification in southern California. The beginning of the Gypsum Period coincides with the Little Pluvial, a period of increased moisture in the region; this ameliorated climate allowed for more extensive occupation of the desert regions. In addition, periods of drought within this era seem to have resulted in human adaptations to more arid conditions, rather than a retreat from the deserts. Large occupation sites are usually located adjacent to permanent water sources, such as perennial springs or larger streams. The Tehachapi Mountain front bordering on the western edge of the Antelope Valley was occupied during this time period, an upland areas with more abundant resources than the adjacent desert floor.

A few Gypsum Period sites from California, Nevada, and Arizona have been excavated, including Willow Beach, Rose Spring, Indian Hill Rockshelter, and Gypsum, Newberry, Ray, Baird, and Chapman caves. During the succeeding arid periods, human populations gradually adapted in a variety of socioeconomic ways to the more arid desert environment (Warren 1984).

Technologically, the artifact assemblage of this period is similar to that of the preceding Pinto Period; new tools were added either as innovations or as "borrowed" cultural items. Diagnostic projectile points of this period include Humboldt, Gypsum, and Elko-series dart points (Warren 1984). Late in the Gypsum Period, Rose Spring arrow points appear in the archaeological record, reflecting the spread of the bow and arrow technology from the Great Basin and the Colorado River region. Other artifact types characteristic of this period include leaf-shaped arrow points, rectangular-based knives, flake scrapers, T-shaped drills, milling slabs and manos, as well as core/cobble tools assemblages such as scraper planes, large choppers, and hammerstones. Shaft smoothers, incised slate and sandstone tablets and pendants, bone awls, *Olivella* shell beads, and *Haliotis* beads and ornaments are also found (Warren 1984). Reuse or retouching of lithic artifacts made of locally available materials seems to be a recognizable component of the Gypsum period (Byrd 1996[25]). In addition to the introduction of the bow and arrow, another technological innovation introduced during this period was the mortar and pestle for processing hard seeds, such as those derived from the mesquite pod.

---

22 Warren, Claude N., The Desert Region. In *California Archaeology*, by M. J. Moratto. Orland and London: Academic Press, 1984.

23 McGuire, Kelly R., and M. C. Hall, The Archaeology of Tiefort Basin, Fort Irwin, San Bernardino County, California. Unpublished report on file at the Archaeological Information Center. Redlands, California: San Bernardino County Museum, 1988.

24 Warren, Claude N., The Archaeology and Archaeological Resources of the Amargosa – Mojave Basin Planning Units. In *Cultural Resource Overview of the Amargosa – Mojave Basin Planning Units*, edited by Eric W. Ritter, pp. 1–134. Riverside, California: Bureau of Land Management, 1980.

25 Byrd, Brian F., *Camping in the Dunes:* Archaeological and Geomorphological Investigations of Late Holocene Settlements West of Rogers Dry Lake. , San Diego, California: Prepared by AMS Affiliates, 1970.

Saratoga Springs Period (ca. 1500–650 B.P. [A.D. 500–1200])

This period is, in large part, a continuation of the developments begun during the Gypsum Period, such as an increasing adaptation to the arid environment in the deserts and an increase in trade relations (Warren 1984[26]). Regional environmental conditions became much wetter, a development known as the Little Pluvial. Variations in regional cultural adaptations also become apparent.

Warren (1984) defines four cultural spheres within the Mojave and Colorado deserts during this period: a northern sphere located north of the Mojave River, a central desert sphere located around the Mojave River, an Antelope Valley sphere, and a southern desert sphere influenced by Patayan (Hatakayan) cultures adjacent to the Colorado River.

By roughly 2,000 years ago, Yuman people had occupied the Gila/Colorado River drainage (Moriarty 1969[27]) and proximal portions of the Colorado and Mojave Deserts. By about 1200 years B.P., the technology of ceramic manufacture had been introduced from the eastern deserts, marking the end of the Early Period and becoming an integral part of the Late Period assemblage.

The Saratoga Springs period (A.D. 500–1200) represents intensification of a sedentary settlement pattern focused on more extreme exploitation of local resources in reaction to a return to an arid climate. Smaller point types such as the Rose Spring and Eastgate series evidence technological change from altlatl to bow and arrow, with Gypsum Period point types still persisting into this period. Saratoga Springs Period sites include Saratoga Springs, Rose Spring, Chapman Cave, Bickel, and Death Valley III (Warren 1984).

Trade with the Pacific and Gulf coastal populations appears to have been extensive, and was one driving force that led to the gradual expansion of cultural traits further west into the deserts, and later into the mountains of the Peninsular Range, as well as into the inland valleys and coastal regions of southern California. Desert people, speaking Shoshonean languages, may have moved into southern California at this time, the so-called “Shoshonean Intrusion.”

Shoshonean Period (ca. 650–150 B.P. [ca. A.D. 1200 to the 1800s])

During the Shoshonean Period there appears to have been a continuation of the technological developments from the earlier Saratoga Springs Period. However, regional developments that indicate the formation of distinct ethnographic groups become more clear. As in all of southern California prehistory, heavily used sites are located adjacent to dependable sources of water.

By the Shoshonean Period (around 800 B.P.), two cultural families had emerged (Warren 1984). The Uto-Aztecan (Shoshonean) people expanded from northern portions of the Great Basin into that portion of the Colorado-Mojave Desert region north and west of the Colorado River. Shoshonean territories eventually made up much of southern California, north of the Yuman groups, including desert, mountain, and coastal areas, and several of the Channel Islands (Moratto 1984[28]). In the northwest Mojave, the artifact assemblage continued from the Saratoga Springs Period through the Shoshonean Period with the addition of Desert Side-notched and Cottonwood Triangular points, Owens Valley Brownware pottery, and small steatite beads.

---

26 Warren, Claude N., The Desert Region. In *California Archaeology*, by M. J. Moratto. Orland and London: Academic Press, 1984.

27 Moriarty, James R. III, The San Dieguito Complex: Suggested Environmental and Cultural Relationships. *Anthropological Journal of Canada* 7(3):2–18. 1969.

28 Moratto, M. J., *California Archaeology*. New York and Orlando: Academic Press, 1984.

Cultural patterns reflecting the Late Period include permanent or semi-permanent seasonal village sites, a proliferation of acorn-milling and pinyon-processing sites in upland areas, the use of obsidian from Obsidian Butte, Coso Range, and other sources, and the appearance of cremation as a funerary preference.

C. SOUTHERN SAN JOAQUIN VALLEY

Previous archaeological investigations indicate that occupation of the southern San Joaquin Valley occurred as early as 8,000 years ago. A deeply buried prehistoric component at the Buena Vista Lake Site (CA-KER-116) approximately 18 air miles southwest of Bakersfield was ascribed to the Western Pluvial Lakes Tradition, which investigators have placed from 11,500 to 7,500 years ago (Moratto 1984:186, 214[29]). Wallace[30] (1978:449) suggests that tools recovered from the Buena Vista Lake Site were used to hunt big game animals; these were later supplemented or replaced by ground stone tools for seed processing.

Prior to the discovery of a buried component at CA-KER-116, strata excavated from the upper site levels indicated a fairly continuous occupation extending from prehistoric, through protohistoric, to historic times. Studies conducted at other sites in the region (Riddell 1951[31]; Walker 1947[32]) have substantiated similar periods of occupation. Materials have been dated to circa 2500 B.C., the same time frame assigned to the Early Horizon of the Delta region. It is difficult to clearly determine the ancestry of these early peoples. However, artifact assemblages associated with occupation circa 1000 B.C.–A.D. 500 suggest that the inhabitants were possibly the ancestors of the ethnographic Yokuts (Moratto 1984:188). The latest occupation has been dated from circa A.D. 1500–1850, the time period in which the ethnographic Yokuts inhabited the region. Based on these and other archaeological investigations conducted throughout the valley (Latta 1977[33]; Wallace 1978), the Yokuts occupied most of the San Joaquin Valley over a period extending as long as 2,000 years. By the historic period, approximately 15 Yokuts groups were occupying the southern valley (Wallace 1978:449).

2.2.2 Ethnographic Background

The Los Angeles to Bakersfield segment of the High-Speed Rail Project passes through the territory of five or six ethnohistorically known Native American groups: the Gabrielino, the Fernadeno or Tataviam, the Interior Chumash, the Southern Valley Yokuts, the Kitanemuk, and possibly the Serrano. Figure 2.2-1 depicts the approximate locations of Native American groups in the Project region at the time of European contact.

A. GABRIELINO

The Los Angeles Basin was part of Gabrielino territory. It is believed that the total Gabrielino territory covered more than 1,500 square miles, and included the watersheds of the Los Angeles

29 Moratto, M. J., *California Archaeology*. New York and Orlando: Academic Press, 1984.

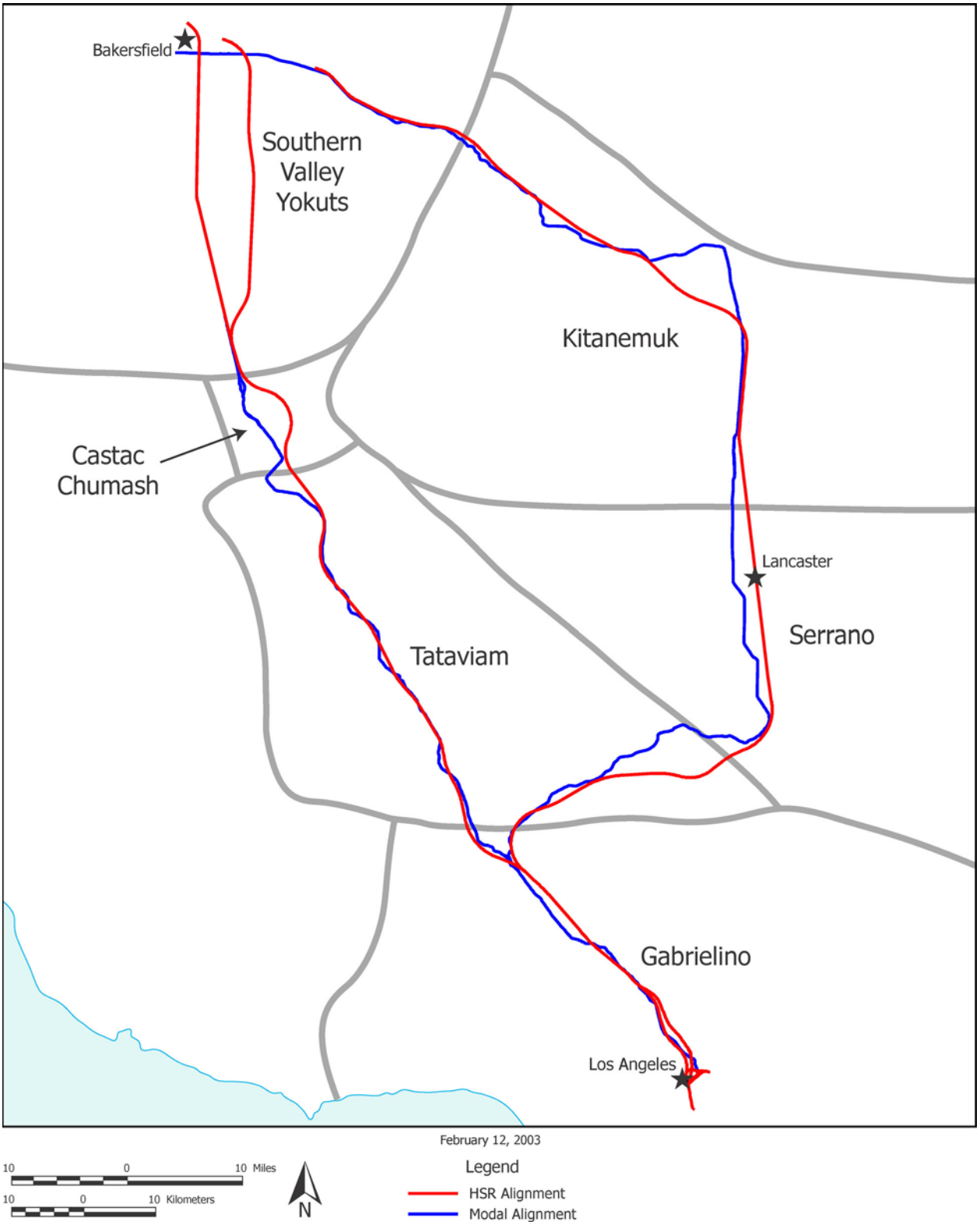
30 Wallace, William J., Southern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 448–461. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Washington, D.C.: Smithsonian Institution, 1978.

