

Chapter 2 Project Description

2.1 COMMON DESIGN CONCERNS ABOUT THE PROJECT

Various reviewers of the environmental document expressed similar or common concerns that relate to the design of the proposed project. These similarities in concerns provided insight into the issues and concerns of the reviewers. The following section provides additional information to clarify these common issues and concerns.

2.1.1 Project Applicability to Non-Motorized User Groups

The three general non-vehicular user categories on the Tower Bridge are pedestrians, recreational bicyclists, and commuter bicyclists. Each of these groups has unique needs.

At the commencement of the project, a multidisciplinary Project Development Team (PDT) was established with representatives of the FHWA, Caltrans, the City of Sacramento, the City of West Sacramento, and engineering and environmental specialists to develop the project design and assist in the environmental documentation. During the multi-year design process, the PDT discussed the potential for conflicts among the various users of the bridge. It is understood that mixing higher speed bicycle commuters with other sidewalk users traveling at much slower speeds is not desirable. The shared-use sidewalk concept is that the wider sidewalk can safely accommodate less experienced bicyclists or recreational bicyclists who travel at near walking speeds and would not use on-street bicycle facilities.

This concept will be reinforced through bridge design elements, additional signage, and/or enforcement, as appropriate.

The sidewalk will not be signed as a bikeway. Commuter bicyclists, who typically travel at higher speeds than recreational bicyclists, are considered more likely to use the delineated paved shoulder areas that will be provided with the deck rehabilitation project that is scheduled to go to construction in the Summer/Fall of 2005.

Pedestrians

Pedestrians include anyone on foot, in a wheelchair, walking a bike, pushing/pulling a stroller, or any similar uses. Pedestrians typically use the sidewalk.

Recreational Bicyclists

Recreational bicyclists include those who are leisure riders, less experienced riders, low mobility riders, children, and adult bicyclists with a child either in a child's seat or in a trailer behind the bike.

The American Association of State Highway and Transportation Officials (AASHTO's) *Guide for the Development of Bicycle Facilities* acknowledges, "although their physical dimensions may be relatively consistent, the skills, confidence, and preferences of bicyclists vary dramatically. Some riders are confident riding anywhere they are legally allowed to operate and can negotiate busy and high speed roads...Most adult riders are less confident

and prefer to use roadways with a more comfortable amount of operating space, perhaps with...shared use paths that are away from motor vehicle traffic. Children may be confident riders and have excellent bike handling skills, but have yet to develop the traffic sense and experience of an everyday adult rider.”

The FHWA’s *Selecting Roadway Design Treatments to Accommodate Bicycles* (January 1994) describes the types of bicyclists in the recreational category as a consideration for different facilities types for bicyclists:

Basic or less confident adult riders may also be using their bicycles for transportation purposes, but prefer to avoid roads with fast and busy motor vehicle traffic...Basic riders are comfortable riding on neighborhood streets and shared use paths...

Children, riding on their own or with their parents, may not travel as fast as their adult counterparts, but still require access to key destinations. Residential streets with low motor vehicle speeds, linked with shared use paths can accommodate children without encouraging them to ride in the travel lane of major arterials.

Commuter Bicyclists

Commuter bicyclists are generally described as those bicyclists who are more likely to prefer to remain on the roadway, adjacent to the flow of vehicular traffic, unimpeded by changes in the path.

The FHWA’s *Selecting Roadway Design Treatments to Accommodate Bicycles* (January 1994) describes commuter bicyclists and their facilities type preferences:

Advanced or experienced riders are generally using their bicycles as they would a motor vehicle. They are riding for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding with motor vehicle traffic; however, they need sufficient operating space on the traveled way or shoulder...

Currently, commuter bicyclists on Tower Bridge share the outside lane with vehicles, as there is no striped shoulder or bike lane. In addition, the roadway pavement is in deteriorating condition, making the surface less than desirable for bicycle travel.

Higher speed bicyclists (including commuters) desire to travel at normal bicycle speeds without repeatedly stopping or dismounting. The Tower Bridge is on a designated bicycle route and is routinely used by commuter bicyclists from West Sacramento and Davis to Sacramento or by long distance bicyclists from the Bay Area to Tahoe.

