

Chapter 3 Affected Environment; Environmental Consequences; and Avoidance, Minimization, and Mitigation Measures

3.1 ENVIRONMENTAL CHECKLIST/INITIAL STUDY

Caltrans prepared and circulated a detailed Initial Study for the proposed project in January and February 2004. The Initial Study included a detailed project description, project purpose and need, and an environmental checklist and discussion.

In addition to distributing copies of the Initial Study to the State Clearinghouse, interested agencies, interested groups and individuals, and libraries in Sacramento and West Sacramento, Caltrans also posted the environmental document on the Internet at:

<http://www.dot.ca.gov/dist3/departments/envinternet/sacdocs/towerbr.htm>

Comments received from agencies and interested public can be found in Appendix A.

It should be noted that the proposed project design as identified in the Initial Study included a 300-mm (1-ft) gap between the existing structure and the new approach span sidewalks, with a design variation identified that would add the new sidewalk directly adjacent to the existing structure. Since publication of the Initial Study, Caltrans and the PDT have selected the design variation as the proposed project.

The Initial Study identified the following issues to be addressed in detail in the EA/Draft EIR:

- Cultural resources
- Alternatives to the proposed project
- Cumulative impacts to cultural resources
- Section 4(f) resources

None of the comments received on the Initial Study provided any substantial evidence as to why any other resource areas should be discussed in the EA/Draft EIR.

As an aid to the reader, avoidance, minimization, and mitigation measures identified in the Initial Study are included as Appendix B to this document.

3.2 CULTURAL RESOURCES SETTING INFORMATION

The information in this section is summarized from the following reports that are on file at Caltrans District 3 offices:

- Archaeological Survey Report (contains information that is considered sensitive; therefore, copies are not available for public review),
- Historical Resources Evaluation Report,
- Historic Property Survey Report, and
- Finding of Adverse Effect.

3.2.1 Archaeological Resources

3.2.1.1 Area of Potential Effects

The APE for archaeological resources was determined in consultation with Caltrans and the FHWA, and was determined based on the maximum area that may be affected by the proposed project. The archaeological APE includes approximately 0.8 hectare (2 acres), covering the span of Tower Bridge and an approximately 129.5-m (425-ft) stretch of roadway approach adjoining each end of the bridge (Capitol Mall on the east side of the bridge and West Capitol Avenue on the west side of the bridge). The plaza area and section of open field in the northwest portion of the APE, north of West Capitol Avenue and west of the Sacramento River, is included as a possible construction staging area (Map 3). Ground-disturbing construction activity would be restricted to expanding sidewalks, removing planter pots, and relocating a utility box on portions of the approach adjacent to the bridge site on the levees. Depth of construction for these actions would not exceed 0.6 m (2 ft) in the case of the sidewalk expansion, planter pot removal, and utility box location; and would not exceed 2.1 m (7 ft) if the concrete wall footings need reinforcement (Cermak pers. comm.).

3.2.1.2 Sources Consulted

The effort to identify archaeological sites in the project study area, defined as the APE plus a 0.8-km (0.5-mi) border, consisted of a record search, general and property-specific historical research, and a pedestrian survey of the APE. The size of the study area was coordinated with Caltrans staff in order to produce enough information to provide a good understanding of the types of resources likely to be encountered in the project area. The results of the general and property-specific research are described in the HRER prepared for the project (P.S. Preservation Services 2004).

3.2.1.3 Records Search Summary

The identification efforts consisted of an initial search for records of cultural resources in the Sacramento County portion of the study area (including an 0.8-km [0.5-mi] border around the APE). Records were searched at the North Central Information Center of the California Historical Resources Information System (CHRIS), located at California State University, Sacramento, in December 2000. In addition, researchers at the CHRIS Northwest Information Center at California State University, Sonoma, conducted a record search for the Yolo County portion of the study area, also including an 0.8-km (0.5-mi) border around the APE. In May 2003, an archaeologist reviewed updated historic property inventories and the Information Center's base maps of previous cultural resource studies and recorded cultural resources. Sources consulted during the record search included maps of previous cultural resource studies and known cultural resource locations, as well as the sources listed in Table 3-1.

Table 3-1. Sources Consulted at the North Central and Northwest Information Centers

| Source | Citation/Year |
|--|--|
| California Historical Landmarks | California Department of Parks and Recreation (1996) |
| California Points of Historical Interest | 1992 and updates |
| National Register of Historic Places | 1996 and updates |
| Gold Districts of California | Clark (1970) |
| California Place Names | Gudde (1969) |
| Caltrans Historic Bridge Inventory | 1987 |
| Caltrans Local Bridge Inventory | 2000, 2001 |
| Directory of Properties Listed in the Historic Resources Inventory | March 1999 and updates |
| Historic Spots in California | Kyle (1990) |
| U.S. Geological Survey Davisville quadrangle | 1907 |

The record search indicated that 12 cultural resource studies have been conducted in and near the study area (Table 3-2). Of these, seven were conducted during the last 10 years. Four of the studies included archaeological surveys that collectively covered approximately half of the present study area (James 1986; Glover and Bouey 1990; Jones & Stokes Associates 1996; PAR Environmental Services 1998). Two studies involved evaluation of properties in the APE (Maniery 1991; Osanna and Peak 1994). Five studies concerned resources next to the APE (Peak & Associates, Inc. 1986a; Woodward and Evans 1992; Allan 2002a, 2002b, 2002c, 2002d). One study is a treatment plan for a historic resource adjacent to the APE (Ziesing 1999). Consequently, adequate and recent archaeological surveys have been conducted for the majority of the study area, and the entire APE was surveyed for this project.

Table 3-2. Cultural Resources Study Areas and Sites in or Adjacent to the APE

| Reference | Type of Study | Site |
|-----------------------------------|----------------------------------|--|
| James (1986) | Underwater survey | None near APE |
| Peak & Associates, Inc. (1986a) | Letter report | CA-Yol-27 within project vicinity |
| Glover and Bouey (1990) | Linear survey | None near APE |
| Maniery (1991) | Evaluation | Walnut Grove Branch Line Railroad in APE |
| Woodward and Evans (1992) | Summary of burial collections | CA-Yol-27 within project vicinity |
| Osanna and Peak (1994) | Evaluation | Sacramento seawall in APE |
| Jones & Stokes Associates (1996) | Survey and inventory | Tower Bridge in APE |
| PAR Environmental Services (1998) | Survey and inventory | None near APE |
| Ziesing (1999) | Treatment plan | CA-Sac-575H adjacent to APE |
| Allan (2002a) | Archival and literature research | P-57-000423 adjacent to APE |
| Allan (2002b) | Documentation and assessment | P-57-000423 adjacent to APE |
| Allan (2002c) | Evaluation | P-57-000423 adjacent to APE |

Although most of the historical properties identified through the record search are located outside the APE, three properties located in or adjacent to the APE are listed in or determined eligible for listing in the NRHP: Tower Bridge, the Old Sacramento NHL, and the Walnut Grove Branch Line Railroad. CA-Sac-575H (the Embassy Suites site) was evaluated as potentially eligible for listing in the NRHP and was excavated by California State University, Sonoma, in 1999 (Meyer 2002). The levees along the Sacramento River represent additional historical properties in the APE that are either not eligible or have not been evaluated for listing in the NRHP. These cultural resources are addressed in the HRER prepared for the proposed project.