31 Riddell, Fritz A., The Archaeology of Site KER-74. *University of California Archaeological Survey Reports* 10:1–28, 1951.

32 Walker, E. F., *Excavation of a Yokuts Indian Cemetery*. Bakersfield, California: Kern County Historical Society, 1947.

33 Latta, Frank F., *Handbook of Yokuts Indians*. Bakersfield, California: On file, Kern County Museum, 1949.

Figure 2.2-1
Approximate Location of Native American Groups
In Project Region at the Time of European Contact



River, San Gabriel River, Santa Ana River, and Rio Hondo, as well as the islands of Santa Catalina, San Clemente, and San Nicolas.

Within this large territory were more than 100 residential communities with populations that ranged from approximately 50 to 200 individuals. Thought to perhaps represent a classic chieftain social structure, each community consisted of one or more lineages that maintained a permanent geographic territory that included a permanent village and a variety of hunting and gathering areas, as well as ritual sites.

This tribe spoke the Cupan language, of the Takic family, part of the Uto-Aztecan linguistic stock. This language group is often referred to as southern California Shoshonean. This language group was a relative latecomer to southern California perhaps extending here from the Great Basin approximately 1000 A.D. Some archaeological evidence suggests the movement to have been possibly as early as 1500 B.C. (Moratto 1984:165[34]). Cultural traits that accompany this language may have included cremation, ceramics, sand painting and possibly horticulture.

Settlement patterns included primary subsistence villages and secondary temporary campsites. Village sites may have been occupied year round and were located inland from the ocean. Secondary camps were located along the shore and in the mountains. Settlements on the islands were either near the shoreline or in the mountain areas near water sources. In major villages, structures were large, sometimes big enough to accommodate 50 or more people. Other structures were the sweathouse, menstrual house, and a ceremonial enclosure with a wicker fence.

The Gabrielino were adept at sculpting steatite and other rock into bowls, pestles and pots ornaments, animal carvings, ritual items, pipes, and utility items. They also decorated items with *Haliotus* shell inlay using asphaltum. Shell ornaments and beads, baskets, bone tools, flint weapons and drills, fishhooks, mortars and pestles, wooden bowls and paddles, shell spoons, and wooden war clubs are among the many artifact types common in descriptions of Gabrielino culture (Blackburn 1963[35]).

Social structure was similar to the Luiseño, with a chief heading up the lineal family group or clan that might oversee more than one village. The chief's authority was manifested as keeper of the sacred bundle, a package of rocks, crystals, feathers and other "power" items. Shaman powers were imbued by taking datura and having visions. Like the Mohave, Gabrielino shamans could heal but could also hurt, and power could be stripped from them by other shamans if misused.

The wealth of resources, coupled with an effective technology, a well-developed intra- and extra-territorial trade, and an elaborate ritual system, resulted in a society that was among one of the most materially wealthy and culturally sophisticated groups in California (McCawley 1996:141[36]). The management of food resources by the chief was the heart of the Gabrielino economy; a portion of each day's hunting, fishing, or gathered food resources was given to the chief who was responsible for managing the community's food reserves. Each family also kept a food supply for use in lean times.

Population estimates are difficult to make, but it may have been as many as 20,000 if 100 village complexes each had 200 members. This population was heavily diminished by European contact; by the early 1900s there were only a few Gabrielino left.

---

34 Moratto, Michael J., *California Archaeology*. New York: Academic Press, Inc., 1984.

35 Blackburn, Thomas, Ethnohistoric Descriptions of Gabrielino Material Culture. Los Angeles: *UCLA Archaeological Survey Annual Reports* 5:1–50, 1963.

36 McCawley, W., *The First Angelinos*. Malki Museum Press/Ballena Press Cooperative Publication, 1996.

B. FERNANDEÑO/TATAVIAM

The Fernandeño tribal group is associated with San Fernando Mission, but this population was likely derived from both the Gabrielino and Tatatiam tribal groups.

Ethnographically, the Tataviam (Alliklik) group occupied a portion of the Project area in the San Gabriel Mountians north of Los Angeles. The territory attributed to the Tataviam includes that between Elizabeth Lake in the east almost to Sespe Creek in the west and south of Newhall in the south to Frazier Mountain and Lake Castaic in the north. The terms Tataviam and Alliklik are not necessarily interchangeable, and some confusion exists in terms of exact territorial boundaries and/or names referenced. King and Blackburn[37] (1978) refer to them as associated with the Chumash, Gabrielino, and Kitanemuk culturally, however Kroeber[38] (1925) lists the Alliklik as possibly affiliated with the Serrano. The Tataviam originally may have spoken a Takic language, with this language becoming distinguished from neighboring languages about 1000 B.C.

Their territory provided the Tataviam with a variety of eco-zones from which to acquire resources. The Tataviam depended on yucca as a primary food source, along with deer and small mammals. These people were noted for their basketry and rock art. Village size varied from 10 individuals to 200 individuals, and villages tended to cluster along water sources and somewhat near to bigger villages. Historically, several villages were known. Ethnographic accounts describe domed living structures as constructed from brush and twigs, supported by willow branch framing.

While cultural ties to the Chumash and Gabrielino neighbors are evident in some of the material remains such as that of the ritual paraphernalia and pictographs, little is known of the social structure of the Tataviam. A Chumash-like social structure has been inferred for the Tataviam, which would include a stratified society with a religious elite and supplemental market economy.

At the time the Spanish arrived in 1769, a population of 1,500 Tataviam may have been living in the area. Typically, they were absorbed into mission life at the San Fernando Mission and had married into other groups. The last full-blooded Tataviam had died by 1921. Today the Tataviam are included within the mixed group of Native Americans known as the Fernandeño tribe (King and Blackburn 1978[39]).

C. INTERIOR CHUMASH

The territory of the Castac sub-group, the most interior group of the Chumash, is bisected by the Project alignment. Overall, Chumash territory extended from Half Moon Bay south to Pt. Dume and as far east as Castac Lake. They also inhabited the islands of San Miguel, Santa Rosa, Santa Cruz and Anacapa. The Castac group was located around Lake Castac. Considered part of the Interior Chumash, this tribe is similar to the Interior Chumash sub-group the Emigdiano except that it is thought the Castac spoke a dialect similar to the Ventureno; the Emigdiano dialect was similar to the Barbareno dialect.

---

37 King, Chester, and Thomas C. Blackburn, Tataviam. In *Handbook of North American Indians*, Vol 8. pp. 535–537. Edited by R. F. Heizer. Washington, D.C.: Smithsonian Institution, 1978.

38 Kroeber, Alfred L., *Handbook of the Indians of California*. Washington, D.C.: Bureau of American Ethnology Bulletin 78, 1925.

39 King, Chester, and Thomas C. Blackburn, Tataviam. In *Handbook of North American Indians*, Vol 8. pp. 535–537. Edited by R. F. Heizer. Washington, D.C.: Smithsonian Institution, 1978.

Little is known about the Emigdiano or the Castac sub groups. Ethnographically, village names are identified as belonging to these groups. The population is estimated at about 1,000 at the time of historic contact. A cave containing very fine rock art is located within Emigdiano territory.

D. SOUTHERN VALLEY YOKUTS

North of Tataviam territory, and north of the Tehachapi Mountains, is the tribal territory of the Southern Valley Yokuts which extended throughout the Central Valley from Kings River south to the Tehachapi Foothills and included Tulare Lake, Kern Lake and Buena Vista Lake. There were up to 15 Southern Valley Yokuts tribes, all speaking separate dialects. The Project alternatives crosses through the territory of two of these groups, the Hometowii, and the Yawelmani, near Bakersfield.

While the south San Joaquin Valley is now dry and used for farming, the valley known to the Southern Valley Yokuts was a wet basin with lakes, sloughs and marshes. The life of the Southern Valley Yokuts was focused on the water resources and rather than migrating to distant areas to procure resources, they instead tended to concentrate on what was available or what migrated in to the water source. Fish, freshwater mussels, turtles, migratory duck and geese, herds of antelope, deer and elk were abundant food sources. In addition, jackrabbit, squirrel, other small mammals, birds, and seeds and berries were eaten. Tule reeds were used to make mats for housing, and for watercraft, while grasses were used for basketry. In late spring, some remote camps were used for gathering various wild plants. Many items were traded in since sources such as rock for milling and hunting were not available in the area. Fish and small game made up the primary food source and these were caught in a variety of ways including using everything from bare hands to decoys and bow and arrow.

The Yokuts lived in individual, autonomous villages (Latta 1949:3[40]). It was not unusual for as many as 10 families to live together within a single structure (Wallace 1978:451[41]). Villages were established on high ground near drainages and other water sources where the Yokuts were able to reside on a near-permanent basis due to the abundant food resources of the Valley. Some travel did occur for collection of seasonal plant foods, hunting, and fishing.Villages were permanent and structures were constructed of posts and reed mats. Houses could be large, particularly amongst the Tulamni, Hometwoli, Wowol, and Tachi, which had communal residences. There were no ritual, dance circle, or sweathouse structures.

The tribal structure included patrilineal clans and local chiefs, sometimes two, one for each clan. The duties of the chief included the timing of ceremonies, authorizing gathering and trade expeditions, and the killing of evil sorcerers.

Medicine men (shamans) healed the sick and took lead roles in ceremonies. Shamans acquired power through dream vision or by a quest. The quest often involved an encounter with a water creature after spending a winter night in a pool of water. Ceremonies included honoring the dead, an elaborate six-day affair, and first-fruit rites, involving the eating of taboo berries or seeds.

Population estimates are about 5,000 individuals for the Southern Valley Yokuts. An attempt was made to create a reservation for the Southern Valley Yokuts at Tejon, but this reservation was no longer occupied by 1859. The Tule River Reservation was created in 1873, and was occupied by 154 individuals in 1905.

40 Latta, Frank F., *Handbook of Yokuts Indians*. Bakersfield, California: On file, Kern County Museum, 1949.

41 Wallace, William J., Southern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 448–461. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Washington, D.C.: Smithsonian Institution, 1978.

E. KITANEMUK

The alignment following State Route 58 east of Bakersfield, and following State Route 14 in to Los Angeles, passes through desert territory largely attributed to the Kitanemuk Native American group. The Kitenemuk were located in the Tehachapi Mountains from Caliente Creek south to the San Gabriel Mountains and from El Paso Creek east to Rosamond Lake. Sharing cultural attributes and territory with the Kawaiisi to the east, the Kitanemuk spoke a Takic language. Parts of this desert area may also have been used by the Serrano, occupants of the San Bernardino Mountains.

These people were principally a mountain dwelling group but did travel to the desert in winter. Datura was given to young men for obtaining a totem vision during puberty rites. Social organization and terminology suggests a patrilineal descent system but without a moiety structure. Shamans were healers; they could bring rain and presided over mourning rites. Bear shamans were powerful and were paid to kill. Burial rites included grave goods and when chieftains were buried, grave poles were erected. Elements of Kitanemuk myth are shared with the Chumash, with whom the Kitanemuk had a complex trade relationship.

