

# Railyards Specific Plan Draft Environmental Impact Report

SCH No. 2006032058

August 2007

(P05-097)



Prepared for  
City of Sacramento

Prepared by  
PBS&J/EIP



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## **1.0 INTRODUCTION**

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## INTRODUCTION

The project proposes adoption and implementation of the proposed Railyards Specific Plan and approval of related entitlements. The proposed Railyards Specific Plan (Specific Plan) is a regulatory document defining clear parameters for development and redevelopment in the Railyards Specific Plan Area (Specific Plan Area). It establishes a comprehensive framework of development policies to create unique mixed-use neighborhoods consisting of high-density housing complemented by cultural opportunities, office development, hotels, entertainment and commercial uses, and parks and urban plazas. The proposed project includes the proposed Specific Plan and related approvals (e.g., Design Guidelines), related General Plan and Central City Community Plan amendments, revisions to the Railyards Specific Plan/Richards Boulevard Area Plan Facility Element, and relocation of the Union Pacific Railroad (UPRR) tracks. A more complete list of anticipated approvals is provided at the end of this chapter.

This Environmental Impact Report (EIR) has been prepared to assess the potential environmental impacts associated with implementation of the proposed project in accordance with the principles, goals, and policies set forth in the Specific Plan. As required under the California Environmental Quality Act (CEQA), the EIR evaluates and describes potentially significant environmental impacts, identifies mitigation measures to avoid or reduce the significance of potential impacts, and evaluates the comparative effects of potentially feasible alternatives to the proposed Specific Plan.

## BACKGROUND

The Specific Plan Area was first developed as the western terminus of, and produced much of the rail equipment for, the Transcontinental Railroad in the early 1860s. The Central Pacific and Southern Pacific railroads used the Specific Plan Area for railroad uses for almost 150 years, with the last railroad workers leaving the maintenance and locomotive works in 1995. During its peak, the Specific Plan Area housed the largest railroad facility of its kind west of the Mississippi River. The Specific Plan Area's use as a production and maintenance facility for the railroads continued for most of its history. In the late 1990s, after the closure of the locomotive maintenance works at the site, Union Pacific (UP) purchased the Southern Pacific Railroad and acquired the property comprising the Specific Plan Area. Currently, most of the Specific Plan Area is owned by Thomas Enterprises, while approximately 8.82 acres are owned by the City.

Today, the Specific Plan Area continues to be used for passenger rail service through the existing historic Depot building, constructed in 1926 and used as the primary depot for passenger rail service in the Sacramento Valley. The Specific Plan Area continues to include the UP main lines that are used by freight and passenger trains, the passenger Depot for Amtrak and Capitol Corridor trains, and certain other rail lines (see Figure 3-3, Existing Railyards Area). The Specific Plan Area also contains several large City-owned parking lots. The Central Shops, located to the north of the historic Depot, were used previously as the location of rail equipment production and maintenance, and have been mostly vacant for some years. The California State Railroad Museum leases two of these buildings to repair and maintain its historic train stock. Sims Metal operates on approximately five acres in the eastern portion of the Specific Plan Area. The Specific Plan Area has been undergoing environmental remediation for many years, and remediation activities are ongoing on

certain portions of the Railyards site today.<sup>1</sup> Portions of the Railyards, primarily the Depot and REA building, are served by major utilities; including water, sewer, storm drainage, solid waste, natural gas and electrical service; however, most of the site currently lacks these utilities.

The City Council certified the EIR for the existing Railyards Specific Plan and Richards Boulevard Area Plan in December 1993.<sup>2</sup> At that time the City Council approved amendments to the City's General Plan and Central City Community Plan that provided for the land uses proposed in the two plans. The City Council certified a Supplemental EIR (SEIR) for the existing Railyards Specific Plan and the Richards Boulevard Area Plan in late 1994, and approved the existing Railyards Specific Plan on December 13, 1994. The SEIR addressed several aspects of the Railyards Specific Plan (RSP) and Richards Boulevard Area Plan (RBAP) that had been further refined including levels of development and timing of infrastructure improvements. Additionally the SEIR evaluated the effects of soil remediation alternatives described in the draft Feasibility Study prepared by Southern Pacific Transportation Company. Development in the Specific Plan that has occurred to date includes the restoration and re-use of the Railway Express Agency (REA) Building, construction of the Federal Courthouse, the extension of 7<sup>th</sup> Street to North B Street and the extension of light rail.

The existing Historic Depot is served by freight operations and several passenger rail services, including Amtrak, and the Capitol Corridor and San Joaquin lines. Future uses could also include proposed regional commuter rail and the future California High Speed Rail. Freight service would continue to move on the main rail lines through the project site, as it a major transcontinental freight route of the UPRR.

The proposed project assumes that these rail-related activities would continue, and that the tracks will be realigned as part of the Specific Plan, as shown in Figure 3-11. The proposed realignment of the heavy rail tracks would relocate the existing tracks between the I Street Bridge and 7<sup>th</sup> Street to the north, along the northern edge of the proposed Depot District and adjacent to the southern edge of the historic Central Shops (see Figure 3-11). The UPRR would continue to own the relocated tracks within their right-of-way. The City of Sacramento would obtain the alignment of the current tracks after relocation, and would continue to own the Depot and related facilities. The applicant would own the remaining portions of the Specific Plan Area. The relocation of the heavy rail tracks will also include relocating passenger platform tracks, passenger platforms, constructing sub-and super-structures for the 5<sup>th</sup> Street and 6<sup>th</sup> Street overcrossings, and constructing pedestrian connections from the old depot building to the newly relocated passenger platform tracks.

The Specific Plan Area is currently undergoing remediation of contaminated soils and groundwater. The remediation of the Specific Plan Area must proceed pursuant to Department of Toxic Substance Control's (DTSCs) orders irrespective of development of the Specific Plan Area. The remediation studies and plans have been subject to CEQA under the jurisdiction of the City of Sacramento and DTSC (see Appendix I). Because remediation of the Specific Plan Area as a project is independent of the Specific Plan, the environmental effects of remediation activities are not evaluated in this EIR. However, the potential effects of constructing and occupying new development in an area that has undergone remediation, and may still be undergoing remediation concurrent with development activities in the future, are addressed.

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- 1 Remediation of contaminated soils and groundwater on the site is within the jurisdiction of the California Department of Toxic Substances Control (DTSC) and is ongoing pursuant to the Remedial Action Plans reviewed and approved by DTSC. As discussed below, remediation of the Plan area must proceed pursuant to DTSC's orders irrespective of development of the Plan area.
  - 2 The 1994 adopted Railyards Specific Plan, the Richards Boulevard Area Plan, and the 1993 Final EIR and 1994 Supplemental EIR prepared for these Plans are available from the City at the Development Services Counter, 915 I Street, Third Floor.

## **PURPOSE AND SCOPE OF THE EIR**

The purpose of the EIR is to inform public agency decision makers and the public about the proposed project and potentially significant adverse environmental impacts that may result from the adoption and implementation of the proposed project, and to identify appropriate feasible mitigation measures and alternatives that may be adopted to reduce or eliminate impacts.

The EIR is anticipated to be the primary environmental document for project implementation within the Specific Plan Area. Developments that require further discretionary approvals will be examined in light of this EIR to determine whether additional environmental documentation must be prepared. Specific development projects will be compared to the analysis contained in this EIR. Consistent with CEQA Guidelines section 15152, projects that raise environmental issues that could not have been anticipated in this EIR due to the specific characteristics of project design or other factors, may be subject of further CEQA documentation as deemed appropriate by the City as lead agency. Development projects that are consistent with the principles, goals, and policies of the Specific Plan and do not require further discretionary approvals will not be subject to any additional environmental documentation. (Public Resource Code sections 21080(b)(1) and 21083.3; Government Code section 65457(a); CEQA Guidelines sections 15060(c)(1) and 15268.)

A Notice of Preparation (NOP) for this EIR was published on March 10, 2006. The NOP identified the environmental issue areas associated with potential environmental effects of the project that would be analyzed in this EIR. Pursuant to CEQA Guidelines Section 15060d, no Initial Study was prepared, because the City had determined that the EIR would be the appropriate CEQA document for the proposed Specific Plan. A copy of the NOP and comments received in response to the NOP are included in Appendix A and Appendix B. The purpose of the NOP is to solicit comments from public agencies and interested parties on issues within their areas of expertise that they believe should be considered in the EIR. In addition, the City conducted a public scoping meeting on March 29, 2006, for the purpose of further soliciting public input regarding the scope and content of this EIR.

The scope of this EIR includes environmental issues determined to be potentially significant as determined through preparation of the NOP, responses to the NOP, scoping meetings, and discussions among the public, consulting staff, and the City of Sacramento. This process identified potentially significant impacts associated with the construction and/or operation of the proposed project in the following issue areas:

- Air Quality
- Biological Resources
- Cultural Resources
- Seismicity, Soils, and Geology
- Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise and Vibration
- Parks and Open Space
- Public Services (Police and Fire, Solid Waste, Libraries and Schools)
- Public Utilities (Wastewater, Drainage and Water Supply)

- Transportation and Circulation
- Urban Design and Visual Resources
- Energy

This EIR evaluates the direct, indirect, and cumulative impacts resulting from construction and operation of the proposed project in these issue areas using the most current information available, and in accordance with the provisions of CEQA.

### **RELATIONSHIP BETWEEN THIS EIR AND CEQA REVIEW FOR LATER PROJECT APPROVALS PURSUANT TO THE PROPOSED SPECIFIC PLAN**

The Specific Plan is a land use plan and development program proposed to guide the physical development within the Specific Plan Area. If approved, the Specific Plan will be implemented by a new Special Planning District Ordinance, development agreement, design guidelines, and related entitlements. This EIR evaluates the effects of implementation of the proposed Specific Plan, as described in Chapter 3, Project Description. Any proposal for future development within the Specific Plan Area must be reviewed pursuant to the terms of the Specific Plan and implementing entitlements.

As noted above, use of a Specific Plan EIR to cover later activities is addressed in Public Resources Code section 21080.7 and CEQA Guidelines Sections 15168(c). Under CEQA guidelines for using EIRs in connection with later activities, if the proposed activities are consistent with the Specific Plan and the project as analyzed in the EIR, and would not have new significant or more severe significant effects that were not examined in the Specific Plan EIR, the later activities are considered to be within the scope of the Specific Plan EIR and no further review under CEQA is required. As set forth in the interpretive “discussion” following Section 15168 prepared by the Governor’s Office of Planning and Research (OPR) in connection with promulgation of the CEQA Guidelines, “[t]his approach offers many possibilities for agencies to reduce their costs of CEQA compliance and still achieve high levels of environmental protection.” The City thus will rely on the Specific Plan EIR in conjunction with its consideration of subsequent project development, as deemed appropriate and consistent with the requirements of CEQA by the City as lead agency.

### **OTHER AGENCIES THAT MAY USE THE EIR**

This EIR is intended to be used by responsible and trustee agencies (as defined by sections 15381 and 15386 of the CEQA Guidelines) that may have review or discretionary authority over some component of the project. Agencies in addition to the Lead Agency that also may use this EIR in their review of the project or that may have responsibility over approval of certain project elements may include, but are not limited to, the following:

- California Department of Toxic Substances Control (DTSC)
- California Department of Health Services (DHS)
- California Department of Transportation (Caltrans)
- California Department of Fish and Game (CDFG)
- California Public Utilities Commission
- Central Valley Regional Water Quality Control Board (CVRWQCB)
- California State Reclamation Board (Rec Board)
- Sacramento Metropolitan Air Quality Management District (SMAQMD)

- Sacramento Municipal Utility District (SMUD)
- Redevelopment Agency of Sacramento
- U.S. Army Corps of Engineers (Corps)
- U.S. Fish & Wildlife Service/National Marine Fisheries Service (USFWS/NMFS)

Other agencies that may have trustee responsibilities in connection with resources affected by the project or are otherwise anticipated participants in the environmental review process include, but are not limited to, the following:

- State of California Office of Planning and Research (OPR)
- California State Lands Commission (CSLC)
- Sacramento Area Council of Governments (SACOG)
- State Historic Preservation Office (SHPO)

### **PUBLIC REVIEW PROCESS**

This EIR is being circulated to local, state, and federal agencies and to interested organizations and individuals who wish to review and comment on the report. Publication of this EIR marks the beginning of a 45-day public review period, during which copies of the EIR will be available for review at the City of Sacramento's Development Services Department offices and the City of Sacramento Public Library:

City of Sacramento City Hall  
915 I Street, Third Floor  
Sacramento, California 95814

City of Sacramento Public Library  
828 I Street  
Sacramento, California 95814

City of Sacramento  
North Permit Center  
2101 Arena Boulevard, Suite 200  
Sacramento, California 95834

In addition, the EIR can be viewed or downloaded from the City of Sacramento's website, which can be found at:

<http://www.cityofsacramento.org/dsd/planning/CurrentEnvironmentalImpactReportsProjects.cfm>

and

<http://www.cityofsacramento.org/dsd/projects/railyards/>

Written comments on the EIR (including email) may be submitted to the City of Sacramento at the following address:

Scott Johnson, Associate Planner  
City of Sacramento Development Services Department  
North Permit Center  
2101 Arena Boulevard, Suite 200  
Sacramento, California 95834  
srjohnson@cityofsacramento.org

In accordance with CEQA Guidelines section 15204(a), the focus of review should be on the sufficiency of this EIR in identifying and analyzing the potentially significant environmental impacts of the project and ways in which such effects might be avoided or mitigated.

Comments on the Draft EIR that are received in writing during the public review period and orally at the public hearing on the Draft EIR will be presented in their entirety and addressed in written responses to comments in the Final EIR. The City of Sacramento then will consider EIR certification under section 15090 of the CEQA Guidelines. If it determines to certify the EIR, the City may consider project approval (see section 15092 of the CEQA Guidelines). If it chooses to approve the project, the City must make written findings with respect to (1) each significant environmental effect, (2) each mitigation measure, and (3) each alternative not approved in accordance with section 15091 of the CEQA Guidelines. Further, if the City chooses to approve a project that would cause unmitigated significant environmental effects, it must include in its written findings a Statement of Overriding Considerations that documents those benefits (economic, social, legal, technological, or otherwise) that it determines would offset the adverse environmental consequences of the project approval (see CEQA Guidelines 15093). If a project is approved, the City must, within five working days following that approval, file a Notice of Determination (NOD) with the Sacramento County Clerk and the State Clearinghouse in the Governor's Office of Planning and Research, in accordance with CEQA Guidelines section 15094.

CEQA also requires lead agencies to adopt a reporting and monitoring program for changes to the project that have been adopted or made conditions of project approval to avoid or mitigate significant effects on the environment (Public Resources Code section 21081.6; CEQA Guidelines section 15097).

## **REQUIRED DISCRETIONARY ACTIONS**

The City of Sacramento would be required to certify that the EIR adequately identifies the significant environmental effects of the proposed Specific Plan, pursuant to CEQA, the State CEQA Guidelines, and the City of Sacramento CEQA Guidelines. In addition, implementation of the proposed Specific Plan could require, but would not be limited to, the following discretionary actions:

### **City Actions**

1. Certification of an EIR and adoption of a Mitigation Monitoring and Reporting Program (MMRP);
2. Rescission of the 1994 Railyards Specific Plan ;
3. Adoption of the proposed Specific Plan;
4. Amendment of City Code Chapter 17.124 (Special Planning District, including development standards);
5. Adoption of Design Guidelines;
6. Adoption of a Development Agreement;
7. Adoption of a Financing Plan;

8. Approval of Master Tentative (Parcel) Map;
9. Amendments to the General Plan;
10. Amendments to the Central City Community Plan;
11. Amendments to the Zoning Code;
12. Amendments to City Code sections 18.36 et seq. and 18.48 et seq.;
13. Amendments to the Railyards Specific Plan/Richards Boulevard Area Plan Facility Element;
14. Approval of Master Certificate of Appropriateness;
15. Approval of Inclusionary Housing Plan;
16. Approve Water Supply Assessment; and
17. Repeal of City Code Chapter 18.28 regarding City oversight of remediation of the Specific Plan area.

**Other Agency Actions**

18. Section 404 permit from the Corps for any activity in the Sacramento River (e.g., stormwater outfall);
19. Section 1602 Streambed Alteration Agreement from the CDFG for any activity in the Sacramento River;
20. Section 7 Consultation and Biological Opinion from the USFWS;
21. Section 401 certification from the CVRWQCB in conjunction with the 404 permit;
22. Construction activity stormwater permit from the CVRWQCB;
23. Encroachment permit from the State Reclamation Board for activities on the Sacramento River levee (e.g., stormwater outfall);
24. Transfer of Public Trust Claim from State Lands Commission for the historic bed of the American River (including anticipated transfer from City to SLC of property located along the Sacramento River);
25. Approval of track relocation from Public Utilities Commission;
26. National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB;
27. Approval of the revised tri-party Memorandum of Understanding between DTSC, City of Sacramento, and the applicant; and
28. Stationary source permit from the Sacramento Metropolitan Air Quality Management District.





## **2.0 SUMMARY OF ENVIRONMENTAL EFFECTS**

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## 2.0 SUMMARY OF ENVIRONMENTAL EFFECTS

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### PROJECT UNDER REVIEW

The Railyards Specific Plan is a proposed mixed-use development in the downtown area of the City of Sacramento. The proposed project would involve the development of between 10,000 and approximately 12,500 dwelling units (du), 1,384,800 square feet (sf) of retail, 491,000 sf of mixed use, 1,100 hotel rooms, 2,337,200 sf of office, 485,390 sf of historic/cultural space, and 41.16 acres of open space. The project would include low-, medium-, and high-rise single use and mixed use residential, retail, office, and hotel structures. The project also provides cultural/recreational facilities including but not limited to the refurbished Central Shops buildings, numerous public parks and walkways, and a proposed performing arts and education center. The proposed project offers a network of public streets with vehicular, bicycle, and pedestrian access, aboveground and subgrade parking facilities and above surface and subsurface energy, water, wastewater, and drainage infrastructure and facilities. The project would also include approximately 32 acres designated for the development of the Sacramento Intermodal Transit Facility (SITF), which would provide multiple modes of public transit service including bus, rail, light rail, and passenger auto. The proposed project would also involve the realignment of the tracks running from 3<sup>rd</sup> Street to 7<sup>th</sup> Street for use by Amtrak, Union Pacific (UP), Sacramento Regional Transit (RT), and the potential future construction of a regional high speed rail.

The approximately 244-acre project site is generally bounded by North B Street and the Sacramento River Water Treatment Plant to the north, the Sacramento River to the west, I Street and H Street to the south and 7<sup>th</sup> and 12<sup>th</sup> streets to the east.

### SUMMARY OF IMPACTS

#### Effects Found to be Less Than Significant

As shown in Table 2-1, a number of project impacts identified in the EIR were found to be less than significant, requiring no mitigation. These impacts are analyzed in the following sections: 6.1, Air Quality; 6.2, Biological Resources; 6.3, Cultural Resources; 6.4, Seismicity, Soils, and Geology; 6.5, Hazards and Hazardous Substances; 6.6, Hydrology and Water Quality; 6.7, Land Use; 6.9, Parks and Open Space; 6.10, Public Services; 6.11, Public Utilities; 6.12, Transportation and Circulation; 6.13, Urban Design and Visual Resources; and 6.14 Energy. During preparation of the EIR, it was determined that numerous other identified impacts could be reduced to a less-than-significant level with implementation of the proposed mitigation measures described herein.