3.2.1.4 Consultation with Interested Parties

In December 2000 and again in March 2003, the Native American Heritage Commission (NAHC) in Sacramento was asked to search its sacred lands file. A list of Native American contacts knowledgeable of Native American cultural resources and concerns pertinent to the proposed project was also requested. The NAHC responded by facsimile transmission on December 22, 2000, and on March 21, 2003. The sacred lands file search did not indicate the presence of Native American cultural resources in the project area. In both 2000 and 2003, NAHC provided a list of Native American contacts for the project area. The contacts were sent project notification letters (dated August 7, 2001, and May 7, 2003). Follow-up telephone calls were made to all the contacts on November 1, 2001, and on June 4, 2003.

Consultation with Native Americans resulted in both general and project-specific information regarding cultural resources and Native American concerns pertinent to the proposed project.

One individual said that although he had no personal knowledge of the area, he knew that burials had been found west of Tower Bridge area. Two additional individuals both said that they had no first-hand knowledge of the cultural resources in or adjacent to the APE but asked to be notified if prehistoric cultural resources were discovered during project construction.

The general consensus among the individuals contacted was that the general vicinity of the APE is sensitive for the presence of buried cultural resources. In addition to the request for a Native American monitor on site during construction, three individuals requested that they be notified if any cultural resources were discovered during project activities.

Cultural resources staff initiated consultation with historical organizations in Sacramento and Yolo Counties, including the Sacramento County Historical Society, the Yolo County Historical Society, Sacramento Heritage, and the West Sacramento Historical Society. Letters were sent to the above organizations in May and June 2003, and follow-up letters were sent on June 4, 2003. To date, no response has been received from these organizations.

3.2.1.5 Field Methods

An archaeologist conducted an archaeological survey of the APE on May 23, 2003 (Map 3). The archaeologist surveyed most of the study area intensively by walking systematic parallel transects spaced no farther than 3 m (10 ft) apart. In addition, the archaeologist walked along the cutbanks of the Sacramento River immediately adjacent to the bridge, to inspect the exposed soil strata along the riverbank for eroding cultural deposits. During the survey, the archaeologist looked for indications of human activity, such as stained midden soils, stone artifacts, historical artifacts, unnatural depressions or isolated topographic elevations, and bone. River cobbles encountered were closely examined for evidence of deliberate battering or grinding by humans. As indicated below, much of the APE ground surface was partially or completely obscured by vegetation or by the built environment. To improve efforts to identify archaeological sites that might have been hidden by vegetation, the archaeologist cleared vegetation at individually determined intervals with a trowel (single square-m scrapes). Field conditions were variable over the study area, although the larger proportion consisted of developed land. For ease of description, the study area may be divided into two areas.

The first area encompasses Tower Bridge spanning the Sacramento River, including the roadway approaches on both sides of the bridge. Most of this section is a built environment, although vacant fields and roadside vegetation are located next to this segment on the Yolo County side. Levees and fill lie beneath the built environment at both approaches to the bridge. Ground visibility in the vacant fields and roadside vegetation on the west side of this segment ranged from 50% to 0%. Visibility in the built environment is zero.

The second portion of the study area is a vacant field located northeast of Tower Bridge that is bounded by West Capitol Avenue to the south, the Ziggurat office building to the north, the pedestrian plaza along the river to the east, and 3rd Street to the west. Heavy ruderal vegetation in the form of annual grasses and weeds greatly inhibited ground visibility (from 0% to 25%). Soils in this area are a mixture of imported fill and natural soils.

3.2.1.6 Archaeological Sensitivity

Prehistoric Archaeology

This section addresses the potential for the proposed project to encounter buried archaeological sites during construction. The purpose of the discussion is to identify portions of the study area that are likely to contain buried archaeological sites.

The floodplains surrounding the confluence of the Sacramento and American Rivers are generally rich in archaeological sites, especially close to the rivers. As indicated in the “Environmental Context” and “Ethnographic Context” sections of the ASR, much of the floodplain was inundated in winter (General Land Office 1855, 1859; U.S. Geological Survey 1908, 1913) on a yearly basis. General Land Office and U.S. Geological Survey maps indicate that winter floods seasonally inundated about 50% of the study area. Examination of these historical maps suggests that, after floodwaters receded, lands that lay between sea level and 1.5–3 m (5–10 ft) above mean sea level (amsl) retained water. Shallow lakes that once stood in the study area were created by a meandering Sacramento River. Changes in river course typically isolate portions of old meanders, resulting in the formation of oxbow lakes. It is also probable that alluvial deposition from the Sacramento River has buried older lake remnants.

Sutter Lake (a.k.a. Sutter Slough or China Lake) once was situated near the confluence of the Sacramento and American Rivers, at the site of the present-day Southern Pacific Railyards. This oxbow lake was connected to the American and Sacramento Rivers by channels that transported floodwaters, creating pools during times of high water and a marsh at other times of the year (Ziesing 1999). The marsh supported stands of rushes, tules, and associated palustrine plants and animals. The APE lies several blocks south of where Sutter Lake was located. The lake was filled in by the Central Pacific Railroad between 1869 and 1910 (U.S. Army Corps of Engineers 2002).

Marsh ecosystems are among the most productive in the world. Of particular interest to present and past human populations are the higher plants of palustrine lakes; these produce seed crops that are an important food source for birds. The water and vegetation present at nontidal wetlands attract large numbers of migratory swans, geese, ducks, and shorebirds (Schoenherr 1992). Clearly, wetland environments provide abundant plant and animal resources for human use.

The ethnographically documented Nisenan village of Momol was located in the same vicinity, south of the American River at its confluence with the Sacramento River. Regional archaeological excavations strongly suggest that prehistoric sites on the riverbanks, seasonally flooded areas, and lake margins represent long-term occupation sites and fishing camps. Indeed, aquatic faunal remains recovered from nearby CA-Sac-43 predominately represent lentic fish species—freshwater fish species that favor slow-moving bodies of water, such as shallow lakes (Bouey 1995). Prehistoric inhabitants of the area south of Sacramento apparently had a palustrine subsistence orientation from at least 1500 B.C. through the historic period.

Based on this discussion, it is possible to discern portions of the study area that are sensitive for the presence of surface and subsurface archaeological sites. Known archaeological sites in the

study area vicinity are all located between 1.5 and 6 m (5 and 20 ft) amsl, either on knolls or on the margins of seasonal lakes. Features with these characteristics are considered archaeologically sensitive areas. Former palustrine lake margins can be roughly identified by existing and historic topographic contours that enclose land that lay 1.5 m (5 ft) or less amsl. Most recorded archaeological sites are located within 180 m (600 ft) of former lake margins, although sites located on knolls may be located farther from the lakes.