The population of the Kitenemuk at the time of historic contact is unknown; however, an estimate of 500 to 1,000 has been reported (Blackburn and Bean 1978[42]). After European contact, the Kitanemuk, like many of the tribes in the region, abandoned the traditional lifeways and resettled at Tejon Ranch.

F. SERRANO

The territory of the Serrano, which means mountaineers in Spanish, has been described as occupying an area extending along the southern fringe of the San Bernardino Mountains, east from the vicinity of Cajon Pass to Twentynine Palms, and north into the Mojave Desert. This land area includes a variety of environmental zones and was capable of sustaining aboriginal populations to varying degrees, depending largely on the availability of water. Rainfall and topography vary widely within the historic territory of the Serrano and had a direct effect on the resource base available to the Serrano and other aboriginal populations.

The Serrano practiced a hunting and gathering subsistence strategy that focused largely on the procurement of seasonally available food stuffs. The settlement size, location and degree of mobilization therefore varied according to broader environmental influences. Larger, more sedentary village sites occurred in the middle elevations where water resources were more dependable and the animal and plant resource base was more extensive. Settlements in the lower desert areas were smaller, perhaps numbering less than twenty individuals, and were, by necessity more mobile (Bean and Smith 1978[43]).

2.2.3 Historical Background

The development of the Southern San Joaquin Valley, the high desert, and the Los Angeles Basin is linked together in historic times. The quest for inhabitable land and a means of living, as well technological advances created long distance trade and population shifts across the historic landscape in

42 Blackburn, Thomas C., and Lowell John Bean, Kitanemuk. In *Handbook of North American Indians*, Vol 8. pp. 564–569. Edited by R. F. Heizer. Washington, D.C.: Smithsonian Institution, 1978.

43 Bean, Lowell, and Charles R. Smith, Serrano. In *Handbook of North American Indians*, Vol. 8. pp. 570–574 Edited by Robert F. Heizer, Washington, D.C.: Smithsonian Institution, 1978.

southern California. California history can be divided into seven temporal periods (City of Santa Barbara 2002: 56-57[44]).

During the **Spanish Period (1769–1821),** European inhabitants first occupied parts of California from Spanish-ruled Mexico. This period, marked by the establishment of missions and the Christianization of large parts of the Native American population, had the greatest impact in the Los Angeles Basin portion of the Project region.

The subsequent **Mexican Period (1821-1848)** was marked by the end of the Mission system, and the rise of the large ranchos. Again, the Los Angeles Basin was most affected by these developments, while the Southern San Joaquin Valley and the high desert of Antelope Valley were less directly involved.

The United States acquired California in 1848, and the subsequent history of California can be divided into five periods. The **Hispanic to American Transition Period, 1848-1870**, is marked by the arrival of relatively large numbers of *Americanos* into California, especially during the Gold Rush, the establishment or growth of cities in the region, and the spread of American endeavors, such as mining, oil production, land reclamation, and ranching to all parts of the Project region.

The **American Period (1870–1900)** is the era of the railroads: with the arrival of rail connections in California, cities such as Los Angeles boomed, smaller towns such as Bakersfield grew more populous, and rural development, whether for farming, citrus orchards or ranching, also increased. At the beginning of this period, portions of southern California were still empty land. By the end of the period, only the steep mountain ranges were not occupied by at least a few people, and places such as Los Angeles had taken on the look of a modern city, with multi-story buildings, street cars, and electric lighting.

The subsequent period, the **Early Twentieth Century Period, (1900–1929)** is notable for continued growth, the development of industries in Los Angeles such as aircraft production and motion pictures, and the continued infilling of neighborhoods and rural spaces with a denser population. The following **Mid-Twentieth Century Period (1930-1958)** is marked by similar growth and development. After a hiatus during the Great Depression, California grew spectacularly in population during World War II. The birth of the modern automobile suburb occurred in southern California at this time, and freeways came to be a hallmark of the region. These developments, an influx of population, and the building of new communities, continues to the present in the Project region. Structures from the **Post-1958 Period** are not old enough to be considered historic under state or federal statues and guidelines.

Within this context, the following sections present a history of the Project region's two counties, Kern and Los Angeles, focused on the history of significant communities within these counties crossed by the High-Speed Train alignments.

A. HISTORY OF KERN COUNTY

The recorded history of Kern County began in 1772 with the arrival of the Spanish expeditionary force led by the acting governor of Alta California, Commander Pedro Fages. Visiting the Yokut village of *Tulaminu*, eight miles east of modern Taft, Fages re-named the native settlement "Buena Vista," a name that continues to be associated with a nearby lake. En route to the Pacific coast from the inland desert, Commander Fages crossed the Tehachapi Mountains at Tejon Pass, and later passed through a locality known today as Mettler. During the same march, the Fages party named Grapevine Canyon (Canada de La Uvas), a steep, narrow passage across the mountains.

[44] City of Santa Barbara Master Environmental Assessment: Guidelines for Archaeological Resources and Historic Structures and Sites. Santa Barbara, California, 2002.

In 1776, Spanish missionaries visited the area now known as Bakersfield; the event was documented by Franciscan Friar Francisco Garces. Father Garces described the Kern River, which he named Rio de San Felipe, and visited the Yokut community of Woilu, a village situated on the land modern Bakersfield would later occupy. While visiting Woilu, Father Garces performed the first European baptism in the San Joaquin Valley. The Franciscans returned to their base at the mission San Gabriel following a route through the Tehachapi Mountains that functioned as the primary road until 1876, when the Southern Pacific Railroad created an alternate route. From the 1770s until the 1820s, the area remained relatively unvisited from non-native influences. However, by 1827 the seventeen-man expedition led by Jedediah Smith entered the region and signaled the earliest American presence in the Kern County area (Clark 1998[45]).

Kern County remained the province of several Native American groups and relatively isolated from Euro-American influences until 1853 when gold was discovered in the rugged hills near Greenhorn Mountains, about one mile northwest of the Kern River and thirty miles northeast of Bakersfield. Thousands of gold-seekers poured into the Kern River Valley, including families, many of whom settled in the region after most of the gold mining ended.

Modern Bakersfield evolved, in part, from the reclamation of swamp lands known as Kern Island. Originally settled in 1860 by Christian Bohna, Kern Island underwent development initiated in 1863 by Colonel Thomas Baker and his family. In 1866, the California State Legislature created Kern County, naming Havilah, a small mining town in the Greenhorn Mountains, as the county seat. Bakersfield became an incorporated city in 1874 and that same year displaced Havilah as the county seat.

The settlement and growth of Bakersfield began in earnest with the arrival of the Southern Pacific Railroad. In 1873, the Southern Pacific constructed lines that connected San Francisco, Sacramento and the eastern United States with Los Angeles. By 1873 the Southern Pacific had laid trackage through Kern County and founded the town of Delano. The railroad erected stations at Sumner, several miles east of Bakersfield, and at Summit (later known as Tehachapi), in the Tehachapi Pass, Pacific bypassing Bakersfield because city boosters refused to satisfy the railroad's request for large land concessions. Bakersfield residents quickly organized a small rail system that connected Bakersfield to Sumner and the Southern Pacific's national lines. In 1893, Sumner incorporated as Kern City and in 1910 merged into the city of Bakersfield. Today the area is known as East Bakersfield (Clark 1998)

The Southern Pacific railroad facilitated the creation of several Kern County communities; besides Delano, East Bakersfield, and Tehachapi, the railroad created several towns, including: Caliente (1875) construction headquarters for the SP, Bealville (1875) a depot and telegraph office; Mojave (platted by the railroad in 1876); and Rosamond, platted in 1877 by a railroad employee who named the town for his daughter. Passenger service continued until 1971 when the Amtrak system merged all passenger carriers into one system.

The Tehachapi Loop is an engineering marvel designed by William Hood that allows freight and passenger trains to climb from Bakersfield at an elevation of 500 feet through the east-west barrier mountains known as the Tehachapis, to Tehachapi Summit at 4,065 feet in less than sixteen miles, and connect to points south. The feat was accomplished by building, at the center of the mountain-route, a "loop" (the loop consists of a full circle that winds around a mountain, with a semi-circle on each end) 3,799 feet long with a diameter of about 1,210 feet. The entire Tehachapi Loop consists of a steel rail roadway containing 18 tunnels with a total length of 8,240 feet, designed by American engineers, and laid by Cantonese workmen using dynamite and hand

45 Clark, Alfred P., *History of Kern County.* La Verne, California: On file, University of LaVerne, 1998.

tools. A modern freight train often extends over one mile in length; portions of the train will cross over one another during the climb through the Tehachapi Loop. Today the Tehachapi Loop is jointly operated by the Union Pacific and Burlington Northern Santa Fe railroads (Sammis 1996[46]).

The Tehachapi Loop, built by the Southern Pacific in 1876, made possible the economic relationship held between Bakersfield and Tehachapi before the advent of modern highways. Tehachapi began as a supply settlement for ranching and logging. Mining of lime occurred there and kilns were built to "burn" the lime. The original town was abandoned when the Southern Pacific Railroad laid out a town plan in 1876.

From the 1870s to 1900, Kern County developed as an agricultural community strongly allied to the railroad via its cotton, potatoes, and cattle production. In 1899, Bakersfield's economic base shifted quickly to oil: rich oil fields were discovered near McKittrick, and the Kern River oil field, developed during the late 1890s and early twentieth century, ranked among the nation's 10 most productive regions. Oil production continues north of Bakersfield to this day.

The nation's military helped to diversify the Kern County economy when, in 1933, the U.S. Army Corps set up camp in what later became known as Edwards Air Force Base. The 1930s also saw a great migration of farming families arrive in Kern County from the drought-stricken Plains states known as the "Dust Bowl" (Oklahoma, Texas, Arkansas, and elsewhere); the population of Bakersfield rose faster during this time than any previous period.

The 1940s–1950s brought the development of dams on the Kern River providing Bakersfield with energy and relief from flooding; agricultural diversification; further growth at Edwards Air Force Base; and continued oil production.

In 1964–1965, Highway 99 was converted into a freeway and relocated to Bakersfield. To present times, Bakersfield continued to prosper according to changes in oil and agricultural commodities prices, the relocation of military facilities, and the diversification of its population through the arrival of immigrants. At present, oil is still a prominent natural resource in Kern County, and agriculture continues to be a principal occupation for local residents (Clark 1998[47]).

B. HISTORY OF LOS ANGELES COUNTY

Los Angeles Pueblo was established as an adjunct to Mission San Gabriel and was thought by some to have been started as a ranching area. Much of the early recorded historical use of the land within the Project area was as vineyards, orchards, and gardens. The building of *El Pueblo de la Reina de Los Angeles* (*sobre el Rio de la Porciuncula*)—Town of the Queen of the Angeles (on the River Porciuncula)— was underway and chartered by 1781. It was described as "a dozen or so adobe structures surrounded by wooden palisades" housing 44 people with a complement of four military soldiers (Dillon 1994:37[48]). The first chapel and adobe were built on the Plaza in 1784.

46 Sammis, J. C., *Tehachapi Loop: A World-Famous Railroad Construction Achievement of the 19th Century*, Tehachapi Chamber of Commerce, 1996.

47 Clark, Alfred P., *History of Kern County.* La Verne, California: On file, University of LaVerne, 1998.

48 Dillon, Brian D., *Alameda District Plan, Los Angeles California: Prehistoric and Early Historic Archaeological Research.* Fullerton., California: On file, South Central Coastal Information System, California State University, Fullerton. 1994.

Irrigation systems or Zanjas were constructed mostly by Native Gabrielino to bring water from the Los Angeles River to the village. The agricultural fields, corrals and stock pens that sprang up were laid out adjacent to and along the water source.

Driven out by flooding in about 1800, the town and plaza were relocated up-hill to the area of the present Olvera Street, originally named Wine Street or *Calle de Vino*. The village, however, may have been moved as many as four times before being settled at the present location (Dillon 1994:43[49]).