#### Environmental Impacts and Mitigation

Under CEQA, a significant effect on the environment is defined as a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance (CEQA Guidelines, Section 15382). Implementation of the proposed project would result in significant impacts to some of these resources, which are fully analyzed in Sections 6.1 through 6.14 of this document and summarized in Table 2-1 (provided at the end of this Chapter).

This EIR discusses mitigation measures that would be implemented by the City and/or the project applicant to reduce potential adverse impacts to a level that is considered less than significant. Such mitigation measures are noted in this document and are found in the following sections: 6.1, Air Quality; 6.2, Biological Resources; 6.3, Cultural Resources; 6.4, Seismicity, Soils and Geology; 6.5, Hazards and Hazardous Substances; 6.6, Hydrology and Water Quality; 6.8, Noise and

Vibration; 6.9, Parks and Open Space; 6.10, Public Services; 6.11, Public Utilities; 6.12, Transportation and Circulation; 6.13, Urban Design and Visual Resources, and 6.14 Energy. However, even with the application of feasible mitigation measures, some impacts could not be reduced to less-than-significant levels. The significant and unavoidable impacts that were identified for both project-level and cumulative impacts are shown below.

### **Project-Specific Significant and Unavoidable Impacts**

- 6.1-3 Operation of the proposed project would result in the generation of increased ROG and NO<sub>x</sub> emissions.**
- 6.8-1 Construction of the proposed Specific Plan would temporarily produce loud noise.**
- 6.8-2 The proposed Specific Plan could permanently expose sensitive receptors to traffic and rail noise levels.**

#### Initial Phase Only (see Section 6.12, Transportation and Circulation)

- 6.12-1 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**
- 6.12-2 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**
- 6.12-3 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**
- 6.12-4 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**
- 6.12-5 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**
- 6.12-10 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**
- 6.12-11 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**
- 6.12-12 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**
- 6.12-13 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**
- 6.12-14 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**
- 6.12-16 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**
- 6.12-17 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**

- 6.12-18** The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.
- 6.12-19** The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-20** The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.

#### **Cumulative Significant and Unavoidable Impacts**

- 6.1-8** Project construction activities would contribute to cumulative increases in ozone precursors.
- 6.1-9** The proposed project would contribute to cumulative air quality degradation.
- 6.1-10** Project construction would contribute to cumulative increases in particulate matter in the vicinity of the Specific Plan Area.
- 6.8-6** The proposed project would contribute to increases in traffic and rail noise levels.
- 6.12-22** The Full Project would increase traffic volumes at study area intersections and cause the level of service to deteriorate.
- 6.12-23** The Full Project would add traffic to the study roadway segments that result in substandard levels of service.
- 6.12-24** The Full Project would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.
- 6.12-25** The Full Project would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-26** The Full Project would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.

#### **ENVIRONMENTAL EFFECTS FOUND NOT SIGNIFICANT**

During preparation of the NOP and in scoping meetings and related consultation, several issue areas (agriculture and mineral resources) were found not to be significant and therefore are not addressed in detail in this EIR. Pursuant to CEQA Guidelines section 15128, the reasons these issues were determined not to be significant are described below.

##### **Agriculture Resources**

The Specific Plan Area is not under a Williamson Act contract and is not designated for agricultural use; nor has the site been identified as "Prime Farmland," "Farmland of Statewide Importance," or "Unique Farmland." The proposed project would not contribute to the conversion of farmland to non-agricultural uses and development of the site would not create any conflicts with existing agricultural uses.

##### **Mineral Resources**

The Specific Plan Area is located in a disturbed environment, surrounded by urban uses. Due to the site's previous use as an active railyard and based on previous environmental analysis of the site, no

risk of impact to important mineral resources was anticipated. Therefore, the Specific Plan Area's potential to cause loss of a local or regionally identified mineral resource was not determined to be significant.

## ALTERNATIVES TO THE PROPOSED PROJECT

The EIR analyzes the following alternatives to the proposed project:

- **No Project/No Development Alternative**, which assumes no new development of the Railyards Specific Plan Area. This alternative assumes the existing Railyards Specific Plan Area would remain undeveloped. The existing depot (Intermodal Facility) and the Central Shops structures would remain under their existing uses, would not be restored, and would remain inaccessible to the general public.
- **No Project/General Plan Buildout**, which assumes that the Railyards Specific Plan Area would be redeveloped consistent with the existing land use designations identified in the current adopted Railyards Specific Plan.
- **Reduced Density/Reduced Intensity Alternative**, in which the density and/or intensity of all of the proposed land uses besides Parcel 2, Parcel 11a, and Parcel 35 would be reduced by approximately 30 percent. The retail uses anticipated for Parcel 2 under the proposed project would remain the same as the proposed project, while the amount of retail in Parcel 11a would be reduced by 50 percent compared to the proposed project. This alternative would place a 60-foot height limit on the proposed hotels within Parcels 35, 14, and 3c.
- **Water Supply Consistency Alternative**, in which the development of the proposed project would be reduced from four phases to two phases, which would allow the project to be completed by 2017, when it is anticipated that a potable water treatment capacity deficit may occur within the City without a new Sacramento River diversion and water treatment plant (WTP). The entire initial phase and parcels 50, 52N, 52S, 53N, 53S, 54a, 57a, 57N, 58N, 59N, 60, 61, 62, 63, 64, 65 and 72 would be developed in a manner consistent with the proposed project. However, Parcels 66N, 67N, 68N, 69N, 70N, and 71N would not be developed under this alternative, which would result in a reduction the development footprint size (a reduction of 6.59 acres). Land uses within the riverfront and parcels 49a, 54N, 54S, 66S, 67S, 68S, 69S, 70S, and 71S would be converted from RMU to open space. Parcels 47a, 48, 51, 57S, 58S, and 59S would be converted to surface and above-ground parking.

## SUMMARY TABLE

Table 2-1 (Summary of Impacts and Mitigation Measures), has been organized to correspond with the environmental issues discussed in Chapter 6. The summary table is arranged in four columns:

1. Environmental impacts ("Impact").
2. Level of significance without mitigation ("Significance").
3. Mitigation measures ("Mitigation Measure").
4. The level of significance after implementation of mitigation measures ("Residual Significance").

If an impact is determined to be significant or potentially significant, mitigation measures are identified, where appropriate and feasible. More than one mitigation measure may be required to reduce the impact to a less-than-significant level. This EIR assumes that all applicable plans, policies, and regulations would be implemented, including, but not necessarily limited to, City General Plan policies, laws, and requirements or recommendations of the City of Sacramento.

Applicable plans, policies, and regulations are identified and described in the Regulatory Setting of each issue area and within the relevant impact analysis. A description of the organization of the environmental analysis, as well as key foundational assumptions regarding the approach to the analysis, is provided in Chapter 6, Introduction to the Analysis.





<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
<b>6.1 Air Quality</b>			
<b>6.1-1</b> The proposed project would generate particulate matter during grading of construction site(s) and construction of the proposed structures.	S	6.1-1 The following measures are required by the SMAQMD for level one mitigation, and shall be implemented during grading at all project sites: a) Water all soil with sufficient frequency as to maintain soil moistness. b) Maintain two feet of freeboard space on haul trucks. In addition, the following measures shall be implemented to further reduce the PM <sub>10</sub> impact during construction activity: c) All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry brushes is expressly prohibited except where preceded or accompanied by sufficient water or chemical stabilizer/suppressant.) d) Wheel washers for all exiting trucks shall be installed, or all trucks and equipment leaving the site shall be washed off. e) Excavation and grading activity shall be suspended when winds exceed 20 mph. f) During clearing, grading, earth-moving, or excavation operations, fugitive dust emissions shall be controlled by watering exposed surfaces two times per day, watering haul roads three times per day or paving of construction roads, or dust-preventative measures. All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer or suppressant. g) Onsite vehicle speeds on unpaved roads shall be limited to 15 mph.	LS

LS = Less than Significant      PS = Potentially Significant      S = Significant      SU = Significant and Unavoidable      NA = Not Applicable      NI = No Impact

<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
<p><b>6.1-2 Construction of the proposed project would generate emissions of ozone precursors.</b></p>	<p>S</p>	<p>6.1-2 The following measures shall be incorporated into construction contracts and included on all construction plans:</p> <p>a) The project shall provide a plan, for approval by the lead agency and the SMAQMD, demonstrating that the heavy-duty (&gt; 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, would achieve a project wide fleet-average 20% NO<sub>x</sub> reduction and 45% particulate reduction compared to the most recent CARB fleet average at time of construction. The SMAQMD shall make the final decision on the emission control technologies to be used by the project construction equipment; however, acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available;</p>	<p>LS</p>

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		<p>b) The project applicant and/or contractor shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that shall be used an aggregate of 40 or more hours during any phase of the construction project. The inventory shall include the horsepower rating, engine production year, projected hours of use or fuel throughput for each piece of equipment, and its compliance status with respect to CARB emission reduction regulations for off-road diesel equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project applicant and/or contractor shall provide SMAQMD with the anticipated construction timeline, including start date and name and phone number of the project manager and on-site foreman.</p> <p>c) The project applicant and/or contractor shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly by contractor personnel certified to perform opacity readings, and a monthly summary of the visual survey results shall be submitted to the SMAQMD throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.</p>	

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		d) Limit vehicle idling time to five minutes or less. e) The project applicant shall pay into the SMAQMD's construction mitigation fund to offset construction-generated emissions of NO <sub>x</sub> that exceed SMAQMD's daily emission threshold of 85 lbs/day. The project applicant shall coordinate with the SMAQMD for payment of fees into the Heavy-Duty Low-Emission Vehicle Program designed to reduce construction related emissions within the region. Fees shall be paid based upon the applicable current SMAQMD Fee. The applicant shall keep track of actual equipment use and their NO <sub>x</sub> emissions so that mitigation fees can be adjusted accordingly for payment to the SMAQMD. f) Construction equipment shall be kept in optimum running condition at all times. g) When appropriate, use alternative fueled (such as aqueous diesel fuel) or catalyst equipped diesel construction equipment. h) When appropriate, replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).	
<b>6.1-3</b> Operation of the proposed project would result in the generation of increased ROG and NO <sub>x</sub> emissions.	S	6.1-3 The project applicant shall implement the emission reduction strategies contained in the Railyards Air Quality Mitigation Plan (see Appendix E). The AQMP shall be endorsed by the SMAQMD prior to the first building permit. Documentation confirming implementation of the Air Quality Management Plan shall be provided to the SMAQMD and the City of Sacramento prior to issuance of occupancy permits.	SU
<b>6.1-4</b> Operation of the proposed project could cause an increase in CO concentrations from project-related traffic.	LS	None required.	NA

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
6.1-5 Implementation of the proposed project could result in a substantial increase in exposure of sensitive receptors to toxic air contaminants.	LS	None required.	NA
6.1-6 The proposed project could generate objectionable odors or expose on-site sensitive uses to odors from existing odor sources.	LS	None required.	NA
6.1-7 The proposed Specific Plan could alter wind speed at ground level (pedestrian level).	S	6.1-7 During design review for buildings over 100 feet in height, the applicant shall demonstrate that ground-level winds would not exceed 35 miles per hour as the result of the building design. If necessary to determine the potential ground-level wind speeds, wind-tunnel testing will be conducted.	LS
6.1-8 Project construction activities would contribute to cumulative increases in ozone precursors.	S	6.1-8 Implement Mitigation Measures 6.1-2 (a) through (e).	SU
6.1-9 The proposed project would contribute to cumulative air quality degradation.	S	6.1-9 Implement Mitigation Measures 6.1-3.	LS
6.1-10 Project construction would contribute to cumulative increases in particulate matter in the vicinity of the Specific Plan Area.	S	6.1-10 Implement Mitigation Measures 6.1-1(a) through (g).	SU
6.1-11 The proposed project could contribute to cumulative emissions of CO concentrations from project-related traffic.	LS	None required.	NA
6.1-12 The proposed project could contribute to cumulative increases in TACs.	LS	None required.	NA
6.1-13 The proposed project could contribute to changes in wind levels throughout the Central City.	LS	None required.	NA

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<b>6.2 Biological Resources</b>			
<b>6.2-1</b> Development of the Specific Plan could result in the loss of potential foraging habitat for Swainson's hawk.	LS	None required.	NA
<b>6.2-2</b> Development of the Specific Plan could result in the loss of potential nesting habitat for Swainson's hawk, white-tailed kite, and other sensitive riparian-nesting species, and burrowing owls.	PS	6.2-2 a) Nesting Swainson's Hawk Habitat: If construction occurs during the breeding season (February 1-August 31), the project applicant shall conduct CDFG-recommended protocol-level surveys prior to construction as required by the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley or as required by the CDFG in the future. If active nests are found in the construction area, mitigation measures consistent with the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks ( <i>Buteo swainsoni</i> ) in the Central Valley of California shall be incorporated in the following manner or as directed by CDFG:  1) If an active nest is found no intensive new disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that may cause nest abandonment or forced fledging, can be initiated within 200 yards (buffer zone) of an active nest between March 1 and September 15. The size of the buffer area may be adjusted if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the hawks. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active.	LS

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>2) Nest trees shall not be removed unless there is no feasible way of avoiding removal of the tree. If a nest tree must be removed, a Management Authorization (including conditions to offset the loss of the nest tree) must be obtained from CDFG with the tree removal period specified in the management Authorization, generally between October 1 and February 1.</p> <p>3) If construction or other project-related activities that may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the project proponent) by a qualified biologist will be required to determine if the nest is abandoned. If the nest is abandoned and if the nestlings are still alive, the project proponent shall fund the recovery and hacking (controlled release of captive reared young) of the nestling(s).</p> <p>4) Routine disturbances, such as routine maintenance activities within 0.25 mile of an active nest, shall not be prohibited.</p> <p>b) Nesting habitat for other protected or sensitive avian species:</p> <p>1) Vegetation removal and construction shall occur after between September 1 and January 31 whenever feasible.</p>	

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S = Significant

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NA = Not Applicable

NI = No Impact

**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>2) Prior to any construction or vegetation removal between February 1 and August 31, a nesting survey shall be conducted by a qualified biologist of all habitat within 500 feet of the construction area. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities and surveys will be conducted in accordance with CDFG protocol as applicable. If no active nests are identified on or within 500 feet of the construction site, no further mitigation is necessary. This survey can be carried out concurrently with surveys for other species provided it does not conflict with any established survey protocols. A copy of the pre-construction survey shall be submitted to the City of Sacramento. If an active nest of a sensitive species is identified onsite (per established thresholds), specific mitigation measures shall be developed in consultation with CDFG and USFWS. At a minimum, these measures shall include a 500-foot no-work buffer that shall be maintained between the nest and construction activity until CDFG and/or USFWS approves of any other mitigation measures.</p> <p>3) Completion of the nesting cycle shall be determined by qualified ornithologist or biologist.</p> <p>c) Burrowing Owl Nesting Habitat:</p> <p>1) Prior to construction activity, focused pre-construction surveys shall be conducted for burrowing owls where suitable habitat is present within the construction areas. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities and surveys shall be conducted in accordance with CDFG burrowing owl survey protocol.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>2) If unoccupied burrows are found during the non-breeding season, the project applicant may collapse the unoccupied burrows, or otherwise obstruct their entrances to prevent owls from entering and nesting in the burrows. This measure would prevent inadvertent impacts during construction activities.</p> <p>3) If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be submitted to the City and CDFG, and no further mitigation is necessary.</p> <p>If occupied burrows are found, impacts on the burrows shall be avoided by providing a buffer of 165 feet during the non-breeding season (September 1 through January 31) or 250 feet during the breeding season (February 1 through August 31). The size of the buffer area may be adjusted if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the owls. No project activity shall commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied. If the burrow is occupied by a nesting pair, a minimum of 7.5 acres of foraging habitat contiguous to the burrow shall be maintained until the breeding season is over.</p>	

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TABLE 2-1

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		4) If impacts on occupied burrows are unavoidable, onsite passive relocation techniques approved by CDFG shall be used to encourage owls to move to alternative burrows outside of the impact area. However, no occupied burrows shall be disturbed during the nesting season unless a qualified biologist verifies through non-invasive methods that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Mitigation for foraging habitat for relocated pairs shall follow guidelines provided in the <i>California Burrowing Owl Consortium's April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines</i> , <sup>1</sup> which ranges from 7.5 to 19.5 acres per pair.	
<b>6.2-3 Development of the Specific Plan could result in take of an endangered and threatened fish species and degradation of designated critical habitat.</b>	PS	6.2-3 To avoid, minimize, or compensate for potential impacts to protected and sensitive riverine species and critical habitat, and prevent any take of winter-run Chinook in the Specific Plan Area the following actions shall be undertaken by the project applicant.  a) Unless prior approval is granted by the National Marine Fisheries Service, USFWS, and/or CDFG, (as applicable) in-water work shall be restricted to the July 1 to October 15 period to avoid construction impacts to winter-run and spring-run Chinook salmon.	LS

1 California Department of Fish and Game, 1995. Staff report on burrowing owl mitigation, Sacramento, CA.

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		b) Project-related impacts to riparian vegetation shall be minimized by replacing lost vegetation onsite at a minimum ratio of 1:1, along the Sacramento River, if feasible. Mitigation and/or restoration plans for all habitats that require revegetation, habitat creation, restoration, and enhancement shall be approved by the regulatory agencies, as appropriate, and shall include construction specifications; irrigation schedules; planting palettes (showing container stock/box plantings, cutting specifications, and seed mixes); monitoring, maintenance, and remediation schedules; and success criteria, assurances and contingency measures. Revegetation specifications, species composition and density shall be developed by an experienced restoration ecologist. The restoration sites shall be evaluated to ensure that required revegetation has been performed in areas where temporary construction has been completed. A report documenting restoration efforts shall be submitted by the applicant to the City and applicable regulatory agencies. If necessary, remedial revegetation should occur during the same rainy season that the remedial recommendation is made. Restoration sites shall be monitored by qualified restoration ecologists for three to five years, or until success criteria are achieved. Restoration plans shall be included in the final construction documents. Grading and revegetation activities shall comply with applicable regulations and mitigation measures identified in this EIR pertaining to dust, air emissions, noise, water quality and other potential environmental effects.	

