EXECUTIVE SUMMARY

Purpose and Need

Project Background

In 2006, the Cities of West Sacramento and Sacramento, in cooperation with Sacramento Regional Transit (RT) and Yolo County Transportation District (YCTD), formed a partnership to study the reintroduction of the streetcar to connect the cities of West Sacramento and Sacramento and their shared riverfront. Over the past 30 years, public and private interests examined the feasibility of streetcar service that would travel between West Sacramento and downtown Sacramento. The partnership was aided by funding from Sacramento Area Council of Governments (SACOG) Community Design Program to perform a thorough analysis so that elected officials, public agencies, citizens groups, and other stakeholders could make an informed decision on the most appropriate transportation investment. The feasibility study, which included a discussion of technology, alignment, financing opportunities, and operating plans, was completed in May 2007 and summarized in the Phase I Summary Report, Downtown/Riverfront Streetcar Study. The City Council of West Sacramento adopted the findings of the Phase I report on May 9, 2007. In addition, the YCTD and RT boards adopted the findings of the Phase I report on May 14, 2007, and the City of Sacramento did the same on May 22, 2007. The selection of the preferred alternative (Streetcar Project Alternative) is described in more detail in the Alternatives section below and in Chapter 2.

Location and Study Area

The location of the proposed streetcar alignment is in downtown Sacramento and the Washington/ Triangle/Civic Center areas of West Sacramento, which are separated by the Sacramento River and linked by the Tower Bridge. The project-level Environmental Impact Report (EIR) analyzes environmental impacts in a study area that encompasses a one-quarter-mile buffer around the proposed alignment, as shown in Figure ES-1.

Purpose of Proposed Action

The purpose of the proposed project is to improve transit service and local circulation by connecting West Sacramento and downtown Sacramento with an alternative (non-auto) mode and supporting existing and future development in the City of West Sacramento and downtown Sacramento. The purpose is consistent with local plans and policies, as further discussed in Chapter 3.

Need for Transportation Improvements in the Corridor

It is anticipated that the development plans and growth projections for West Sacramento's redevelopment areas and downtown Sacramento will generate greater travel demand for local mobility and roadway capacity than is currently available, especially given the projected traffic congestion scenarios at Tower Bridge (SACOG, 2008). West Sacramento is undergoing rapid urban development that will introduce a high concentration of new residential, commercial, civic, and cultural land uses. This intense development is projected to increase the number of residents and workers who will live and/or work in this area. The City of Sacramento has an established downtown that caters to high-density residential and office development, currently planned and under construction. The proposed streetcar service would provide additional capacity between the two cities by supplementing existing transit operations, which primarily consist of intercity service provided by YCTD (Yolobus).

EIR Process

The environmental process began with the publication of a Notice of Preparation of an EIR for the proposed project. The Notice of Preparation announced two public scoping meetings on September 12 and 13, 2007, and a 36-day period to receive public comments on environmental issues to be addressed in the EIR. The environmental analysis for the proposed project is contained in this Draft EIR for the Downtown/Riverfront Streetcar Project, which is available for public review and comment. Two public meetings will be conducted on October 2, 2008, to receive comments on the Draft. Written comments can also be submitted to the City of West Sacramento Public Works and Community Development Department (1110 West Capitol Avenue, West Sacramento, CA 95691) and on the streetcar project website (www.riverfrontstreetcar.com). Comments will be reviewed by the City of West Sacramento and its partner agencies to determine if the proposed project will be carried forward as proposed. Comments on the Draft are then addressed and incorporated into the Final EIR, which will be certified by the City of West Sacramento. Other agencies, including the City of Sacramento, may also certify the Final EIR as responsible agencies. The proposed project will move forward into preliminary engineering and final design before proceeding into construction. Construction is anticipated to begin in 2010.

Alternatives

This section presents a description of the two alternatives carried forward from the Phase I Downtown/Riverfront Streetcar Study for environmental analysis.

No-Project Alternative

The No-Project Alternative is a base scenario used for comparison purposes with the proposed project. In the No-Project Alternative scenario, existing transit services and roadway configurations would remain in their present state with no changes other than improvements that have been programmed and funded through 2012.

Streetcar Project Alternative

Alignment

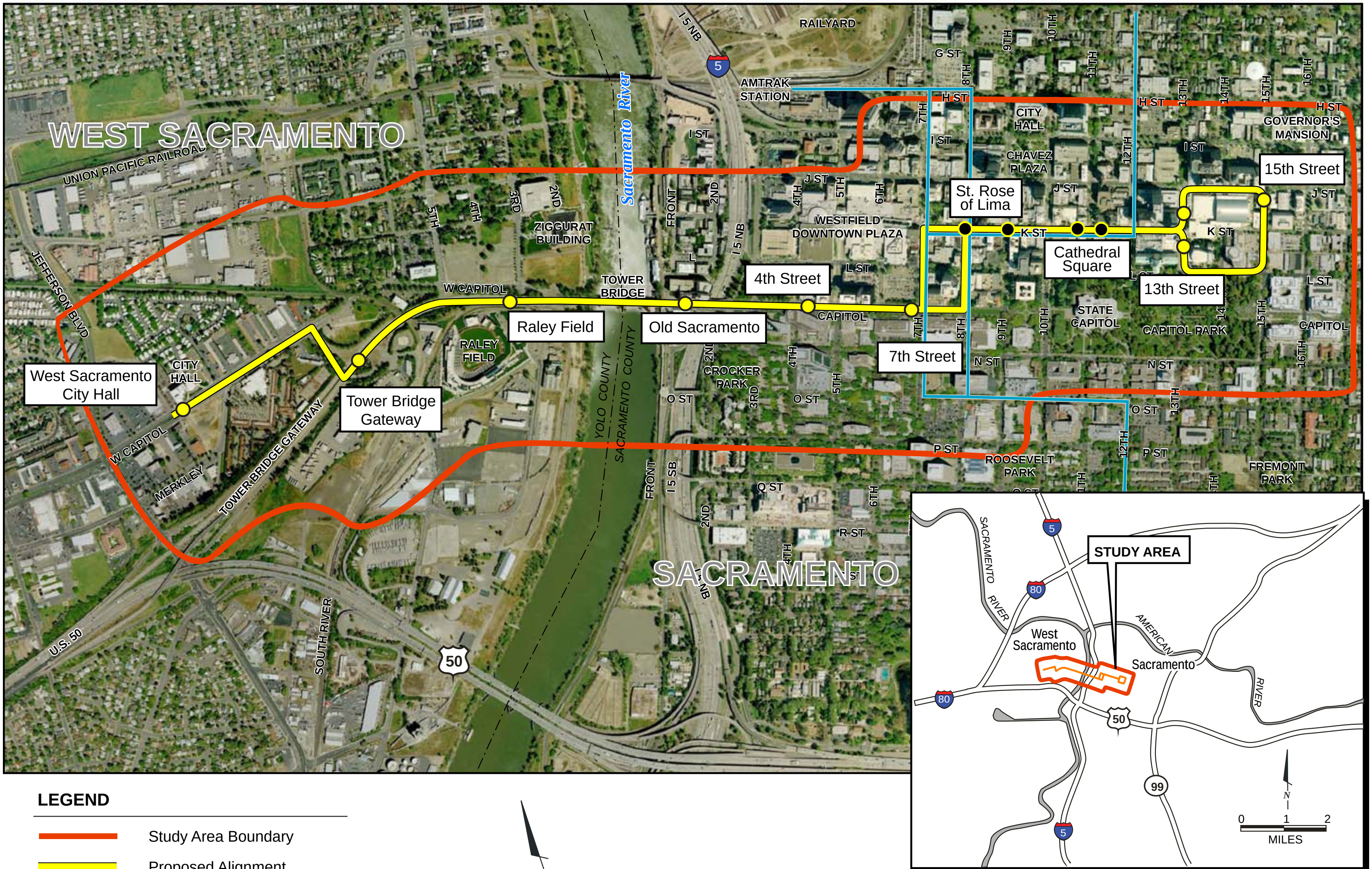
This section describes the proposed streetcar line by track segment, starting from the western terminal and moving east to the eastern terminal loop. Along 7th/8th Street and K Street in the city of Sacramento, the streetcar would share track and stations with RT light rail transit (LRT) and would use the RT light rail maintenance facility at Academy Way. A summary of the track segment descriptions is included in Table ES-1. Figures ES-2 through ES-7 illustrate the proposed alignment and station locations.