It should be recognized that the Tower Bridge is located in an area that has existing and future potential for significant pedestrian and bicycle use of the bridge and surrounding street network, with no nearby alternatives for these modes. The existing demand for bicycle facilities is greater than present usage. Both pedestrian and bicycle demand will increase as both sides of the river continue to be developed with uses that attract bicycle and pedestrian

travel. The development of residential and retail uses on both sides of the bridge has great potential to generate bicycle traffic for commuting to work and other uses.

The Caltrans Deck Rehabilitation Project will address these concerns. Under this future project (scheduled for construction in the Summer/Fall 2005), Caltrans will rehabilitate the Tower Bridge deck and expansion joints. The project will remove the existing asphalt concrete (AC) overlay and a thin portion of the existing Portland Cement Concrete (PCC) deck, and replace it with a variable thickness polyester concrete overlay. The roadway will be restriped, narrowing the vehicular travel lanes to 11 feet (3.3 m), to provide 4-foot (1.2-m) multi-purpose shoulders on each side for commuter bicyclists.

2.1.2 Design Guidelines

AASHTO's *Guide for the Development of Bicycle Facilities* (1999) states the recommended width for a shared use facility is 10 feet. Only under circumstances where the bicycle and pedestrian traffic is minimal, even under peak conditions, are the shared-use facilities recommended to be less than 10 feet wide. A facility that is less than 10 feet wide results in safety issues when passing occurs or when pedestrians/bicyclists meet oncoming pedestrian or bicycle traffic.

The FHWA's *Designing Sidewalks and Trails for Access* (September 2001) states:

“The width of a shared-use path tread not only affects pedestrian usability but also determines the types of users who can use the path...The width of a shared use path should be at least 10 feet (3 m) wide.” Reduced widths should only be considered for paths with limited use.”

2.1.3 Summary Conclusions

In reviewing the comments on the environmental document, the following observations and conclusions resulted:

- The widened sidewalk project is a proactive enhancement project sponsored by both Cities and supported by Caltrans and the FHWA to improve connectivity between the two Cities. It is not considered a safety project or a capacity-increasing project; rather it is considered an enhancement project to improve safety and encourage non-motorized travel between the Cities of Sacramento and West Sacramento.
- The project will enhance accessibility and attract increased non-motorized activity on both riverfronts and along the Capitol Mall/Tower Bridge Gateway corridor (formerly State Route 275). The narrow width of the existing sidewalks discourages non-motorized travel and creates conflicts between the various users of the sidewalks.
- It is recognized that mixing higher speed bicyclists with other sidewalk users traveling at much slower speeds is not desirable. The shared-use sidewalk concept is to accommodate recreational bicyclists and less experienced bicyclists who travel at near walking speeds and that would not use on-street bicycle facilities, including

those who just want to stop and enjoy the view. This concept is reinforced through bridge design elements, added signage, enforcement, and additional regulation as necessary. Higher-speed bicyclists (especially commuters) will have the opportunity to use the delineated paved shoulder that will be provided by the deck rehabilitation project.

In summary, the challenge is to protect, to the extent possible, the historic character of the Tower Bridge while designing and constructing a project that provides access for all user groups, a real choice of modes, and safety in equal measure for each mode of travel, while recognizing that there is an increasing demand for pedestrian and bicycle travel along the Capitol Mall corridor.

2.2 UPDATED PROJECT DESCRIPTION

As a result of public review and agency consultation, the project description has been updated as described below.

The proposed project would widen the existing pedestrian walkway on each side of the bridge. The existing typical distance between the outside of the vertical truss members and the inside of the railing is 1.2 meters (4 feet). There are several constriction points along the existing structure (e.g., at pedestrian gates and pylons) where this width is further reduced to 0.9 meter (3 feet). The proposed widening project would provide a 3-meter- (10-foot) wide sidewalk from the outside of the vertical truss members to the inside of the railing on the fixed spans and lift span. On the approach spans, a new 2.4-meter (8-foot) wide sidewalk would be constructed outside the existing pylons and walls (see Figure 1; all figures are included at the end of the updated project description). The widened sidewalks would provide increased capacity for mixed pedestrian and bicycle use, and the width meets Caltrans' standards for shared-use pedestrian and bicycle space.

Recognizing the need to minimize harm to this historic bridge to the maximum extent feasible while still achieving the project's purpose, the proposed project involves consideration of the following components:

- Sidewalks,
- Sidewalk steel railing,
- Sidewalk pedestrian gates,
- Sidewalk concrete barriers on the West Sacramento approach spans (west end),
- Sidewalk concrete walls on the Sacramento approach span (east end),
- Sidewalk lighting fixtures,
- Steel beam and knee-brace supports below the sidewalk,
- Sidewalk connections at each corner of the bridge,
- Pier access ladders and wooden maintenance walkway on wooden fenders,
- Sidewalk design around the historic pylons, and
- Other elements.