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>c) The project proponent shall plant riparian vegetation and install biotechnical features, such as brush piles, logs, and rootwads, to replace habitat impacted by construction of the outfall structure. These structures shall compensate for potential impacts associated with increased predation around the new structure. Specific measures shall include elements that contribute to nearshore cover in the immediate vicinity of the structure to increase the potential for juvenile fish while discouraging occupancy of the same structures by predaceous species. The precise amount and relative value of affected riparian and cover habitat would be determined during project-level analysis of proposed activities.</p> <p>d) Because design of the outfall is conceptual it is unknown what the specific final design would be, if dredging will be required, or if permanent impacts to designated critical habitat would occur that could result in adverse effects to listed species. If the final design does result in permanent impacts to the river, and regulatory agencies determine this to result in adverse effects to listed species, the area of river-bottom permanently removed by the project shall be calculated and compensated at a minimum 1:1 ratio, or as required by permitting agencies. Mitigation would occur through creation, restoration, enhancement, and/or preservation of this habitat within an approved off-site location and/or mitigation bank at a ratio to be negotiated with the regulatory agencies. Mitigation banking would involve using mitigation credits from mitigation banks approved by the regulatory agencies (i.e., Kimball Island Mitigation Bank or alike). Final mitigation ratios and locations are to be negotiated with the regulatory agencies prior to riverbed disturbing activities and detailed mitigation requirements will be identified in the final regulatory agency permits.</p>	

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## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>Created, restored, or enhanced mitigation habitat will be conserved and managed per the regulatory agencies' permit requirements. For created, restored, or enhanced mitigation habitat the City will prepare a Riverbed Habitat Management Plan in coordination with, as applicable, the NMFS, USFWS and/or CDFG. Prior to commencing any activities that would impact riverbed critical habitat, the Habitat Management Plan will be approved by the applicable regulatory agencies and shall include, at a minimum; monitoring, maintenance, and remediation schedules; and success criteria, and assurances and contingency measures to ensure the viability of the mitigation areas. The Habitat Management Plan will, if required by permits, also place all acquired in permanent conservation easements, or other forms of protection to ensure the long-term protection of their biological resources. These long-term management plans and funding mechanisms will be reviewed and agreed to by the applicable regulatory agencies that have regulatory authority over the biological resources being mitigated; the terms will be based on reasonable management requirements designed to ensure the long-term biological resource viability at each mitigation site. If the off-site mitigation areas purchased are covered by an approved management program, the City will abide by the conditions of that program.</p>	

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>e) The project applicant shall require all contractors to develop Spill Prevention Plans (SPP) and Storm Water Pollution Prevention Plans (SWPPP). These plans shall contain BMPs to be implemented to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs shall include permanent and temporary erosion control measures, including the use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, proper staging of fuel, out of channel equipment maintenance, and ultimately seeding and revegetating. Preventing contaminants from entering the river during construction and operation of the facilities would protect water quality and the instream aquatic species.</p> <p>f) The project shall adhere to current (e.g., those applicable at the time of construction) Regional Water Quality Control Board (Regional Board) water quality objectives for the Sacramento River Basin. These objectives currently require that project discharge cannot exceed 1 Nephelometric Turbidity Unit (NTU) when natural turbidity is between 0 and 5 NTUs, 20 percent of natural turbidity levels when natural turbidity is between 5 and 50 NTUs, 10 NTUs when natural turbidity is between 50 and 100 NTUs, or 10 percent when natural turbidity is greater than 100 NTUs. NTUs are an indicator of the amount of light that is scattered and absorbed by suspended particles. A biological monitor shall supervise construction activities when ground-disturbing and/or construction activities occur below the top of the bank of the Sacramento River (e.g., in-channel work) and if objectives are exceeded, in-water construction shall stop until objectives can be met.</p> <p>g) Implement Mitigation Measures 6.6-1 and 6.6-5.</p>	
<p><b>6.2-4 Development of the Specific Plan could result in the removal of habitat for the Valley Elderberry Longhorn Beetle.</b></p>	<p>LS</p>	<p>None required.</p>	<p>NA</p>

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6.2-5 Development of the Specific Plan could affect habitat for western pond turtle.	LS	None required.	NA
6.2-6 Development of the Specific Plan could result in the loss of a sensitive bat species roosting site, which could result in substantially increased mortality or reduced reproductive success.	S	6.2-6 Prior to construction within 100 feet of the I-5 and I Street Bridge, the project applicant shall conduct a pre-construction survey during the time when bats would be expected to be present and active to determine the presence of roosting bats. This survey shall be conducted by a wildlife biologist qualified to identify the species of bats using these roosts. If no special status species bats are roosting, then no further mitigation is required.	LS
		If special status bat species, e.g. roosting bats, are present, prior to construction within 100 feet of the I-5 and I Street Bridge, the project proponent shall provide for a replacement roosting facility in the form of either a bat house or several bat boxes, immediately adjacent to the I-5 and I Street Bridge. The wildlife biologist who conducted the pre-construction surveys shall recommend appropriate bat exclusion devices (i.e., light weight polypropylene netting (<1/6" mesh), plastic sheeting, tube-type excluders, etc.) that shall be installed at the bridge to prevent roosting bats from being on the bridge when demolition or construction occurs, but located such that they would not interfere with nesting purple martins (which shall take priority due to there tendency permanently abandon nesting sites that have been subject to artificial exclusion devices). The exclusion devices can be designed to serve multiple purposes if the exclusion of other species (i.e., purple martins) is also required.	

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<p><b>6.2-7 Construction near I-5 and the I Street Bridge could result in increased mortality and reproductive success of purple martins if construction would result in the loss of a breeding colony.</b></p>	<p>S</p>	<p>6.2-7 a) Prior to beginning construction activities the project applicant shall prevent nest establishment on the areas of the structure that would be directly affected. Nest prevention methods include, but are not limited to, installation of a barrier (such as netting) to prevent bird access to the structure and/or continued removal of deposited mud material under the structure early in the nesting season to prevent construction of habitable nests. If nest prevention cannot be accomplished prior to the start of construction, and birds establish nests, the nests shall be protected from construction activity that would disrupt nesting activities until the nestlings fledge (per 6.2-7(b)). After the nestlings have fledged, the nests shall be inspected by a qualified biologist to confirm the absence of eggs and nestlings, prior to nest removal and commencement of construction activities.</p>	<p>LS</p>

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		b) Although purple martins are tolerant of human activities, if active nests are present no construction shall be conducted within 100 feet of the edge of the purple martin colony (as demarcated by the nest hole closest to the construction activity) during the purple martin breeding season from April 15 to August 1. The buffer area shall be avoided to prevent destruction or disturbance to the nest(s) until it is no longer active. The size of the buffer area may be adjusted if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the martins. The site characteristics used to determine the size of the modified buffer should include; a) topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; and d) sensitivity of the species to nest disturbances. No project activity shall commence within the buffer area until a qualified biologist confirms that any nests are no longer active. In addition, no equipment shall be parked or stored beneath the I Street on-ramp or the I-5 overpass at the I Street on-ramp during the breeding season (April 15 to August 1).	
<b>6.2-8 Development of the Specific Plan could result in net reduction of sensitive habitats including protected wetland habitat as defined in Section 404 of the Clean Water Act, riparian vegetation, and state jurisdictional waters/wetlands.</b>	S	6.2-8 a) Following final design of the Sacramento River outfall, the loss of riparian habitat shall be quantified by a qualified biologist. In light of the determined loss of Sacramento River riparian habitat, combined with the removal of 0.25 acre remnant riparian habitat in the FOSA, the project applicant shall demonstrate no net loss of sensitive riparian habitat through restoration, creation, enhancement, or preservation at a compensation ratio equivalent to the area lost to project development. This measure may be implemented through the Streambed Alteration Agreement or other regulatory mechanism to the satisfaction of the City.	LS

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		b) The project applicant shall include adequate signage and appropriate fencing along Specific Plan Area boundary adjacent to any sensitive habitats that remain or are created through mitigation. A signage and fencing plan shall be developed with the CDFG but at a minimum "Sensitive habitat" signs shall be installed along the sensitive habitat boundaries every 100 feet. The signs would inform recreationists of the sensitive habitat and species in the area and that unauthorized disturbance would be subject to penalties imposed by the CDFG and USFWS. Fencing shall be designed to allow free movement of wildlife but restrict human movement. c) Implement Mitigation Measure 6.2-3(b).	
<b>6.2-9 Development of the Specific Plan could result in the isolation or interruption of contiguous habitat which would interfere substantially with the movement of resident or migratory fish or wildlife species, migratory wildlife corridors, or impede the use of native wildlife nursery sites.</b>	PS	6.2-9 a) To avoid degradation of habitat values for wildlife along the river portion of the site automobile headlights that are directed at a 90 degree angle onto the vegetation along the river shall be screened along the western project edge. This may be accomplished at the western foot of Railyards Boulevard and Camille Lane through the placement of a 3'-4' vegetated hedge or other structural methods that would not additionally hinder wildlife movement through the aforementioned riverine riparian vegetation. b) Outdoor lighting within 500 feet of the river shall be of the minimum wattage required for the particular use and shall be directed to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) to prevent stray light spillover onto sensitive habitat. c) All fixtures on elevated light standards west of I-5 within the project boundaries, such as in parking lots or along roadways, shall be shielded to reduce glare.	LS
<b>6.2-10 Development of the Specific Plan could conflict with local policies protecting trees.</b>	PS	6.2-10 The project applicant shall comply with the City's tree ordinance and implement the following tree-protection measures prior to and during project construction.	LS

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>To the maximum extent feasible, the project design shall avoid loss of any protected tree. The project applicant shall retain a certified arborist to survey trees in the Specific Plan Area, including potential laydown areas, and identify and evaluate trees that will be removed. If the arborist's survey does not identify any protected trees that would be removed or damaged as a result of the Specific Plan Area, no further mitigation is necessary.</p> <p>If protected trees (or their canopy) are identified within the affected area, measures shall be taken to avoid impacts on protected trees, as detailed in the City's tree ordinance. Protected trees that are lost as a result of the project will be replaced according to the provisions of the ordinance (Section 12.64.040), which generally requires a 1-inch-diameter replacement for each inch lost. Tree replacement shall occur after project construction and will be monitored by qualified arborists.</p> <p>All native oaks greater than 6 inches in diameter at 48 inches above grade that are approved for removal or are critically damaged during construction shall be replaced by a greater number of the same species. At a minimum, one tree shall be planted for each inch in the diameter of the removed tree at 48 inches above grade. The exact size and number of replacement trees shall be determined by the City of Sacramento Urban Forest Services. A qualified biologist shall monitor trees during construction and the following spring and monitor the growth and survival of the newly planted trees. All revegetation plans shall require monitoring the newly transplanted trees for at least 5 years and the replacement of all transplanted trees that die during that period.</p>	

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6.2-11 Development of the Specific Plan would contribute to the cumulative loss of special-status plant and wildlife species or their habitat in the region.	LS	None required.	NA
6.2-12 Development of the Specific Plan would contribute to the cumulative loss of sensitive habitat including wetlands and riparian habitat in the region.	LS	None required.	NA
6.2-13 Development of the Specific Plan could contribute to the cumulative reduction open space or impact riverine habitat, which would interfere substantially with the movement of resident or migratory fish or wildlife, or impede the use of native wildlife nursery sites within the region.	LS	None required.	NA
<b>6.3 Cultural Resources</b>			
6.3-1 The proposed project could cause a substantial adverse change in the significance of an archaeological resource, including human remains.	PS	6.3-1 a) Prior to any ground-disturbing activity in Archaeologically Sensitive Areas (ASAs), a focused Archaeological Testing Plan (ATP) shall be prepared and implemented to determine the presence/absence of archaeological resources and to assess their eligibility to the CRHR. The ATP shall be reviewed and approved by the Preservation Director prior to implementation. A programmatic ATP is provided in Appendix G of this EIR.  b) If the testing program identifies CRHR-eligible archaeological resources, an Archaeological Mitigation Plan shall be prepared and implemented.	LS

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		<p>c) With respect to portions of ASAs where ground-disturbing activities would take place but that are not subject to the archaeological test investigation referred to above, a Construction Monitoring Plan shall be prepared and implemented to ensure appropriate identification and treatment of unanticipated archaeological resources, if any are discovered during grading or construction activities.</p> <p>d) Prior the commencement of any ground disturbance in the 6th-7th Street Corridor ASA, consultation shall be initiated between the landowner or his representative and the appropriate Native American group having traditional authority over the Initial Phase Area. The goal of the consultation shall be to formulate procedures for the treatment of Native American human remains, should any be uncovered during project activities.</p> <p>e) Earth-moving activities within areas identified in the ATP shall be monitored by an archaeologist approved by the City of Sacramento Preservation Director. In the event that unanticipated archaeological resources or human remains are encountered, compliance with federal and state regulations and guidelines regarding the treatment of cultural resources and human remains shall be required. The following details the procedures to be followed in the event that new cultural resource sites or human remains are discovered.</p>	

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		i. If the monitoring archaeologist believes that an archaeological resource has inadvertently been uncovered, all work adjacent to the discovery shall cease, and the appropriate steps shall be taken, as directed by the archaeologist, to protect the discovery site. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the archaeological resources in accordance with Federal and State Law. At a minimum the area will be secured to a distance of 50 feet from the discovery. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. The archaeologist will conduct a field investigation and assess the significance of the find. Impacts to cultural resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by the archaeologist and that are consistent with the Secretary of the Interior's Standards for Archaeological Documentation. All identified cultural resources shall be recorded on the appropriate DPR 523 (A-L) form and filed with the North Central Information Center.	

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		<p>ii. If human remains are discovered at the project construction site during any phase of construction, all ground-disturbing activity within 50 feet of the resources shall be halted and the County Coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. If the remains are determined to be Chinese, or any other ethnic group, the appropriate local organization affiliated with that group shall be contacted and all reasonable effort shall be made to identify the remains and determine and contact the most likely descendant. The approved mitigation shall be implemented before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.</p> <p>If the remains are of Native American origin, the landowner or his representative shall contact the Native American Heritage Commission to identify the Most Likely Descendant. That individual shall be asked to make a recommendation to the landowner for treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.983.</p> <p>If the Most Likely Descendant fails to make a recommendation or the landowner or his authorized representative rejects the recommendation of the descendant, and if mediation by the Native American Heritage</p>	

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		Commission fails to provide measures acceptable to the landowner, then the landowner or his authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.	
<p><b>6.3-2 The proposed project could cause a substantial adverse change in to the Southern Pacific Railroad Shops, a historical resource as defined in Section 15064.5 of the State CEQA Guidelines, through the potential alteration and demolition of character-defining features of contributing elements of the Historic District.</b></p>	PS	<p>6.3-2</p> <p>a) An Architectural Historian qualified under the Secretary of the Interior's Standards shall be retained to prepare the necessary documentation to formally list the Central Shops Historic District as a locally Adopted Historic District.</p> <p>b) A copy of the full Southern Pacific Company Sacramento Shops HAER document (HAER CA303) shall be acquired, including the historic narrative, architectural drawings, and photographs, and archive quality copies disseminated to the appropriate state, regional, and local repositories.</p> <p>c) Consistent with the City's Historic Preservation Ordinance, and in coordination and consultation with the Preservation Director, a Historic District Plan that is specifically focused on the historic district in the Central Shops shall be prepared. The Historic District Plan shall include, at a minimum, the following components:</p> <ol style="list-style-type: none"> <li>1. Statement of the goals for review of development projects within the historic district;</li> <li>2. A representation of the historical development of land uses, existing land uses, and any adopted plans for future land uses;</li> <li>3. A statement of findings, including the following:               <ol style="list-style-type: none"> <li>a. The historical or pre-historical period to which the area is significant.</li> </ol> </li> </ol>	LS

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>b. The predominant periods or styles of the structures or features therein.</li> <li>c. The significant features and characteristics of such periods or styles, as represented in the historic district, including, but not limited to, structure height, bulk, distinctive architectural details, materials, textures, archeological and landscape features and fixtures.</li> <li>d. A statement, consistent with Article IV, Sacramento Register of Historic and Cultural Resources, of this chapter, of the standards and criteria to be utilized in determining the appropriateness of any development project involving a landmark, contributing resource or noncontributing resource within the historic district.</li> </ul>	
6.3-3 The proposed project could cause a substantial adverse change to the Southern Pacific Railyard Historic District by constructing new buildings and structures surrounding the contributing elements of the district.	LS	None required.	NA
6.3-4 The proposed project could cause a substantial adverse change to contributing elements of the Sacramento Depot that could be caused by construction activities associated with the relocation of the UPRR main line tracks.	LS	None required.	NA
6.3-5 The proposed project could cause a substantial adverse change to the I Street Bridge.	LS	None required.	NA

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<b>6.3-6</b> The proposed project could cause a substantial adverse change in the significance of the remnant portion of the Pioneer/Sperry Grain Mill, California State Landmark 780 the First Transcontinental Railroad, and the Levees.	S	6.3-6 a) A qualified architectural historian shall be retained to inventory and record the route of the First Transcontinental Railroad through the project site to HABS/HAER standards. The HABS/HAER recordation shall be disseminated to the appropriate repositories. b) The historical information about the resource shall be integrated into the interpretation displays and signage along the route. c) Implement Mitigation Measure 6.3-1(e).	LS
<b>6.3-7</b> The proposed project could cause a substantial adverse change in the significance of the Alkali Flat Historic District if it would construct development adjacent to the District's west side that would be out of context for the area.	LS	None required.	NA
<b>6.3-8</b> The proposed project could contribute to the cumulative degradation or loss of archaeological resources, including human remains.	PS	6.3-8 Implement Mitigation Measures 6.3-1(a) through 6.3-1(e).	LS
<b>6.3-9</b> The proposed project could contribute to the cumulative loss or alteration of historical resources.	LS	None required.	NA
<b>6.4 Seismicity, Soils, and Geology</b>			
<b>6.4-1</b> The proposed project could expose people or structures to rupture of a known earthquake fault.	NI	None required.	NA
<b>6.4-2</b> The proposed project could expose people and structures to moderate or strong seismic groundshaking (MMI VI to MMI VII).	LS	None required.	NA
<b>6.4-3</b> The proposed project could expose people and structures to seismic-related ground failure, including liquefaction.	LS	None required.	NA

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<b>6.4-4</b> The proposed project could result in damage to the historic Central Shops.	S	6.4-4 a) To the extent feasible, the historic buildings shall be stabilized and reinforced prior to trenching or other construction activities adjacent to the buildings. b) The project applicant shall take reasonable precautions to protect historic structures from damage, such as settlement, caused by excavation, trenching, dewatering, or other construction activities that could affect the integrity of the buildings or expose workers to physical hazards. c) Measures shall be taken to reduce or eliminate potential ground settlement of the areas surrounding the historic buildings due dewatering, excavation, or adjacent construction. A pre-excavation settlement-damage survey shall be prepared that shall include, at a minimum, visual inspection of existing vulnerable structures for cracks and other settlement defects, and establishment of horizontal and vertical control points on the buildings. A monitoring program of surveying horizontal and vertical control points on structures and shoring shall be followed to determine the effects of dewatering, excavation, and construction on the particular building site. If it is determined by the engineer that the existing buildings could be subject to damage, work shall cease until appropriate remedies to prevent damage are identified.	LS
<b>6.4-5</b> The proposed project could expose people or structures to landslides.	NI	None required.	NA
<b>6.4-6</b> The proposed project could cause erosion or the loss of topsoil during construction or operation.	LS	None required.	NA