Description of Station Locations

Proposed station locations are shown in Table ES-2. In places where the streetcar would share track with light rail, the streetcars would stop at RT's existing LRT stations. New stations would be built at the locations where track would be used exclusively by the streetcar. These locations are marked as "New" in Table ES-2 (URS, 2007).

Days of Operation/Span of Service

The proposed streetcar service would operate seven days per week. The span of service for the service would be 6:00 a.m. to 12:00 midnight, seven days per week, as shown in Table ES-3.



LEGEND

- Study Area Boundary
- Proposed Alignment
- Existing LRT Route
- New Streetcar Platform
- Existing RT Platform to be used by Streetcar

N

0 1000 2000
Scale in Feet

PROJECT STUDY AREA

September 2008
25696500

Downtown/Riverfront Streetcar
West Sacramento, California

URS

FIGURE ES-1

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Table ES-1. Proposed Track Configuration

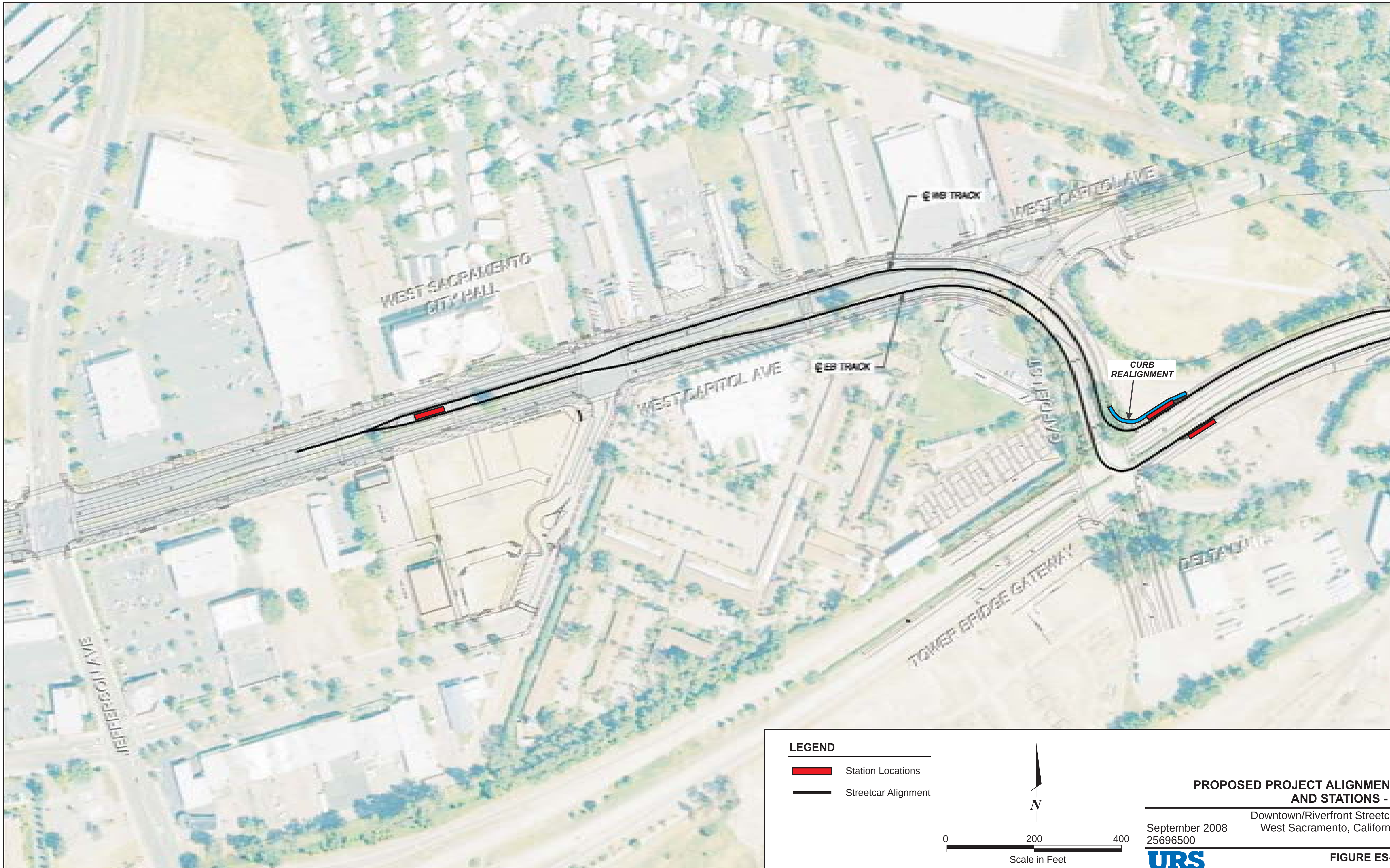
Segment	Track	Proposed Configuration
West Sacramento Civic Center Terminal	Single	Stub track in the reserved center median.
West Sacramento Civic Center Station	Double	Double track in the reserved center median.
Via West Capitol Avenue – West Sacramento Civic Center Station to Garden	Double	Exclusive operation in the reserved center median from West Sacramento Civic Center Station to Merkley Avenue. Left-lane operation in mixed traffic on the two-way street along West Capitol Avenue from Merkley Avenue to Garden Street.
Garden Street to Tower Bridge Gateway	Double	Left-lane operation in mixed traffic on the two-way street.
Via Tower Bridge Gateway – Garden Street to Raley Field Station	Double	Right-lane operation in mixed traffic on each side of the two-way street, with the exception of Tower Bridge Gateway between 5th and 3rd Streets, where the eastbound alignment would operate partially on the former UPRR right-of-way.
Via Tower Bridge Gateway – Raley Field Station to Tower Bridge	Single	Left-lane operation in mixed traffic on the west side of the two-way street.
3rd Street Southbound Extension (proposed)	Single	Right-lane operation in mixed traffic on the west side of the two-way street.
Tower Bridge	Single	Operation in center of the bridge, overlapping two travel lanes.
Old Sacramento Station	Double	Exclusive operation in the reserved center median.
Capitol Mall	Double	Double track with semi-exclusive operation in the reserved center median.
7th and 8th Streets	Double (split pair)	Left-side, mixed traffic operation on the one-way couplet, shared with RT.
K Street – 7th Street to 12th Street	Double	Exclusive operation in the center of the transit mall, shared with RT.
K Street – 12th Street to 13th Street	Single	Exclusive operation in the center of the pedestrian mall.
13th Street, J Street, L Street	Single	Right-side operation on the two-way street (13th Street)/one-way streets (J Street and L Street) in mixed traffic.
15th Street	Single	Left-side operation on the one-way street in mixed traffic.