2.2.1 Sidewalks

The existing bridge deck and sidewalks are constructed of reinforced lightweight concrete. As explained further in the following paragraph, weight considerations on the lift span require the existing concrete sidewalk to be removed and replaced with a lighter weight material, either FRP, if feasible, or aluminum. Weight concerns associated with widening the sidewalk on the approach and fixed truss spans are not critical as the support members can be supplemented to resist the additional load of a widened concrete sidewalk.

Lift Span

The project would replace the existing concrete sidewalk with a 3-meter- (10-foot) wide (useable width) sidewalk constructed of FRP composite material, if feasible (Figure 2), or aluminum. The difference in weight between a FRP sidewalk or aluminum sidewalk and the existing lightweight concrete sidewalk would allow the sidewalk surface to be widened without increasing the weight on the lift span. Engineering constraints require that no additional load be added to the lift span due to concerns about the age and balancing of the lifting system, and the overall lifting capacity of the machinery. Either the FRP sidewalk or aluminum would be treated with a skid-resistant resin surface (similar to a concrete surface). This surface provides traction for pedestrians and bicyclists, and would blend the sidewalk with the concrete deck in the adjacent spans.

Fixed Truss Spans – Pylons to Lift Span

The project would preserve the existing sidewalk and widen it with a new concrete sidewalk, so the total usable sidewalk width is 3 meters (10 feet), measured from the outside of the truss to the inside of the relocated railing (Figure 3 and Figure 11). The new concrete would be distinct from the existing sidewalk in order to differentiate between the old and the new. Minimal removal of the sidewalk, limited to the edge under the existing railing, would be necessary.

Approach Spans – Pylons to Riverbanks

The project would preserve the existing sidewalk, concrete barriers (west end) and concrete walls (east end). A new concrete sidewalk 2.4 meters (8 feet) wide would be placed around the pylons and on the outside of the concrete barriers and walls. To smoothly transition around the pylons and provide a usable sidewalk width of 2.4 meters (8 feet), the width of the sidewalk for a short distance at the ends of the truss spans would increase from 3 meters (10 feet) to 4.3 meters (14 feet) wide. See Figures 5, 6, 7, 8, 9, and 10.

The new concrete surface is proposed to be finished with a scoring pattern similar to the existing sidewalk, yet different enough to distinguish the new from the old. The design for this location would not require removal of sidewalk concrete for railing relocation, as railings do not exist in this area. The existing concrete walls (Sacramento end) and concrete barriers (West Sacramento end) would remain in place.

2.2.2 Sidewalk Steel Railing

The existing sidewalks have steel railings along the length of the truss spans until they meet concrete pylons at the western and eastern approach spans. On the West Sacramento approach span, a concrete barrier lines the outside of the sidewalks (see discussion below);

on the Sacramento approach span, a concrete wall lines the outside of the sidewalks. The existing steel railing is 1.1 meters (44 inches) high above the existing sidewalk and extends through the 102-mm- (4 inch-) thick sidewalk to where it connects to the sidewalk support system below the deck. Thus, the total existing post height is 1.22 meters (48 inches) with an additional 13 mm (0.5 inch) steel plate cap at the top. The vertical bar spacing along the railing is 146 mm (5¾ inches) center-to-center and 133 mm (5¼ inches) clear. Current Caltrans safety standards require a minimum height above the deck of 1.37 meters (54 inches) for cyclists. In addition, a Caltrans memorandum (September 23, 2003) modified the Caltrans' Bridge Design Specifications to state that "[w]ithin a band bordered by the walkway surface and a line [690-mm] 27 inches above it, all elements of the railing assembly shall be spaced such that a [150-mm] 6-inch sphere will not pass through any opening." To meet these safety requirements, the following option is proposed for the sidewalk railing.

The project would preserve the existing steel railing and relocate it to the outside of the widened sidewalk. The railing would 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 and comply with ADA sidewalk requirements. Because placing the post on top of the curb would result in a 280-mm (11-inch) gap between the top of the new curb and bottom of the lowest horizontal member of the railing, a steel cable would be run horizontally at 140-mm (5.5-inch) vertical spacing between the railing posts. Cable guides would be attached to the inboard side of the railing posts in a fashion that would allow them to be removed in the future, if desired. Two guides would be provided on each post to support the cable (see Figure 4).