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<b>6.4-7</b> The proposed project could cause on- or off-site lateral spreading, subsidence, settlement, or collapse because the Specific Plan Area contains unstable geologic and soil units.	LS	None required.	NA
<b>6.4-8</b> The proposed project could be located on expansive soil, as defined in Table 18-1-A of the California Building Code (2001), as adopted by the City of Sacramento, creating life or property hazards.	LS	None required.	NA
<b>6.4-9</b> The proposed project would contribute to increases in the number of people exposed to seismic and geologic risks.	LS	None required.	NA
<b>6.4-10</b> The proposed project would contribute to cumulative increases in erosion within the American River watershed.	LS	None required.	NA
<b>6.5 Hazards and Hazardous Substances</b>			
<b>6.5-1</b> Development of the proposed Specific Plan would occur on property that is known to contain contaminated soil, which could present a hazard to construction workers if not properly managed.	PS	6.5-1 The City shall enforce the following requirements for construction on the Specific Plan Area: a) The City recognizes that DTSC has ultimate authority regarding approval of health risk assessments. However, through a new Tri-Party MOU, the City may provide input to DTSC if any assumptions employed appear to be inaccurate or differ from those previously prepared. b) Each developer's general contractor shall prepare a site-specific construction worker health and safety plan containing construction worker health and safety requirements based on the levels of remediation already performed in each project area.	LS

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		<p>c) Contractors shall be given a worker health and safety guidance document at the time of grading or building permit application to assist them in preparing site-specific worker health and safety plans. Pursuant to the requirements of state and federal law, the site-specific health and safety plan may require the use of personal protective equipment, onsite continuous air quality monitoring during construction, and other precautions.</p> <p>d) During construction, except in imported clean fill areas, all excavation, soil handling, and dewatering activities shall be observed for signs of apparent contamination by the developer under DTSC oversight.</p> <p>e) In addition to these steps, DTSC, through the new Tri-Party MOU, shall provide for environmental oversight, including site inspection during construction and procedures for detecting previously undiscovered contamination during site excavation as well as contingency plans for investigation, remediation and disposal of such contamination.</p>	
<b>6.5-2</b> Development of the proposed Specific Plan would occur on property that is known to contain contaminated soil and groundwater, which could present a hazard to people during occupancy of the proposed project if not properly managed.	S	6.5-2 In areas where the groundwater contamination has the potential to reach water, sewer or storm drainage pipelines due to fluctuations in the elevation of the groundwater table, measures will be used to prevent infiltration in accordance with DTSC requirements.	LS
<b>6.5-3</b> Soil remediation activities will occur concurrently with development of the proposed Specific Plan, which could expose project occupants or visitors to adverse health effects associated hazardous substances.	PS	<p>6.5-3</p> <p>a) With the exception of the Central Shops, development of any parcel site shall only be permitted if relevant soil remediation for an entire block and the full right-of-way of all surrounding streets has been completed. Thus, occupancy of a portion of a block will be prohibited unless the entire block and the area immediately surrounding the block are remediated accordingly.</p> <p>b) Fencing shall prevent access to surface soil in unremediated areas of the site.</p>	LS

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>c) Dust control for active cleanup sites shall be implemented.</li> <li>d) Construction site air monitoring, if required by site-specific conditions, shall be conducted.</li> <li>e) Compliance with building design requirements, to be included in the building code ordinance, for preventing the buildup of soil vapors in enclosed spaces where applicable, shall be required if determined by DTSC to be necessary.</li> <li>f) Prior to approval of any grading permit, developers shall demonstrate access to a nearby secure holding area for interim storage of contaminated soil that could be uncovered during construction, and provide a plan for transport of soil to the holding area.</li> <li>g) Developers shall be required to employ construction dewatering techniques, should they become necessary, that minimize potential for pulling groundwater contaminants to the surface. Contingency plans for pretreatment of contaminated groundwater, if necessary, shall be in place prior to the start of construction in the event that extracted water cannot be sent to the regional wastewater treatment plant.</li> <li>h) Prior to issuance of a grading permit, the developer shall demonstrate compliance with all applicable protective measures. If the level of protection is inadequate, implementation of additional protective measures is required; the City may review this Specific Plan to determine if amendments are required to protect human health and the environment.</li> </ul>	

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<p><b>6.5-4 Construction of site features such as infrastructure and buildings could interfere with remediation efforts.</b></p>	PS	<p>6.5-4</p> <p>a) Project developers and their contractors shall coordinate with the City of Sacramento, DTSC, and other involved agencies, as appropriate, to assure that project construction shall not interfere with any adjacent and/or on-site remediation activities or unduly delay any or site remediation activities.</p> <p>b) The project developers and their contractors shall comply with all applicable site controls established for site remediation activities through the approved RAPs and RDIP and shall ensure that project construction does not prevent such compliance.</p> <p>c) Implement Mitigation Measure 6.5-3.</p>	LS
<p><b>6.5-5 Throughout the life of the project, currently proposed land uses may be changed and new construction may occur, exposing construction workers and site occupants to unacceptable levels of contaminated soil and/or groundwater in the Specific Plan Area. Cleanup standards affecting soil could also be revised downward in light of new scientific information, indicating that planned cleanup levels may not be as protective of human health as originally assumed.</b></p>	PS	<p>6.5-5 Hazardous substances review at the development permitting stage shall involve consulting with DTSC to determine if changing standards will trigger the need for additional remediation under the following circumstances:</p> <ul style="list-style-type: none"> <li>• Sites that currently expose the general public to bare soil or landscaped soil shall be reevaluated if a significant change of standards has occurred since the last such evaluation.</li> <li>• In utility corridors, existing cleanup levels shall be reevaluated to ensure that construction worker health and safety is adequately protected if a significant change in standards occurs.</li> <li>• On development parcels where remediation standards are revised significantly downward following remediation but before site development, cleanup levels shall be reevaluated for consistency with proposed land use.</li> </ul>	LS

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<p><b>6.5-6</b> Central Shops buildings that will be renovated and/or restored are likely to contain asbestos, lead-based paint, or other hazardous substances, which could be released to the environment if not properly identified, removed, contained, and transported for disposal at approved sites.</p>	PS	<p>6.5-6 Prior to renovation and/or restoration of the Central Shops buildings, the project applicant shall provide written documentation to the City that asbestos-containing materials (ACM) and lead-based paint has been abated and any remaining hazardous substances and/or waste have been removed in compliance with applicable state and local laws and regulations.</p>	LS
<p><b>6.5-7</b> Implementation of the proposed project would increase the use of hazardous substances during construction and occupancy of the proposed project.</p>	LS	None required.	NA
<p><b>6.5-8</b> Development of the proposed project would bring new residents in proximity to existing non-project-related hazardous substances transportation routes, such as I-5 and the UPRR rail lines.</p>	LS	None required.	NA
<p><b>6.5-9</b> Development of the West Jibboom Street Property in the Riverfront District (APN 002-0010-023) could expose construction workers to hazardous substances that could be present in soil or groundwater.</p>	PS	<p>6.5-9 Prior to development of the West Jibboom Street Property site, the results of a Phase 2 ESA and subsurface geophysical investigation shall be submitted to DTSC. If the Phase 2 ESA concludes that site remediation would be necessary to protect human health and the environment (if the site is developed as envisioned in the Specific Plan), the site shall not be developed until the site is remediated to levels that would be protective of the most sensitive population for the planned use.</p>	LS
<p><b>6.5-10</b> Development of the proposed Specific Plan, in combination with development of other projects in the City of Sacramento that are on property that are known to contain, or could contain contaminated soil or groundwater, could present a hazard to construction workers if not properly managed.</p>	LS	<p>6.5-10 Implement Mitigation Measures 6.5-1, 6.5-3, 6.5-4, 6.5-5, and 6.5-9.</p>	LS

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<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
<b>6.5-11</b> The renovation and/or restoration of Central Shops buildings likely to contain asbestos, lead-based paint, or other hazardous substances, in combination with similar activities at existing buildings in the City of Sacramento, could result in a release of hazardous substances to the environment if not properly identified, removed, contained, and transported for disposal at approved sites.	PS	6.5-12 Implement Mitigation Measure 6.5-6.	LS
<b>6.5-12</b> Implementation of the proposed project would contribute to cumulative increases in the use of hazardous substances during construction and occupancy of the projects.	LS	None required.	NA
<b>6.5-13</b> Implementation of the proposed project would contribute to cumulative increases in the number of people who could be exposed to accidental or intentional release hazardous substances on rail lines and roadways.	LS	None required.	NA
<b>6.6 Hydrology and Water Quality</b>			
<b>6.6-1</b> Construction of the proposed project could degrade the quality of receiving water bodies.	LS	None required.	NA
<b>6.6-2</b> Operation of the proposed project would generate new sources of polluted runoff that could violate water quality standards or waste discharge requirements for receiving waters.	S	6.6-2 The proposed Specific Plan shall limit discharges to the Sacramento River from the cistern that do not meet the water quality standards set by the City and the CVRWQCB. If the cistern cannot meet the required water quality standards, then the proposed Specific Plan shall incorporate BMPs using the best available technology as provided in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Manual) (May 2007) to reduce urban pollutant discharges to the Sacramento River.	LS

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<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
6.6-3 Implementation of the proposed project could adversely affect groundwater quality, the rate and direction of groundwater flow, or interfere with groundwater recharge.	LS	None required.	NA
6.6-4 The proposed project could expose people or structures to an increased risk from flooding.	LS	None required.	NA
6.6-5 Stormwater and operational runoff from the project would contribute to cumulative increases in discharge of urban pollutants to the Sacramento River, which could affect water quality.	S	6.6-5 Implement Mitigation Measures 6.6-2.	LS
6.6-6 The proposed project would contribute to cumulative increases in discharges of groundwater from dewatering during construction or operation to the CSS or separate drainage system, and adversely affect water quality.	LS	None required.	NA
6.6-7 The proposed project would contribute to cumulative increases in the number of people and structures that could be exposed to flood hazards.	LS	None required.	NA
<b>6.7 Land Use</b>			
6.7-1 The proposed project would not physically divide an established community.	NI	None required.	NA
6.7-2 The proposed project could result in short or long-term land use conflicts due to the adjacency or proximity of incompatible uses.	LS	None required.	NA

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<b>6.8 Noise and Vibration</b>			
<b>6.8-1 Construction of projects under the proposed Specific Plan could temporarily produce loud noise.</b>	S	<p>6.8-1 The contractor shall ensure that the following measures are implemented during all phases of project construction:</p> <p>a) Whenever construction occurs adjacent to occupied residences (on or offsite), temporary barriers shall be constructed around the construction sites to shield the ground floor of the noise-sensitive uses. These barriers shall be of ¾-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility and appearance, and shall achieve a Sound Transmission Class of STC-30, or greater, based on certified sound transmission loss data taken according to ASTM Test Method E90 or as approved by the City of Sacramento Building Official.</p> <p>b) Construction activities shall comply with the City of Sacramento Noise Ordinance, which limits such activity to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, the hours of 9:00 a.m. to 6:00 p.m. on Sunday, prohibits nighttime construction, and requires the use of exhaust and intake silencers for construction equipment engines. Exceptions to these regulations may be granted by the building inspector, consistent with the Noise Ordinance.</p> <p>c) Construction equipment staging areas shall be located as far as feasible from residential areas while still serving the needs of construction contractors.</p> <p>d) Quieter "sonic" pile-drivers shall be used, unless engineering studies are submitted to the City that show this is not feasible and cost-effective, based on geotechnical considerations; and</p>	SU

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		e) Activities that generate high noise levels, such as pile driving and the use of jackhammers, drills, and impact wrenches, shall be restricted to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, unless it can be proved to the satisfaction of the City that the allowance of Saturday work on certain onsite parcels (i.e., those as far from noise-sensitive uses as possible) would not have an adverse noise impact.	
<b>6.8-2</b> The proposed Specific Plan could permanently expose sensitive receptors to traffic and rail noise levels on an ongoing basis.	LS	None required.	NA
<b>6.8-3</b> The proposed Specific Plan could permanently expose sensitive receptors in the Specific Plan Area to noise produced by onsite stationary sources.	S	6.8-3 The project sponsor shall ensure that the following measures are implemented for all development under the proposed Specific Plan Area:  a) Prior to the issuance of building permits, the applicant shall submit engineering and acoustical specification for project mechanical HVAC equipment to the Planning Director demonstrating that the equipment design (types, location, enclosure, specifications) will control noise from the equipment to at least 10 dBA below existing ambient at nearby residential and other noise-sensitive land uses.	LS
<b>6.8-4</b> Construction of the Specific Plan could temporarily increase levels of groundborne vibration.	S	6.8-4 Implement Mitigation Measure 6.8-1.	SU
<b>6.8-5</b> Development of the Specific Plan could expose new receptors to vibration on an ongoing basis.	S	6.8-5  a) The City shall work with UPRR and RT to identify methods of vibration reduction that could be implemented during UPRR track relocation and LRT track construction. Such methods could include, but would not be limited to:  <ul style="list-style-type: none"> <li>• soil densification under the tracks;</li> <li>• use of deep piles under the track bed;</li> <li>• use of tire derived aggregate below the track bed;</li> </ul>	LS

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		<ul style="list-style-type: none"> <li>• floating slab tracks;</li> <li>• for light rail, use of a resiliently supported fastener system; and for light rail, installation of a ballast mat beneath the track.</li> </ul> <p>b) After relocation of the UPRR tracks, the applicant shall prepare a revised screening analysis to address reductions in the potential area of impact due to incorporation of measures in Mitigation Measure 6.8-3(a). The revised screening analysis shall supersede Figure 6.8-3 in this EIR.</p> <p>c) Prior to use of the relocated tracks, the historic structures to be retained in the Central Shops Historic District shall be stabilized using methods that would protect against vibration levels identified in the screening analysis.</p> <p>d) Prior to design review, the applicant shall have a certified vibration consultant prepare a site-specific vibration analysis for residential uses and historic structures that are within the screening distance (shown in Figure 6.8-3) for freight and passenger trains or light rail trains. The analysis shall detail how the vibration levels at these receptors would meet the applicable vibration standards to avoid potential structural damage and annoyance. The results of the analysis shall be incorporated into project design.</p>	
6.8-6 The proposed project would contribute to cumulative increases in traffic and rail noise levels.	S	None available.	SU

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<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<b>6.9 Parks and Open Space</b>			
<b>6.9-1</b> The proposed Specific Plan would increase demand for parks and recreation facilities.	S	6.9-1 Prior to the recordation of the tentative map, the project applicant shall reach agreement with the City on which of the proposed project elements and acreage meet the parkland dedication requirements. The project applicant shall pay in-lieu fees (Quimby and/or PIF) on the difference in acreage between what the City parkland requirement is and the amount of parkland the proposed project would supply or provide "turnkey" improvements equal to the value of in-lieu fees owed, if any.	LS
<b>6.9-2</b> The proposed Specific Plan would increase demand for and use of the bicycle path network.	PS	6.9-2 During construction, the project applicant shall allow continuous access to the existing bike trail at the western boundary of the Specific Plan Area along the Sacramento River or provide an alternate bicycle access route through or around the Specific Plan Area.	LS
<b>6.9-3</b> The proposed Specific Plan would contribute to cumulative increases in the demand for additional parkland in the Central City.	S	6.9-3 Implement Mitigation Measure 6.9-1.	LS
<b>6.10 Public Services</b>			
<b>6.10-1</b> The proposed project would increase demand for law enforcement services.	LS	None required.	NA
<b>6.10-2</b> The proposed project would contribute to the cumulative increased demand for police protection services within the Central City.	LS	None required.	NA
<b>6.10-3</b> The proposed project would increase demand for fire protection services.	LS	None required.	NA
<b>6.10-4</b> Development of the proposed project could contribute to cumulative increases in demand for fire protection services within the Central City.	LS	None required.	NA

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6.10-5 The proposed project would generate solid waste, which could result in the need for new landfills or the expansion of existing facilities.	LS	None required.	NA
6.10-6 The proposed project would contribute to cumulative increases in solid waste, which could result in the construction of new landfills or the expansion of existing facilities.	LS	None required.	NA
6.10-7 The proposed project would generate additional elementary school students in the Sacramento City Unified School District.	LS	None required.	NA
6.10-8 The proposed project would generate additional middle school students in the Sacramento City Unified School District.	LS	None required.	NA
6.10-9 The proposed project would generate additional high school students in the Sacramento City Unified School District.	LS	None required.	NA
6.10-10 The proposed project could result in a school within 1,500 feet of a railroad track.	S	6.10-10 Prior to school site approval, the Sacramento Unified School District shall retain a competent professional to prepare a safety study that assesses cargo manifests, frequency, speed, and schedule of railroad traffic, grade, curves, type and condition of track need for sound or safety barriers, need for pedestrian and vehicle safeguards at railroad crossings, presence of high pressure gas lines near the tracks that could rupture in the event of a derailment, and an evacuation plan. In addition to the analysis, the study shall identify and the district shall incorporate measures to avoid potentially hazards to students related to proximity to the rail line on the campus.	LS

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6.10-11 The proposed project would contribute to cumulative increases in the number of students in the Sacramento City Unified School District.	LS	None required.	NA
6.10-12 The proposed project would contribute to cumulative increases in the number of middle school students in the Sacramento City Unified School District.	LS	None required.	NA
6.10-13 The proposed project would contribute to cumulative increases in combination with other projects in the Central City would in the number of high school students in the Sacramento City Unified School District.	LS	None required.	NA
6.10-14 The proposed project would result in an increased demand for library services.	LS	None required.	NA
6.10-15 The proposed project would contribute to cumulative increases for library services.	LS	None required.	NA
<b>6.11 Public Utilities</b>			
6.11-1 The proposed project would increase wastewater and stormwater flows requiring treatment.	PS	6.11-1 Prior to completion of the cistern, the City shall limit development of the proposed project so that combined wastewater and stormwater flows do not exceed the project's peak flow sewage generation rate of 9.43 mgd.	LS
6.11-2 The proposed project would increase stormwater and wastewater flows over pre-development conditions through the CSS conveyance system.	PS	6.11-2 The City shall limit development of the proposed project so that combined wastewater and stormwater flows do not exceed a flow rate of five cubic feet per second, until (1) the cistern and outfall for stormwater flows are constructed, and/or (2) planned CSS improvements for wastewater flows are implemented.	LS
6.11-3 The proposed project would contribute to cumulative increases in flows to be treated and discharged at the SRWTP.	LS	None required.	NA
6.11-4 The proposed project would contribute to cumulative increases in stormwater runoff and wastewater through the CSS.	LS	None required.	NA

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6.11-5 The proposed project would increase demand for potable water.	LS	None required.	LS
6.11-6 The proposed project would increase demand for treated water and water distribution systems.	LS	None required.	LS
6.11-7 The proposed project would contribute to cumulative increases in water demand throughout the City.	LS	None required.	LS
6.11-8 The proposed project would contribute to cumulative increases in the need for water supply treatment and/or distribution facilities.	PS	<p>6.11-8</p> <p>a) Implement Maximum Day Demand Conservation in the proposed project.</p> <p>The City's 2006 UWMP presents three future demand projection scenarios spread over a twenty-five year planning horizon, they include a "no conservation" scenario, a 7.5 percent conservation scenario and a 25.6 percent conservation scenario.</p> <p>Assuming that as a mitigation measure the proposed project could achieve 7.5 percent conservation in average day demands, the proposed project would roughly save approximately 287,250 gpd (3.54 mgd) and reduce average annual demands to 3,965 AFA down from the calculated demand of 4,295 AFA for a savings of 330 AFA. The conservation savings achieved at the project site would not reduce the maximum day demands enough to overcome the 2020 City-wide capacity deficit; therefore, this ultimately is a City-wide issue and the City would be need to the address future potential maximum day demand deficit on a larger scale to reduce the potentially significant cumulative impact to a less-than-significant level.</p> <p>b) Implement Diversion and WTP as cost-sharing partner in Sacramento River Water Reliability Study.</p>	LS

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		<p>The City is a partner on the Sacramento River Water Reliability Study, which is investigating alternatives for an additional 365 cfs (235 mgd) diversion on the Sacramento River and an associated water treatment facility. The City would have access to 145 mgd of the available 235 mgd. The 145 mgd diversion and WTP alternative included in the SRWRS would avoid any future capacity deficits as shown in Table 6.11-9. Upon implementation of this new diversion and WTP plant project, the potentially significant cumulative impact would be reduced to a less than significant cumulative impact.</p>	
		<p>The SRWRS requires is undergoing environmental review under CEQA and NEPA, in addition to compliance with Endangered Species Act and other applicable regulatory requirements. This process began in 2002 with the authorization of Public Law 106 – 554 and is currently ongoing. USBR is the federal lead agency and Placer County Water Agency is the local lead agency. The draft environmental documentation is scheduled to be completed in the spring of 2008 and would be certified in early 2009. USBR plans to issue a Record of Decision in spring 2009.<sup>2</sup></p>	
		<p>The construction and operation of a second Sacramento River diversion and WTP could result in, at a minimum, the following potentially significant environmental impacts:</p> <ul style="list-style-type: none"> <li>• Exposure of soils to erosion and loss of topsoil during construction;</li> <li>• Surface water quality degradation (cumulative impact);</li> </ul>	

2 Initial Alternatives Report. Final Version, March 2005. Sacramento River Reliability Study. Updated by personal communication with Jim Peifer, City of Sacramento and Sammie Cervantes, USBR, August 9, 2007.