Table ES-2. Proposed Station Locations

Item	Location	New or Existing	Single or Double Track	Side or Center Platforms
Westbound				
Station	15th Street and J Street	New	Single	Side
Station	13th Street and K Street	New	Single	Side
Station	K Street and 11th Street	Existing	Double	Side
Station	K Street and 8th Street	Existing	Double	Side
Station	Capitol and 7th Street	New	Double	Center
Station	Capitol and 4th Street	New	Double	Center
Station	Old Sacramento Station	New	Double	Center
Station	Raley Field Station	New	Double	Side
Station	Tower Bridge Gateway/Garden Street	New	Double	Side
Station	West Sacramento Civic Center	New	Double	Center
Eastbound				
Station	West Sacramento Civic Center	New	Double	Center
Station	Tower Bridge Gateway/Garden Street	New	Double	Side
Station	Raley Field Station	New	Double	Side
Station	Old Sacramento Station	New	Double	Center
Station	Capitol and 4th Street	New	Double	Center
Station	Capitol and 7th Street	New	Double	Center
Station	K Street and 8th Street	Existing	Double	Side
Station	K Street and 11th Street	Existing	Double	Side
Station	13th Street and K Street	New	Single	Side
Station	15th Street and J Street	New	Single	Side

Table ES-3. Span of Service

Day	Span
Monday-Friday	6:00 a.m. – Midnight
Saturday	6:00 a.m. – Midnight
Sunday	6:00 a.m. – Midnight



PROPOSED PROJECT ALIGNMENT AND STATIONS - 1

Downtown/Riverfront Streetcar
West Sacramento, California

September 2008
25696500

URS

FIGURE ES-2

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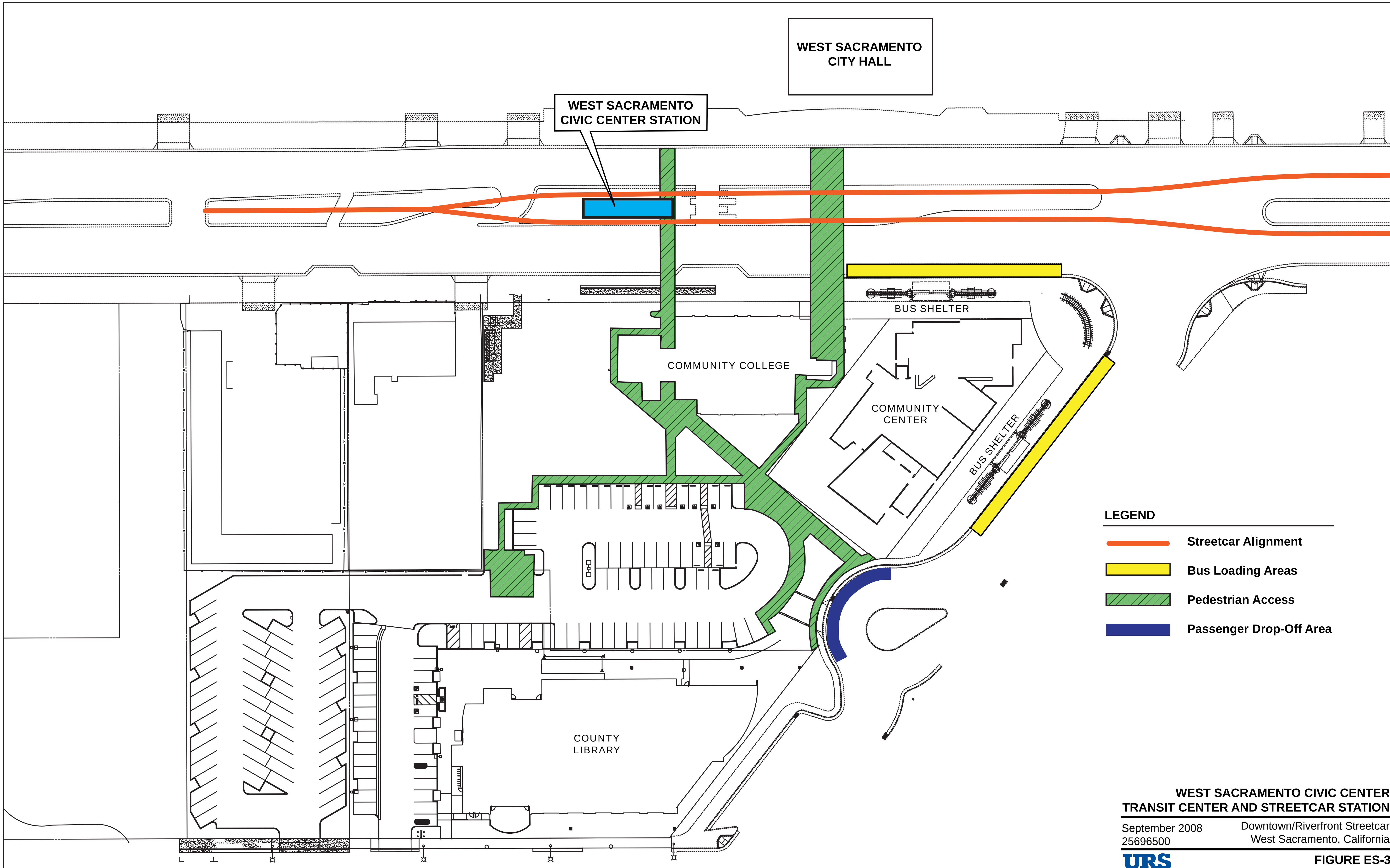
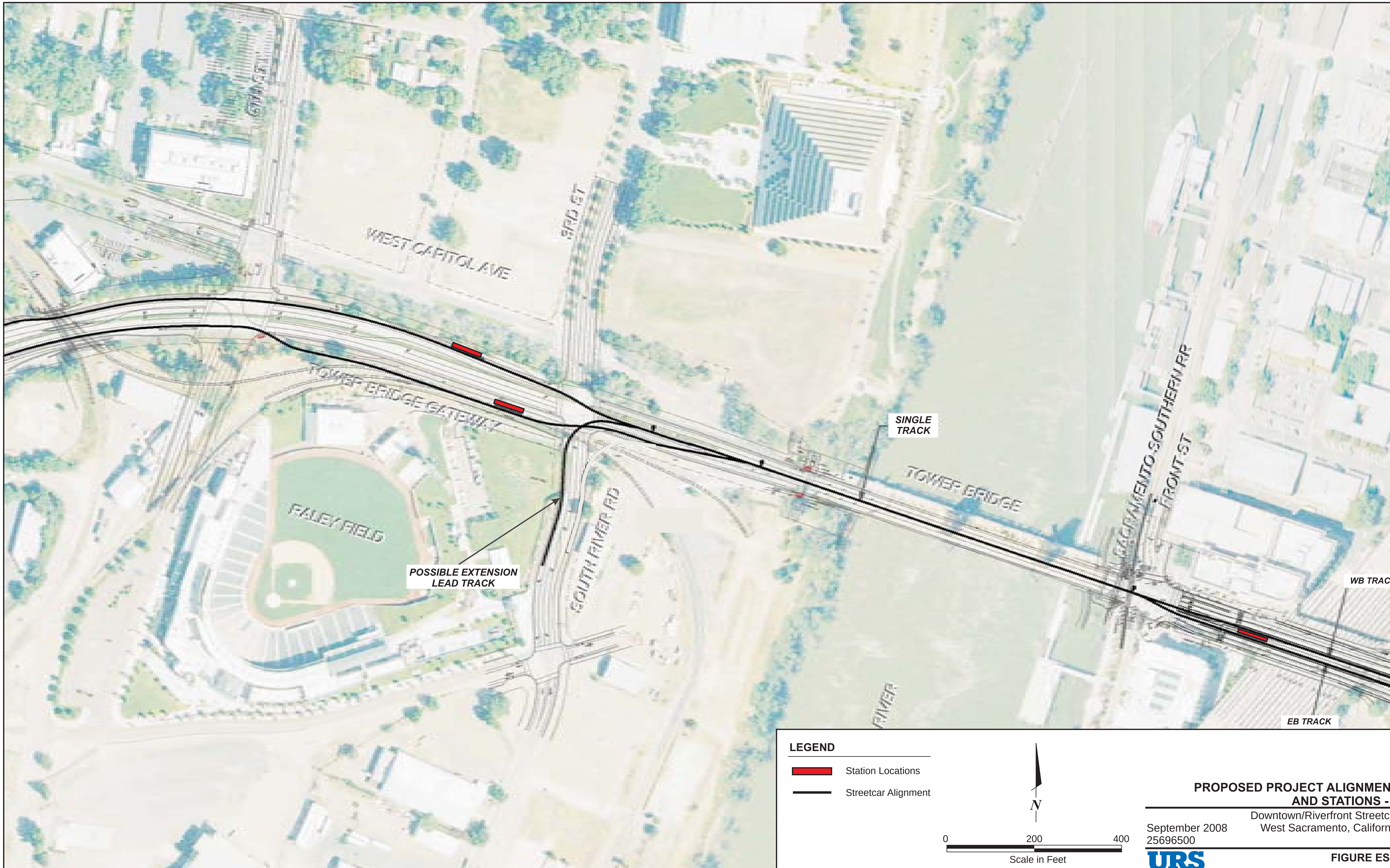