As mentioned above, under Caltrans safety standards, the first 690 mm (27 inches) of a railing above the sidewalk must have no openings through which a 150-mm (6-inch) sphere could pass. The proposed curb and horizontal cable would satisfy this requirement for the first 510 mm (20 inches). The remaining 180 mm (7 inches) would meet the standard without modification as the existing clear spacing between vertical bars is 133 mm (5.25 inches), which would not allow a 150-mm (6-inch) sphere to pass through regardless of horizontal clearances.

2.2.3 Sidewalk Pedestrian Gates

Four new sidewalk pedestrian gates would 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 would be positioned between the truss members, parallel to the sidewalk. When closing, the gates would swing outward across the sidewalk, spanning the full width of the new sidewalk; they would be designed to appropriate standards. The existing gates would be preserved in place but not used during future lift span openings. As necessary, surveillance cameras for lift span operations would be modified to accommodate the sidewalk usage for the new width.

2.2.4 Sidewalk Concrete Barriers at the West Sacramento Approach Spans (West End)

The existing bridge has hollow concrete barriers at the outside edge of the sidewalk on the West Sacramento end of the bridge (west approach spans). The existing sidewalk concrete barriers are 1.19 meters (44 inches) high and approximately 610 mm (2 feet) wide. To widen the sidewalk in this location and preserve the historic fabric and character of the bridge, the following is proposed.

The project would preserve the existing sidewalk and barriers in place and widen the sidewalks to the outside, placing new steel railings at the outside edge of each sidewalk (Figure 10). A 2.4-meter- (8-foot-) wide sidewalk widening in this area is proposed to be entirely on the outside of the pylons and adjacent to the existing concrete barriers. The new steel railing on the outside of the widened sidewalk is proposed to be constructed to current height standards and be compatible with but slightly different in appearance from the existing railings, in order to avoid creating a false sense of history. (See Figures 5 and 6.) The light posts that attach to the existing barriers on the west approach would be preserved in place.

2.2.5 Sidewalk Concrete Walls at the Sacramento Approach Span (East End)

The existing bridge has two large concrete walls along the eastern approach span of the bridge in the City of Sacramento. The walls are approximately 3 meters (10 feet) high and 610 mm (2 feet) thick. The proposed project would preserve the existing sidewalk and walls and construct the new sidewalks on the outside of the pylons and walls with a width of 2.4 meters (8 feet) around the pylons. The new sidewalk railing would be the same as discussed above in the West Sacramento Approach Spans section. (See Figures 7 and 8.)

2.2.6 Sidewalk Lighting Fixtures

The existing bridge has Streamlined Moderne-style lighting fixtures aligned with the existing railings. The existing light fixtures would be preserved and relocated along with the existing railing to the outside of the new sidewalk. The existing light fixtures on top of the concrete barrier on the west approach spans and the lights attached to the pylons would be preserved in place. The electrical system of the lights would be upgraded, as necessary. The new railing on the approach spans where the new sidewalk is located outside of the concrete barriers and walls would include inside-facing/downward lighting to illuminate the sidewalk. (See Figures 4 and 6.)

2.2.7 Knee-Brace and Other Supports below Sidewalk

Lift Span and Fixed Truss Spans

On the lift spans and fixed truss spans, the existing bridge has knee-brace supports below the existing sidewalk. The new sidewalk on these spans would require a modification to these existing supports. The existing support members would be preserved in place and extended by adding new bracing to the existing knee-braces to support the widened sidewalk. (See Figures 2 and 3.)

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

Approach Spans

The existing approach span sidewalks are supported by the typical girder system. On the Sacramento end, the new sidewalk would be supported by large steel knee-braces, similar to the existing knee-braces. On these approaches, the sidewalk, as it winds around the existing abutment walls, would be up to 4.3 meters (14 feet) in width. As this is considerably more than the 3-meter- (10-foot-) wide sidewalk supported typically on the widened structure, additional anchorage must be implemented to provide the proper support. In this case, to provide anchorage for a deeper knee-brace, the existing structure must provide deeper support. This deepening may take the form of a concrete girder on the eastern approach span that is anchored to the existing hollow concrete columns, or other appropriate support system. The hollow columns would be strengthened inside to facilitate support to the column by adding concrete or steel members. (See Figure 7.) Final design will consider feasible refinements to lessen visual impact of the added new concrete girder.