In general, the lands on the margins of the Sacramento River are sensitive for prehistoric archaeological resources. Prehistoric archaeological sites often are located along riverbanks in the Central Valley, although they usually are found on natural rises that protected the inhabitants from frequent floods. Although no sites are known to exist in the APE, the possibility remains that prehistoric deposits may be buried in the area, in natural buried contexts (such as under alluvial deposits) as well as cultural buried contexts (such as below constructed levees or mixed in as a portion of levee fill material).

The potential for the proposed project to encounter buried prehistoric archaeological sites during construction is low for several reasons. Ground-disturbing activity would be limited to shallow excavation of fill, not exceeding 0.6 m (2 ft), on each river levee below and immediately adjacent to the bridge approaches. In the case of the concrete walls on each riverbank adjacent to the bridge, more extensive excavation behind the walls, if needed, would be limited to a depth between 1.5 and 2.1 m (5 and 7 ft), and would be penetrating bridge fill and rip rap material lying on top of levee fill (California Department of Public Works 1934). Historically, large amounts of fill material were imported to construct the levees, and low-lying areas along the Sacramento River—particularly the commercial district—were raised above the water table by hauling in vast amounts of fill. While the levee north of downtown Sacramento reached heights of 4.9 m (16 ft), the levee along Sacramento's downtown commercial area measured 2.4 to 3.0 m (8 to 10 ft) high (Zeising 1999). In sum, virtually all of the land in and adjacent to the APE has been artificially raised by levee and fill material by a minimum of 2.4 m (8 ft). Therefore, the prospect of encountering a buried prehistoric cultural deposit is minimal.

Historical Archaeology

The area around the APE played a pivotal role as a transportation and supply center, beginning with the Gold Rush. River transportation brought goods from San Francisco, and businesses sprang up along the Sacramento riverfront, where would-be fortune hunters bought their supplies before setting off for the gold mines. Sacramento's population grew into the thousands.

Yearly flooding along the Sacramento and American Rivers, along with the constant problem of drainage on all lands next to the Sacramento River, caused a need for flood control measures. This need was partially met by the extensive transformation of the landscape along the river. Large levees, originally built in the nineteenth century and expanded and maintained to this day, keep river waters at bay. These levees serve as a critical barrier in the face of yearly storms. The levees in the APE raise the elevation of the historic-era ground surface to 7.6 m (25 ft) amsl on the Sacramento side of the river, and to 10.7 m (35 ft) amsl on the Yolo County side (U.S. Geological Survey 1980). In addition, large portions of marshlands and lowlands adjacent to the levees were filled in during the late nineteenth century by trucking vast amounts of fill material

in, effectively lifting the land above the water table. Virtually all of the land in and around the APE has been artificially raised as a result of levee and landfill construction.

Levees were also used for elevating railroads. Although some railroads were elevated on levees only in certain sections, the Walnut Grove Branch Line Railroad (in the APE) was unique in that almost its entire length was elevated (Maniery 1991). Railroads also transformed the landscape: numerous rail lines, spurs, and railyards constructed in the area encouraged industrial development, particularly canneries, packing houses, dried fruit operations, and warehouses. Downtown Sacramento continued to grow, as did the area along the west side of the river.

Major portions of the riverbanks and adjacent low-lying lands on both sides of the river have been covered and obscured by the building of levees and importation of fill material. Although historical archaeological sites may exist near the project APE, at the very least they would be located beneath or at the lower depths of the levees and fill in the project area. Therefore, the prospect of encountering a buried historic archaeological site during project construction is low.

Underwater Cultural Resources

There is little documentation of cultural resources in the Sacramento River. Possible cultural resources located in the river include shipwrecks and the remains of docks, landings, and wharves. Although there were many historical riverboat landings, most were gangplanks that swung or slid out to meet the vessel. Little is left of them except, in some cases, a location on a map. Shipwrecks were usually the result of one of two kinds of incidents: either the vessel exploded or burned and sank, or caught a snag that tore a hole in the vessel and sank. In the first case, there was often little left of the vessel or cargo. In the second instance, the vessel and cargo were often salvaged. Some shipwrecks have been raised; others may have been buried or moved by the effects of hydraulic mining. The expense required to locate these submerged resources, through underwater survey and remote sensing techniques, makes locating the shipwrecks prohibitive. Finally, although a few documented shipwrecks are located in the general project vicinity, none has been documented in or immediately next to the APE. While no work is scheduled to be performed in the Sacramento River channel for this project, any changes to the project that include channel work would create the need to consider the possibility that underwater cultural resources may exist in the water channel in the vicinity of the bridge.

3.2.1.7 Archaeological Findings and Conclusions

No new prehistoric or historic archaeological sites were identified in the APE. Most or all of the APE and vicinity has been subject to significant disturbances, and it is unlikely that intact prehistoric or historic archaeological materials are located in the APE. An attempt was made, however, to relocate CA-Yol-27. An archaeologist visited the recorded possible southern location of the site and found that the area is a paved and fenced lot; several pieces of heavy machinery were parked on the lot. Inspection of the ground surface was not possible, and no cultural materials were observed in the vicinity. P-57-423, the four wharf pilings, were relocated and still stand along the west bank of the Sacramento River, south of Tower Bridge.

No additional archaeological sites were located during the survey. While the project vicinity in general may be sensitive for prehistoric and historic archaeological resources, ground-disturbing construction activity would be confined to limited excavation of imported fill materials. Therefore, the archaeological sensitivity of the project APE is low. In the unlikely event that buried archaeological resources are discovered during construction, it is Caltrans policy to avoid cultural resources whenever possible. If cultural resources cannot be avoided, additional work may be necessary. If buried cultural materials are encountered during construction, it is Caltrans policy that work in that area must halt until a qualified archaeologist can evaluate the nature and significance of the find (Caltrans 1991).

3.2.2 Architectural Resources

3.2.2.1 Background Research

Prior to the field reconnaissance, the following sources were consulted to obtain information concerning previously identified sites, structures, or buildings located within or adjacent to the architectural APE:

- National Register of Historic Places, 1996 and updates;
- California Register of Historical Resources (updates through February 2003);
- California Inventory of Historic Resources, 1976;
- California Historical Landmarks, 1996;
- California Points of Historical Interest, 1992 and updates;
- California Place Names (Gudde 1969);
- Historic Highway Bridges of California (Caltrans 1990); and
- Caltrans Local Bridge Inventory (2000, 2001).

Three historic properties were identified within the project area: Tower Bridge, the Old Sacramento NHL, and the Walnut Grove Branch Line Railroad.

Given the resources identified, pertinent research themes included history, urban planning architecture, engineering, and transportation.