9/2/08 hk ..T:\West Sacramento Streetcar\June 2008\FES-3_west sac civic center.ai



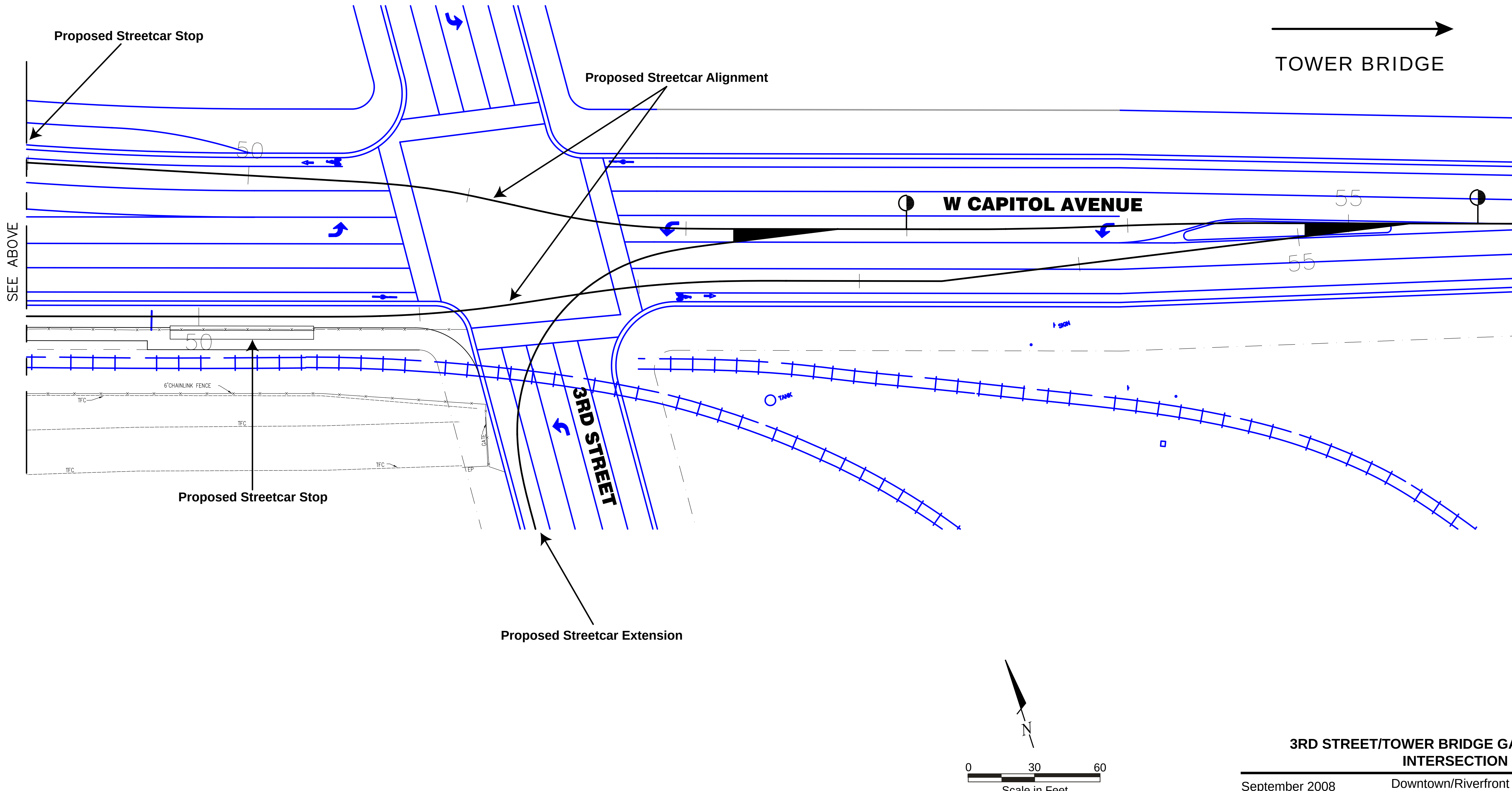
PROPOSED PROJECT ALIGNMENT AND STATIONS - 2