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		<ul style="list-style-type: none"> <li>• Destruction or disturbance of subsurface archeological or paleontological resources;</li> <li>• Construction-related air emissions;</li> <li>• Construction and operations-related noise impacts;</li> <li>• Visual and/or light and glare impacts;</li> <li>• Loss of protected species and degradation or loss of their habitats;</li> <li>• Conversion of existing agricultural lands or resources;</li> <li>• Degradation of fisheries habitat (cumulative impact); and</li> <li>• Exposure to pre-existing listed and unknown hazardous materials contamination.</li> </ul> <p>Mitigation measures would be to need developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above to less than significant levels:</p> <ul style="list-style-type: none"> <li>• Reduction in operational and construction air emissions as required by SMAQMD;</li> <li>• Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;</li> <li>• Minimization of operational and construction noise through the use of noise attenuation measures;</li> <li>• compensate for effects to biological resources;</li> </ul>	

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>• Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise</li> <li>• Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;</li> <li>• Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and</li> <li>• Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.</li> </ul> <p>The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.</p> <p>c) Implement a City of Sacramento Only Sacramento River Diversion and WTP.</p> <p>Another mitigation option would be for the City to be the sole operator of the second Sacramento River diversion and Elverta Road WTP project. Under this option, the diversion and WTP would be scaled down to provide the additional capacity needed to meet only the City's maximum day demands when diversion limitations apply at FWTP under the City WFA PSA. As presented in the SRWRS, the City would most likely construct capacity to divert roughly 235 cfs and could treat up to 145 mgd at the new WTP. This new diversion and WTP would avoid any future maximum day capacity deficits through 2030 and beyond, as shown in Table 6.11-10, the new 145 WTP would provide capacity to meet all demands through 2030.<sup>3</sup> This was presented as one of the X</p>	

3 Executive Summary, Initial Alternatives Report, Final Version, March 2005. Sacramento River Water Reliability Study (attached as Appendix C).

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise assume this as a feasible mitigation measure. Upon implementation of this diversion and WTP project, the potentially significant cumulative impact would be reduced to a less than significant cumulative impact.</p> <p>As with the previous SRWRS alternative, this City-only project requires its own environmental review, whether as part of the SRWRS or as an independent project, in addition to compliance with all applicable regulatory requirement.</p> <p>The construction and operation of a second Sacramento River diversion and WTP as described above could in, at a minimum, result in the following potentially significant environmental impacts:</p> <ul style="list-style-type: none"> <li>• Exposure of soils to erosion and loss of topsoil during construction;</li> <li>• Surface water quality degradation (cumulative impact);</li> <li>• Natural drainage courses and hydrology;</li> <li>• Construction-related air emissions;</li> <li>• Construction and operations-related noise impacts;</li> <li>• Visual and/or light and glare impacts;</li> <li>• Loss of protected species and degradation or loss of their habitats;</li> <li>• Conversion of existing agricultural lands or resources;</li> <li>• Degradation of fisheries habitat (cumulative impact); and</li> <li>• Exposure to pre-existing listed and unknown hazardous materials contamination.</li> </ul>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>Mitigation measures would need to be developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above:</p> <ul style="list-style-type: none"> <li>• Reduction in operational and construction air emissions as required by SMAQMD;</li> <li>• Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;</li> <li>• Minimization of operational and construction noise through the use of noise attenuation measures;</li> <li>• Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;</li> <li>• Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;</li> <li>• Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and</li> <li>• Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.</li> </ul>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.</p> <p>d) Increase Groundwater Pumping.</p> <p>As previously discussed, the City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water.<sup>4</sup> The total capacity of the wells is 33 mgd, containing a sustainable capacity of approximately 30 mgd and producing up to 33,600 AFA. In 2000 - 2005 the City's annual average groundwater pumping was 22,992 acre-ft.<sup>5</sup></p> <p>The proposed project's average annual demand is estimated at 3.83 mgd. In comparison to City-wide demands of 325 mgd in 2020 and up to 402 mgd in 2030 above-Hodge conditions, the proposed project's demand contribution is less than considerable. Nonetheless, under a dry year scenario, the project would increase demand on the City's water system infrastructure. In an effort to minimize the project's demand, the project could add new wells to the City's groundwater system paid for through developer or other water connection fees. Assuming a new groundwater well could pump roughly 1,000 gpm or 1.44 mgd, the 3 new wells would be needed to meet the project's peak day demands and offset the demand placed on the City's water system. Furthermore, each new project would have to pay their fair share to fund new groundwater wells to offset project-specific demands.</p>	

4 Dan Sherry, City of Sacramento, Utilities Department. Status of groundwater wells, June 23, 2005.  
 5 Calculated from the City of Sacramento, Department of Utilities, Operational Statistics Annual Reports.

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>The City's water supply infrastructure is designed to serve the entire City-wide service area and new infrastructure ties into the existing system to meet both average and maximum day demands. The City supplements the surface water capacity by pumping groundwater to meet the maximum day demands. If no surface water diversion and treatment capacity is added by 2025, the City would need to more than double the peak day pumping rate to meet customer demands. This could not be achieved with the current well capacities and new wells would have to be installed. Upon implementation of this mitigation measure, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact. This analysis assumes that additional wells would be installed in the SGA groundwater area.</p> <p>The implementation of this mitigation measure would require environmental analysis to assess if the construction or operation of new wells would have any adverse environmental consequences and would require environmental evaluation. The new wells, appurtenances and infrastructure could result in the following potentially significant environmental impacts:</p> <p>Exposure of soils to erosion and loss of topsoil during construction:</p> <ul style="list-style-type: none"> <li>• Construction-related air emissions;</li> <li>• Destruction of buried archeological or paleontological resources;</li> <li>• Changes in natural drainage courses and hydrology;</li> <li>• Construction and operations-related noise impacts;</li> <li>• Visual and/or light and glare impacts;</li> <li>• Conversion of existing agricultural lands or resources;</li> </ul>	

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>• Drawdown of groundwater in the North American Subbasin; and</li> <li>• Exposure to pre-existing listed and unknown hazardous materials contamination.</li> </ul> <p>In addition, although this groundwater pumping mitigation measure could supply potable water to meet proposed site demands and offset a service area capacity deficit; this mitigation measure could also cause rapid drawdown of a sustained groundwater basin the results of which are counter to the SGA Groundwater Management Plan and WFA. Additionally, increasing groundwater withdrawals could adversely affect other groundwater pumping activities in the region, or cause dramatic changes within known and unknown groundwater contamination plumes in the Subbasin.</p> <p>Mitigation measures would be to need developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed project. The following are illustrative of the types of, mitigation measures that could be implemented to avoid or reduce those impacts listed above to less than significant levels:</p> <ul style="list-style-type: none"> <li>(a) Reduction in operational and construction air emissions as required by SMAQMD;</li> <li>(b) Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;</li> <li>(c) Minimization of operational and construction noise through the use of noise attenuation measures;</li> </ul>	

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		<ul style="list-style-type: none"> <li>(d) Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;</li> <li>(e) Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;</li> <li>(f) Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and</li> <li>(g) Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.</li> </ul> <p>The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<b>6.12 Transportation and Circulation</b>			
<p><b>6.12-1 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.</b></p>	<p>S</p>	<p>6.12-1</p> <p>a) At the I-5 southbound ramps / Richards Boulevard intersection, the City shall install, or cause to be installed, one southbound lane to provide one exclusive left-turn lane, a combination left-through lane, and a right turn lane; and optimize the signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (31.5 seconds delay) in the a.m. peak hour and the delay would be reduced to 84.1 seconds (but the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-15.</p> <p>The City will further mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode.</p>	<p>SU</p>

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>b) At the I-5 northbound ramps / Richards Boulevard intersection, the City shall install, or cause to be installed, one westbound right-turn lane to provide two right-turn lanes and two through lanes; and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>The City will further mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode.</p> <p>With implementation of this mitigation measure, the level of service would be maintained at LOS C (25.4 seconds delay) in the a.m. peak hour and improved to LOS C (31.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>c) At the Bercut Drive / Richards Boulevard intersection, the City shall install, or cause to be installed, one eastbound right turn lane to provide one left turn lane, two through lanes, and one right-turn lane; re-stripe the northbound lanes to provide one left-turn lane and one combination left-through-right lane; and optimize the signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (11.7 seconds delay) in the a.m. peak hour and LOS E (69.7 seconds delay) in the p.m. peak hour. To further mitigate the impact would require additional widening of Richards Boulevard, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-15.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>d) At the 7th Street / Richards Boulevard intersection, the City shall install, or cause to be installed, overlapped signal phasing for the northbound 7<sup>th</sup> Street right turning movement that would be displayed at the same time the green left turn arrow is displayed for the westbound left turning movement from Richards Boulevard, and prohibited U-turning movements for the westbound approach to the intersection. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (34.9 seconds delay) in the a.m. peak hour and would remain at LOS C (28.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15</p> <p>e) At the N 12<sup>th</sup>/N 16<sup>th</sup> Streets / Richards Boulevard intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 12<sup>th</sup> Street. With implementation of this mitigation measure, the level of service be improved to LOS D (47.7 seconds delay). These results are shown in Table 6.12-15.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>f) At the Bercut Drive / Bannon Street intersection, the City shall install, or cause to be installed, one southbound left turn lane, a traffic signal, and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (16.0 seconds delay) in the a.m. peak hour and LOS D (39.8 seconds delay) in the p.m. peak hour. To further mitigate the impact would require additional widening of Bercut Drive, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-15.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>g) At the 12<sup>th</sup> Street / North B Street intersection, the City shall increase the cycle length at the N 12<sup>th</sup> Street/Sunbeam/Sproule Avenue intersection to 150 seconds, decrease the cycle length at the N 12<sup>th</sup> Street/Sunbeam/Sproule Avenue intersection to 75 seconds, and optimize the signal timing at both intersections during both the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 12<sup>th</sup> Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (20.9 seconds delay) in the a.m. peak hour and to LOS D (41.1 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>h) At the 7<sup>th</sup> Street / Railyards Boulevard intersection, the applicant shall install a second eastbound right turn lane on Railyards Boulevard. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (17.9 seconds delay) in the a.m. peak hour and to LOS C (27.9 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.</p>	

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>i) At the 5<sup>th</sup> Street / G Street intersection, the applicant shall install a second eastbound left turn lane, provide split signal phasing for eastbound and westbound movements on G Street, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (17.9 seconds delay) in the a.m. peak hour and to LOS D (35.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require additional widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>j) At the 6<sup>th</sup> Street / G Street intersection, the applicant shall install a second southbound lane 150 feet in length to provide one left-through lane and one right-through lane and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (33.3 seconds delay) in the a.m. peak hour and the delay would be reduced to 103.2 seconds delay (but the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require additional widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>k) At the 6th Street / H Street intersection, the applicant shall re-stripe the northbound 6th Street approach to the intersection to provide one through lane and one combination through-right turn lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (35.3 seconds delay) in the a.m. peak hour and the delay would be reduced to 142.7 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>l) At the 7<sup>th</sup> Street / H Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (31.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>m) At the Jibboom Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the delay would be reduced to 109.0 seconds delay (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.</p> <p>n) At the 5<sup>th</sup> Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (31.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>o) At the 6<sup>th</sup> Street / I Street intersection, the City shall prohibit parking during the p.m. peak hour for 100 feet along the right side of westbound I Street to provide one combination through-left lane, two through lanes, and one-combination through-right lane; and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the delay would be reduced to 52.0 seconds (although the level of service would remain at LOS D) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-15.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>p) At the 3<sup>rd</sup> Street / J Street intersection, the City shall provide, or cause to be provided, conversion of one southbound left-turn lane to a through lane to provide two through lanes and one left-turn lane; conversion of the eastbound combination through-right lane to an exclusive right-turn lane to provide one combination left-through lane, two through lanes, and one right-turn lane; and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (50.8 seconds delay) in the a.m. peak hour and LOS C (32.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.</p> <p>q) At the 3<sup>rd</sup> Street / L Street intersection, the City shall provide, or cause to be provided, conversion of one northbound through lane to a left-turn lane to provide two left-turn lanes and one through lane; conversion of southbound combination through-right lane to an exclusive right-turn lane to provide two through lanes and one right-turn lane; and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (25.4 seconds delay) in the a.m. peak hour and LOS D (44.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.</p>	

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		r) At the 5 <sup>th</sup> Street / Capitol Mall intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. With implementation of this mitigation measure, the level of service would be improved to LOS C (20.3 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-15.	
<b>6.12-2 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.</b>	S	6.12-2 (a) No mitigation measure was found that would lessen the impact of the Initial Phase. To mitigate the impact would require widening 6th Street to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Hence, the impact would remain significant and unavoidable.	SU
<b>6.12-3 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.</b>	S	6.12-3 The Traffic Study found that the impacted freeway mainline segments currently operate at LOS "F" in the Baseline Condition during the PM Peak Hour without the Project, and would continue to operate at LOS "F" in both the "Near Term Cumulative Condition (2013)" and "Long Term Cumulative Condition (2030)" both without and with the Project. Freeway mainline improvements are within the exclusive jurisdiction of Caltrans which can and should propose and adopt appropriate improvement plans that would reduce freeway mainline impacts pursuant to Public Resources Code Section 21081 and CEQA Guideline Section 15091.	SU

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>The City consulted with Caltrans prior to the preparation of this Draft EIR concerning possible mitigation measures to address impacts to the identified freeway mainline segments. The discussion focused on (1) identifying any Caltrans approved or adopted capital improvement projects that would improve access to and from Sacramento's downtown and improve the existing LOS F on the freeway mainline segments to LOS "E" or better in the Near Term (2013) and Long Term (2030), and (2) proportional share mitigation impact funding contributions to those projects as a means of addressing impacts to the highways from the Project and various other pending developments in the area.</p> <p>Caltrans indicated that they have developed general cost estimates for the following projects. Though these projects are designed to address regional transportation needs that extend far beyond the downtown area, Caltrans believes they would serve to mitigate impacts from pending downtown developments and are viable:</p> <ul style="list-style-type: none"> <li>• I-5 American River Bridge widening - two structures. Add one standard lane and re-establish standard shoulders to each structure: \$134 million.</li> <li>• I-5 HOV lanes - Garden Highway to I-80 HOV lanes with direct connectors: \$300 million.</li> <li>• I-5 HOV lanes - U.S. 50 Interchange to Elk Grove Blvd: \$200 million.</li> </ul> <p>No preliminary improvement plans have been prepared for these proposed freeway improvements, and it is unclear what the cost estimates are based on or include.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>These proposed freeway improvement projects are included in Sacramento Area Council of Governments (SACOG) existing Metropolitan Transportation Plan (MTP) for preliminary engineering and environmental only. The MTP is a long-range plan which is based on growth and travel demand projections coupled with financial projections. The MTP lists hundreds of locally and regionally important projects. It is updated every three years, at which time projects can be added or deleted. SACOG uses the plan to help prioritize projects and guide regional transportation project funding decisions. The projects included in the MTP have not gone through the environmental review process and are not guaranteed for funding or construction.</p> <p>Given the status of the freeway improvement projects identified by Caltrans and the information available at this time, the City has concluded that there is currently insufficient information and certainty on which to base a feasible and viable mitigation measure to address the Project's impacts on the identified freeway mainline segments. The proposed freeway improvement projects are not currently approved and funded. There is no fee or other funding mechanism currently in place for future funding. Furthermore, the City cannot determine either the cost of the proposed freeway improvement projects or the Project's fair share proportional contribution to the improvement projects with sufficient certainty to enable the City to develop a fee-based mitigation measure that would satisfy the legal requirements for fee-based mitigation under both CEQA (see CEQA Guidelines 15126.4), state planning and zoning laws (see Government Code Section 66000 et seq.) and constitutional principles that call for a nexus and rough proportionality between a project's impacts and the fee-based mitigation measure. Finally, the prospects of the proposed freeway improvements ever being constructed</p>	

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		<p>remains uncertain due to funding priorities and on-going policy developments that may favor other approaches to addressing freeway congestion.</p> <p>Therefore, the impacts of the proposed project on the three I-5 freeway segments would remain significant and unavoidable. The City will mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode. However, because DNA may not fully mitigate the impact of the Project on the freeway system, the impact is still considered significant and unavoidable.</p>	
<p><b>6.12-4 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.</b></p>	S	<p>6.12-4 No feasible mitigation measures were identified that would reduce the impact of the project on I-5 freeway ramps. Widening the freeway may reduce the impact but the freeway interchanges are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. Finally, no improvement is included in any of Caltrans' funding mechanisms. Because mitigation is beyond the control of the City and outside of its jurisdiction, and there is not an established funding mechanism available for contribution, this mitigation measure is considered infeasible and the impact is considered significant and unavoidable. Furthermore, the City cannot determine either the cost of the proposed freeway improvement project or the Project's fair share proportional contribution to the improvement project with sufficient certainty to enable the City to develop a fee-based mitigation measure that would satisfy the legal requirements for fee-based mitigation under both CEQA (see CEQA Guidelines 15126.4), state planning and zoning laws (see Government Code Section 66000 et seq.) and constitutional principles that call for a nexus and rough proportionality between a project's impacts and the fee-based mitigation measure. Therefore, the</p>	SU