3.2.2.2 Area of Potential Effects

The architectural APE is shown in Map 3. The architectural APE includes only built environment resources that have already been listed or evaluated by other studies. The only significant historical resources within the architectural APE are Tower Bridge, the Old Sacramento NHL, and the Walnut Grove Branch Line Railroad.

3.2.2.3 Historical Overview

In 1839, Mexican Governor Juan Bautista granted lands to John Sutter, who called his grant—near the confluence of the Sacramento and American Rivers—New Helvetia. Sutter completed a fort on the site by 1844, and this became a center for trading. New Helvetia became Sacramento and, with the onset of the Gold Rush, the city became the major staging area for the gold camps. Its location on the navigable Sacramento River meant that vessels could bring supplies up from San Francisco for off-loading at Sacramento and trans-shipment by wagon or mule to the mines. Across the river, James McDowell established Washington—later named Broderick—as an agricultural community, and others homesteaded along the river.

The rivers brought both prosperity and problems to Sacramento. Repeated flooding from 1850 on forced a series of efforts at flood protection, leading to ever-higher levees and, eventually, to a re-grading and raising of the entire business district of Sacramento, which was completed by 1878. Levees continue to provide flood protection for Sacramento and still require periodic strengthening by the Corps to ensure their adequacy.

Sacramento's position as a hub of supply and transportation during the Gold Rush led to waterfront improvements and new wharves. Rail transportation began in 1855 with construction of the Sacramento Valley Railroad from the Sacramento waterfront to Folsom; service began in 1856. Teamsters serving the mining communities moved to the new railhead in Folsom. The Central Pacific Railroad began construction in 1862, reaching Junction (now Roseville) by 1864; by May 1869, the line had met and joined with the westward-building Union Pacific Railroad at Promontory Summit, Utah. With Central Pacific Railroad's general shops, rail yards, and headquarters, Sacramento became California's rail center. By 1897, 90% of California fruits and vegetables shipped to eastern markets went by way of Sacramento, where buyers congregated to obtain the best prices. Rail expansion would continue through the 19th century and into the 20th century. In 1908, the Southern Pacific Railroad—successor to the Central Pacific—began construction of a branch line to Walnut Grove to serve the vast Delta lands south of the city and to compete with river shipping. Prior to completion of the railroad's Martinez-Benicia Bridge in 1928, the Walnut Grove branch line even received brief consideration as the Southern Pacific main line to the Bay Area.

Roads to and from Sacramento quickly developed during the 19th century. By the turn of the 20th century, spurred on by the national Good Roads movement, cities and counties—Sacramento included—embarked on major improvements to existing roads and on construction of new routes. These efforts saw the paving of roadways and the building of new bridges that were able to handle faster, heavier traffic. Sometimes rail and road improvements coincided, as was the case with Sacramento's M Street Bridge. The Northern Electric Railway, building south from Chico toward the Bay Area, built a swing bridge across the Sacramento River at the foot of M Street (now Capitol Mall) in 1911. This bridge included single-lane roadways cantilevered from the outsides of the trusses, to handle vehicular traffic. By 1933, the M Street Bridge—although still adequate for railroad traffic—was no longer adequate to handle the traffic of the Lincoln Highway. The State Division of Highways designed and built Tower Bridge as its replacement, with the Sacramento Northern Railway (the Northern Electric Railway and the Oakland, Antioch & Eastern Railway had merged as the Sacramento Northern Railway, the longest interurban electric railroad in the United States) tracks running down the center of the

new bridge. (Interestingly, although the bridge was state-built and -owned, the railroad provided the bridge operators until it ceased to operate over the bridge in 1965.)

Even in the face of rail and highway competition, river traffic continued to serve Sacramento during these years. The Southern Pacific Railroad acquired and merged a number of river lines that served its wharves and freight houses along Front Street. The River Lines provided overnight passenger service to San Francisco with their twin steamers, *Delta King* and *Delta Queen*, from their terminal adjacent to the downstream side of Tower Bridge. This latter service ended with the onset of World War 2, when both vessels were requisitioned by the Navy for use on San Francisco Bay. The end of the war brought new plans for a long-delayed deepwater ship channel to Sacramento, a project undertaken by the Corps during the 1950s and early 1960s. Completion of the channel, as well as the Port of Sacramento in Yolo County, finally spelled the virtual end of commercial freight traffic on the Sacramento River and the end of more than 100 years of such service at Sacramento's waterfront.

3.2.2.4 Field Methods

On January 22, 2002, an architectural historian conducted a field survey of architectural resources in the architectural APE. The architectural historian confirmed that the only built environment resources within the APE were those already listed or evaluated by other studies, and that the only significant historical resources were Tower Bridge, the Old Sacramento NHL, and the Walnut Grove Branch Line Railroad. As the project and its design evolved, additional field surveys were conducted on July 21 and 22, 2003, and on November 3 and 4, 2003.

3.2.2.5 Description of Cultural Resources

Tower Bridge

Tower Bridge is a Streamlined Moderne-style lift bridge consisting of a steel through truss vertical lift span, and steel through truss and reinforced concrete and steel plate deck girder approach spans. The bridge rests on reinforced concrete piers, a reinforced concrete seat abutment, and a reinforced concrete cantilever and gravity wall abutment. The piers and abutments are founded on reinforced concrete piles, untreated Douglas fir piles, and treated Douglas fir piles. Piers 6 and 7 are founded on concrete footing blocks in addition to piles. The bridge's eight spans total 224.8 m (738 ft) in length, with a 61-m- (200-ft-) long lift span, 15.8 m (52 ft) in roadway width, and 21.0 m (69 ft) in overall width; and carry four traffic lanes between steel channel railings and two 1.2-m (4-ft) sidewalks cantilevered outside the trusses, crossing the Sacramento River with no skew. The Bridge Department of the California Division of Highways designed the bridge, while Alfred Eichler of the Office of the State Architect provided the Streamlined Moderne architectural elements of the design.

As a Streamlined Moderne-style bridge, Tower Bridge is the only movable bridge of this style in California. By using parallel legs in its towers, the designers achieved the unique verticality of the style by sheathing the towers in bolted and riveted ¼-inch steel panels. This paneling was even applied to the cross bracing of the towers, a feature the State would later use on the towers

of the suspension spans of the San Francisco-Oakland Bay Bridge. The design team echoed the verticality of the towers in the concrete pylons at each end of the bridge. To heighten the stylistic treatment, the bridge was painted in a special aluminum-based silver paint, linking it more firmly to the machine-age theme that characterized so much of the Streamlined Moderne-style. It wore this paint until 1976, when it was repainted a gold color. Using lightweight concrete and special steel reinforcement for the deck, Tower Bridge served as a test bed for these elements that were to be later used in the design of the Bay Bridge.