Downtown/Riverfront Streetcar
West Sacramento, California

September 2008
25696500

FIGURE ES-4

9/2/08 hk ..T:\West Sacramento Streetcar\June 2008\FES-4_segment_2.ai



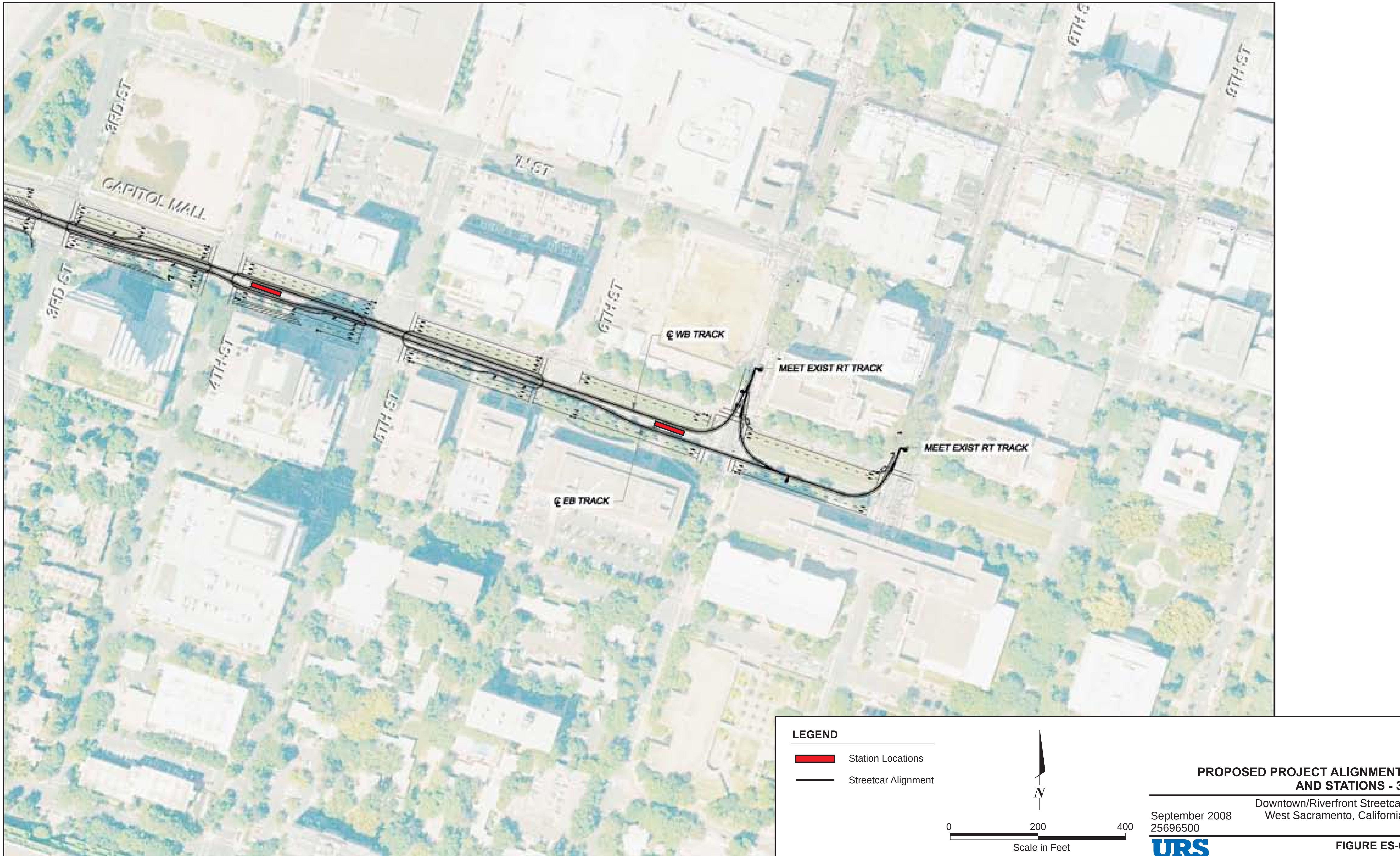
3RD STREET/TOWER BRIDGE GATEWAY INTERSECTION DESIGN

September 2008
25696500

Downtown/Riverfront Streetcar
West Sacramento, California

URS

FIGURE ES-5



PROPOSED PROJECT ALIGNMENT AND STATIONS - 3

Downtown/Riverfront Streetcar
West Sacramento, California

September 2008
25696500

URS

FIGURE ES-6

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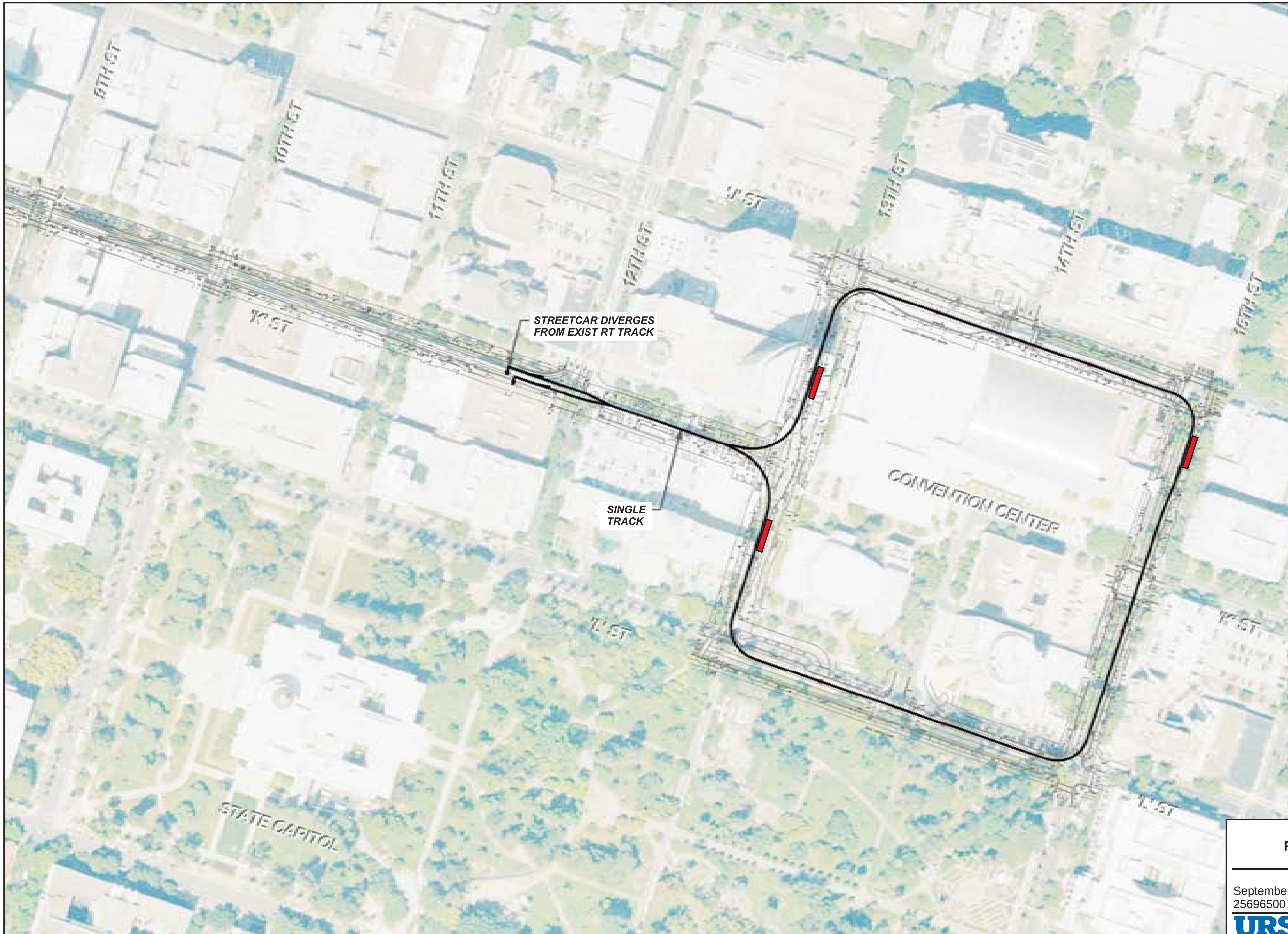

LEGEND

Station Locations

Streetcar Alignment

N

0 200 400

Scale in Feet

PROPOSED PROJECT ALIGNMENT AND STATIONS - 4

Downtown/Riverfront Streetcar
West Sacramento, California

September 2008
25696500

URS

FIGURE ES-7

9/2/08 hk ..T:\West Sacramento Streetcar\June 2008\FES-7_segment_4.ai

Headways and Potential Ridership

The streetcar's headways would be 10 minutes for service between 12:00 noon and 2:00 p.m. and 15 minutes for the remaining hours of service (i.e., 6:00 a.m. to 12:00 noon and 2:00 p.m. to 12:00 midnight). Establishing the headway at 10 minutes during peak hours and 15 minutes during non-peak hours would result in 6 trips per hour each direction during the midday peak and 4 trips per hour each direction during the rest of the service period, with departures possible at the same times each hour. Streetcar schedules would then be effectively coordinated with connecting rail or bus services operating at multiples of this headway, such as 15 minutes, 30 minutes or hourly.

The ridership estimates from the Phase I feasibility study were refined for the Streetcar Project Alternative. The analysis reveals that the streetcar system would have daily non-event day patronage of 7,700 and 10,800 by 2010 and 2030, respectively, under the most likely operating scenario (10 minutes peak and 15 minutes off-peak headway, $0.50 fare, and complementary feeder bus service). A non-event day is defined as a typical weekday without any scheduled major events at Raley Field or any other venue within the study area. Currently, RT and YCTD operate bus transit services in the streetcar corridor. The analysis indicates that restructuring of RT and YCTD service routes in the streetcar corridor to complement the streetcar service would increase system ridership by 36 to 45 percent. In addition, the streetcar system has potential to attract 11,700 non-event day riders by 2030 under a fare-free policy. In addition, the analysis suggests that by 2030 the streetcar system will attract 2,950 daily choice riders.

Vehicle and Vehicle Storage Facilities

Vehicle Types

The vehicle envisioned for the proposed project is the modern streetcar, which would be double-ended and double-sided, with operating controls at both ends. Passengers would board from either side of the car.

Capital Cost and Operating Maintenance Cost Estimates

Capital Cost

The most current capital cost estimate for the Streetcar Project Alternative is in the *Downtown/ Riverfront Streetcar Study Phase I Report* (HDR, 2007). The capital costs include the track and systems work, civil and roadway engineering, stop shelters and amenities, vehicles, and soft costs associated with the design and construction of the preferred project. The estimated capital cost is $69,319,151. An updated capital cost estimate is pending completion of Preliminary Engineering, which will add more definition to the trackwork, vehicle, passenger information system, overhead contact system, traction power, signaling, revenue collection, maintenance facility, stray current, and traffic signal modifications (Hecht, 2008c).

Operating and Maintenance Cost Estimates

Annual Operating Costs

The operating cost estimate derived in this phase of the proposed project is approximately $3.9 million per year. Due to uncertainties at this stage of the proposed project about governance and the organizational structure of the future operation, it would be prudent to assume an additional 10 percent contingency. More refined operating cost estimates will be provided in the Preliminary Engineering phase.