During the Mexican Period, which brought secularization and the break-up of the vast mission lands formerly controlled by the Franciscans, private cattle ranching began to overshadow the agricultural economy in the region; industries and trade grew up around this shift. San Pedro, established during the mission days as a port for the export of tallow and hides, grew in importance as trade grew between California, Boston, South America, England, and Europe. The post-mission period became known as the era of the ranchos, and the new currency became cattle hides. Americans, British and other Europeans were welcomed at this time by the *Californios* and they began to filter into the region's new commercial center, Los Angeles. The newly arrived capitalists built dozens of trading and retail houses.

The Gold Rush of 1849 brought many people to California, but for Los Angeles it meant a business opportunity in supplying the miners; businesses and storage warehouses were built in the Los Angeles basin and areas north of the county to accommodate the warehousing needs. Cattle ranching expanded during the 1850s; the citrus industry and viticulture also prospered. Names associated with early wineries include Jean Louis Vignes, William Wolfskill, Mathew Keller, Jean Louis Sainsevain. Begun during the 1820s–1830s, the region's wine-producing vineyards numbered over 100 by the 1860s–1870s.

Los Angeles became one of California's original 27 counties, created by the state's first Legislature, February 18, 1850. Prior to obtaining statehood in early 1850, California was known as Alta California, a province of Spanish Mexico formed in 1804 from mission lands administered by the Franciscan Order north of modern Mexico's border. Los Angeles County was named for the territory's largest city, Los Angeles.

In September 1849, California's first Legislature met in San Jose; a primary task during the first meeting was to divide the state into counties. Assigned to the project was a committee led by *Californio* Don Mariano Guadalupe Vallejo, the Mexican general who surrendered the town of Sonoma to American revolutionaries during the Bear Flag Revolt of 1848. Vallejo and his team divided Los Angeles County into lands that encompassed 4,340 square miles and originally contained all of San Bernardino County, a large portion of Kern County, and all of Orange County.

During the 1850s-1860s, Los Angeles underwent several boundary changes: In 1853 California's Legislature extracted the eastern portion of Los Angeles County to form San Bernardino County; in 1866, an act created Kern County from territory previously part of Tulare and Los Angeles counties; and in 1889, a similar act created Orange County from Los Angeles County lands lying southeast of Coyote Creek (Coy 1923[50]).

---

[49] Dillon, Brian D., *Alameda District Plan, Los Angeles California: Prehistoric and Early Historic Archaeological Research.* Fullerton., California: On file, South Central Coastal Information System, California State University, Fullerton. 1994.

[50] Coy, Owen C., *California County Boundaries*, Berkeley: California Historical Survey Commission pp. 116, 140, 196, and 216, 1923.

Railroads in part created a "citrus boom"; compared to the existing horse-drawn freight wagons, railroad freight lines could move fresh oranges relatively cheaply and quickly over greater distances. Similarly, railroads fostered land rushes in 1870 and again in 1880. The region's first railroad was the Los Angeles & San Pedro, a local line built in 1869 and operating between Los Angeles and San Pedro Bay. The Southern Pacific was the first national railroad to operate in southern California. The Southern Pacific arrived in 1873 and connected San Francisco to Los Angeles. Land-hungry Americans arrived in the Los Angeles area by the thousands. Agricultural lands soon underwent subdivision as speculators sold smaller and smaller parcels to the itinerant speculator. Electric lights arrived in downtown Los Angeles in 1882 and telegraph service was installed. In 1889 a cable car system operated in downtown Los Angeles, supplemented by horse-drawn trams on small-gauge rails (Warner 1889[51]).

During the early twentieth century, the development of oil production in southern California again spurred a population influx. The petroleum industry was not novel to Los Angeles since products such as kerosene and lubricants had been manufactured there prior to 1880s. With improved drilling technology, however, such companies as Pioneer Oil Company and Union Oil Company became established. The conversion of stream engines to fuel engines both on trains and in stream ships, along with the advent of the automobile, began cultural changes, which prompted explosive movement of people and goods. Many who moved, moved to California.

Another industry that boomed during the Depression in the 1930s was movie making, and Los Angeles, along with Burbank and Glendale, became the hub for this activity. The industry brought another surge of population growth when people left the agricultural fields in the Midwest to fulfill their film dreams in Los Angeles (Pitt and Pitt 1994[52]).

Despite the seemingly endless stream of people to the area, perhaps the biggest population growth occurred during World War II (1941-1945) when Los Angeles became a center for military manufacturing and supply. It was during and shortly after this period that communities such as Watts, South Gate, Florence, and Huntington Park experienced rapid growth (Dillon 1994[53]; Rolle 1963[54]). Today Los Angeles is the state's most populous county (pop. 9,643,000) with a total land mass of 4,083.21 square miles, and 88 incorporated cities; almost 1 million people reside within Los Angeles' numerous unincorporated areas.

High-Speed Train Alignments north of the City of Los Angeles pass through Glendale, Burbank, and the Newhall-Castaic area, now largely part of the City of Santa Clarita, all of which have their own place in regional history. The City of Glendale traces its roots to the Rancho San Rafael, composed of colonial territories granted by the Spanish crown to a horse soldier named Corporal Jose Maria Verdugo in 1798. Rancho lands included the area now occupied by the cities of Glendale, Burbank, Eagle Rock, and Highland Park.

In 1831, the Rancho San Rafael passed to the Jose Verdugo's children, Julio and Catalina. In 1861, the Verdugo siblings partitioned the rancho into smaller parcels. In 1871, California and the U.S. Supreme court dissolved the Rancho San Rafael. After dissolution, six Americans acquired a 150-acre parcel; in 1887 the partners registered the original town site of Glendale with the Recorder for Los Angeles County. Glendale was incorporated in 1906. Through a series

51 Warner J. J., *History of Los Angeles County*, pp. 87–89 Chicago: The Lewis Publishing Company, 1889.

52 Pitt, Leonard, and Dale Pitt, *Los Angeles A to Z: An Encyclopedia of the City and County*, pp. 277–278. Berkeley: University of California Press, 1994.

53 Dillon Brian D., *Alameda District Plan, Los Angeles California: Prehistoric and Early Historic Archaeological Research.* Fullerton., California: On file, South Central Coastal Information System, California State University, Fullerton. 1994.

54 Rolle, Andrew F., *California: A History*. New York: Thomas C. Cromwell, 1963.

of annexations occurring between 1906–1990, Glendale grew in size from 1,486 acres to more than 30 square miles.

The City of Glendale is divided into 34 neighborhoods, "which are delineated by streets, washes, and mountain ridges." Each of the neighborhoods represents unique areas of history and growth. The oldest neighborhoods are generally clustered in the southwest to southern portions of the city. Entire residential blocks can be identified as sensitive architectural resources, dating in construction from 1900 to the 1940s (City of Glendale 2003[55]).

The city of Burbank was founded on lands formerly situated on the Rancho San Rafael (granted to Jose Maria Verdugo by the Spanish crown in 1798) and the Rancho La Providencia (a land grant created by Mexico after winning independence from Spain in 1821). In 1857, the Verdugo family sold a portion of their rancho to John R. Scott, the first American to own territory that would eventually become Burbank. The Rancho La Providencia was purchased by Alexander Bell and David W. Alexander, men who later formed part of Los Angeles' first City Council.

In 1867, a New Hampshire dentist and real estate speculator named David Burbank acquired a 4,000+ acre portion of the former Rancho San Rafael from Scott and a 4,600 acre portion of the La Provedencia lands. Burbank built a house on land that would eventually become the back lot of Warner Brothers Studio; for the next 20 years he successfully raised sheep. In 1887, Burbank sold his ranch to the Providencia Land, Water, and Development Company, an enterprise specifically formed to build the city of Burbank.

The Providencia Land, Water, and Development Company platted a business district, and subdivided the remaining lands into agricultural and residential parcels. On May 1, 1887, land sales were opened to the public and thus began the town of Burbank. In 1911, voters approved incorporation; that same year, the Pacific Electric Railway extended its lines to Burbank from Glendale and thereby connected Glendale to the Greater Metropolitan Los Angeles area.

During the 1920s, Burbank's population grew four-fold, from 2,913 in 1920 to 16,622 in 1930. The same decade also saw the arrival of the Lockheed Aircraft Company, located on farmland known as "Turkey's Crossing." By 1941, Lockheed employed 94,000 men and women. It was during this time that many of the city's bungalow neighborhoods developed. By 1943, Burbank's population rose to 53,899.

The 1920s also brought the first motion picture studio to Burbank. In 1923, Warner Brothers produced the first all-talking movie, *The Jazz Singer*. By the 1930s, most of the nation's major studios operated out of Burbank, including Columbia Pictures and Walt Disney.

Following the end of World War II (1945), most of Burbank's remaining vacant lands were subdivided into residential lots. By the 1960s-1970s, Burbank had become the center of the West Coast entertainment industry. In 1978, the city purchased Lockheed's airport and reopened the facility as Burbank-Glendale-Pasadena Airport, "the largest privately owned municipal airport in the United States" (City of Burbank: Online 2003[56]).

The Newhall-Castaic area has a rich early history based on the founding of Spanish missions, trade between the desert and the valleys, and oil production. Early European exploration in the area included Gaspar de Portola, who would later become the governor of Las Californias.

---

55 City of Glendale, Planning Commission, Historic Preservation Commission; and City of Glendale, "Glendale History" online at www.ci.glendale.ca.us), 2003.

56 City of Burbank, Planning Commission, "The History of Burbank," available online at www.burbankca.org/planning/htm>).

Portola headed an early explorer group of mission scouts to the Castaic Junction area on a Spanish expedition from San Diego to Monterey in 1769. The Mission San Fernando Rey de España was established in the San Fernando Valley in 1797. The Asistencia, serving as an agricultural outpost to the Mission, was built at Rancho San Francisco in Castaic Junction in 1804.

The secular policies of the Mexican era brought the dispersal of mission lands to such people as army veterans, resulting in huge land grants. Of the 100,000-acre Rancho San Francisco, 48,000 acres were granted to Antonio Del Valle in 1839. Del Valle ran sheep, horses and cattle on the rancho land.

Although gold discoveries were historically ascribed to Jose Francisco de Garcia Lopez at Placerita Creek in 1842, gold may have been discovered earlier by Santiago Feliciano in Hasley Canyon in 1820. Copper was found at the head of Soledad Canyon in 1860. By 1843, the area was being prospected and mined in many locations in San Francisquito Canyon.

A road was built through Newhall Pass, started by Mexican General Andres Pico and finished by U.S. General Edward F. Beale in 1863. These two previous adversaries now became business partners, exploiting oil claims in the valley. Charles Alexander Mentry helped make a success of the oil wells with his drilling expertise. An oil refinery was first located at Lyon's stagecoach station and then relocated in town.

In 1853, the Union Pacific Railroad Survey arrived in Soledad Canyon. By 1870, mule teams hauling freight from the mining camps in Inyo, as well as the stagecoach line and mail delivery, ran through the canyon. Chinese labor completed the railroad, including the 6,940-ft San Fernando Tunnel, in 1879. Passengers and goods were moved by companies with such names as Telegraph Stage, Coast Line Stage, Atlantic and Pacific Stage Line, Santa Clara and Pajaro Valley Railroad Company, Central Pacific Railroad Company, and Southern Pacific Railroad Company.

The oil industry was re-ignited after a 10-year hiatus and by the mid-1870s, the California Star Oil Company had begun drilling in the Newhall Basin. Demetrius G. Scofield eventually presided over Standard Oil Company of California, which had bought out and reorganized the oil interests in the area. The oil industry continued in the valley throughout the century and in September 1990, after 114 years of continuous operation, "Pico Number 4" oil well was capped.