The bridge originally carried the tracks of the Sacramento Northern Railway down the centerline of the roadway, with the railroad's trolley wire carried overhead through the trusses and between the pylons. The trolley wire and its appurtenances were removed in the 1950s when the railroad converted to diesel locomotives, and some or all of the tracks may have been removed around 1966 when the railroad began rerouting its trains over Southern Pacific tracks on the I Street Bridge.

The contributive elements of Tower Bridge include:

- Boxed, riveted through trusses, including curved portal elements;
- Laced and latticed upper sway bracing elements;
- Steel-clad Streamlined Moderne-style lift towers with parallel legs;
- Control cabin, including final, horn, bell, and access ladder with alarmed step;
- Any original control equipment/motors/standby motors/generators;
- Lightweight concrete deck;
- Reinforced concrete piers and abutments;
- Dolphins and fenders;
- Concrete sidewalks with original scoring pattern;
- Triangular sidewalk support brackets;
- Concrete span wire pylons;
- Concrete walls and railings;
- Steel railings;
- Electroliers, including those on the bridge itself and at the approaches;
- Light fixtures on pylons;
- Streamlined Moderne-style cast-in dates in pylons;
- Pale blue paint on concrete pylons;
- Sidewalk triangular knee-braces; and
- Pedestrian sidewalk gates at the ends of the approach spans.

The non-contributive elements of Tower Bridge include:

- New lighting system,
- Metal beam guardrail inside trusses,
- Retractable vehicle barrier in deck,
- Planter pots at the west end,

- Chain-link fencing, and
- Non-historic paint color.

Tower Bridge retains a high degree of all seven points of integrity as defined by the NRHP criteria. The boundary of the historic property “consists of 738 linear feet of State Highway 275 crossing the Sacramento River between Yolo County (on the west) and Sacramento County (on the east), with the width of the property defined by the physical width of the bridge and its piers.”

Old Sacramento National Historic Landmark District

The Old Sacramento NHLD is a 12±-hectare (30±-acre) group of 19th century commercial buildings that mark the early development of California’s capital. The district is significant for its role in the California Gold Rush, for its architecture, for its association with persons and events important in history, and for having yielded information important in history through archaeological excavations. (**Note:** While the sketch map accompanying the District’s NRHP nomination shows the southern boundary as extending well across Capitol Mall to nearly a block along Front Street, the written description of the District boundary clearly states that the southern boundary is “. . . the north edge of Capitol Mall . . .”). Contributing elements of the district are its 19th century buildings and structures and its unexcavated archaeological deposits. Non-contributing elements consist of 20th century buildings and structures and asphalt street paving (however, the street layout itself is a contributing element of the district).

The integrity of the Old Sacramento NHLD has been compromised by new construction, reconstruction of historic buildings at locations different from their historic locations, and use of inappropriate signage and colors. Along the western boundary in particular—that portion of the District closest to the Sacramento River and Tower Bridge—integrity is the most compromised. None of the buildings and structures abutting the river and within the viewshed of Tower Bridge—and having the bridge within their viewshed—are contributors to the District. All of these buildings and structures are new construction, comprising restaurants, wharves, a parking garage, a replica 19th century schoolhouse, and the California State Railroad Museum complex. The historic *Delta King* riverboat, moored upstream from the bridge, is no longer in its historic location adjacent to the downstream side of the bridge, where the River Lines terminal formerly existed.

The Old Sacramento NHLD “is bound[ed] on the north by the south edge of the ‘I’ Street Bridge access ramp, on the east by the west edge of U.S. Interstate Route 5, on the south by the north edge of Capitol Mall, and on the west by the Sacramento River.”

Former Walnut Grove Branch Line of the Former Southern Pacific Railroad

The former Walnut Grove Branch Line of the former Southern Pacific Railroad (a portion of which is now owned and operated by the California State Railroad Museum as the Sacramento Southern Railroad), is a single-track railroad line that originally connected Sacramento with Walnut Grove in the Delta. Built between 1908 and 1912, the line transported agricultural

commodities from the Delta to Sacramento and then to national markets by rail. The line also provided passenger service until 1934. The advent of trucking led to increasingly declining rail revenues, and Southern Pacific finally abandoned the line in 1978. The line today extends 53.3 km (33.1 mi) from Old Sacramento to Isleton, on a ROW varying in width from 6.1 to 121.9 m (20 to 400 ft). In 1991, PAR Environmental Services, Inc., (PAR) evaluated the railroad line for the Corps and concluded that it appeared to meet NRHP Criteria A and C at the local level of significance. The Walnut Grove Branch Line Railroad was determined eligible for inclusion on the NRHP, significant under Criterion A at the local level of significance, on April 24, 1991.

Based on the PAR report, contributive elements of the Walnut Grove Branch Line Railroad include:

- The Sacramento River levee and other levees on which it was built, including that section within the project APE, as well as other at-grade ROW;
- Open-deck and ballast-deck timber pile trestles and timber culverts at various locations;
- Swing bridge across Snodgrass Slough; and
- Scherzer rolling lift drawbridge across Georgiana Slough.

Non-contributive elements include:

- Existing rails and ties, as these are latter-day replacements of original materials;
- Reinforced concrete bridge across Interstate 5, built in the mid-1970s at Milepost 91.97; and
- Composite concrete and structural steel bridge, built post-1960, just north of the town of Locke.

The integrity of the Walnut Grove Branch Line Railroad has been compromised by various re-alignments and new construction. Its tracks within the Old Sacramento NHLD are almost wholly reconstructed on alignments that differ from the period of significance, when the branch line served Southern Pacific warehouses that no longer exist. Portions of the track south of Capitol Mall have recently been realigned in connection with construction of the Promenade. South of Sacramento, integrity has been compromised by the construction of new bridges over Interstate 5, by the paving over of various highway crossings, and by the removal of other original bridges.

The Request for Determination of Eligibility prepared by PAR did not define the property boundaries. These were assumed to be the limits of the ROW of the railroad, between its termini.

These are the only resources that were identified within the APE, and all are considered significant resources under CEQA.

All of these resources have been previously identified, listed, and evaluated.

3.2.2.6 Resource Significance

As stated previously, pertinent research themes included history, urban planning, architecture, engineering, and transportation. Tower Bridge is significant in the contexts of transportation, engineering, and architecture. The Old Sacramento NHL is significant in the contexts of history, architecture, and urban planning. The Walnut Grove Branch Line Railroad is significant in the context of engineering and transportation.

3.3 CULTURAL RESOURCE IMPACTS

3.3.1 Applicable Cultural Resources Laws

3.3.1.1 Section 106 of the National Historic Preservation Act Summary

Section 106 of the NHPA requires Federal agencies to take into account, through a consultation process, the effects of their undertakings on historic properties. The responsible Federal agency first determines whether it is undertaking a type of activity that could affect historic properties. If it determines that it has no undertaking, or that it is undertaking a type of activity with no potential to affect historic properties, the agency has no further Section 106 obligations.