Summary of Significant Impacts and Mitigation Measures

Table ES-4 (at the end of this Executive Summary) provides a summary of significant or potentially significant impacts for the No-Project and Streetcar Project Alternatives by environmental topic area. For those topics indicating significant impacts, this table provides mitigation strategies and the effectiveness of the mitigations to reduce impacts to a less than significant level.

Other CEQA Considerations

Summary of Unavoidable Impacts

As indicated in Table ES-4, the No-Project Alternative produces unavoidable impacts on traffic circulation and cumulative noise levels as traffic volumes increase on study area roads. Of particular concern are the long-term circulation impacts on Tower Bridge and the unacceptable future ambient noise levels on sensitive receptors along the alignment. In addition, the No-Project Alternative would induce growth. As indicated in Chapter 4, the Streetcar Project Alternative produces construction, operation and cumulative impacts that can be reduced to a less than significant level. Unlike the No-Project Alternative, the Streetcar Project Alternative produces no unavoidable impacts.

Environmentally Superior Alternative

The EIR compares the Streetcar Project Alternative with the No-Project Alternative to determine which would be the Environmentally Superior Alternative. As indicated in Chapter 4 and Sections 5.1, 5.2, and 5.3, the Streetcar Project Alternative is the Environmentally Superior Alternative for the following reasons:

- **Land Use:** The Streetcar Project Alternative supports the City of West Sacramento's redevelopment goals of promoting transit-oriented development.

- **Employment:** The Streetcar Project Alternative would create construction and operations jobs without creating added demand for housing, because the regional labor pool could fulfill the employment requirements of the proposed project.

- **Transportation:** In contrast to the No-Project Alternative, which produces cumulative traffic impacts on study area roads, particularly on the approach roads to Tower Bridge, the Streetcar Project Alternative would reduce automobile trips over Tower Bridge over the long term and, as a result, help the cities overcome cumulative traffic congestion and circulation problems on the approach roads to Tower Bridge.

- **Parks and Recreation:** The Streetcar Project Alternative would improve access to parklands along the Sacramento River and in the area surrounding the Capitol and connect them with neighborhoods along the alignment.

- **Air Quality:** By shifting some automobile trips to transit, the Streetcar Project Alternative would support regional air quality goals to reduce vehicle miles traveled.

- **Noise:** Noise levels along the proposed alignment are forecasted to exceed local thresholds over the planning horizon under the No-Project Alternative. Sensitive receptors along the alignment may be subjected to unacceptable future ambient noise levels due to the increased traffic volumes on the major streets that contain the alignment. Unlike the No-Project Alternative, the Streetcar Project Alternative does not make a considerable contribution to unacceptable cumulative noise levels. Mitigations are identified to reduce project-related noise and vibrations impacts to a less than significant level.

- **Energy:** The streetcar is a non-polluting, electric-powered vehicle that lessens reliance on fossil fuels. If the proposed project were in operation, an additional 3,134 kWh of annual energy usage, or a 4 percent increase, would be required. This is not considered a substantial increase in energy consumption and represents a very small percentage of electric power generated by SMUD. In addition, trips made on buses and cars between West Sacramento and downtown Sacramento that may be diverted to the streetcar would balance the additional electrical power required for streetcar operation.

Table ES-4. Summary of Significant and Potentially Significant Impacts

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.1	Land Use and Planning	Both Alternatives	All impacts less than significant.		
4.2	Population and Housing	No-Project Alternative	Development could induce substantial population growth in West Sacramento.	None	Unavoidable Impact
4.3	Recreation and Parklands	No-Project Alternative	All impacts less than significant.	The response times for fire protection, emergency medical, and police services may be affected by the planned residential, commercial, and civic development in West Sacramento's redevelopment areas and downtown Sacramento, which is expected to generate additional demand on local roadways.	Potentially Significant
4.4	Public Services	Both Alternatives	All impacts less than significant.		
4.5	Transportation	No-Project Alternative	**Traffic Impacts – 2020 Intersection Operations Analysis:** • Increased development in downtown West Sacramento and Sacramento, combined with the rather modest increase in roadway capacity, produces less than acceptable service levels in the a.m. and/or p.m. peak hour under the No-Project Alternative. In particular, the results show heavy congestion on Tower Bridge Gateway/Capitol Mall between 3rd Street in West Sacramento and 3rd Street in Sacramento during the a.m. and p.m. peak hours.		Unavoidable Impact

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

EIR/EIS Section	Environmental Area/Impacts	Alternatives	Impacts	Mitigation	Level of Significance After Mitigation
4.5 (cont'd)	Transportation (cont'd)	No-Project Alternative (cont'd)	• J Street and 13th Street intersection is heavily congested in the p.m. peak hour. The VISSIM simulation shows substantial queues in the eastbound direction at 13th Street, similar to existing conditions when there are events at the Convention Center and Sheraton Hotel, a significant impact. By 2020, the No-Project Alternative would create significant and unavoidable impacts at several intersections in the study area.		Unavoidable Impact
			Traffic Impacts – 2035 Intersection Operations Analysis: The proposed development in West Sacramento and downtown Sacramento contributes to significant congestion in both the a.m. and p.m. peak hours. Congestion is particularly pronounced around the Tower Bridge in the a.m. peak hour. During the p.m. peak hour, the VISSIM simulation shows gridlocked conditions on Tower Bridge Gateway/Capitol Mall, and heavy congestion on J Street. These intersections would operate at substandard conditions, a significant impact. By 2035, the No-Project Alternative would create additional significant and unavoidable impacts at several intersections in the study area.		Unavoidable Impact