Water control projects of the late 1800s and early 1900s included the Los Angeles Aqueduct, which was constructed through a portion of the Newhall property in 1913, and which brought water to the area from Owens Lake. As part of this system, the St. Francis Dam was constructed in 1926, creating a reservoir. Due to inadequate estimates regarding geologic structures in the area, on March 12, 1928 the St. Francis Dam broke and 470 lives were lost in the deadly flood that destroyed farms and towns throughout the Santa Clara River Valley. The dam was not rebuilt.

With the development of the automobile and road systems the area fell subject to the land boom. Subsequently, the rest of the historical era has seen housing development throughout the region.

C. HISTORY OF THE ANTELOPE VALLEY

The Antelope Valley, situated in both Kern County and Los Angeles County, is part of the high desert of the Mojave. Antelope Valley communities encounterd by the High-Speed Train alignments include Palmdale, Lancaster, and Rosamond.

Mineral and silver discoveries in the northern and eastern Mojave and Owens Valley resulted in transportation corridors to Los Angeles via Soledad Canyon and Cajon Pass. The community of Lancaster began as a train stop on the Southern Pacific Railroad. Yucca fiber production, begun in 1875 by the Atlantic and Pacific Fibre Company, brought Chinese into the area to work as laborers. The small communities slowly grew with the addition of a few hotels and various businesses. Gold mining at Acton and Rosamond, and cattle ranching brought people to the area.

The Butterfield Stage, the Los Angeles to San Francisco telegraph line in 1860, and the railroad completed in 1876 all brought people through the valley. The Federal Homestead Act of 1862 tempted the landless to homestead on available land in the valley. A short burst of grain and alfalfa production was followed by several dry years and by 1897, nearly everyone had left the valley. By 1898, borax was being hauled in from various mines and loaded on trains in Lancaster. Palmdale Lake was constructed in 1896 as a reservoir and in 1924 Little Rock Dam was completed. Agriculture was the mainstay of the community throughout the early 1900s, and in 1913, the completion of the Owens Valley to Los Angeles aqueduct stabilized the water supply for the valley. The socialist colony, Llano Del Rio Commune, was established by Job Harriman in the years before War World I. The colony was a heaven for the discontented from Los Angeles, who were fighting crowding, low wages, and "open-shop" non-union work. The colony only lasted a short time until 1918.

The small settlement of Muroc, now the location of Edwards AFB, was started by the Corum Family in 1910 and, by 1930, the Muroc dry lake was being used for test flying airplanes and fighter planes. The aerospace industry grew up around Edwards AFB and is still present today. With the completion of State Route 14 to Los Angeles the valley became a convenient commute for people working in Los Angeles, resulting in rapid residential and commercial development.

2.3 DATA SOURCES

A literature and records search was conducted at the South San Joaquin Valley Information Center, located at California State University, Bakersfield and the South Central Coastal Information Center, located at California State University, Fullerton, both part of the California Historical Resources Information System. The records search included a review of previously conducted cultural resource studies, and of previously recorded archaeological sites. For review purposes the study area included a 500 foot APE on either side of the alignment centerline. Site records were copied for each resource identified within the Project APE, with site locations drawn on Project maps.

Other records reviewed include the National Register of Historic Places, California Inventory of Historic Resources, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest. Historic maps were reviewed, and copies obtained as appropriate.

In addition, a field reconnaissance was conducted of structures along the Project alignments. This field reconnaissance was limited to contextual-level surveys along proposed corridors and around facilities to identify general areas of development and approximate years of construction. Additionally, the following agencies, organizations, registers and other sources were consulted, primarily via the Internet:

National Park Service
- National Register of Historic Places
- Historic American Engineering Record
- Historic American Building Survey

U.S. Congressional Districts 24 & 25
U.S. Air Force, Edwards Air Force Base

California State Assembly District 36
State of California
- State Historic Preservation Office
- California Register of Historic Places

CERES: California Environmental Resources Evaluation System

California Historical Society

County of Kern
- Planning Department
- Kern Co. Library (Beale Memorial Library: Jack Maguire Local History Room)

Kern County Historical Society

Kern River Valley Historical Society

Upper Mojave Valley Historical Society

City of Tehachapi
- Tehachapi Heritage League and Museum
- Tehachapi Valley Recreation and Parks District

City of Bakersfield
- Bakersfield Historic Preservation Commission
- Bakersfield Register of Historic Places
- Bakersfield Redevelopment Agency

City of Mojave

City of Rosamond

County of Los Angeles

City of Lancaster
- Lancaster Planning Department
- Lancaster Library

City of Palmdale
- Palmdale Planning Department
- Palmdale Main Library

City of Santa Clarita (including Newhall)

City of Castaic

City of Burbank
- Burbank Planning Division
- Burbank Heritage Commission
- Burbank Historic Register

City of Glendale
- Glendale Historic Preservation Commission
- Glendale Register of Historic Places
- Glendale Planning Commission
- Glendale Public Library (Brand Library)

Glendale Historical Society

City of San Fernando
- San Fernando Planning Department
- San Fernando Library
- Friends of the San Fernando Library

City of Los Angeles
- Los Angeles Central Library
- Los Angeles Cultural Heritage Commission
- Cultural Affairs Department
- Department of City Planning, Historic-Cultural Monument Report

Los Angeles City Historical Society

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.

Prehistoric archaeological sites types commonly found along the High-Speed Train alignments in the Bakersfield-to-Los Angeles region include lithic scatters, milling stations and quarries. Less common are habitation sites, which can include midden, rock features and in some cases human burials. One rock art site, a petroglyph is also known to exist within the APE. These site types are described briefly below:

Lithic scatter: A location with lithic debitage and perhaps stone tools. Lithic scatters reflect the production and maintenance of flaked stone artifacts.

Milling station: A location with bedrock mortars or milling slicks, used to process floral, and perhaps faunal, resources.

Quarry: A source of geologic material—such as obsidian, quartzite, chert, basalt—used by Native Americans for manufacture, as well as debitage or other debris from this manufacture.

Habitation: These are locations with evidence of habitation, including hearths, house remains, midden soils, tool and debitage scatters, and milling stations. These sites may also contain mortuary features and rock art.

Rock art: Rock art includes designs pecked into rock surfaces, petroglyphs, and designs painted on rock surface, pictographs.

Mortuary site: These include any place used for disposal of the dead, such as cemeteries, cremations, funerary caves, crevice or talus burials, and annual mourning sites.

Historical 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 historical 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.

2.5 STRUCTURES FROM THE HISTORIC PERIOD

Structures from the historic period consist of houses, outbuildings, stores, offices, factories, barns, corrals, mines, dams, bridges, roads, and other facilities that served, residential, commercial, industrial, agricultural, transportation, and other functions during the historic period (more than 50 years ago).

For purposes of this document, historical periods used in analysis are specified as before 1900, 1900 to 1929, and 1930 to 1958. This division was chosen because historic structures in California occur primarily in the 1900 to 1929 and 1930 to 1958 periods. Structures dating from before 1900 are relatively rare.

Historic structures in the Bakersfield-to-Los Angeles region, as might be expected from the historic background developed above, are primarily 20th century residential, commercial, and industrial structures located within cities. Large tracts of residential houses are most common, with industrial and commercial structures largely confined to existing railroad rights-of-way in the Los Angeles area.

Structures dating to before 1900 are rare. In many areas of the region, such as the Antelope Valley, structures from this time period were few and far between, and were built in perishable vernacular styles. In the largest cities of the region, Los Angeles and Bakersfield, large sections of houses and commercial structures built originally before 1900 have been replaced by subsequent development.

Table 2.5-1 below lists the general years of development of presently standing structures along the High-Speed Rail alignments within cities and towns of the Bakersfield-to-Los Angeles region. Historic districts listed under the Special Considerations column include both NRHP districts and other areas considered to be historically sensitive by federal, state, and/or city agencies and commissions.

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

Table 2.5-1
General Areas of Development and
Approximate Years of Construction

City	Years of Construction	Special Considerations
Bakersfield		
City Center	1920s-1940s	Sensitive
North and South Bakersfield	1930s-1950s	
Tehachapi		
Citywide	1880s & 1950s-1980s	Historic District
Mojave		
Citywide	1940s-1970s	
Rosamond		
Citywide	1940s-1970s & 1980s-1990s	
Lancaster		
Citywide	1940s-1960s & 1980s-1990s	
Palmdale		
Citywide	1940s-1960s & 1980s-1990s	
Newhall		
(now part of Santa Clarita)	1950s-1970s	
Castaic		
Citywide Castaic	1960s-1990s	
Burbank		
Central and West Burbank	1900-1950s	Sensitive
Glendale		
Central Burbank	1900-1950s	Sensitive
San Fernando		
Central San Fernando	1900-1940s	Sensitive
Los Angeles		
El Pueblo de Los Angeles/Old Downtown District Alameda St./LAUS	1800s-1930s	Historic District
Southeast L.A.	1900-1940s	Sensitive
Industrial District /Los Angeles River	1910-1930s	Historic District

Park Service n.d.)[57]. 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 identified one traditional cultural property that could be near the project in the Bakersfield-to-Los Angeles Region. This site is described as a sacred power area and a worship and ritual site (Wood 2003[58]). Locational information obtained from the U.S. Bureau of Land Management (Kaldenberg 2003[59]) indicates that this Traditional Cultural Property is located well north of

[57] National Park Service. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. National Register Bulletin 38. U.S. Department of the Interior, National Park Service, Interagency Resources Division, Washington.

[58] Wood, Rob, Letter from the Native American Heritage Commission to Roger Mason, Chambers Group Inc., dated 17 January 2003.

[59] Kaldenberg, Russ, U.S. Bureau of Land Management. Telephone interview by Mark C. Robinson, Applied EarthWorks, Inc. 3 February 2003. Regarding location of Traditional Cultural Property.

SR 58 and the High-Speed Train Alignment. Therefore this project will not impact this Traditional Cultural Property. Native Americans contacted by letter **[did; did not]** identify traditional cultural properties that could be affected by the project in this region.

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 Area of Potential Effect (APE) or study area was defined for the project. 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 the California Historic Resources Information System (CHRIS). The records searches provided the locations of archaeological sites within the APE. The number of archaeological sites within the APE for each alternative was compared to assess the relative degree of potential impacts or effects for each alternative. In order to assess impacts to structures from the historic period, the percentage, based on miles, of each alternative route that passes through areas that originally developed in specific, pre-defined historical time periods (before 1900, 1900 to 1929, and 1930 to 1958) was determined by using historical maps and knowledge of local history.

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 searches 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. Numbers of archaeological sites were then translated into qualitative rankings of Low, Medium, and High. Rankings considered the number of known sites per mile, accounting for the percentage of each segment that had been subjected to archaeological survey in the past.

In addition, the preparer's knowledge of regional prehistory was used to supplement the records search results. For example, if it is known that numerous sites have been recorded along a particular river drainage, but the records search did not yield recorded sites along the river in the APE for a particular alternative route, the preparer increased the ranking for sites expected for that route. Similarly, rankings were increased in areas where buried archaeological sites could be expected to occur. If this was done, it is discussed under the applicable alternative in Section 4.

Specific structures from the historic period were not identified at this Tier 1 programmatic level of analysis. Instead, the percentage, based on miles, of each alternative route that passed through areas that originally developed in specific, pre-defined historical time periods (before 1900, 1900 to 1929, and 1930 to 1958) was determined from historical maps and knowledge of the history of the region. The percentages were used as indicators of the potential for a particular alternative to impact or affect potentially eligible structures from the historical time periods. Percentages of route lengths that developed in various periods were then translated into qualitative rankings of Low, Medium, and High, with greater weight given for structures or districts known to be listed on or eligible for the National Register of Historic Places, and for segments that were developed in earlier periods.

Traditional cultural properties were assessed on a presence/absence basis for each alternative route. Because no traditional cultural properties were identified, they did not figure into rankings of alternatives.