On the end portion of the truss span that widens where the sidewalk connects into the approach structure, a deeper structure support system would be needed to provide support for the deeper knee brace. The structure deepening may be provided by a steel box beam or other appropriate support system added below the truss bottom chord to support the deeper knee-brace geometry required for the wider sidewalk. This steel box beam and the deeper knee-braces would extend along the end of the truss next to the approach span for the portion of sidewalk that is wider than 3 meters (10 feet). (See Figure 7.) Final design would consider feasible refinements to lessen visual impact of the added new steel box beam, by use of shallower beams or adding required strength behind the truss chord where it is less visible.

On the West Sacramento end, the new sidewalk would be supported by a knee-brace system similar to that on the truss span. (See Figures 5 and 6.) In addition to the knee-brace system, some strengthening to the existing superstructure beams would also 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.

2.2.8 Sidewalk Connections at Each Corner of the Bridge

In each corner of the bridge, the new sidewalk will land on existing ground. If the existing ground conditions and walls are not sufficient to support the minimal loading from the sidewalk ends, small spread footings will be constructed below the end of the sidewalk. These spread footings would be no more than 0.9 meter (3 feet) to 1.5 meter (5 feet) deep and 1.5 meter (5 feet) long, for the width of the sidewalk (Figure 7).

Northeast Corner

A portion of the existing concrete wall on the bank, parallel to the river, would need to be removed for the new sidewalk to connect with existing pedestrian facilities. Only the

amount of wall necessary would be removed, and the remainder would be preserved in place (Figures 7 and 8). The existing sidewalk from the eastern side of the bridge to the railroad tracks will be replaced with an ADA-compliant concrete sidewalk. The widened sidewalk from the bridge would transition to the existing railroad crossing at an ADA-compliant slope (Figure 9). Ground disturbing activities will be limited to sidewalk construction work in the northeast corner of the bridge, where the new widened sidewalk will meet the bank. The area of this ground disturbing activity will be no more than 120 square meters (0.012 hectare). The City of Sacramento is in the process of constructing a connection between the existing raised boardwalk to the north of the bridge in Old Sacramento and the northeast corner of the Tower Bridge. The sidewalk constructed for the Tower Bridge will connect to the City's new walkway.

Southeast Corner

A portion of the existing concrete wall and existing metal railing (erected as part of the Riverfront Promenade) on the south side of the bridge, parallel to the river, would need to be removed for the new sidewalk to connect to the Riverfront Promenade. The Riverfront Promenade sidewalk connects to a crosswalk of the railroad and street and continues as a sidewalk to the south along the river.

Northwest Corner

On the West Sacramento end of the bridge, a portion of the existing concrete wall parallel to the river (part of the plaza on the bank) would need to be removed for the new sidewalk to connect to the existing pedestrian facilities. (See Figure 5.) A sidewalk currently exists from the plaza toward 3rd Street; therefore, no additional construction is included in this project.

Southwest Corner

A portion of the existing concrete wall parallel to the river (part of the plaza on the bank) would need to be removed for the new sidewalk to connect to the existing pedestrian facilities. (See Figures 5 and 6.) The existing walkway from the plaza toward 3rd Street is unpaved. The City of West Sacramento is currently constructing an ADA-compliant path from the west end of Tower Bridge toward Raley Field. This project is scheduled to be completed prior to completion of the sidewalk widening project. Consequently, no additional sidewalk construction is proposed for this corner as part of this project.

2.2.9 Pier Access Ladders and Wooden Maintenance Walkway on Fenders

Due to the width of the proposed widened sidewalk, the pier access ladders and maintenance walks on the fenders at the north side of Piers 6 and 7 would need to be shifted from their current location in order to maintain direct access to the piers from the superstructure. The existing location of the ladders requires that the bridge operator cross traffic to access the maintenance walks. The project proposes to relocate the existing access ladders and maintenance walks from the north to the south side of the bridge to eliminate a potentially hazardous situation for the bridge operator. The access gate in the railing currently on the north side of the bridge would be reused and relocated to the south side of the bridge, and the section of fixed railing replaced by the gate would be reused on the north side of the bridge, to the extent possible.