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		impacts of the proposed project on freeway ramps would remain significant and unavoidable. The City will mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode. However, because DNA may not fully mitigate the impact of the Project on the freeway system, the impact is still considered significant and unavoidable.	
<p><b>6.12-5 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.</b></p>	<p>S</p>	<p>6.12-5 No feasible mitigation measures were identified that would reduce the impact on freeway ramp queues. Freeway ramps are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. In addition, to implement this mitigation measure would require acquisition of additional right of way for a new lane. Additional widening would create secondary impacts to adjacent properties; this right of way is currently unavailable. Finally, this improvement is not included in any of Caltrans' funding mechanisms. Because mitigation is outside the jurisdiction of the City, and there is not an established funding mechanism available for contribution, mitigation is considered infeasible and the impact is considered significant and unavoidable. Furthermore, the City cannot determine either the cost of the proposed freeway improvement project or the Project's fair share proportional contribution to the improvement project with sufficient certainty to enable the City to develop a fee-based mitigation measure that would satisfy the legal requirements for fee-based mitigation under both CEQA (see CEQA Guidelines 15126.4), state planning and zoning laws (see Government Code Section 66000 et seq.) and constitutional principles that call for a nexus and rough proportionality between a project's impacts and the fee-based mitigation measure. Therefore, the impacts of the project on freeway ramp queues would remain significant and unavoidable. The City will mitigate freeway impacts</p>	<p>SU</p>

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode. However, because DNA may not fully mitigate the impact of the Project on the freeway system, the impact is still considered significant and unavoidable.	
<b>6.12-6 The Initial Phase would increase demand on the public transit system.</b>	PS	6.12-6 The project applicant shall coordinate with RT to provide modifications to both bus and light rail services and to help fund necessary improvements in order to serve the transit demand generated by the Initial Phase. The project applicant shall also dedicate right of way for the Downtown Natomas Airport (DNA) light rail system for the alignment and station located within the Specific Plan Area and pay a fair share contribution to fund construction of the DNA light rail system to mitigate the impacts of the Project on transit capacity.	LS
<b>6.12-7 The Initial Phase may interfere with the implementation of proposed bikeways.</b>	PS	6.12-7 The applicant shall be required to prepare site plans showing all required bikeway facilities in compliance with City of Sacramento Standards. The Project entitlements shall be conditioned to provide the required bikeway facilities as part of improvement plan which includes alternate on-street and separated bikeway facilities that connect to the City's bicycle network. The project applicant shall work with the City to ensure that the proposed bikeway facilities would achieve the intent of the Bikeway Master Plan and meet the City's standards. Modifications to the proposed bikeways shall be made to satisfy the requirements of the City.	LS
<b>6.12-8 The Initial Phase would increase the number of pedestrians on the roadway system and some proposed project design elements could result in unsafe conditions for pedestrians.</b>	PS	6.12-8 Pursuant to Title 16 (Subdivisions) and Title 18 (Development Requirements) of the City of Sacramento Municipal Code, the Initial Phase shall be conditioned to provide all frontage improvements which include sidewalks, gutters and planters to the satisfaction of Development Engineering Division.	LS

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<p><b>6.12-9 The Initial Phase of the Railyards Specific Plan could result in inadequate vehicle parking and bicycle parking capacity.</b></p>	<p>PS</p>	<p>6.12-9 In compliance with the Urban Permit Process and CEQA Conformity Report set forth in the Railyards SPD for development within the Railyards Specific Plan, all applications must include a parking management plan for City review to ensure adequate parking capacity based on the goals and objectives of the Central City Parking Master Plan adopted by the City Council in September 2006. Accordingly, more or less parking may be appropriate in a particular location based on factors such as geographic location, residential density, employment density, land use mix, transit accessibility, walkability, housing tenure and demographics, parking pricing or unbundling (parking sold or rented separately from building space). Parking management strategies may include:</p> <ul style="list-style-type: none"> <li>• <u>Shared Parking</u>: A parking facility may serve multiple uses or destinations, particularly if destinations have different peak periods, or if they share patrons so that motorists park at one facility and walk to multiple destinations.</li> <li>• <u>Parking Regulations</u>: Parking facilities may control who, when and how long they may be used in particular locations in order to prioritize parking facility use.</li> <li>• <u>Remote Parking and Shuttle Service</u>: Shuttles or free transit service may be provided to connect destinations with remote parking facilities, allowing them to be farther apart than typical.</li> </ul>	<p>LS</p>

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<ul style="list-style-type: none"> <li>• <u>Walking and Cycling Improvements</u>: Improved walking conditions expand the range of parking facilities that serve a destination and increase the feasibility of shared parking facilities and use of remote parking facilities. Parking in one location and walking rather than driving to other destinations reduces vehicle trips and the amount of parking required at each destination. Walking and cycling improvements allow these modes to substitute for some automobile trips, and they encourage transit use, since most transit trips involve walking or cycling links.</li> <li>• <u>Transportation Demand Management</u>: Strategies for transportation demand management (“TDM”) can increase transportation system efficiency by changing travel behavior – frequency, mode, destination or timing (eg., shifting from peak to off-peak). TDM strategies are numerous, and may include alternative work schedules, bicycle improvements, bike/transit integration, security improvements, park &amp; ride, pedestrian improvements, ridesharing, shuttle services, improved taxi service, telecommuting, traffic calming, and transit improvements.</li> <li>• <u>Parking Facility Design and Operation</u>: The physical layout, construction and day-to-day management of parking facilities can integrate them into communities, improve the quality of service experience by users, support parking management, and may be used to address specific problems.</li> </ul> <p>The parking management strategy for the Initial Phase will include provision of bicycle parking capacity consistent with City Code requirements.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>A well-constructed parking management plan for the Initial Phase and the provision of on-street parking will reduce the potential for increased congestion resulting from an inadequate parking supply. The number of on-street parking spaces has not been established and is not estimated to make up for the shortfall in the off-street parking supply. In addition, even a well-constructed parking management plan cannot be certain to eliminate the need for motorists to circulate to find parking. Therefore, the project will be required to provide parking consistent with the goals of the Central City Parking Master plan, after mitigation the impact on motor vehicle parking would be less than significant.</p>	
<p><b>6.12-10 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.</b></p>	<p>S</p>	<p>6.12-10 a) At the I-5 SB off-ramp / Richards Boulevard intersection, optimizing signal timing would lessen the project impact; however, to further mitigate the impact would require widening of the freeway ramp to add an additional lane to the west. Freeway ramps are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. In addition, to implement this mitigation measure would require acquisition of additional right of way for a new lane. Additional widening of Richards Boulevard would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p>	<p>SU</p>

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>(b) At the I-5 NB on-ramp / Richards Boulevard intersection, optimizing signal timing would lessen the project impact; however, to further mitigate the project impact would require widening of the freeway on-ramp and acquisition of right-of-way. Freeway ramps are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. In addition, to implement this mitigation measure would require acquisition of additional right of way for a new lane. Additional widening of Richards Boulevard would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>(c) At the Bercut Drive / Richards Boulevard intersection, Mitigation Measure 6.12-1(b), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard. To further mitigate the project impact would require further widening of Richards Boulevard which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>(d) At the 7<sup>th</sup> Street / Richards Boulevard intersection, Mitigation Measure 6.12-1(d), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard. To further mitigate the project impact would require further widening of Richards Boulevard which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(e) At the 12<sup>th</sup>/N 16<sup>th</sup> Streets / Richards Boulevard intersection, mitigating the project impact would entail widening of 12<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p>	

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## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>(f) At the Bercut Drive / Bannon Street intersection, Mitigation Measure 6.12-1(f), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Bercut Drive. To further mitigate the project impact would require further widening of Bercut Drive which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(g) At the North 10<sup>th</sup> Street / North B Street intersection, the City shall install, or cause to be installed, a traffic signal, and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along North B Street. With implementation of this mitigation measure, the level of service would be improved to LOS A (7.4 seconds delay) in the a.m. peak hour and to LOS B (10.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-21.</p> <p>(h) At the 12<sup>th</sup> Street / North B Street intersection, the City shall optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along North B Street.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, delay would be slightly reduced but the intersection would continue to operate at LOS F during both the a.m. and p.m. peak hours. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(i) At the 16<sup>th</sup> Street / North B Street intersection, mitigating the project impact would require widening of 16<sup>th</sup> Street which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>j) At the 7<sup>th</sup> Street / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-1(h) and optimizing signal timing would reduce the impact. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (20.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-21.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>(k) At the 7<sup>th</sup> Street / F Street intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (32.5 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-21.</p> <p>(l) At the 5th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(i) and optimizing signal timing would reduce the impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (17.5 seconds delay) in the a.m. peak hour and to LOS D (37.3 seconds delay) in the p.m. peak hour, thus the impact would remain significant and unavoidable. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>(m) At the 6th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(j), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>(n) At the 6<sup>th</sup> Street / H Street intersection, implementation of Mitigation Measure 6.12-1(k), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(o) At the 7<sup>th</sup> Street / H Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS D (40.9 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(p) At the 8<sup>th</sup> Street / H Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (32.7 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-21.</p> <p>(q) At the Jibboom Street / I Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p>	

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Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS C (30.8 seconds delay) in the a.m. peak hour and the delay would be reduced to 139.4 seconds delay (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.</p> <p>(r) At the 5th Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (31.0 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-21.</p> <p>(s) At the 6<sup>th</sup> Street / I Street intersection, implementation of Mitigation Measure 6.12-1(o), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS D (46.3 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(t) At the 3<sup>rd</sup> Street / J Street intersection, implementation of Mitigation Measure 6.12-1(p), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS E (73.4 seconds delay) in the a.m. peak hour and to LOS D (39.2 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>(u) At the 3<sup>rd</sup> Street / L Street intersection, implementation of Mitigation Measure 6.12-1(q), supplemented by signal timing modifications in the p.m. peak hour, would lessen the project impact. Therefore, the City shall optimize the signal timing in p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (28.1 seconds delay) in the a.m. peak hour and the delay would be reduced to 82.9 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>(v) At the 5th Street / Capitol Mall intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (21.0 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-21.</p>	

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<b>6.12-11 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.</b>	S	6.12-11 At the 6 <sup>th</sup> Street roadway segment just north of H Street, mitigating the project impact would entail widening of 6 <sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Hence, the impact would remain significant and unavoidable.  At the Jibboom Street roadway segment just north of I Street, mitigating the project impact would entail widening of the elevated bridge structure to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive. Hence, the impact would remain significant and unavoidable.	SU
<b>6.12-12 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.</b>	S	6.12-12 For the reasons discussed in Mitigation Measure 6.12-3, the Initial Phase impact would remain significant and unavoidable.	SU
<b>6.12-13 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.</b>	S	6.12-13 For reasons discussed in Mitigation Measure 6.12-4, the impacts of the Initial Phase on freeway interchanges would remain significant and unavoidable.	SU
<b>6.12-14 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.</b>	S	6.12-14 For reasons discussed in Mitigation Measure 6.12-5, the impacts of the Initial Phase on freeway ramp queues would remain significant and unavoidable.	SU
<b>6.12-15 The Initial Phase would increase demand on the public transit system.</b>	PS	6.12-15 Implement Mitigation Measure 6.12-6.	LS
<b>6.12-16 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.</b>	S	6.12-16 a) At the I-5 SB Ramps / Richards Boulevard intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve	SU

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>vehicle progression along Richards Boulevard. With implementation of this mitigation measure, the level of service would be improved to LOS C (29.8 seconds delay) in the a.m. peak hour and the delay would be reduced to 63.2 seconds (LOS E) in the p.m. peak hour. To further mitigate the impact of the Initial Phase would require widening of the freeway ramp and acquisition of right-of-way, which is under Caltrans jurisdiction, and is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(a). These results are shown in Table 6.12-26.</p> <p>b) At the I-5 NB Ramps / Richards Boulevard intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (49.6 seconds delay) in p.m. peak hour. To further mitigate the impact of the Initial Phase would require widening of the freeway on-ramp and acquisition of right-of-way, which is under Caltrans jurisdiction, and is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(b). These results are shown in Table 6.12-26.</p> <p>c) At the Bercut Drive / Richards Boulevard intersection, the City shall install, or cause to be installed, one westbound through lane to provide one left-turn lane, four through lanes and one combination through-right lane; re-striping the northbound Bercut Drive approach to provide one left turn lane and one left-through lane; split phasing for northbound and southbound Bercut Drive; and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (17.7 seconds delay) in the a.m. peak hour and LOS D (39.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>d) At the 5th Street / Richards Boulevard intersection, the City shall install, or cause to be installed, one westbound through lane to provide one left-turn lane, four through lanes and one combination through-right lane; modify the northbound 5<sup>th</sup> Street approach to provide one left turn lane and two through lanes, and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (20.4 seconds delay) in the a.m. peak hour and to LOS C (37.3 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>e) At the 10<sup>th</sup> Street / Richards Boulevard intersection, the City shall re-stripe the northbound 10<sup>th</sup> Street approach to the intersection to provide two left turn lanes and one through lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (22.9 seconds delay) in the a.m. peak hour and to LOS C (33.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>f) At the I-5 Northbound ramps / Bannon Street intersection, the City shall install, or cause to be installed, one eastbound through lane to provide one left-turn lane, three through lanes and one combination through-right lane; and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (38.3 seconds delay) in the a.m. peak hour and LOS C (29.8 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>g) At the Bercut Drive / Bannon Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the delay would be reduced to 39.2 seconds delay (although the level of service would remain at LOS D) in the p.m. peak hour. To further mitigate the impact would require additional widening of Bercut Drive, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-26.</p> <p>h) At the N. 5th Street / Bannon Street intersection, the City shall install, or cause to be installed, re-striping of the eastbound Bannon Street approach to provide one left turn lane, one combination left-through lane and three through lanes, and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS B (11.0 seconds delay) in the a.m. peak hour and to LOS C (21.0 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>i) At the 12<sup>th</sup> Street / Bannon Street intersection, the City shall optimize the signal timing during both the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 12<sup>th</sup> Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (52.1 seconds delay) in the a.m. peak hour and to LOS E (77.7 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>j) At the 16<sup>th</sup> Street / North B Street intersection, the City shall optimize the signal timing at both intersections during the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 16<sup>th</sup> Street.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS E (57.4 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>k) At the Jibboom Street / Railyards Boulevard intersection, the applicant shall re-stripe the westbound Railyards Boulevard approach to the intersection to provide one left turn lane and one combination left-through lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (10.1 seconds delay) in the a.m. peak hour and to LOS B (16.7 seconds delay) in the p.m. peak hour. These results are shown in Table6.12-26.</p> <p>l) At the Bercut Drive / Railyards Boulevard intersection, the applicant shall re-stripe the westbound Railyards Boulevard approach to the intersection to provide one left turn lane and one combination left-through lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS C (21.9 seconds delay) in the a.m. peak hour and to LOS D (45.4 seconds delay) in the p.m. peak hour. To further mitigate the impact of the Initial Phase would entail widening of the roadways, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>m) At the 5th Street / Railyards Boulevard intersection, the City shall increase the cycle length at the intersection to 120 seconds, and optimize the signal timing during the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along Railyards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS E (57.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>n) At the 6th Street / Railyards Boulevard intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard. With implementation of this mitigation measure, the level of service be improved to LOS C (32.0 seconds delay). These results are shown in Table 6.12-26.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>o) At the 7th Street / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-1(h) and increasing the cycle length to 100 seconds in the p.m. peak hour would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (31.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>p) At the 5th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(i) and optimizing signal timing would reduce the impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (20.1 seconds delay) in the a.m. peak hour and the delay would be reduced 89.9 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>q) At the 6th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(j), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (47.9 seconds delay) in the a.m. peak hour and the delay would be reduced 200.1 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>r) At the 7th Street / G Street intersection, the City shall re-stripe the southbound approach to the intersection to provide two through lanes and one combination through-right lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (32.6 seconds delay) in the a.m. peak hour and to LOS E (79.3 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>s) At the 6th Street / H Street intersection, implementation of Mitigation Measure 6.12-1(k), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (28.0 seconds delay) in the a.m. peak hour and to LOS F (141.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>t) At the 7th Street / H Street intersection, implementation of Mitigation Measure 6.12-10(o), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (15.2 seconds delay) in the a.m. peak hour and the delay would be reduced to 92.0 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>u) At the Jibboom Street / I Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS E (79.4 seconds delay) in the a.m. peak hour and the delay would be reduced to 184.9 seconds delay (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.</p> <p>v) At the 5th Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (44.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>w) At the 6th Street / I Street intersection, implementation of Mitigation Measure 6.12-1(o), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the delay would be reduced to 83.9 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>x) At the 7th Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (35.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>y) At the 3rd Street / J Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the delay would be reduced to 167.0 seconds (although the level of service would remain at LOS F) in the a.m. peak hour and the delay would be reduced to 51.0 seconds (although the level of service would remain at LOS D) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>z) At the 3<sup>rd</sup> Street / L Street intersection, implementation of Mitigation Measure 6.12-1(q), supplemented by signal timing modifications in the p.m. peak hour, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (39.1 seconds delay) in the a.m. peak hour and the delay would be reduced to 126.7 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-26.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>aa) At the 5th Street / Capitol Mall intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. With implementation of this mitigation measure, the level of service would be improved to LOS C (23.5 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-26.</p> <p>bb) At the 3rd Street / P Street intersection, the City shall increase the cycle length to 100 seconds during the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. With implementation of this mitigation measure, the level of service would be improved to LOS D (39.4 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.</p> <p>cc) At the Richards Boulevard / 12th Street intersection, the City shall increase the cycle length to 150 seconds and optimize the signal timing at both intersections during both the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 12<sup>th</sup> Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (38.9 seconds delay) in the a.m. peak hour and to LOS C (23.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		right of way for a new vehicle travel lane; this right of way is currently unavailable.	
<p><b>6.12-17 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.</b></p>	S	<p>6.12-17</p> <p>a) At the 5<sup>th</sup> Street roadway segment just south of N. B Street, mitigating the project impact would entail widening of 5<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>b) At the 6<sup>th</sup> Street roadway segment just north of H Street, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>c) At the N. B Street roadway segment just west of 7th Street, mitigating the project impact would entail widening of N. B Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>d) At the Bannon Street roadway segment just east of Dos Rios Street, mitigating the project impact would entail widening of Bannon Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p>	SU

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		e) At the Jibboom Street roadway segment just north of I Street, mitigating the project impact would entail widening of the elevated bridge structure to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.	
<b>6.12-18 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.</b>	S	6.12-18 For reasons discussed under Mitigation Measure 6.12-3, the Impact of the Initial Phase would remain significant and unavoidable.	SU
<b>6.12-19 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.</b>	S	6.12-19 For reasons discussed under Mitigation Measure 6.12-4, the impacts of the Initial Phase on freeway interchange would remain significant and unavoidable.	SU
<b>6.12-20 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.</b>	S	6.12-20 For reasons discussed in Mitigation Measure 6.12-5, the impacts of the Initial Phase on freeway ramp queues would remain significant and unavoidable.	SU
<b>6.12-21 The Initial Phase would increase demand on the public transit system.</b>	PS	6.12-21 Implement Mitigation Measure 6.12-6.	LS

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<p><b>6.12-22 The Full Project would increase traffic volumes at study area intersections and cause the level of service to deteriorate.</b></p>	<p>S</p>	<p>6.12-22</p> <p>a) At the I-5 SB off-ramp / Richards Boulevard intersection, optimizing signal timing would lessen the impact of the Full Project; however, to further mitigate the impact would require widening of the freeway ramp to add an additional lane to the west and acquisition of right-of-way. Freeway ramps are under Caltrans jurisdiction and widening is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(a). The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>b) At the I-5 NB Ramps / Richards Boulevard intersection, optimizing signal timing would lessen the impact of the Full Project; however, to further mitigate the project impact would require widening of the freeway on-ramp and acquisition of right-of-way. Freeway ramps are under Caltrans jurisdiction and widening is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(b). The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>c) At the Bercut Drive / Richards Boulevard intersection, implementation of Mitigation Measure 6.12-16(c), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p>	<p>SU</p>