The Low, Medium, and High rankings for numbers of archaeological sites and percentage of the route that developed in historical periods were combined to produce an overall ranking of Low, Medium, or High potential to impact/affect cultural resources for each alternative HST route. These rankings were again combined to provide a ranking of Low, Medium, or High potential to impact/affect cultural resources for the entire HST Alternative, and for the Modal and No-Project Alternatives within the region.

4.0 CULTURAL IMPACTS

Table 4.0-1 below lists each segment of the Bakersfield-to-Los Angeles Route for the No-Project, Modal, and High-Speed Train alternatives. The number of archaeological sites found within each APE, the percentage of historical development, and the presence or absence of traditional cultural properties, are combined to provide an overall ranking of high, medium, or low potential to impact cultural resources. This final evaluation is reached using both the raw data on Table 4.0-1 and incorporating certain professional judgments by the preparers about the prehistory and history of each segment and its potential to contain cultural resources. A brief discussion of the reasoning behind these judgments is presented, after Table 4.0-1, in a paragraph discussing each segment and its evaluation.

Table 4.0-1
Detailed Analysis/Comparison Table:
Impacts to Cultural Resources, Bakersfield-to-Los Angeles Region

	Number of Archaeological Sites	Percentage of Route Developed During Historic Periods			Traditional Cultural Properties (Yes/No)
		<1900	1900-1929	1930-1958	
BAKERSFIELD-TO-LOS ANGELES REGION					
No-Project Alternative					
Highway					
I-5: SR-99 to SR-14	0	<0.1	1.5	6.5	0
I-5: SR-14 to I-405	0	<0.1	1.0	4.0	0
I-5: I-405 to Burbank	0	<0.1	10.0	75.0	0
I-5: Burbank to LA Union Station	0	1.0	11.0	79.5	0
SR-58/14: SR-99 to Palmdale	0	1.0	11.0	79.5	0
SR-14: Palmdale to I-5	0	<0.1	1.0	2.5	0
Airports					
Burbank Airport	0	1.0	5.0	82.5	0
Modal Alternative					
Highway					
I-5: SR-99 to SR-14 (Widen 2 lanes)	18+	<0.1	1.5	6.5	0
I-5: SR-14 to I-405 (Double-deck 4 lanes)	0	<0.1	1.0	4.0	0
I-5: I-405 to Burbank (Widen 4 lanes)	1	<0.1	10.0	75.0	0
I-5: Burbank to LA Union Station (Widen 4 lanes)	0	1.0	11.0	79.5	0
SR-58/14: SR-99 to Palmdale (No widening)	0	1.0	11.0	79.5	0
SR-14: Palmdale to I-5 (Widen 2 lanes)	30	<0.1	1.0	2.5	0
Airports					
Burbank Airport Expansion	0	1.0	5.0	82.5	0
High-Speed Train Alternative					
Alignments					
Wheeler Ridge Corridor	5	2.5	20.0	25.0	0
Union Avenue Corridor	6+	1.5	25.0	35.0	0
I-5: Tehachapi Crossing	11+	1.0	5.0	6.5	0
SR-58 Corridor	18	0.1	1.5	6.5	0
Antelope Valley Corridor	120+	0.1	2.0	10.5	0
Soledad Canyon Corridor	30+	<0.1	0.2	5.0	0
Metrolink/UPRR: Sylmar Station to Burbank Airport	0	0.5	20.0	35.0	0
Burbank Airport to Downtown Burbank	0	<0.1	8.5	75.5	0

\+ This mark after the number of sites indicates that the sites within the APE include sites listed on the National Register of Historic Places, or are designated California Historical Landmarks, or that the APE contains sites known or reported to contain human remains.

	Number of Archaeological Sites	Percentage of Route Developed During Historic Periods			Traditional Cultural Properties (Yes/No)
		<1900	1900-1929	1930-1958	
Metrolink/UPRR: Downtown Burbank to LAUS (Over I-5 and SR-110 Variant)	0	<0.1	20.0	55.0	0
Metrolink/UPRR: Downtown Burbank to LAUS (Under I-5 and SR-110 Variant)	0	<0.1	19.0	52.5	0
I-5: Downtown Burbank to LAUS (Aerial at Silverlake)	0	<0.1	5.5	10.5	0
I-5: Downtown Burbank to LAUS (Cut and Cover at Silverlake)	0	<0.1	19.0	52.5	0
East Bank North	0	4.5	31.5	22.0	0
East Connection	0	2.5	19.0	18.5	0
South Connection	0	1.5	5.0	21.5	0
Stations					
Palmdale Station	0	<0.1	0.5	25.0	0
Sylmar Station	1	<0.1	10.0	50.5	0
Burbank Airport Station	0	<0.1	20.0	60.0	0
Downtown Burbank Station	0	<0.1	19.0	49.5	0
LAUS Existing Siding	1+	<0.1	1.5	2.0	0
LAUS East Bank Siding	0	4.5	31.5	22.0	0
LAUS South Siding	1	<0.1	1.5	5.5	0
Maintenance Yard	0	<0.1	2.0	5.5	0
+ This mark after the number of sites indicates that the sites within the APE include sites listed on the National Register of Historic Places, or are designated California Historical Landmarks, or that the APE contains sites known or reported to contain human remains.					

4.1 NO-PROJECT ALTERNATIVE

The No-Project Alternative is based on programmed and funded improvements to the intercity transportation system through 2020. For the Los Angeles to Bakersfield study area, the only roadway widening project is the addition of a High Occupancy Vehicle (HOV) lane on SR-14 between Ave P-8 to Ave-L in the County of Los Angeles. It is believed that the existing median is of sufficient size to incorporate the additional HOV lane without widening the roadway beyond the existing right of way. As such, the No-Project Alternative does not entail any roadway widening beyond what currently exists. Because of this, the No-Project Alternative will have no impact to prehistoric or historical archaeological resources, or to historic-era structures.

4.2 MODAL ALTERNATIVE

4.2.1 Highways

A. I-5: SR-99 to SR-14 (WIDEN 2 LANES)

The I-5: SR 99 to SR 14 Corridor, 64.38 miles in length, encompasses 14 recorded archaeological sites; an average of 0.28 sites per mile. Previous surveys have examined about 30 percent of the APE. One recorded site crossed by the APE is Fort Tejon State Historical Monument, which is also listed on the National Register of Historical Places (NRHP). However, the APE crosses the eastern edge of the park, and Modal expansion will not impact or affect any existing structures. Two recorded historic properties within the I-5:Tehachapi Crossing APE are California Historic Landmarks, the Sebastian (Tejon) Indian Reservation #133, and Rose Stage Station, #300. However, it appears that the only portion of CHL #133, the Sebastian (Tejon) Indian Reservation, present in the Project APE are plaques placed on Highway 99 in 1937 to indicate the location of the former reservation east of the project APE.

The presence of Fort Tejon, Tejon Ranch, Rose Stage Station and associated stage road, and the Sebastian (Tejon) Indian Reservation within or near the APE, suggests that there is an unknown but perhaps high potential to find historical archaeological sites from the Hispanic to American Transition Period (1848–1870) in the I-5:Tehachapi Crossing APE. Steep terrain in much of the APE for this corridor suggests that there is a low potential to locate previously unknown prehistoric sites.

B. I-5: SR-14 TO I-405 (DOUBLE-DECK 4 LANES)

No archaeological sites are recorded within the 2.50 mile length of the I-5: SR-14 to I-405 APE. About 20 percent of this APE has been previously surveyed. Given the density of structures along this urban portion of I-5, there is probably a high potential for discovery of previously unrecorded historical structures. Within this built environment, and considering the limitations of surface survey due to urban development, however, there is an unknown, but possibly high potential for undiscovered prehistoric and historical archaeological sites.

C. I-5: I-405 TO BURBANK (WIDEN 4 LANES)

One historic-era site, an overhead electric transmission line, has been recorded within the 11.18 mile length of the I-5: I-405 to Burbank APE, an average of 0.09 sites per mile. About 20 percent of this APE has been previously surveyed. Given that a large amount of historic-era development near the I-5 freeway took place in the period 1930 to 1958, there is a moderate potential for discovery of previously unrecorded historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

D. I-5: BURBANK TO LA UNION STATION (WIDEN 4 LANES)

No archaeological sites are recorded within the area of the Burbank Airport APE. About 5 percent of this APE has been previously surveyed. Historic-era development in this portion of the APE began before 1900, but occurred primarily in the 1900-1929 and 1930 to 1958 eras. This suggests that there is a high potential for discovery of previously unrecorded historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

E. SR-58/14: SR-99 TO PALMDALE (NO WIDENING)

Seventeen archaeological sites are recorded on the 96.20 mile long SR 58/14: SR 99 to Palmdale Corridor, an average of 0.18 sites per mile. Two of these sites are described as isolated artifacts. About 20 percent of the APE has been previously surveyed. However, since no construction is proposed within this segment of the Modal Alternative, there will be no impacts or effects to cultural resources.

F. SR-14: PALMDALE TO I-5 (WIDEN 2 LANES)

The Palmdale to I-5 Corridor, 34.51 miles in length, encompasses 12 previously recorded historical archaeological sites, an average of 0.35 sites per mile. Previous surveys have examined about 15 percent of the Palmdale to I-5 Corridor APE.

Beyond known sites, the Palmdale to I-5 Corridor passes through flat rural terrain, then encompasses both steep hillslopes and the valley floor of the Santa Clara River to reach I-5. This rugged terrain overall, and its rural nature, suggest that there is a moderate to low potential to locate previously unknown archaeological sites within the APE.

4.2.2 Airports

A. BURBANK AIRPORT (19 NEW GATES, 1 NEW RUNWAY, 1 NEW ACCESS)

No archaeological sites are recorded within the area of the Burbank Airport APE. Only about 5 percent of this APE has been previously surveyed. Given the density of structures in this urban area, and the presence of locally significant buildings at the airport, there is probably a high potential for discovery of previously unrecorded historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

4.3 HIGH-SPEED TRAIN ALTERNATIVE

4.3.1 Alignments

A. Wheeler Ridge Corridor

Five recorded historical archaeological sites are found on the 28.38 mile-long Wheeler Ridge Corridor, an average of 0.18 sites per mile. These sites are all crossed by the centerline of the Union Avenue Corridor. Record search results indicate that previous studies have surveyed only approximately 10 percent of the APE of the Wheeler Ridge Corridor.

Beyond known sites, the portion of the Wheeler Ridge Corridor within the City of Bakersfield has a relatively high potential for previously undocumented historic structures. The flat rural landscape crossed by the Wheeler Ridge Corridor south of Bakersfield probably has moderate to low potential for containing previously unknown archaeological sites within the APE.

B. Union Avenue Corridor

Six archaeological sites are recorded on the 29.06 mile long Union Avenue Corridor, an average of 0.21 sites per mile. One of these sites is California Historic Landmark #690, the Alex Godey House in the City of Bakersfield. One prehistoric site recorded within the APE, CA-KER-30, is reported to be a prehistoric mound containing human burials. Record search results indicate that previous studies have surveyed approximately 20 percent of the APE of the Union Avenue Corridor.

Beyond known sites, the portion of the Union Avenue Corridor within the City of Bakersfield has a relatively high potential for previously undocumented historic structures. The flat rural landscape crossed by the Union Avenue Corridor south of Bakersfield probably has moderate potential for previously unknown archaeological sites within the APE.

C I-5: Tehachapi Crossing

The I-5:Tehachapi Crossing Corridor, 55.06 miles in length, encompasses 11 recorded archaeological sites; an average of 0.20 sites per mile. Previous surveys have examined about 30 percent of the APE. Two recorded historic properties within the I-5:Tehachapi Crossing APE are California Historic Landmarks, the Sebastian (Tejon) Indian Reservation #133, and Rose Stage Station, #300. However, it appears that the only portion of CHL #133, the Sebastian (Tejon) Indian Reservation, present in the Project APE are plaques placed on Highway 99 in 1937 to indicate the location of the former reservation east of the project APE. The I-5: Tehachapi

Crossing Corridor passes several miles east of Fort Tejon State Historical Park, and avoids this National Register location.