2.2.10 Sidewalk Design around the Historic Pylons

The existing bridge has pylons at each end of the bridge that are significant character-defining features and that originally supported the span wire for the trolley wires of the electric railway. On the west end, these pylons are the transition point between the steel railing and concrete barrier, as discussed above. On the east end, the pylons attach to the 3-meter- (10-foot-) high wall. In both cases, the widened sidewalk around the pylons is proposed to have an angular transition in the plan view in keeping with the rectilinear character of the bridge. (See Figures 1, 5, 7 and 9.)

2.2.11 Other Elements

Foundations and Floodwalls

Foundation work would be limited to widening adjacent to the existing structure abutments. Outside the existing abutments on the Sacramento side of the river are adjacent floodwalls. As mentioned previously, a portion of these walls would be removed to accommodate the new sidewalk width. A concrete sidewalk would be constructed, to which the bridge sidewalk and at-grade sidewalk can be joined. To avoid reliance on the existing walls or the fill material behind the walls for support, spread footings may be installed to support the concrete slab. The spread footings would be placed behind the existing floodwalls below the new concrete slab. (See Figure 7.) No other foundation work is anticipated or identified in the project description. All the work that is described is above the ordinary high water mark and above the 100-year water surface elevation.

Planters at West End

The project proposes to remove two concrete planter pots located at the west end of the bridge in West Sacramento, one on each side of the bridge (Figure 5). The planter pots are not part of the original design fabric of the bridge and do not represent a later alteration that has gained significance in its own right; they are not contributive elements of the historic bridge. Removal of the planter pots would have no effect on the historic characteristics that qualify the Tower Bridge for inclusion in the National Register of Historic Places.

Utility Relocation

Three utility boxes are located in the northeast quadrant of the bridge. At least one utility box, owned by Sacramento Municipal Utility District (SMUD) and closest to the bridge, would need to be relocated to accommodate the proposed project. The exact relocation site for this box has not been determined, but it would be relocated within the same general area—possibly adjacent to the existing utility box that is farthest north from the bridge. Depending on the final design, the second utility box, owned by the Sacramento Southern Railroad and containing signal equipment may also need to be relocated. Utility relocation would be coordinated with Caltrans, SMUD, the Sacramento Southern Railroad and other utilities, as needed.

Paint Color

All new elements or disturbed existing steel elements would be painted using the existing color scheme. Any new color scheme will require approval by the District Principal Architectural Historian.

Americans with Disabilities Act Compliance

As part of any improvement to a public facility, there is a Federal mandate to upgrade that facility to current ADA standards. This is especially true for projects constructed with federal funds, such as the Tower Bridge project. Accessibility is not just making sure individuals can use the accessible route, but also traverse the route safely. Within the traversable sidewalk route are diagonal truss elements that present a potential vertical obstacle for visually impaired users. The ADA Head Room standard requires a cane detection area in any location where headroom is restricted to less than 2.0 meters (80 inches) along the accessible route. At the restricted head room area on the diagonal truss member, an appropriate cane detection barrier would be installed in accordance with the ADA accessibility guidelines.

Navigation Lights

The Tower Bridge has existing channel delineation lights for navigational purposes under the structure at the edge of the existing sidewalk (both north and south sides) in the center channel. The widening of the sidewalks will include addition of new (or relocation of the existing) navigation lights to the outside edge of the widened sidewalks.

2.2.12 Construction Information

This section briefly describes the construction techniques and equipment that are anticipated to be used during the different stages of project construction. Construction contractors would schedule construction operations so that conflicts with other projects on the bridge (redecking) are minimized.

Similar to the recent painting project, Tower Bridge would need to be closed to vehicular and pedestrian traffic when work is being performed on the lift span. By closing the bridge to traffic during this phase of the work (two periods of approximately 2 to 3 months each), the contractor would be able to place the lift span in the “up” position, thus allowing river traffic to pass without disrupting work on the lift span. Vehicular traffic and transit service would need to use either the Pioneer Bridge (Interstate 80 over the Sacramento River) or the I Street Bridge. The contractor would be required to prepare a traffic management plan and submit it to Caltrans, the Cities, and the Sacramento Southern Railroad for review and approval. The bridge closures would not occur during the River Cats’ home season (typically from mid-April to mid-September) or during the holiday shopping season (from November 20 to January 2).

The permanent improvements proposed by this project would remain entirely within the Caltrans, City of Sacramento, and City of West Sacramento rights-of-way. On the West Sacramento side of the river, the connection to the plaza areas would remain entirely within the City of West Sacramento right of way. In the northeast corner of the bridge, an interagency easement from the City of Sacramento Redevelopment Agency may be necessary for construction of the new sidewalk and relocation of the existing utility box(es).