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS B (18.7 seconds delay) in the a.m. peak hour and LOS D (39.8 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p>	
		<p>d) At the 5th Street / Richards Boulevard intersection, implementation of Mitigation Measure 6.12-16(d), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (20.6 seconds delay) in the a.m. peak hour and to LOS C (28.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>e) At the 10<sup>th</sup> Street / Richards Boulevard intersection, implementation of Mitigation Measure 6.12-16(e), and optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>f) At the I-5 Southbound ramps / Bannon Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Bannon Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (17.0 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>g) At the I-5 Northbound ramps / Bannon Street intersection, implementation of Mitigation Measure 6.12-16(f), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (36.0 seconds delay) in the a.m. peak hour and LOS C (34.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>h) At the Bercut Drive / Bannon Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>i) At the N. 5<sup>th</sup> Street / Bannon Street intersection, implementation of Mitigation Measure 6.12-16(h), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (11.6 seconds delay) in the a.m. peak hour and LOS B (17.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>j) At the 7<sup>th</sup> Street / Bannon Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street and Bannon Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (20.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>k) At the 12th Street / Bannon Street intersection, optimizing signal timing would lessen the impact of the Full Project during the p.m. peak hour but would not lessen the impact in the a.m. peak hour due to interaction with other signals along 12<sup>th</sup> Street that would also be reoptimized. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>l) At the 16<sup>th</sup> Street / North B Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>m) At the Bercut Drive / South Park Street intersection, the applicant shall install an additional northbound lane to provide one through lane and one right turn lane. With implementation of this mitigation measure, the level of service would be improved to LOS B (10.3 seconds delay) in the a.m. peak hour and to LOS C (20.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p>	

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**TABLE 2-1**

**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>n) At the Bercut Drive / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-16(l), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (14.4 seconds delay) in the a.m. peak hour and LOS B (14.7 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>o) At the Crocker Street / Railyards Boulevard intersection, the applicant shall install a traffic signal, modify the westbound lanes to provide one left turn lane and one combination through-right lane, and optimize signal timing. The applicant shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS B (14.8 seconds delay) in the a.m. peak hour and to LOS B (17.4 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>p) At the 6<sup>th</sup> Street / Railyards Boulevard intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. The applicant shall pay a fair share</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>q) toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.</p> <p>At the 7<sup>th</sup> Street / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-16(o) and optimizing signal timing would lessen the impact of the Full Project. The applicant shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (32.2 seconds delay) in the a.m. peak hour and to LOS C (28.8 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>r) At the Bercut Drive / Camille Lane intersection, the applicant shall install a traffic signal, and optimize signal timing. The applicant shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression. This intersection is located along a primary pedestrian/bicycle corridor linking the project to the Sacramento River trail. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>s) At the 5th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(i) and optimizing signal timing would reduce the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>t) At the 6th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(j), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>u) At the 7<sup>th</sup> Street / G Street intersection, implementation of Mitigation Measure 6.12-16(r), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>v) At the 6<sup>th</sup> Street / H Street intersection, implementation of Mitigation Measure 6.12-1(k), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>w) At the 7th Street / H Street intersection, implementation of Mitigation Measure 6.12-10(o), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.</p> <p>x) At the 16<sup>th</sup> Street / H Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p>	

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>y) At the Jibboom Street / I Street intersection, no feasible mitigation measure was identified that would lessen the impact of the Full Project. To mitigate the impact would require widening of the existing and/or proposed elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.</p> <p>z) At the 3<sup>rd</sup> Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street and Bannon Street.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (29.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>aa) At the 6th Street / I Street intersection, implementation of Mitigation Measure 6.12-1(o), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS C (31.1 seconds delay) in the a.m. peak hour and to LOS E (78.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>bb) At the 7<sup>th</sup> Street / I Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>cc) At the 3<sup>rd</sup> Street / J Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p>	

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TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>dd) At the 3rd Street / L Street intersection, implementation of Mitigation Measure 6.12-16(q), supplemented by signal timing modifications in the p.m. peak hour, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the delay would be reduced to 123.3 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>ee) At the 3rd Street / P Street intersection, implementation of Mitigation Measure 6.12-16(bb), supplemented by signal timing modifications in the p.m. peak hour, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.</p> <p>With implementation of this mitigation measure, the level of service would be improved to LOS D (46.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p> <p>ff) At the Richards Boulevard / 12<sup>th</sup> Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 12<sup>th</sup> Street.</p>	

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**SUMMARY OF IMPACTS AND MITIGATION MEASURES**

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		<p>With implementation of this mitigation measure, the level of service would be improved to LOS C (35.0 seconds delay) in the a.m. peak hour and to LOS C (20.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.</p>	
<p><b>6.12-23 The Full Project would add traffic to the study roadway segments that result in substandard levels of service.</b></p>	<p>S</p>	<p>6.12-23 At the 6<sup>th</sup> Street roadway segment just north of H Street, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>At the South Park Street roadway segment just west of 7<sup>th</sup> Street, mitigating the project impact would entail widening of South Park Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>At the Camille Lane roadway segment just west of 5<sup>th</sup> Street, mitigating the project impact would entail widening of Camille Lane, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>At the 6<sup>th</sup> Street roadway segment just north of Railyards Boulevard, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p> <p>At the Bannon Street roadway segment just east of Dos Rios Street, mitigating the project impact would entail widening of Bannon Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.</p>	<p>SU</p>

LS = Less than Significant      PS = Potentially Significant      S = Significant      SU = Significant and Unavoidable      NA = Not Applicable      NI = No Impact



TABLE 2-1

## SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		At the Jibboom Street roadway segment just north of I Street, mitigating the project impact would entail widening of the elevated bridge structure to add vehicle lanes to increase vehicle capacity. However, the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive at Full Project.	
<b>6.12-24</b> The Full Project would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.	S	6.12-24 For the reasons discussed in Mitigation Measure 6.12-3, the Full Project impact would remain significant and unavoidable.	SU
<b>6.12-25</b> The Full Project would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.	S	6.12-25 For reasons discussed in Mitigation Measure 6.12-4, the impacts of the Full Project on freeway interchanges would remain significant and unavoidable.	SU
<b>6.12-26</b> The Full Project would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.	S	6.12-26 For reasons discussed in Mitigation Measure 6.12-5, the impacts of the Full Project on freeway ramp queues would remain significant and unavoidable.	SU
<b>6.12-27</b> The Full Project would increase demand on the public transit system.	PS	6.12-27 Implement of Mitigation Measure 6.12-6.	LS
<b>6.12-28</b> The Full Project may interfere with the implementation of proposed bikeways.	PS	6.12-28 Implement Mitigation Measure 6.12-7.	LS
<b>6.12-29</b> The Full Project would increase the number of pedestrians on the roadway system and some proposed project design elements could result in unsafe conditions for pedestrians.	PS	6.12-29 Pursuant to Title 16 (Subdivisions) and Title 18 (Development Requirements) of the City of Sacramento Municipal Code, the Full Project shall be conditioned to provide all frontage improvements which include sidewalks, gutters and planters to the satisfaction of Development Engineering Division.	LS
<b>6.12-30</b> Buildout of the Full Project could result in inadequate vehicle parking and bicycle parking capacity.	PS	6.12-30 The Full Project shall provide enough parking spaces to comply with City code requirements unless otherwise approved by the City.	LS

LS = Less than Significant      PS = Potentially Significant      S = Significant      SU = Significant and Unavoidable      NA = Not Applicable      NI = No Impact

<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
Impact	Level of Significance Prior to Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
<b>6.13 Urban Design and Visual Resources</b>			
<b>6.13-1</b> East of I-5, the potential development of large-floor plate and high-rise buildings across the project site could alter public views.	LS	None required.	NA
<b>6.13-2</b> The potential development of high-rise buildings adjacent to the riverfront could represent an introduction of building height and mass that conflicts with the character of the riverfront between Old Sacramento and the Jibboom Street bridge.	LS	None required.	NA
<b>6.13-3</b> The proposed project could create substantial new sources of light.	PS	6.13-3 a) East of 6th Street, all exterior lighting and advertising (including signage) shall be directed onto the specific location intended for illumination (e.g., parking lots, driveways, and walkways) and shielded away from adjacent properties and public rights-of-way to minimize light spillover onto adjacent areas. Light structures for surface parking areas, vehicular access ways, and walkways shall not exceed a height of 25 feet. In addition, monument lighting and night-lit signage is prohibited on building facades that face existing residential neighborhoods.  b) Prior to issuance of a Site Development Permit for each specific development project, the applicant shall submit a lighting plan to the Development Services Department for review and approval. The plan shall specify the lighting type and placement to ensure that the effects of security and other outdoor lighting are minimized on adjacent uses and do not create spillover effects.  c) Landscape illumination and exterior sign lighting shall follow the City's Municipal Code.	LS

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<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
6.13-4 The proposed project could create a new source of glare.	PS	6.13-4 Highly reflective mirrored glass walls shall not be used as a primary building material (no more than 35 percent) for building facades adjacent to major roadways. Instead, low emission (Low-E) glass shall be used in order to reduce the reflective qualities of the building, while maintaining energy efficiency.	LS
6.13-5 Implementation of the proposed project, in combination with cumulative development in the areas surrounding the project site, could substantially degrade the existing visual character or quality of the vicinity.	LS	None required.	NA
6.13-6 Implementation of the proposed project, in combination with cumulative development along the riverfront in Sacramento, could cause an introduction of building height and mass that conflicts with the character of the Sacramento River riverfront between Old Sacramento and Discovery Park.	PS	6.13-6 Implement Mitigation Measures 6.13-2(a)-(e).	LS
6.13-7 Implementation of the proposed project, in combination with cumulative development in the areas adjacent to the project site, could create cumulative light effects that could impact adjacent properties.	LS	None required.	NA
6.13-8 Implementation of the proposed project, in combination with cumulative development along major roadways in the project vicinity, could create cumulative glare that could affect adjacent properties.	PS	6.13-8 Implement Mitigation Measure 6.13-4.	LS
<b>6.14 Energy</b>			
6.14-1 The proposed project would increase the demand for electricity supply and conveyance.	LS	None required.	NA

LS = Less than Significant      PS = Potentially Significant      S = Significant      SU = Significant and Unavoidable      NA = Not Applicable      NI = No Impact

<b>TABLE 2-1</b>			
<b>SUMMARY OF IMPACTS AND MITIGATION MEASURES</b>			
<b>Impact</b>	<b>Level of Significance Prior to Mitigation</b>	<b>Mitigation Measure(s)</b>	<b>Level of Significance After Mitigation</b>
<b>6.14-2</b> The proposed project would increase the demand for natural gas supply and conveyance facilities.	LS	None required.	NA
<b>6.14-3</b> The proposed project could result in the wasteful or inefficient use of energy.	LS	None required.	NA
<b>6.14-4</b> The proposed project would contribute to cumulative increases in energy use.	LS	None required.	NA

LS = Less than Significant      PS = Potentially Significant      S = Significant      SU = Significant and Unavoidable      NA = Not Applicable      NI = No Impact

## **3.0 PROJECT DESCRIPTION**

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## 3.0 PROJECT DESCRIPTION

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### INTRODUCTION

This chapter describes the project analyzed in this Draft Environmental Impact Report (Draft EIR), the Railyards Specific Plan, which is available from the City of Sacramento's Development Service Counter.<sup>1</sup> This project description identifies the location of the project, the land uses allowed by the proposed Specific Plan, a description of the scenario analyzed in this EIR based on allowed land uses, the off-site infrastructure that would be required to support the Specific Plan, other components of project implementation that are covered by this EIR (e.g., track relocation, design guidelines, Special Planning District Ordinance, Historic District Ordinance, Development Agreement), and those discretionary approvals that are required to implement the proposed project.

### PROJECT LOCATION

The Railyards Specific Plan Area (Specific Plan Area) is located in Sacramento County within the existing downtown area of the City of Sacramento, near the confluence of the American and Sacramento rivers, as depicted in Figure 3-1, Regional Location Map. The approximately 244-acre Specific Plan Area<sup>2</sup> is immediately north of the Central Business District, east of the Sacramento River and Interstate 5 (I-5) south of North B Street and the Richards Boulevard area, and west of the Alkali Flat Neighborhood, as depicted in Figure 3-2, Local Vicinity Map. The Specific Plan Area is generally bounded by the Sacramento River Water Treatment Plant and industrial and commercial uses along Richards Boulevard to the north; the Alkali Flat neighborhood to the southeast; the Central Business District to the south; Old Sacramento to the southwest; and I-5 and the Sacramento River to the west (see Figure 3-3, Existing Railyards Area).

The Specific Plan Area is located in the Central City Community Plan (CCCP) area and Downtown area of the City of Sacramento. The CCCP includes the area bounded by the American River to the north, Broadway to the south, the Sacramento River to the west, and Alhambra Boulevard to the east. I-5, which runs along the western edge of the Specific Plan Area near the Sacramento River, is elevated above the existing Amtrak rail line and vacant lands of the Specific Plan Area. The Specific Plan Area is comprised of 12 Assessor's Parcel Numbers (APN), including 001-0210-013, -016; and 002-0010-018, -019, -025, -035, -036, -037, -038, -039, -041, -043.

The boundaries for the 244-acre, proposed Specific Plan differ slightly from those of the 237-acre 1994 Railyards Specific Plan (see Figure 3-4) The primary differences are:

- The following areas are no longer within the proposed Specific Plan Area:
  - The federal courthouse site on the block bounded by H, I, 5<sup>th</sup> and 6<sup>th</sup> streets;
  - The REA building, located immediately east of the Depot; and
  - The blocks bounded by 7<sup>th</sup>, 8<sup>th</sup>, D, E and F streets, located within Alkali Flat.

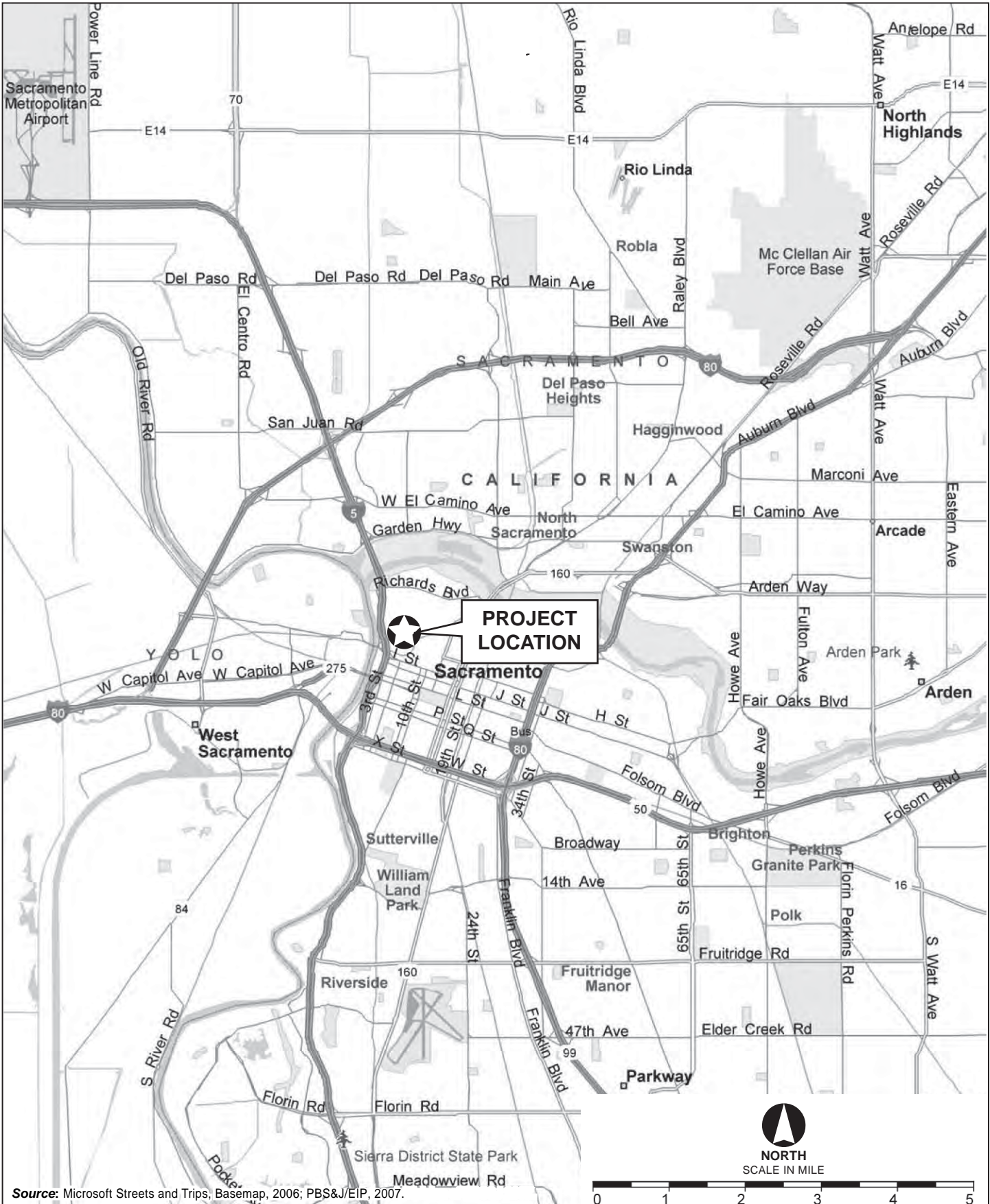
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1 Where applicable, this EIR incorporates by reference technical analyses or reports prepared by the City or its consultants in connection with the Railyards Specific Plan. All of these documents are available for review at the City of Sacramento's Development Services Department, 915 I Street, 3rd Floor, Sacramento, California, 95814.

2 The boundaries of the proposed Specific Plan differ slightly from the 1994 adopted Railyards Specific Plan. The adopted plan included the site of the federal courthouse two blocks in Alkali Flat (bounded by 7th Street, D Street, 8th Street, and F Street) and a portion of the river front owned by the California Department of Parks and Recreation.







Source: Microsoft Streets and Trips, Basemap, 2006; PBS&J/EIP, 2007.

**FIGURE 3-1**  
**Regional Location Map**

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Railyards Specific Plan EIR

**EIP**  
ASSOCIATES

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Source: City of Sacramento, Basemap; PBS&J/EIP, 2007.

**FIGURE 3-2**  
**Local Vicinity Map**



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**LEGEND**

- Railyards Specific Plan Area Boundary
- State Park



**FIGURE 3-3**  
**Existing Railyards Area**





Source: Railyards Specific Plan, 2007.



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**FIGURE 3-4**  
**1994 and Proposed Specific Plan Boundaries**

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- The following land has been incorporated into the proposed Specific Plan Area, although the proposed Specific Plan would not alter land use designations on these parcels:
  - Approximately 3 acres of state-owned land adjacent to the Sacramento River;
  - A segment of Caltrans-owned land south of the Depot; and
  - An approximately quarter-block located southeast of the intersection of 5<sup>th</sup> Street and North B Street.