If the agency's undertaking could affect a historic property, however, the agency identifies historic properties within the APE that are listed in the NRHP or eligible for listing. If a listed or eligible property is present, the agency proceeds to assess, in consultation with the State Historic Preservation Officer (SHPO), whether the undertaking constitutes an adverse effect on the property.

The determination of adverse effect is based on criteria established in Section 106 of the NHPA. Adverse effects occur when an undertaking may directly or indirectly alter characteristics of a historic property that qualify it for inclusion in the NRHP. Reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative also need to be considered. If the agency determines that the undertaking would cause an adverse effect on the historic property, Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 is triggered.

3.3.1.2 Section 4(f) of the U.S. Department of Transportation Act Summary

The USDOT Act of 1966 declared it "to be a national policy that special effort should be made to preserve....historic sites." The Secretary of Transportation may approve a project affecting a historic site only if (1) there is no prudent and feasible alternative and (2) all possible planning to minimize harm has been done. "Feasible" is defined as possible to engineer with available technology. "Prudent" is defined as factors in cost, safety, displacements, and community disruptions. If a prudent and feasible alternative is found, the proposed undertaking cannot be approved.

3.3.1.3 California Public Resources Code Section 5024.5 Summary

The California Public Resources Code (PRC) supports the Section 106 and Section 4(f) processes. This code requires that, if an undertaking is determined to result in an adverse effect on a historic property, the agency “shall adopt prudent and feasible measures that will eliminate or mitigate the adverse effects.”

For a project in which both the Federal processes are satisfied, the California process is also satisfied.

3.4 CULTURAL RESOURCES ANALYSIS

Because the project is receiving federal funds from FHWA, the project must comply with FHWA regulations, including Section 106 of the NHPA and Section 4(f) of the USDOT. FHWA has prepared and submitted documentation to the SHPO to comply with Section 106 of the NHPA. FHWA has concluded that the proposed project would result in an adverse effect on Tower Bridge and would result in no effect on the Old Sacramento NHL and the Walnut Grove Branch Line Railroad. The SHPO must review the documentation and determine whether it concurs with FHWA’s conclusion. Additional information on the Section 106 documentation is provided below under Architectural Impacts.

FHWA has also prepared a Draft Section 4(f) Evaluation for the project (see Appendix E).

Caltrans is the owner-operator of the bridge; therefore, Caltrans must comply with Section 5024.5 of the PRC. Caltrans has reviewed and approved the Section 106 documentation and the Draft Section 4(f) Evaluation. Once both Federal processes are satisfied, the California process will also be satisfied.

3.4.1 Archaeological Impacts

No archaeological resources were identified in the APE during preliminary background research, and no new archaeological resources were identified during the survey. However, undiscovered buried archaeological resources in the APE may exist and, therefore, may be adversely affected. It is Caltrans policy to avoid cultural resources whenever possible. Further investigations may be needed, if buried archaeological resources are discovered and cannot be avoided by the project. If buried cultural materials are encountered during construction, it is Caltrans policy that work will stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey would be required if the project changes to include areas not previously surveyed (Caltrans Environmental Handbook Vol. 2, Chapter 1).

3.4.2 Architectural Impacts

Based on the Section 106 documentation, the proposed project would result in an adverse effect on Tower Bridge; however, the proposed project would result in no effect on the Old Sacramento NHL or the Walnut Grove Branch Line Railroad. Following is a brief discussion of the

applicability of the Criteria of Adverse Effect (36 Code of Federal Regulations [CFR] 800.5) that state:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the NRHP. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

Adverse effects on historic properties include, but are not limited to:

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

The proposed project *would not* destroy Tower Bridge but *would* modify contributive elements of Tower Bridge. The proposed project would modify the concrete sidewalk on the lift span and would modify sidewalk edges elsewhere. The proposed project would modify portions of the hollow concrete pylons that require filling, would place welded clips on railing posts, and would modify small numbers of existing rivets on sidewalk knee-braces.

The proposed project *would* alter Tower Bridge as follows:

1. The existing sidewalk on the lift span would be *replaced* with a wider sidewalk constructed of aluminum.
2. The existing sidewalk on the fixed truss spans from the pylons to the lift span would be *preserved* and *widened* from its existing outboard edge with a new concrete sidewalk.
3. The sidewalk on the approach spans from the pylons to the riverbanks would be *preserved* and *widened* from the existing location with a new concrete sidewalk.
4. The existing steel railing would be *reused* and *relocated* to the outside of the new sidewalk, and attached with cable guides. The railing would be placed on top of a new 150-millimeter (-mm) (6-inch) concrete curb at the outside of the new sidewalk.
5. The existing barriers would be *preserved* in place and the sidewalks would be *widened* to the outside, placing new steel railings at the outside edge of each sidewalk. The existing concrete barrier walls would be *preserved* and a *new* sidewalk would be constructed on the outside of the walls.
6. The existing historic Streamlined Moderne-style lighting fixtures would be *preserved, repaired, and relocated*. The existing light fixtures would be *preserved* and *relocated* to the outside of the new sidewalk, with the exception of the fixtures on top of the barrier on the west approach span, which would be *preserved in place*.
7. The existing pedestrian gates would be *preserved* in place; four new pedestrian gates would be *added* to meet the pedestrian safety needs associated with the wider sidewalk.
8. The concrete barriers at the West Sacramento end of the bridge would be *preserved* and sidewalks would be *widened* to the outside, *new* steel railings would be placed at the outside edge of the sidewalk.
9. The hollow concrete pylons would be *modified* by filling them with concrete to facilitate support of the widened sidewalk on the City of Sacramento approach span.
10. Other aspects of the bridge would be *modified*, including the wooden maintenance walks on the fenders.
11. The existing knee-brace supports below the existing sidewalk would be *preserved in place* but *modified*; *new*, larger knee-braces under the widened sidewalk would be *added*. *New* support girders would be anchored to existing hollow concrete columns, and the columns would be filled. *Additional* transverse bracing would be provided.
12. The concrete walls on the banks parallel to the river would be *partially removed* to allow the sidewalk to connect to existing facilities.

The proposed project would introduce visual elements that could diminish the integrity of the significant features of Tower Bridge. Such visual elements, described and discussed above, include wider sidewalks, higher railings, and new knee-brace elements.

Finally, there are no reasonably foreseeable effects caused by the proposed project to Tower Bridge that may occur later in time or be farther removed in distance.

In summary, implementation of the proposed project would result in physical alterations to Tower Bridge that are considered a significant and unavoidable impact under CEQA.

3.5 CULTURAL RESOURCE AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

The following avoidance, minimization, and mitigation measures have been identified to reduce impacts to cultural resources.