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.5 (cont'd)	Transportation (cont'd)	Streetcar Project Alternative	**Impact T-1:** Potential to disrupt transit services resulting from proposed project construction activities.	The construction contractor would coordinate construction activities with RT and Yolobus and work with transit operators to communicate route detours to the riding public on a line-by-line basis.	Less than Significant
			Impact T-5: Potential to temporarily disrupt circulation in the study area.	The project sponsor will develop a Construction Traffic and Parking Management Plan that will be subject to review and approval by the City of West Sacramento Traffic Engineer, the City of Sacramento Department of Transportation, Caltrans, and local emergency service providers including the fire and police departments. The plan will ensure that acceptable operating conditions on local roadways and freeway facilities are maintained during construction. At a minimum, the plan will include: • The number of truck trips, time, and day of street closures; • Time of day of arrival and departure of trucks; • Limitations on the size and type of trucks, provision of a staging area with a limitation on the number of trucks that can be waiting; • Provision of a truck circulation pattern; • Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas);	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.5 (cont'd)	Transportation (cont'd)	Streetcar Project Alternative (cont'd)	**Impact T-5** (cont'd)	• Provision of driveway access plan so that safe vehicular, pedestrian, and bicycle movements are maintained (e.g., steel plates, minimum distances of open trenches, and private vehicle pick up and drop off areas); • Maintain safe and efficient access routes for emergency vehicles; • Manual traffic control when necessary; • Proper advance warning and posted signage concerning street closures; and • Provisions for pedestrian safety. A copy of the construction traffic management plan will be submitted to local emergency response agencies and these agencies will be notified at least 14 days before the commencement of construction that would partially or fully obstruct roadways.	
			Impact T-10: Potential to conflict with railroad governing codes promulgated by the CPUC.	To resolve the vertical clearance constraint beneath the existing UPRR overpass on Tower Bridge Gateway, a variance from the CPUC's Utility Safety Branch must be approved. Without the variance, the proposed project would be responsible for lowering the elevation of the street grade under the UPRR overpass to achieve the CPUC clearance standard. In this scenario, relocation of adjacent fiber-optic cables and installation of a storm drain pump station may be required.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.5 (cont'd)	Transportation (cont'd)	Streetcar Project Alternative (cont'd)	**Impact T-11:** Potential to temporarily disrupt bicycle circulation during project construction.	Bicycle detours will be devised and publicized in advance of streetcar construction. Alternatively, it may be possible to route bicycles along short sidewalk segments, depending on the pedestrian volumes along the sidewalk.	Less than Significant
			Impact T-15: Potential for construction activities to restrict use of the Tower Bridge lift.	If construction activities limit or impede use of the lift mechanism of the bridge during intermittent or extended periods, the U.S. Coast Guard will be informed of these occurrences a minimum of 30 days in advance of the interruption to navigational traffic. The U.S. Coast Guard will post notice of the temporary closure in the Federal Register, and businesses and boat owners that would be most affected by the obstruction of navigation will be notified individually. The project sponsor will coordinate with Caltrans, the owner of Tower Bridge, the U.S. Coast Guard, and affected businesses/boat owners to minimize or alleviate the potential impact by providing proper notification of the bridge closures; by scheduling closures in the non-peak excursion season (October through April); or by raising the bridge for an extended time to allow continuous river navigation, while temporarily rerouting vehicular and non-motorized traffic.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.6	Cultural Resources	Streetcar Project Alternative	**Impact CR-1:** Construction activities could encounter subsurface cultural resources.	It is recommended that monitoring of any subsurface excavations during construction be undertaken by a qualified archaeologist. In the event that any cultural discovery is made by construction crews, work would halt in the immediate area, and the archaeologist will be notified to evaluate the find and determine appropriate mitigation strategies.	Less than Significant
4.7	Aesthetics	Both Alternatives	All impacts less than significant.		
4.8	Air Quality	Both Alternatives	All impacts less than significant.		
4.9	Noise and Vibration	No-Project Alternative	The No-Project Alternative would not implement the Streetcar Project Alternative. No new noise and vibration would occur in the study area beyond those ambient levels currently generated through normal construction, traffic, and transit operation. The No-Project Alternative would be affected by increases in noise levels due to changes in vehicular traffic. Future noise levels would be mainly dictated by the increases in traffic volume. Noise levels from traffic with lower speeds and higher congestion would be generally lower than similar traffic volumes under free-flow condition. However, for the purposes of this analysis, the increase associated with No-Project conditions has been determined exclusively from anticipated changes to the traffic volumes. Based on these assumptions, future ambient noise levels under this scenario would be 5 to 6 dBA higher than the existing		Unavoidable Impact