The presence of the Rose Stage Station and associated stage road, and the Sebastian (Tejon) Indian Reservation within or near the APE, suggests that there is an unknown but perhaps high potential to find historical archaeological sites from the Hispanic to American Transition Period (1848-1870) in the I-5:Tehachapi Crossing APE. Steep terrain in much of the APE for this corridor suggests that there is a low potential to locate previously unknown prehistoric sites. In addition, large portions of this route will be in bored tunnel, also reducing potential impacts to cultural resources.

D. SR-58 Corridor

Eighteen archaeological sites are recorded within the 54.19 mile-long SR 58 Corridor, an average of 0.33 sites per mile. However, two of these sites are described as isolated artifacts. About 20 percent of the APE has been previously surveyed. The SR-58 Corridor passes to the north of the town of Tehachapi, and the Tehachapi Loop; however, High-Speed trains along this corridor will be visible from both.

Beyond known sites, the SR 58 Corridor passes through rolling to steep hills in a rural environment. Portions of the alignment in steeper terrain will be placed in bored tunnels. This suggests there is a low potential for discovery of previously unrecorded historical archaeological sites or historical structures. However, the rolling terrain and presence of surface streams, as well as the ethnographically known use of this area as a retreat from the heat of the Antelope Valley floor suggests that the potential for previously undocumented prehistoric sites is moderate to high.

E. Antelope Valley Corridor

Twenty recorded archaeological sites are found on the 17.59 mile-long Antelope Valley Corridor, an average of 1.14 sites per mile. The majority of these sites are historic-era trash scatters. However, one historic structure located within the 500 foot APE near the railroad right-of-way in downtown Lancaster is the Western Hotel, California Historic Landmark #658. Record search results indicate that previous studies have surveyed approximately 50 percent of the APE of the Antelope Valley Corridor.

Beyond known sites, the portion of the Antelope Valley Corridor within the City of Lancaster has a moderate potential for previously undocumented historic structures. As well as California Historic Landmark #658, within the APE, a National Register District and a National Register listed structure are recorded in Lancaster beyond the Project APE. The flat rural landscape crossed by the Antelope Valley Corridor north and south of Lancaster probably has moderate potential for containing previously unknown archaeological sites within the APE.

F. Soledad Canyon Corridor

Thirty recorded archaeological sites are found on the 34.11 mile-long Soledad Canyon Corridor, an average of 0.88 sites per mile. The majority of these sites are prehistoric. One of these prehistoric sites, crossed on its northern edge by the High Speed Rail centerline, yielded a human burial. Record search results indicate that previous studies have surveyed approximately 20 percent of the APE of the Soledad Canyon Corridor.

The Soledad Canyon Corridor includes both steep hillslopes and the valley floor of Soledad Canyon, where surface water would have been attractive to prehistoric inhabitants. This

suggests that there is a moderate to high potential to locate previously unknown prehistoric sites in the APE. One of the sites recorded within the APE is California Historical Landmark # 590, a location at Lang station, where a golden spike was driven on 5 September 1876 to complete the Southern Pacific Railroad line to the Central Valley. (Nonetheless, a "Golden Spike Memorial" is located about 6.5 miles east up Soledad Canyon, suggesting there is some confusion regarding the location of this event.) This serves to highlight the early use of Soledad Canyon as a transportation corridor, suggesting that there is an unknown but perhaps high potential to find historical archaeological sites from the Hispanic to American Transition Period (1848-1870) in the Soledad Canyon Corridor APE.

G. Metrolink/UPRR: Sylmar Station to Burbank Airport

The Metrolink/UPRR: Sylmar Station to Burbank Airport segment is the first of the High-Speed Rail segments located within the Los Angeles Basin. Beginning with this segment, APE is reduced to 100 feet on either side of the centerline; as well, the segments decrease greatly in length. The Metrolink/UPRR: Sylmar Station to Burbank Airport Corridor is 3.02 miles long, with no recorded sites within the APE. Only about 5 percent of the APE has been previously surveyed.

Given that a large amount of historic-era development occurred in this area in the period 1930 to 1958, there is a moderate potential for discovery of previously unrecorded historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

H. Burbank Airport to Downtown Burbank

The Burbank Airport to Downtown corridor is 0.31 mile long, with no recorded sites within the APE. Only about 5 percent of the APE has been previously surveyed. Given that a large amount of historic-era development in downtown Burbank occurred in the 1930–1958 period, there is a moderate to high potential for discovery of previously unknown historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

I. Metrolink/UPRR: Downtown Burbank to LA Union Station (Over I-5 and SR 110 Variant)

The Metrolink/UPRR: Downtown Burbank to LA Union Station, Over I-5 and SR 110 Variant, is 7.12 miles long, with no recorded sites within the APE. About 10 percent of the APE has been previously surveyed. Historic-era development in the Metrolink/UPRR: Downtown Burbank to LA Union Station, Over I-5 and SR 110 Variant corridor began before 1900, but occurred primarily in the 1900–1929 and 1930–1958 eras. This suggests that there is a high potential for discovery of previously unrecorded historical structures; given the location of a substantial part of this segment the existing UPRR Taylor Yard and the UPRR tracks, many structures and features are likely to be railway related. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

J. Metrolink/UPRR: Downtown Burbank to LA Union Station (Under I-5 and SR 110 Variant)

The Metrolink/UPRR: Downtown Burbank to LA Union Station, Under I-5 and SR 110 Variant, is 7.17 miles long, with no recorded sites within the APE. Only about 10 percent of the APE has been previously surveyed. Historic-era development in the Metrolink/UPRR: Under I-5 and SR 110 Corridor began before 1900, but occurred primarily in the 1900–1929 and 1930–1958 eras. This suggests that there is a high potential for discovery of previously unrecorded historical structures; given the location of the majority of this segment along the existing UPRR Taylor

Yard, and along the UPRR tracks, many structures and features are likely to be railway related. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

K. I-5: Downtown Burbank to LA Union Station (Aerial at Silverlake)

The I-5: Downtown Burbank to LA Union Station, Aerial at Silverlake Variant, is 7.75 miles long, with no recorded sites within the APE. Only about 10 percent of the APE has been previously surveyed. Historic-era development in the Silverlake District began in the 1900–1929 period, and historic structures are known to exist in Elysian Park. This indicates that there is a moderate to high potential for discovery of previously unrecorded historical structures. However, much of this route will be on aerial structure, limiting the potential for impacts to these strictures. In addition, the northern end of this segment runs along the chanellized Los Angeles River and I-5, and here there is a low potential for discovery of previously unrecorded historical structures. Overall, there is probably a moderate to low potential for discovery of previously unrecorded historical structures. Considering the location of this corridor adjacent to the Los Angeles River, there is a moderate potential for discovery of unknown prehistoric archaeological sites.

L. I-5: Downtown Burbank to LA Union Station (Cut and Cover Option at Silverlake)

The Downtown Burbank to LA Union Station, Cut and Cover Option at Silverlake, follows the same alignment as the segment discussed above, in Section K. This option varies only in that a below grade trench is proposed for a portion of this alignment.

Since this option encompasses the same APE as Option K above, and proposes trenching as well as at-grade construction methods, Option L has a higher potential to encompass previously unknown historical structures, and a slightly higher potential to encounter previously unknown prehistoric and historical archaeological sites.

M. East Bank North

The East Bank North segment, 1.05 miles in length, does not encompass any recorded archaeological sites. Only about 10 percent of the APE for this segment has been surveyed. This portion of the APE is located in an area of intense urban industrialization, the majority of which occurred in the 1900–1929 period. This urbanization has precluded location of prehistoric archaeological sites; there is then, an unknown, but possibly high potential for these types of sites in this portion of the APE. There is a high potential for discovery of previously unrecorded historic archaeological sites and historic structures in the East Bank North Corridor APE.

N. East Connection

The East Connection, 1.64 miles in length, does not encompass any recorded archaeological sites. Only about 10 percent of the APE for the East Connection has been surveyed. This portion of the APE is located in an area of intense urban industrialization, the majority of which occurred in the 1900–1929 period. This urbanization has precluded location of prehistoric archaeological sites; there is then, an unknown, but possibly high potential for these types of sites in this portion of the APE. There is a high potential for discovery of previously unrecorded historic archaeological sites and historic structures in the East Connection APE.

O. South Connection

The South Connection, 2.12 miles in length, does not encompass any recorded archaeological sites. Only about 15 percent of the APE for the South Connection has been surveyed. This

portion of the APE is located in an area of intense urban industrialization, the majority of which occurred in the 1929–1958 period. This urbanization has precluded location of prehistoric archaeological sites; there is then, an unknown, but possibly high potential for these types of sites in this portion of the APE. There is a high potential for discovery of previously unrecorded historic archaeological sites and historic structures in the South Connection APE.

4.3.2 High-Speed Train Stations

A. Palmdale Station

The proposed Palmdale Station and the 3.08 mile length of associated approach tracks are located entirely within the City of Palmdale. About 20 percent of the Palmdale Station APE has been surveyed; four previously recorded historical archaeological sites are located along the approach tracks, an average of 1.30 sites per mile. No sites are recorded in the station location.

Beyond known sites, the Palmdale Station APE within the City of Palmdale has a moderate to low potential for previously undocumented historic structures. The flat terrain of the Palmdale Siding Corridor probably has moderate potential for containing previously unknown archaeological sites within the APE.

B. Sylmar Station

The APE for the Sylmar Station and 3.01 mile length of associated approach tracks encompasses three recorded sites, an average of 1.00 sites per mile. About 20 percent of the APE has been previously surveyed. One of these sites occupies the northern quarter of the proposed Sylmar Station location. This site, CA-LAN-2681, is described as encompassing prehistoric artifacts and a historic-era brick feature and trash scatter.

Given that historic development has occurred in this area primarily within the last 50 years, there is a low potential for discovery of previously unrecorded historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

C. Burbank Airport Station

The Burbank Airport Station and the associated 4.89 miles long approach tracks encompass no previously recorded sites within the APE. Only about 5 percent of the APE has been previously surveyed. The proposed Burbank Airport Station itself is located just north of a structure, the Hamilton Aero Hanger, which has been recorded as Los Angeles Point of Historical Interest (PHI) # 060; however, this structure is outside the APE.

Given that a large amount of historic-era development near Burbank Airport occurred in the 1930–1958 period, there is a moderate potential for discovery of previously unrecorded historical structures. Numerous structures considered to be of local significance are known to be present at Burbank Airport itself. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

D. Burbank Downtown Station

The Burbank Downtown station APE forms an inverted Y shape. A 1.78 mile length of the approach tracks follows the Metrolink/UPRR existing tracks from the north, reaching the Burbank

Downtown Station location itself near Olive Street. Approximately 700 feet south of the proposed station, the approach tracks split, connecting to the next section, depending on which route choice is made to the south.

A 2.52 mile long section of approach tracks south of the proposed Burbank Downtown Station location follows the Metrolink/UPRR existing tracks, bending slightly to the east. An alternate 1.78 mile long section of approach tracks south of the proposed Burbank Downtown Station location bends slightly to the west and follows I-5.

Three recorded historical sites are present within this Y-shaped APE, an average of 0.50 sites per mile. All three sites are associated with the UPRR railroad yards north of or adjacent to the Burbank Downtown Depot, the shared portion of this alternative.