1. Prior to the start of any work on the Tower Bridge, Caltrans will prepare a supplemental Historic American Engineering Record (HAER) documentation of the Tower Bridge to supplement the HAER documentation previously completed for the Tower Bridge. (An HAER documentation set for the bridge [HAER No. CA-73] was prepared in approximately 1985, when Caltrans undertook modifications to emergency standby power system elements in the control cabin. Documentation can be found at <http://memory.loc.gov/ammem/hhhtml/hhhome.html>.) The level of supplemental documentation will be developed by Caltrans, the Cities, and the FHWA in consultation with the State Historic Preservation Officer (SHPO) and the National Park Service.
 - a. Large-format (4" by 5" or larger negative size) photographs shall be taken showing Tower Bridge in context, as well as details of its historic engineering features. Photographs shall be processed for archival permanence in accordance with the HAER photographic specifications. Views of the Tower Bridge shall include:
 - i. Contextual views showing the bridge in its setting;
 - ii. Elevation views;
 - iii. Views of the bridge approaches, abutments, and piers;
 - iv. Detail views of significant engineering and design elements; and
 - v. Any and all contributive elements that will be adversely affected by the undertaking.
 - b. Caltrans shall reproduce plans, elevations, and selected details from the original construction drawings for Tower Bridge, in 8-1/2" by 11" format, for inclusion in the supplemental HAER report.

2. A written historical and descriptive report for Tower Bridge will be completed. In providing a physical description of the bridge, discussing its construction and its significance under applicable NRHP criteria, and addressing the historical context for its construction, this report shall utilize and reference newspaper and other sources not previously utilized in the previous HAER documentation. This report shall follow the format and instructions in the above-referenced HAER guidelines for written documentation.
3. Final copies of the HAER supplemental report shall on completion be retained by Caltrans District 3, deposited in the Caltrans Transportation Library and History Center at Caltrans Headquarters in Sacramento, and offered to the Sacramento Archives and Museum Collection Center. Copies also shall be offered to those repositories holding copies of the previous HAER documentation set: the HAER Collection in the Library of Congress, the California Section of the California State Library, the California State Railroad Museum Library, and the Bancroft Library.
4. Caltrans and the Cities shall ensure that preliminary design drawings at 35%, 65%, and 95% are submitted to a qualified Caltrans architectural historian and the SHPO for concurrent review and comment. The Caltrans architectural historian and SHPO shall review the plans for consistency with the Secretary of the Interior's Standards for the Treatment of Historic Properties to the maximum extent possible with regard to alterations to Tower Bridge.
5. Caltrans and the Cities shall design an interpretive display of the history of Tower Bridge. The Cities shall coordinate with Caltrans, which shall review and approve content, design, and placement of the display. The form of the display may be a kiosk, interpretive panel, or other interpretive device. Caltrans and the Cities shall ensure that preliminary design drawings for the interpretive display at 30%, 65%, and 95% are submitted to the SHPO for review and comment. The interpretive display shall be completed and installed prior to completion of work on the sidewalk widening project.
6. Caltrans shall ensure that the following project description features are included in the final project design.
 - a. Sidewalks
 - i. Lift Span
 - The sidewalk on the lift span will be replaced with a 3-m- (10-ft-) wide (useable width) sidewalk constructed of aluminum.
 - The aluminum decking will be treated with a skid-resistant resin surface (similar to a concrete surface).
 - The aluminum portion of the sidewalk will be constructed on supports such that the surface profile of the sidewalk is consistent as a pedestrian travels from the fixed span (concrete sidewalk) to the lift span (aluminum sidewalk).

- ii. Fixed Truss Spans (Pylons to Lift Span)
 - The sidewalk on the fixed truss spans will be preserved and widened from its existing location with a new concrete sidewalk, so the total usable sidewalk width is a minimum of 3 m (10 ft).
 - The new concrete will be finished with a scoring pattern similar to the existing sidewalk, yet different enough to distinguish the new from the old.
 - Minimal removal of the sidewalk on the lift span will be allowed. Removal will be limited to spot areas around the existing railing posts.
- iii. Approach Spans (Pylons to Riverbanks)
 - The existing sidewalk on the approach spans will be preserved and widened from the existing location with a new concrete sidewalk, with a minimum 3-m (10-ft) usable width. The new concrete surface will be finished with a scoring pattern similar to the existing sidewalk, yet different enough to distinguish the new from the old. The existing concrete walls (Sacramento side) and concrete barriers (West Sacramento side) will remain in place.
 - The “lookout” or “balcony” area on the fixed-span side of the pylons on the Sacramento side will be preserved in place; however, the railing around it will be removed.
- b. Sidewalk Steel Railing
 - i. The existing sidewalk steel railing will be preserved and relocated to the outside of the new sidewalk. The railing will be reused and placed on top of a new 150-mm (6-inch) curb at the outside of the new sidewalk, to obtain the height appropriate for bicycle travel.
 - ii. Two steel cables will be run horizontally at 100-mm (4-inch) vertical spacing between the railing posts. Two cable guides per cable will be welded to the inboard of the railing posts to attach the cables in a reversible fashion.
- c. Sidewalk Pedestrian Gates
 - i. The existing pedestrian gates will be preserved in place and not used during future lift span openings.
 - ii. Four new sidewalk pedestrian gates will be added to the structure on the fixed truss spans, at locations farther from the lift span than the existing gates. When open, these new gates will be positioned between the truss members, parallel to the sidewalk. When closing, the gates will swing outward across the sidewalk, spanning the full width of the new sidewalk, and will be designed to appropriate standards.

- d. Concrete Barriers at the West Sacramento End
 - i. The existing hollow concrete barriers at the outside edge of the sidewalk on the West Sacramento end of the bridge (west approach span) will be preserved in place.
 - ii. The sidewalks will be widened to the outside, placing new steel railings at the outside edge of each sidewalk.
 - iii. The new steel railing on the outside of the widened sidewalk will be constructed to current height standards and be slightly different in appearance from the existing railings, so as to avoid creating a false sense of history.
 - iv. The light posts that attach to the existing barriers on the west approach will be preserved in place.
- e. Concrete Walls at the Sacramento End (East End)
 - i. The two large concrete walls at the east end of the bridge in the City of Sacramento will be preserved in place.
 - ii. The new 3-m (10-ft) wide (minimum usable width of 3-m [10-ft]) sidewalks will be constructed on the outside of the walls.
 - iii. A new steel railing will be constructed on the outside of the new sidewalks on the Sacramento approach spans. The new steel railing will be built to current safety standards and will be compatible with the existing railings on the bridge.
- f. Lighting Fixtures
 - i. The existing light fixtures will be preserved and relocated to the outside of the new sidewalk, with the exception of the fixtures on top of the barrier on the west approach span, which will be preserved in place.
 - ii. The electrical system of the lights will be repaired, as necessary, and the lighting elements may need to be upgraded to current illumination standards.
- g. Substructure Support Beams to Support the Sidewalk
 - i. Lift Span and Fixed Spans
 - On the lift spans and fixed spans, the existing bridge has knee-brace supports below the existing sidewalk. The new sidewalk on the lift span and fixed spans will be supported by the existing knee-brace supports, which will be preserved in place and modified by adding to the existing knee-braces to support the widened sidewalk.