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.9 (cont'd)	Noise and Vibration (cont'd)	No-Project Alternative (cont'd)	ambient noise dBA. In most areas, the community noise environments would remain consistent with the Sacramento Noise Element's *Conditionally Acceptable* designation. However, in the area of 7th Street and 8th Street, cumulative noise for 2035 would be *Clearly Unacceptable* due to the anticipated traffic increase, an unavoidable impact.		Unavoidable Impact
		Streetcar Project Alternative	**Impact N-1:** Construction noise could affect sensitive receptors along the proposed streetcar alignment.	To eliminate construction noise impacts, construction activities will be performed in accordance with local ordinances and local allowable hours. In addition, to reduce impacts from long-term construction activities (longer than 2 weeks), construction activities will be conducted in compliance with the criteria presented in this report. To control the potential impacts to the nearby community during construction of the proposed project, the following array of mitigation strategies could be employed: • Locate noisy equipment as far as possible from noise sensitive receptors. In addition, temporary barriers should be employed around the equipment. Use temporary noise barriers along the proposed project right-of-way. Barriers/curtains must achieve a Sound Transmission Class of 30 or	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.9 (cont'd)	Noise and Vibration (cont'd)	Streetcar Project Alternative (cont'd)	**Impact N-1** (cont'd)	greater in accordance with American Society for Testing and Materials (ASTM) Test Method E90, and be constructed from material having a surface density of at least 2 lb/sq. ft., to ensure adequate transmission loss. • Use sound absorption for temporary barriers in the area of downtown Sacramento. In this area, a reverberant environment is produced due to the narrow distance between buildings and hard pavement surfaces. Line the inner face of the temporary barrier or use a curtain with an absorptive face. The absorptive liner or absorptive face should have a Noise Reduction Coefficient rating of 0.70 or greater in accordance to ASTM Test Method C423. • Require ambient sensitive ("smart") backup alarms, SAE Class D, or limit to SAE Class C (97 dB). • Fit silencers to combustion engines. Ensure that equipment has quality mufflers installed, in good working condition. • Switch off engines or reduce to idle when not in use. • Lubricate and maintain equipment regularly. Equipment is normally quieter when well maintained.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.9 (cont'd)	Noise and Vibration (cont'd)	Streetcar Project Alternative (cont'd)	**Impact N-1** (cont'd)	• Construction-related truck traffic should be re-routed along road-ways that would produce the least disturbance to sensitive receptors.	Less than Significant
			Impact N-3: Potential for annoyance.	To avoid vibration-induced annoyance impacts due to construction activities, the activities should be kept below the impact criteria (Table 4-12). The contractor will select equipment and methods to reduce the potential for annoyance. Possible mitigation strategies include: • Avoid the use of pavement breakers. Instead, use a hoe ram with hydraulic chisel. • Avoid the use of dynamic compaction at a distance closer than 25 feet from any sensitive receptors, or use alternative methods of compaction in areas of construction that would be closer than 25 feet from sensitive receptors. • Monitor vibration during construction to ensure compliance with criteria for building damage for buildings within 40 feet of construction activities. Conduct a preconstruction crack survey of these buildings.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.9 (cont'd)	Noise and Vibration (cont'd)	Streetcar Project Alternative (cont'd)	**Impact N-3** (cont'd)	• Plan routes for hauling material out of the proposed project site that would cause the least impact (annoyance). Propose truck routes along roads where the sensitive receptors are at least 75 feet from the street centerline.	Less than Significant
			Impact N-4: Potential to generate noise from streetcar operations.	Resilient wheels or suitable equivalent noise control measures are expected to reduce up to 10 dBA of the noise increase associated with squeal wheel. Combined with the use of rail lubrication, wheel squeal will likely be reduced further. A reduction of 15 or 20 dBA may be possible.	Less than Significant
			Impact N-5: Potential noise from substation operation.	To alleviate noise impacts from substation operation, the following mitigation strategies could be employed: • Locate power stations at a distance farther than the screening distance determined in this analysis from noise sensitive receptors. • Re-evaluate the inside buffer during engineering design and, if necessary, install efficient enclosures to meet local noise threshold criteria. • Place power stations in underground utility vaults.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.10	Biological Resources	Streetcar Project Alternative	**Impact BIO-5:** Potential to displace swallow nests from the bridge in violation of the Migratory Bird Treaty Act (MBTA).	If construction activities on Tower Bridge occur during the nesting season, impacts to nesting birds can be avoided by removing swallow nests prior to nest completion. Because swallows are persistent, continued monitoring and maintenance would be necessary to remove nests that are initiated, generally by use of a fire hose. No violation of the MBTA occurs if the nests or birds are not harmed. Prior to construction and in consultation with USFWS and CDFG, all old nests would be removed from the bridge, and new nests would be prevented from being established through monitoring. As an alternative, the project applicant could consult with the USFWS MBTA office (Portland, Oregon) and CDFG (Sacramento) to secure an agreement to allow construction to be implemented without removing nests preemptively. There is greater risk that one or more birds may abandon young or be injured. Because cliff swallows and barn swallows are not rare, the USFWS may allow construction without pre-emptive nest removal.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.10 (cont'd)	Biological Resources (cont'd)	Streetcar Project Alternative (cont'd)	**Impact BIO-6:** Potential to have a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	The project sponsor will follow the conditions of the City of West Sacramento requirements for replacing lost trees for development projects per its Tree Preservation Ordinance (Municipal Code 8.24) and the City of Sacramento Tree Preservation Ordinance per its Tree Preservation Ordinance (Municipal Code 12.56.090) for removal, construction around trees, and cutting and trimming heritage trees. The City of West Sacramento's Tree Preservation Ordinance can be found in Chapter 8.24 of the City's Municipal Code. Heritage or landmark trees can be only removed by permit granted by the City's tree administrator and usually require the replacement of a living tree on the property or within the City in a location approved by the tree administrator. More specifically, replacement trees will be planted at the rate of 1-inch diameter of replacement plant for every 1-inch diameter of tree removed. In the event that the property owner is unable to replace the tree on his/her property or within an area approved by the tree administrator, the tree administrator would require the	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.10 (cont'd)	Biological Resources (cont'd)	Streetcar Project Alternative (cont'd)	**Impact BIO-6** (cont'd)	property owner to pay an in-lieu fee to the city. However, if a tree is in need of removal solely because it poses a risk to persons or property or if the tree acts as a host for a plant that is parasitic, a replacement tree or in-lieu fee would not be required. If a non-heritage, non-landmark street tree is being removed, the ordinance stipulates that the replacement tree should be of a size and species pursuant to the City of West Sacramento's Landscape Development Guidelines. The City of Sacramento's Tree Preservation Ordinance is included in Section 12.56.090 of its Municipal Code. Removal of a tree is granted by the Director of the City's Department of Parks and Recreation, usually with the condition that a replacement tree would be planted in a location determined by the City. Generally, if the tree being removed is 6 inches or larger in diameter, measured 4.5 feet above ground, then the replacement would need to be at least 24-inch box size. If the city street tree being removed is smaller than 6 inches in diameter, measured 4.5 feet above ground, then the replacement tree would be a minimum of 15-gallon can size.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.11	Hydrology and Water Quality	Streetcar Project Alternative	**Impact HYDRO-1:** Potential to reduce surface water quality during construction.	A preliminary grading and erosion control plan for the proposed project would be submitted to the appropriate city for approval prior to issuance of a grading permit in the city. The BMPs to be implemented during construction to minimize discharge of sediments offsite would be included in the erosion control plan. Sediment generated by demolition, grading, or construction activities for the proposed project would be contained on the construction site and controlled using BMPs. Upon completion of the proposed project, the proposed project area would be covered with impervious surfaces, resulting in negligible sediment production. BMPs that could be implemented during construction include, but are not limited to, silt fences, sand bags, fiber rolls, and a stabilized construction entrance. Final grading plans would include all proposed grading, drainage improvements, vegetation, and tree removal. Final grading and erosion control plans would be prepared during design in accordance with the provisions of Yolo County, the County of Sacramento, and the	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.11 (cont'd)	Hydrology and Water Quality (cont'd)	Streetcar Project Alternative (cont'd)	**Impact HYDRO-1** (cont'd)	cities of West Sacramento and Sacramento and submitted to the appropriate city for approval prior to construction. Construction activities involving the disturbance of one or more acres apply for coverage under the SWRCB's NPDES General Permit for Stormwater Discharges Associated with Construction Activities. To obtain coverage under the permit, the project sponsor would submit a Notice of Intent with the required permit fee and prepare a project-specific SWPPP. The SWPPP will include development of site-specific structural and operational BMPs to prevent and control impacts to runoff quality, measures to be implemented before each storm event, inspection and maintenance of BMPs, and monitoring of runoff quality by visual and/or analytical means. The RWQCB will issue waste discharge requirements that set forth conditions, discharge limitations, and monitoring and inspection requirements with which the cities of West Sacramento and Sacramento will comply. The contents of the SWPPP are set forth	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.11 (cont'd)	Hydrology and Water Quality (cont'd)	Streetcar Project Alternative (cont'd)	**Impact HYDRO-1** (cont'd)	in detail in the permit application package. The California Stormwater BMP Handbook for Construction (CASQA, 2003) also provides examples of BMPs that could be used, including the following: • Scheduling materials deliveries to provide for minimal onsite storage and/or providing covered storage for materials wherever practical; • Designating specific areas for overnight construction equipment storage and maintenance, and providing runoff control around those areas to minimize the potential for runoff to contact spilled materials; • Procedures for daily worksite cleanup and immediate cleanup of spilled materials and contaminated soil; • A program of site inspections to ensure that BMPs are consistently implemented and effective; • Visual monitoring of onsite runoff quality; • Applying hydroseeding or hydromulching to stabilize disturbed areas, as appropriate;	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.11 (cont'd)	Hydrology and Water Quality (cont'd)	Streetcar Project Alternative (cont'd)	**Impact HYDRO-1** (cont'd)	• Placing fiber rolls around drain inlets or providing other storm drain inlet protection measures to prevent sediment and construction-related debris from entering the inlets; • Placing fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site, and placing sandbags around potentially affected offsite inlets to prevent sediments from entering the inlets; • Constructing sedimentation basins to collect and temporarily detain stormwater runoff to allow sediment to settle prior to discharge; • Providing stabilized construction access to minimize the tracking of mud and dirt onto public roads; • Providing equipment tire wash and cleaning area to prevent the tracking of mud and dirt onto public roads;	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.11 (cont'd)	Hydrology and Water Quality (cont'd)	Streetcar Project Alternative (cont'd)	**Impact HYDRO-1** (cont'd)	• Managing stockpiles and materials by stabilizing stockpiles, placing stockpiles away from drainages, and protecting stockpiles with fiber rolls; • Placing silt fences downgradient of disturbed areas to slow down runoff and retain sediment; and • Specifying that all disturbed soil will be seeded, mulched, or otherwise protected by October 15. The preparation and implementation of a SWPPP that addresses maintenance and inspection of BMPs, including monitoring and reporting, to ensure the effectiveness of the BMPs in protecting water quality, would be prepared.	Less than Significant
4.12	Geology and Soils	Both Alternatives	All impacts less than significant.		

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.13	Hazardous Materials	Streetcar Project Alternative	**Impact HAZ-2:** Potential to create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials or wastes into the environment due to construction activities.	Accidental spills or releases of hazardous materials such as fuels and oils from equipment may occur during construction activities. To mitigate potential impacts from an accidental release, an Emergency Response Plan will be prepared to address the procedures to be followed in the event of an accidental spill/release of hazardous materials. These procedures will include those required for agency notification should the release exceed the reportable quantity for the substance released and procedures to follow to contain and clean up the release.	Less than Significant
			Impact HAZ-3: Potential to expose people or the environment to contaminants in soil, groundwater, sediments, or structures slated for demolition due to construction activities.	To mitigate any potential impacts from exposure to contaminated soil and/or groundwater, a soil and groundwater management plan will be prepared for the proposed project. This plan would provide detailed procedures to be followed in the event that contaminated materials are encountered. The plan will detail procedures for the notification of appropriate regulatory agencies as well as procedures for the proper handling, storage, and disposal of contaminated materials.	Less than Significant

Table ES-4. Summary of Significant and Potentially Significant Impacts (Continued)

4.14	Utilities and Energy	Streetcar Project Alternative	**Impact UT-1:** Potential to disrupt or conflict with existing utility lines and services.	Coordination and consultation with utility agencies would occur during the final design phase. Any disruption to utility service due to streetcar construction would be negotiated with the utility agencies and conducted at times to minimize the inconvenience to utility customers. Utilities that interfere with construction activities and need to be relocated would be coordinated with the utility and become a responsibility of the project sponsor.	Less than Significant
			Impact UT-2: Potential of stray current from streetcar operation to affect metallic pipelines located near the alignment: Stray current from operation of the electric-powered streetcar could induce corrosion on underground pipelines if those pipelines, such as older metallic pipelines in downtown Sacramento, are not protected.	The metallic pipes can be protected through multiple mitigation options, including pipe bonding, pipe coating, electrical isolation through use of an encapsulating dielectric isolation such as Rail Boot, creation of a low resistance stray current collector grid, design of traction power system and trackwork to minimize stray current, or test stations to confirm that stray current has been isolated. The most cost-effective strategy will be developed during final design to ensure this potential impact is mitigated.	Less than Significant

Note:
Impacts determined to be less than significant without mitigation are not included in this table.