One possible optional temporary staging area has been identified in the City of West Sacramento near the northwest corner of the bridge. The possible staging area is north of Capitol Mall and south of the Ziggurat Building. The Assessor’s Parcel Number of this

vacant lot is 010-422-321. At the time the parcel was identified as a possible temporary staging area, it was vacant and owned by Raleys. Zoned as a waterfront property, the lot is approximately 31,980 square feet in size.

This area has been identified as a possible area for the contractor to store construction equipment and material, and park employee vehicles. If used, the area would be fenced during construction. The contractor may choose to identify and use other staging areas in the project vicinity. If the contractor deems it necessary to stage outside the existing public right of way, the contractor would need to obtain an easement from the appropriate property owner.

To widen the existing pedestrian walkway, work on the abutments, bridge deck, and lift span is required. All of the work on the lift span would be completed from the bridge deck. However, because of the width of the overhangs on both approach spans and the subsequent need to do strengthening work under the fixed truss in the adjacent areas, a barge or temporary work platform may be needed. The barge or temporary work platform would be located outside the navigable portion of the channel.

On the approach and fixed truss spans, the proposed project would be constructed on one side of the bridge at a time. Lane closures would be required on the side of bridge where construction takes place. Traffic would be directed to the opposite side, where two lanes would maintain flow in either direction. The traffic management plan (TMP) would be developed according to Caltrans guidelines and specifications. The TMP would detail schedules, show how traffic would be detoured, and contain restrictions on lane closures and traffic movements.

2.3 SUMMARY OF COORDINATION AND CONSULTATION WITH OTHER AGENCIES

Pages 17 and 18 of the draft environmental document identify anticipated permits and consultation required to construct the project. Table 2-1 provides an update of the permitting and consultation status.

Permits or Consultation	Documentation Produced and Status of Permit or Consultation	Report Section in the EA/Draft EIR (June 2004)
Section 404 of the federal Clean Water Act	Corps received a copy of the Initial Study and EA/Draft EIR (Regulatory Branch Number 200400041); exact need for permit cannot be determined until final design	Page 18 of the EA/Draft EIR
Section 10 of the federal Rivers and Harbors Act	Permit required prior to construction	Page 18 of the EA/Draft EIR
Transportation conformity under the federal Clean Air Act	Project is exempt (project does not add vehicular capacity)	Page S-5 of the EA/Draft EIR

Section 106 of the National Historic Preservation Act	Archaeological Survey Report, Historic Resources Evaluation Report, Historic Property Survey Report and Finding of Adverse Effect submitted to the State Historic Preservation Officer (SHPO). National Register of Historic Places evaluation of the Sacramento Seawall submitted to the SHPO. SHPO agreed project would result in an adverse effect and concurred that Sacramento Seawall is not eligible for inclusion in the National Register. SHPO declined to enter into a Memorandum of Agreement (MOA) with Caltrans and the FHWA. FHWA agreed to continue Section 106 consultation with the Advisory Council on Historic Preservation (ACHP). ACHP agreed to enter into MOA.	Appendix B contains a copy of the signed Memorandum of Agreement
Section 7 of the federal Endangered Species Act	Natural Environment Study sent to the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) with a request to initiate informal consultation.	Appendix C contains agency consultation letters
Executive Order 11312—Invasive Species	Required evaluation	Natural Environment Study report and Pages 3-16 and 3-24 of the Initial Study
Executive Order 12898—Environmental Justice	Required evaluation	Page S-6 of the EA/Draft EIR
U.S. Coast Guard	Coast Guard permit not required if project complies with Coast Guard conditions	Page 19 of the EA/Draft EIR; Appendix C contains consultation letters
Section 401 of the Clean Water Act	A Section 401 water quality certification is required if a Section 404 permit is required; exact need for permit cannot be determined until final design	Page 19 of the EA/Draft EIR
California Department of Fish and Game	A Section 1602 streambed alteration agreement is required	Page 18 of the EA/Draft EIR. Agreement to be obtained after project approval.
State Reclamation Board	Reclamation Board permit is required	Page 18 of the EA/Draft EIR. Permit to be obtained after project approval.
California Public Utilities Commission (PUC)	Consultation with the PUC may be required for modifications to the sidewalk at the railroad crossing	Page 18 of the EA/Draft EIR. Consultation initiated during environmental review