- During the process of modifying the knee-braces, the rivets connecting the knee-braces to the truss will be removed and replaced with high-strength bolts. The bolts used will have “button-heads” to be compatible with the original rivets.

ii. Approach Spans

- On the Sacramento side, the new sidewalk will be supported by large steel knee-braces, similar to the existing knee-braces. The existing structure will be deepened by filling the existing hollow concrete pylons with concrete to facilitate support to the girder. To fill the pylons, a section will need to be removed from the pylon, large enough to facilitate cleaning of debris and pouring of new concrete.
- On the portion of the approach span widening where the sidewalk ties into the truss structure, a beam will be added to the bottom of the truss to provide knee-brace geometry conducive to providing support to the widened sidewalk. This beam will extend along the truss for the portion of sidewalk that is wider than 3 m (10 ft) and will be approximately 610 mm (2 ft) deep.
- For this section of the widening, additional transverse bracing will also be required to distribute lateral loads from the large knee-brace and truss connection back into the superstructure and to avoid lateral loading of the existing truss.
- On the West Sacramento side, the new sidewalk will be supported by a knee-brace system that is similar to that on the truss. In addition to the knee-brace system, some strengthening to the existing superstructure will be required, both to carry transverse loads from the knee-brace system into the superstructure and to add strength to the superstructure in order to carry the increased superstructure load resulting from the additional dead load and pedestrian loading.

7. In the unlikely event that buried archaeological resources are discovered during construction, it is Caltrans policy to avoid cultural resources whenever possible. If buried cultural materials are encountered during construction, it is Caltrans policy that work in that area must halt until a qualified archaeologist can evaluate the nature and significance of the find (Caltrans Environmental Handbook, Vol. 2, Chapter 1).

3.6 CUMULATIVE IMPACTS RELATING TO CULTURAL RESOURCES

The Council on Environmental Quality (CEQ) guidance defines cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions” (40 CFR Section 1508.7).

Cumulative effects analysis necessarily involves uncertainties and assumptions, but useful information can be presented to facilitate better decision making. To the extent possible, information from past, present, and reasonably foreseeable projects was obtained to help evaluate the cumulative impacts in the area.

To identify cumulative impacts, it is necessary to first identify past, present, and reasonably foreseeable projects in Tower Bridge project area.

3.6.1 Past, Present, and Reasonably Foreseeable Projects in the Tower Bridge Project Area

Tower Bridge was built between 1934 and 1936. Past projects in the project area that have affected Tower Bridge include the revitalization and redevelopment of Old Sacramento, the West Sacramento River Walk, the Sacramento Promenade, the Embassy Suites Hotel, the Old Sacramento parking structure, and the Ziggurat office building in West Sacramento. Past projects on the bridge include the removal of the overhead trolley system, removal of some or all of the railroad tracks that were located down the centerline of the bridge and curbs that flanked the tracks, the recent repainting of the structure as well as the modifications to the emergency standby power system elements in the control cabin in approximately 1985. The only reasonably foreseeable project on the bridge is the pavement rehabilitation project.

Tower Bridge is located at the center of the proposed redevelopment of the urban waterfront in Sacramento and West Sacramento. Both cities have been working together since January 2001 to provide a high-quality and accessible public open space along the riverfront around which dense urban redevelopment can occur. The collective redevelopment potential in the districts abutting the riverfront represents an additional population of approximately 30,000 residents. The Sacramento Riverfront Master Plan documents the partnership between the Cities to create a high-quality riverfront public space and surround it with vibrant urban neighborhoods.

The Sacramento Riverfront Master Plan (2003) outlines a number of strategies to realize the four guiding principles: creating riverfront neighborhoods and districts, establishing a web of connectivity, strengthening the green backbone of the community, and making places for celebration. The Sacramento Riverfront Master Plan states (page 52), that “both the Tower and I Street Bridges should have widened pedestrian facilities in order to make these connectors more effective as pedestrian conveyors across the river.”

In addition to these projects, Sacramento Regional Transit provided comments on the Initial Study and Notice of Preparation (NOP) that the SACOG 2002 Metropolitan Transportation Plan includes the preparation of an Alternatives Analysis to study the construction of a high-capacity transit project between the cities of Sacramento and West Sacramento. This is a project conducted jointly by RT, Yolo County Transportation District, the City of West Sacramento, and the City of Sacramento. The Tower Bridge will be one alternative studied for the river crossing. The timing of the study is unknown.

3.6.2 Cumulative Effects of Projects on Tower Bridge

The cumulative effect of the widened sidewalks would be an overall increase of around 20% in total bridge width, with no increase in the principal area between the trusses. The increase of railing height amounts to less than 20%. As discussed in the Finding of Effect, the cumulative effects of these alterations would be a diminution of the integrity of design of Tower Bridge, but not to the degree that its NRHP listing or eligibility would be affected. The bridge would still clearly reflect its Streamlined Moderne-style design, and would remain recognizable as a product of its time and period. Its designers, should they return following completion of the proposed project, would still recognize Tower Bridge as their work.

In addition, previous projects have altered the original design of Tower Bridge. The original overhead trolley wire system has been removed. Some or all of the railroad tracks down the centerline of the bridge have either been removed or paved over, and curbs that flanked the tracks have been removed. Elements of the emergency backup power system in the control cabin have been upgraded or replaced. Retractable barrier posts have been placed in the ends of the approach spans to prevent vehicles from plunging into the open draw. The bridge also has been repainted in a non-historic color.

The cumulative effects on Tower Bridge's integrity of materials is related to the proposed replacement of a small portion of the original reinforced concrete elements of the bridge by aluminum and the partial removal of the concrete walls on the banks parallel to the river in order to allow the sidewalk to connect to existing facilities. No cumulative effects are related to the use of steel.

The cumulative effects of the proposed project would affect Tower Bridge's integrity of feeling through its alterations to materials and design proportions but would not affect Tower Bridge's continued listing or eligibility for listing in the NRHP.

The cumulative effects of the proposed project would alter Tower Bridge's integrity of association by altering materials and design in its Streamlined Moderne-style that ties it to that period in history. However, its perception as the historic western gateway to Sacramento would not be affected.

It is worth noting the National Park Service Bulletin's comments regarding integrity:

The principal test to establish whether a property retains integrity is to ask whether or not the property still retains the identity or character for which it is important.

and

All properties change over time. The retention of integrity depends on the nature and degree of alteration or change. It is not necessary for a property to retain *all* of the physical features or characteristics that it had during its period of significance. However, the property must retain the essential physical features that enable it to convey its past identity or character and therefore its significance.

In summary, the proposed project—in combination with other projects on Tower Bridge—would result in cumulative impacts that are considered significant and unavoidable under CEQA. However, as stated in the Finding of Effect (page 35), the cumulative adverse impacts would not result in a sufficient lessening of the bridge’s elements of integrity to affect its listing or eligibility for listing in the NRHP, or its historic significance.