About 10 percent of the area has been surveyed. Historic-era development in downtown Burbank began in the 1900-1929 period, but occurred primarily occurred in the1930–1958 period. Two National Register of Historic Places districts are located in downtown Burbank, just north of the High-Speed Rail APE. This indicates that there is a high potential for discovery of previously unrecorded historical structures. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

E. LAUS Existing Siding

The Los Angeles Union Passenger Terminal, commonly called Union Station, is one station alternative for the Project; this alternative includes the 0.75 mile long Existing LAUS Siding. Only about 5 percent of the APE for LAUS has been surveyed, although some historic structures along this route have been intensely documented. Union Station is listed on the National Register of Historic Places.

This portion of Los Angeles is located in the oldest portion of the city, beginning with the establishment of *El Pueblo de Los Angeles* in 1784. The area around Union Station experienced urban development in the late nineteenth century as the population of Los Angeles grew. The railroads arrived in this neighborhood by the 1880s, and subsequent construction was primarily industrial and warehousing. Many of the original buildings in the neighborhood were replaced in the 1900–1928 period, with less intense redevelopment due to freeway and building construction in the following years.

Previous archaeological work in and near Union Station has revealed the presence of prehistoric and historic archaeological remains, including the Native American village of *Yaan'ga,* which yielded Native American burials, as well as Chinatown. There is then, a high potential for these types of archaeological discoveries at Union Station. Conversely, since Union Station and environs has been examined architecturally, there is a low potential for discovery of previously unrecorded historic structures at Union Station.

F. LAUS East Siding

Union Station East, and the associated East Bank Siding, 0.67 miles in length, are situated on the east bank of the Los Angeles River. Only about 5 percent of the APE for the LAUS East Siding has been surveyed; no recorded archaeological sites are present. This station option is situated in a portion of Los Angeles that experienced urban development in the late nineteenth century as population grew after the arrival of the Southern Pacific railroad. Many of the original buildings in the neighborhood were replaced in the 1900–1928 period, with less intense redevelopment in

the following years. Present development conceals any possible remains of prehistoric and historical archaeological sites.

Because of this, there is a high potential for discovery of previously unknown historical structures; given the location of the majority of this segment on the east side of the existing UPRR tracks, many are likely to be railway related. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for prehistoric archaeological sites.

G. LAUS South Siding

Union Station South and the associated 1.37 mile length of the LAUS South Siding is situated just south of and parallel to US 101. The LAUS: South Siding passes through the yard and arrival tracks at the existing Los Angeles Union Passenger Terminal, commonly called Union Station. The only cultural site recorded on this segment, Union Station is listed on the National Register of Historic Places. Only about 10 percent of the APE for the LAUS: South Siding has been surveyed.

Union Station South is located in the oldest portion of Los Angeles, beginning with the establishment of *El Pueblo de Los Angeles* in 1784. The area around Union Station experienced urban development in the late nineteenth century as the population of Los Angeles grew. The railroads arrived in this neighborhood by the 1880s, and subsequent construction was primarily industrial and warehousing. Many of the original buildings in the neighborhood were replaced in the 1900–1928 period, with less intense redevelopment due to freeway and building construction in the following years.

Previous archaeological work has revealed the presence of prehistoric and historic archaeological sites adjacent to Union Station South, including Native American burials and Chinatown. However, present development conceals any possible remains of prehistoric and historical archaeological sites. There is then, a high potential for these types of sites in the Union Station South location. There is also a high potential for discovery of previously unrecorded historic structures in this area

H. Maintenance Yard

The downtown Los Angeles maintenance yards for the HST project occupies a 17.68 acre area on the east side of the Los Angeles River. About ten percent of this area has been surveyed for cultural resources; no recorded archaeological sites are present. The maintenance yard is situated in a portion of Los Angeles that experienced urban development in the late nineteenth century as population grew after the arrival of the Southern Pacific railroad. Many of the original buildings in the neighborhood were replaced in the 1900–1928 period, with less intense redevelopment in the following years. Present development conceals any possible remains of prehistoric and historical archaeological sites.

Because of this, there is a high potential for discovery of previously unknown historical structures; given the location of the majority of this area near existing railroad yards, many are likely to be railway related. Within this built environment, considering the limitations of surface survey due to urban development, there is an unknown but possibly high potential for previously unrecorded archaeological sites.

5.0 REFERENCES

Bean, Lowell, and Charles R. Smith, Serrano. In *California*, edited by Robert F. Heizer, pp. 570–574. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Washington, D.C.: Smithsonian Institution, 1978.

Bedwell, S.F., *Prehistory and Environment of the Pluvial Fork Rock Lake Area of South Central Oregon*. Ph.D. dissertation, Department of Anthropology, Eugene, Oregon: University of Oregon, 1970.

Berger, R., et al., New Radiocarbon Dates Based on Bone Collagen of California Paleoindians. Berkeley: *Contributions of the University of California Research Facility* 12:43–49, 1971.

Blackburn, Thomas, Ethnohistoric Descriptions of Gabrielino Material Culture. Los Angeles: *UCLA Archaeological Survey Annual Reports* 5:1–50, 1963.

Blackburn, Thomas C., and Lowell John Bean, Kitanemuk. In *Handbood of North American Indians*, Vol 8. pp. 564–569. Edited by R. F. Heizer. Washington, D.C.: Smithsonian Institution, 1978.

Byrd, Brian F., *Camping in the Dunes:* Archaeological and Geomorphological Investigations of Late Holocene Settlements West of Rogers Dry Lake. , San Diego, California: Prepared by AMS Affiliates, 1970.

City of Glendale, Planning Commission, Historic Preservation Commission; and City of Glendale, "Glendale History" online at www.ci.glendale.ca.us), 2003.

City of Burbank, Planning Commission, "The History of Burbank," available online at <www.burbankca.org/planning/htm>).

Clark, Alfred P., *History of Kern County.* La Verne, California: On file, University of LaVerne, 1998.

Coy, Owen C., *California County Boundaries*, Berkeley: California Historical Survey Commission pp. 116, 140, 196, and 216, 1923.

Dillon, Brian D., *Alameda District Plan, Los Angeles California: Prehistoric and Early Historic Archaeological Research.* Fullerton., California: On file, South Central Coastal Information System, California State University, Fullerton. 1994.

California PaleoIndians: Lack of Evidence or Evidence of a Lack? In *Essays in California Archaeology, A Memorial to Franklin Fenenga*. Edited by Willaim J. Wallace and Francis A. Riddell, pp. 110–128, 2002.

Goldberg, S. K., et al., *The Metropolitan Water District of Southern California Headquarters Facility Project. The People of Yaanga?: Archaeological Investigations at CA-LAN-1575/H*. Altadena, California: Submitted to Union Stations Partners on behalf of The Metropolitan Water District of Southern California, Los Angeles, 1999.

Goldberg, S. K., et al., *Metropolitan Water District of Southern California, Eastside Reservoir Project: Final Report of Archaeological Investigations, Vol. IV: Synthesis of Findings*. Hemet, California: Applied EarthWorks, Inc., November 2001. Submitted to The Metropolitan Water District of Southern California, Los Angeles.

Johnson, J. J., A Preliminary Survey of the Archaeological Resources of Lower Mill Creek. Davis, California: Ms. on file, Department of Anthropology, University of California, 1966.

Kaldenberg, Russ, U.S. Bureau of Land Management. Telephone interview by Mark C. Robinson, Applied EarthWorks, Inc. 3 February 2003. Regarding location of Traditional Cultural Property.

King, Chester, and Thomas C. Blackburn, Tataviam. In *Handbood of North American Indians*, Vol 8. pp. 535–537. Edited by R. F. Heizer. Washington, D.C.: Smithsonian Institution, 1978.

Kroeber, Alfred L., *Handbook of the Indians of California*. Washington, D.C.: Bureau of American Ethnology Bulletin 78, 1925

Latta, Frank F., *Handbook of Yokuts Indians*. Bakersfield, California: On file, Kern County Museum, 1949

1977 *Handbook of the Indians.* Bear State Books, Santa Cruz, California.

McGuire, Kelly R., and M. C. Hall, The Archaeology of Tiefort Basin, Fort Irwin, San Bernardino County, California. Unpublished report on file at the Archaeological Information Center. Redlands, California: San Bernardino County Museum, 1988.

Merriam, C. H., Distribution of Indian Tribes in the Southern Sierra and Adjacent Parts of the San Joaquin Valley, California. *Science* 19:912–917, 1914.

Moratto, Michael J., *California Archaeology*. New York: Academic Press, Inc., 1984.

Moratto, M. J., R, Boyd, et al., *Preliminary Assessment of Cultural Resources along the Proposed Route of the PGT-PG&E Pipeline Expansion Project, Idaho, Washington, Oregon, and California*. Submitted to Land and Building Services Department, Pacific Gas and Electric Co., San Francisco. Sonora, California: Infotec Research, Inc., 1988.

Moriarty, James R. III, The San Dieguito Complex: Suggested Environmental and Cultural Relationships. *Anthropological Journal of Canada* 7(3):2–18. 1969.

National Park Service. *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. National Register Bulletin 38. U.S. Department of the Interior, National Park Service, Interagency Resources Division, Washington.

Parsons-Brinckerhoff. *Screening Report.* Prepared for California High-Speed Rail Authority, April 2002.

Parsons-Brinckerhoff. *Plans and Profiles.* Prepared for California High-Speed Rail Authority, November 2002.

Parsons-Brinckerhoff. *Final Draft Environmental Analysis Methodologies*. Prepared for California High-Speed Rail Authority, November 7, 2002.

Pitt, Leonard, and Dale Pitt, *Los Angeles A to Z: An Encyclopedia of the City and County*, pp. 277–278. Berkeley: University of California Press, 1994.

Riddell, Fritz A., The Archaeology of Site KER-74. *University of California Archaeological Survey Reports* 10:1–28, 1951.

Rogers, Malcolm J. *Ancient Hunters of the Far West.* Union-Tribune Publishing, San Diego, California. 1966

Rolle, Andrew F., *California: A History*. New York: Thomas C. Cromwell, 1963.

Sammis, J. C., *Tehachapi Loop: A World-Famous Railroad Construction Achievement of the 19th Century*, Tehachapi Chamber of Commerce, 1996.

Treganza, A. E., and A. Bierman, The Topanga Culture: Final Report on Excavations, 1948. *University of California Anthropological Records* 20(2). 1958.

Van Horn, D. M., *Excavations at the Del Rey Site (LAN-63) & Bluff Site (LAN-64), City of Los Angeles*. Sun City: Archaeological Associates, 1987.

Walker, E. F., *Excavation of a Yokuts Indian Cemetery*. Bakersfield, California: Kern County Historical Society, 1947.

Wallace, William J., Southern Valley Yokuts. In *California*, edited by Robert F. Heizer, pp. 448–461. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Washington, D.C.: Smithsonian Institution, 1978.

Warren, Claude N., The Archaeology and Archaeological Resources of the Amargosa – Mojave Basin Planning Units. In *Cultural Resource Overview of the Amargosa – Mojave Basin Planning Units*, edited by Eric W. Ritter, pp. 1–134. Riverside, California: Bureau of Land Management, 1980.

The Desert Region. In *California Archaeology*, by M. J. Moratto. Orland and London: Academic Press, 1984.

6.0 PREPARERS

Susan K. Goldberg, RPA Lead Analyst, Cultural Resources	M.A., Anthropology: University of Missouri, Columbia 25 years of experience in cultural resources management and environmental planning. • Technical Report Editor • Project Oversight
Mark C. Robinson, RPA Analyst, Senior Archaeologist	M.S., Anthropology, University of Oregon. 17 years of experience in cultural resources management and environmental planning. • Project Manager • Archaeological Research and Document Preparation
Nina M. Harris, RPA Analyst, Staff Archaeologist	M.A., Archaeology, University of Durham, England. • Archaeological Research and Document Preparation
David M. Livingstone Analyst, Architectural Historian	B.A., History, University of California, Davis. 14 years of experience in U.S. history and architectural history. • Architectural and Historical Research, Document Preparation