Public Resources Code Sections 5024(f) and 5024.5	Caltrans consulted with the SHPO as required. SHPO terminated consultation to enable the Federal Advisory Council on Historic Preservation to conclude consultation with the Federal Highway Administration	Appendix E, Draft Section 4(f) Evaluation, to the EA/Draft EIR, Page E-1 stated that the Draft Section 4(f) Evaluation and Section 106 documentation was prepared to comply with Section 4(f) and Section 5024.5 of the Public Resources Code; see also Appendix A to this document
California State Lands Commission	The existing bridge is located within the existing Streets and Highway Code Section 101.5 map; thus, an amendment from Caltrans is not necessary.	Appendix A to the EA/Draft EIR
Sacramento Southern Railroad	The project may require relocation of utility box. Issues include possible changes to the gate arms of the highway grade crossing warning device system.	Consultation initiated with EA/Draft EIR. Consultation and coordination require for construction staging and utility relocation.
California Department of Parks and Recreation, California State Railroad Museum	The project may require relocation of utility boxes important to the operation of the California State Railroad. Issues include possible changes to the gate arms of the highway grade crossing warning device system.	Consultation initiated with EA/Draft EIR. Consultation and coordination required for construction staging and utility relocation.

2.4 ERRATA TO THE EA/DRAFT EIR

Listed below are changes, additions, and deletions that have been made to the text of the EA/Draft EIR as a result of public and staff review.

1. Page S-1, 5th paragraph:

~~The existing sidewalks were not designed for mixed pedestrian and bicycle use. As currently configured, the sidewalks and their railings meet Caltrans design standards for pedestrian use only, and bicyclists use the roadway deck. Bicyclists who choose to use the sidewalks must dismount and walk when they encounter a pedestrian.~~

The existing sidewalks were not designed for mixed pedestrian and bicycle use. As currently configured, the sidewalks do not meet current Caltrans design standards for pedestrian or bicycle use, due to obstructions that reduce the width in numerous locations. Currently, bicyclists who choose to use the sidewalks

must dismount and walk when they encounter a pedestrian. In addition, the sidewalk railings do not meet Caltrans design standards for adjacent bicycle use.

2. Page S-2, 3rd paragraph:

~~The only alternative that the PDT determined meets the project purpose and need is Alternative 1: Sidewalk Widening— Proposed Project.~~

The only alternative that the PDT determined meets the project purpose and need for pedestrians and recreational bicyclists is Alternative 1: Sidewalk Widening – Proposed Project. Alternative 9: Reduce Lane Widths and Stripe Bike Lanes on the Pavement will address needs of commuter bicyclists and will be implemented as part of Caltrans’ Deck Rehabilitation project, programmed for 2004/2005.

3. Page 4, Section 1.4.3:

1.4.3 Tower Bridge Pavement Deck Rehabilitation Project

The Tower Bridge ~~pavement~~ deck rehabilitation project includes deck rehabilitation consisting of grinding and overlaying the existing roadway deck surface, increasing the gap in the lift span joints to eliminate binding, rebalancing the lift span, and restoring joint movement in piers 2, 3, 4, and 5. The project will remove the existing asphalt concrete (AC) overlay and a thin portion of the existing Portland Cement Concrete (PCC) deck, and replace it with a variable thickness polyester concrete overlay. The project also includes restriping the vehicular travel lanes to 3.3 m (11 feet) to provide 1.2-meter (4-foot) multi-purpose shoulders. The proposed work will be conducted from the roadway. It may be necessary, however, to perform some activities from under the western end of the bridge using scaffolding and/or a barge. The project will be constructed with both federal and state funds.

Caltrans is preparing the environmental documentation for the deck rehabilitation project. The total project cost is approximately \$2 million. The project is scheduled for construction in Spring/Fall 2005.

4. Page 2, first two sentences of the 5th paragraph:

~~The existing sidewalks were not designed for mixed pedestrian and bicycle use. As currently configured, the sidewalks and their railings meet Caltrans design standards for pedestrian use only, and bicyclists use the roadway deck.~~

The existing sidewalks were not designed for mixed pedestrian and bicycle use. As currently configured, the sidewalks do not meet current Caltrans design standards for pedestrian or bicycle use, due to obstructions that reduce the width in numerous locations. Currently, bicyclists who choose to use the sidewalks