## **PROJECT OBJECTIVES**

The overall goal of the Specific Plan is the orderly and systematic development of an integrated mixed-use component of the downtown community that is compatible with site characteristics and consistent with the City's goals and policies. More specifically, the project objectives are:

- Integrate the Railyards area into the fabric of the existing Central City. The Railyards have historically been isolated from the City. Now the opportunity exists to integrate the area from all points, not just downtown, into a seamless patch of the City fabric.
- Create a dynamic 24-hour mixed use urban village that provides a range of complementary uses—including cultural, office, hospitality, entertainment, retail, residential, educational and open space---and a mixture of housing products, including affordable housing;
- Connect the Railyards area with Sacramento's downtown office, retail, government center areas, as well as Old Sacramento, the Richards Boulevard Area, and the Alkali Flat neighborhood, using pedestrian and bicycle facilities, roadways, and public transportation routes;
- Connect the Railyards area to the Sacramento River waterfront, and allow for hotel, public open space, residential waterfront and recreational uses consistent with the Riverfront Master Plan that will result in a vibrant waterfront, valuable to the region and the City;
- Transform the Railyards from an underutilized and environmentally contaminated industrial site into a transit-oriented, attractive, and nationally renowned mixed-use urban village;
- Utilize the historic Central Shops buildings as a heritage tourism draw and as inspiration for a mix of uses that will help to create a culturally-vibrant, urban community;
- Create a development that is a regional draw for the City of Sacramento due to its geographic location downtown near the Sacramento River waterfront and its unique mix of transportation, residential, cultural, office, hospitality, entertainment, retail and open space uses;
- Provide a mixture of uses that compliment and support the City's planned Sacramento Intermodal Transit Facility (SITF), connecting the Central City to the region, the state and beyond; and
- Create a sustainable community that utilizes green building technology, water conservation and renewable energy resources.
- Create a transportation corridor that accommodates the needs of regional and local passenger rail, freight rail, bus service and other alternate modes of transportation.

The proposed project includes the following components. For a list of the discretionary actions necessary for implementation of the proposed Specific Plan, please see Chapter 1, Introduction.

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## PROPOSED SPECIFIC PLAN

The Specific Plan is a land-use planning document that describes the development program for the Railyards and guides long-range development of the site. Under California Government Code (Section 65450 et seq.), cities and counties may adopt specific plans to develop policies, programs and regulations to implement the jurisdiction's adopted General Plan. A specific plan serves as a bridge between the General Plan, community plans, the Zoning Ordinance, and individual development plans. As a charter city, the City of Sacramento is not bound by state planning statutes, but the proposed Specific Plan has been prepared in accordance with the requirements of the Government Code. The proposed Specific Plan contains the following chapters:

1. Introduction
2. Setting and Context
3. Project Concept
4. Principal Goals and Policies
5. Land Use Regulations
6. Open Space
7. Circulation and Transportation
8. Utilities and Community Services
9. Historic Resources
10. Hazardous Substances
11. Implementation

The proposed Specific Plan is available for review at:

City of Sacramento  
City Hall  
915 I Street, 3<sup>rd</sup> Floor  
Sacramento, California 95814

If adopted, the Specific Plan would guide development in the Specific Plan Area, including not only the general character of the Railyards but the type, density, and design of future development, the provision of services, public infrastructure, and open space, and the financing of public improvements.

This EIR evaluates the environmental effects of implementing the Specific Plan development program particularly as described in the Analysis Scenario, below. If the Specific Plan is approved, the City may further rely on the EIR in conjunction with its consideration of subsequent entitlements for the development of specific projects, as deemed appropriate and consistent with the requirements of CEQA by the City as lead agency. Use of a Specific Plan EIR to cover later activities is addressed in Public Resources Code sections 21080(b)(1), 21080.7, 21083.3, Government Code section 65457(a), and CEQA Guidelines sections 15060(c)(1) and 15168(c), among others. Pursuant to these standards, developments that are consistent with the principles, goals, and policies of the Specific Plan, its implementing entitlements and the analysis in this EIR will not be subject to any additional environmental review.

The proposed land uses, districts, building heights, maximum development potential, infrastructure, community services, and phasing are described below. Additional detail can be found in the chapters of the Specific Plan listed above.

### **Proposed Specific Plan Land Use Designations and Densities**

As shown in Figure 3-5, Land Use Plan, the Specific Plan Area consists of five land use designations, which are described below. Each of these designations allows for some combination of typical land uses, such as office, commercial, residential, and open space. Table 3-1 provides the mix of uses allowed within each Specific Plan designation.

In order to provide as much flexibility as possible, the Specific Plan sets maximum densities for each use that would be allowed within the three mixed use land use designations — Residential/Commercial Mixed Use (RCMU), Office/Residential Mixed Use (ORMU) and Residential Mixed Use (RMU). The Specific Plan does not, however, proscribe any particular mix of uses within each category or block. Consequently, allowable development for each use that is developed in the future will depend, in part, on the amount of development capacity that is taken up by other uses. For example, the maximum amount of residential development that could occur pursuant to the Specific Plan would be approximately 12,500 units.<sup>3</sup> However, if the maximum amount of office space under the Specific Plan is developed (approximately 2.9 million square feet (msf)), then only 10,000 residential units could be built. The proposed Specific Plan identifies the following maximums for each land use category:

- Residential 12,100
- Office 2.4 msf
- Hotel 1,100 rooms
- Historic and Cultural 485,390 sf
- Mixed Use Flex Space 491,000, which could be developed as 491,000 of office, retail or other non-residential uses or approximately 400 residential units or some combination of all of these uses

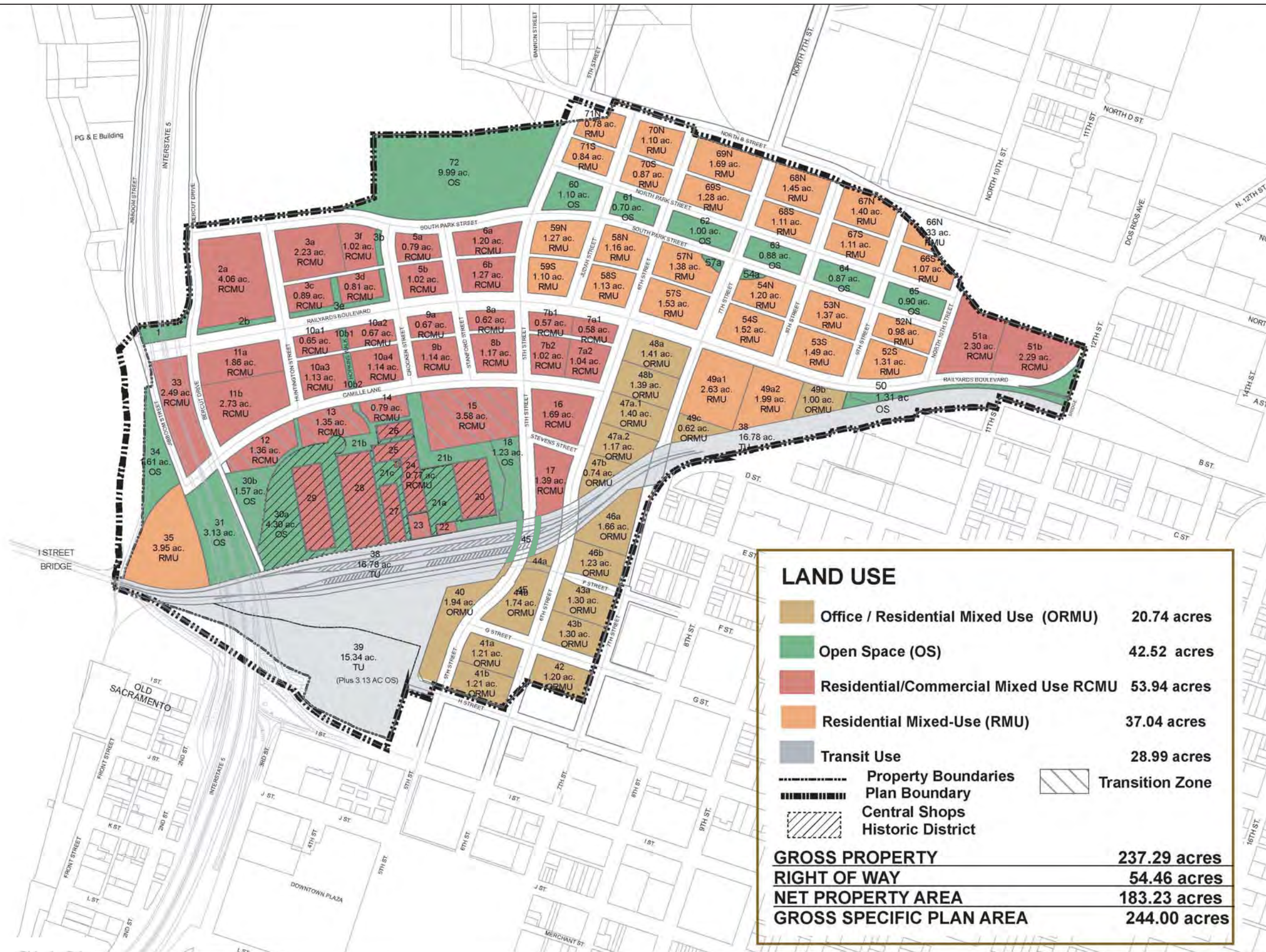
The distribution of these uses by land use designation is discussed below. As discussed later in this chapter (under “EIR Analysis Scenario”), the dwelling unit and square footage assumptions used in this Draft EIR analysis differ slightly from levels identified above.

### **Residential/Commercial Mixed-Use**

The purpose of the RCMU designation is to provide a wide range of residential and commercial uses in order to facilitate development of a 24-hour city. The RCMU designation allows for a broad range of mixed-use residential, office, hotel, and commercial uses, such as, destination retail and restaurants, and entertainment uses, including but not limited to theaters, health clubs and nightclubs. The RCMU designation emphasizes residential and retail uses. The RCMU designation allows public facilities, such as educational facilities, museums and theaters. The majority of the RCMU uses would be located in the western portion of the Specific Plan Area, generally north of the relocated rail line, east of I-5 and west of 6<sup>th</sup> Street. A net maximum floor area ratio (FAR) of 5.0, exclusive of streets, would apply to all development types on each site within this designation with the exception of residential units. Residential densities would not exceed 230 units per acre. Under

<sup>3</sup> The maximum residential unit buildout assumes residential development of the approximately 491,000 sf of mixed use flex space.





Sources: NOLTE, 2007.

FIGURE 3-5  
Land Use Plan



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NORTH



<b>TABLE 3-1</b>			
<b>PROPOSED RAILYARDS SPECIFIC PLAN</b>			
<b>LAND USE DESIGNATIONS AND ALLOWABLE USES</b>			
<b>Use</b>	<b>Allowed Uses</b>	<b>Residential Development Density</b>	<b>Non-Residential Development Intensity</b>
Residential/Commercial Mixed-Use (RCMU)	<ul style="list-style-type: none"> <li>Mixed-use residential, commercial, including destination retail, restaurants and entertainment uses, including, but not limited to, uses such as theaters, health clubs, and nightclubs, together with office, hotel and other uses. Second-floor flexible mixed-use flex space is allowed on parcels in the vicinity of the Central Shops.</li> <li>Historical and cultural uses.</li> <li>Public Facilities such as educational uses, museums, theaters, and other similar public uses.</li> </ul>	Residential uses are allowed on each site within this designation at densities not to exceed 230 du/ac.	Maximum FAR of 5.0
Office/Residential Mixed-Use (ORMU)	<ul style="list-style-type: none"> <li>Office, residential, and commercial uses, such as hotel, supporting retail and other uses.</li> <li>Education uses, museums, and other similar public uses.</li> </ul>	Where maximum build-out of office use does not occur on a parcel, residential and other uses may also be developed on the parcel. In such cases, all uses must "fit" within the maximum square footage allowed by the FAR while also not exceeding a 230 du/ac maximum. Residential units not combined with office uses are subject only to the du/ac maximum.	Maximum FAR of 8.0
Residential Mixed-Use (RMU)	<ul style="list-style-type: none"> <li>High-density residential uses.</li> <li>Commercial uses, such as hotel, neighborhood-serving retail uses, restaurants, cafes, neighborhood-serving office and other uses.</li> <li>Incidental cultural and civic uses.</li> <li>Educational uses, museums, and other similar public uses.</li> </ul>	Residential uses are allowed on each site within this designation at densities not to exceed 310 du/ac.	Maximum FAR of 1.0
Transportation Use (TU)	<ul style="list-style-type: none"> <li>Land uses that are supportive of the SITF facility operations and are intended to serve intercity passengers, including residential, commercial, such as retail, office, hotel, residential and other uses.</li> <li>Other forms of dense development that will encourage transit ridership and are appropriate for dense urban environment.</li> </ul>		
Open Space (OS)	<ul style="list-style-type: none"> <li>Parks, pedestrian trails, plazas, playfields, bicycle trails and related public open space use.</li> <li>Incidental cultural and institutional and retail uses are also allowed.</li> </ul>		

Source: Thomas Enterprises, *Railyards Specific Plan*, August 10, 2007, Table 5-2.

the proposed Specific Plan, a maximum of 1,700 dwelling units, 1.07 msf of commercial space, 1,100 hotel rooms<sup>4</sup>, exclusive of Mixed Use Flex Space and Historical and Cultural space, could occur within this designation. In addition, up to 491,000 sf of some combination of commercial, office and residential uses could occur. The majority of the RCMU uses would be located in the western portion of the Specific Plan Area, generally north of the relocated rail line, east of I-5 and west of 6<sup>th</sup> Street. Two parcels, totaling approximately 4.6 acres are located in the easternmost portion of the Specific Plan Area.

### **Office/Residential Mixed-Use**

The purpose of the Office/Residential Mixed-Use (ORMU) land use designation is to provide office, residential, hospitality and supporting retail uses in portions of the Railyards adjacent to the Central Business District. The ORMU designation allows for a broad range of mixed uses, including office, service, residential, and commercial uses, such as hotels, supporting retail and other uses. The majority of office space, would be located in areas designated ORMU, which are concentrated in proximity to the City's existing Central Business District. The ORMU designation is shown along 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> streets south of Railyards Boulevard. Educational facilities, museums, theatres and other public would be also allowed in this land use designation. The majority of the ORMU uses would be located in the southern and central portions of the Specific Plan Area.

A net maximum FAR of 8.0 would apply to all development types on each site designated ORMU with the exception of residential units and hotel rooms. If a developer is developing a mixed-use office and residential project, then all uses must "fit" within the maximum square footage allowed by the FAR for that site, while not exceeding a 230 du/ac maximum. Residential units that are not combined with office uses would be subject to the units per acre maximum, but not the FAR for that site, while not exceeding a 230 du/as maximum. Under the proposed Specific Plan, a maximum of 2,100 dwelling units, 2.4 msf of office space, 160,000 sf of commercial space and up to 1,100 hotel rooms could occur within the ORMU.

### **Residential Mixed-Use**

The purpose of the Residential Mixed-Use (RMU) designation is to provide an urban residential neighborhood with accompanying neighborhood-serving retail and restaurant uses. The RMU designation allows high-density residential uses and commercial uses, such as neighborhood-serving retail, restaurants, cafes, hotels, neighborhood-serving office and other uses. Incidental cultural and civic uses and public uses are also allowed, including educational uses, museums, theatres and similar uses. The RMU designation would occur primarily in the northeastern portion of the Specific Plan Area, generally east of 5<sup>th</sup> Street and north of Railyards Boulevard. An approximately four-acre RMU parcel also would be located in the western portion of the Specific Plan Area within the Riverfront District, which would include residential, hotel and retail uses.

The maximum residential density would be 310 du/acre, with a maximum of 8,300 dwelling units. The net maximum FAR would be 1.0.

### **Open Space**

The Open Space (OS) designation is intended to provide urban forms of open space to serve residents, employees and visitors. The OS designation allows parks, pedestrian trails, plazas, landscaped sidewalks, playfields, bicycle trails, and related uses. Incidental cultural, civic and specialty retail uses are also allowed, such as small vendor carts and kiosks. OS-designated areas generally would not be developed with major buildings or structures of any significant size; accordingly, no development amounts are specified for these areas.

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4 Within the RCMU, ORMU and RMU designations, 0 to 1,100 hotel rooms could be constructed.



## Transportation Use

The Transportation Use (TU) designation is intended to provide for transportation-related and transit supportive uses associated with the SITF to encourage transit ridership as appropriate in a dense urban environment. Future development could include retail, office, hotel, residential and other uses that would capitalize on the transit opportunities. Densities would be equal to or greater than the densities elsewhere in the Railyards.

## EIR ANALYSIS SCENARIO

The land use designations described in the Specific Plan would allow for a range of possible uses or combinations of uses. The analyses in this Draft EIR are based on assumptions regarding the amount and type of development that could occur within the Specific Plan Area as currently proposed. Table 3-2 provides a summary of the range of development by such designations that are assumed to occur with buildout of the Specific Plan Area for analytical purposes.

This EIR does not analyze every possible combination of uses. Rather, an EIR Analysis Scenario that assumes a specific level and mix of uses was developed, based on an illustrative concept prepared the applicant in April 2007 (see Table 3-2). For the most part, the total number of dwelling units and square footages of development identified in the EIR Analysis Scenario are almost identical to those found in the proposed Specific Plan. The totals for maximum allowed development of dwelling units, hotel rooms, mixed use flex space and historic/cultural space are identical in the proposed Specific Plan and the EIR Analysis Scenario. The maximum amount of office space is slightly higher under the proposed Specific Plan (2.4 msf compared to 2.375 msf), as is the amount of retail square footage (1.4 msf compared to 1.384 msf). These differences would not be enough to substantially alter the conclusions of the Draft EIR.

In order to conduct the EIR analysis, the total levels of development were distributed on a parcel-by-parcel basis, again using an illustrative concept prepared by the applicant. For each technical impact area, the mixed use flex space was assumed to be either 491,000 sf of office or 400 dwelling units, depending on whether office or traffic would have greater impacts in that particular area. In order to conduct the various impact analyses, assumptions had to be made about where different types of development were likely to occur given that most uses are allowed in the RCMU, ORMU and RMU districts. For example, Parcel 33 is designated RRMU (see Figure 3-5), which allows residential and retail uses. However, this parcel is located under the freeway, and is expected to be a parking structure. Therefore, the EIR Analysis Scenario assumes it will be parking. If a use other than parking were ultimately proposed for this parcel, for example residential, then the City would have to determine whether the use would create impacts that were not adequately addressed in this EIR.

Table 3-3 shows the mix of land uses assumed under the EIR Analysis Scenario, and the specific uses assumed for each parcel. A figure illustrating the EIR Analysis Scenario land use assumptions and a parcel-by-parcel break down are provided in Appendix C. Table 3-4 shows the parcel-by-parcel assumptions made for the Mixed Use Flexible Space.

### Initial Phase

In some cases, primarily traffic, the EIR also analyzes an Initial Phase of development expected to occur in the first few years of development. The Initial Phase land uses are based on the parcel-by-parcel assumptions for those parcels that fall within the Initial Phase boundaries, shown in Figure 3-6.

TABLE 3-2

**EIR ANALYSIS SCENARIO  
ASSUMED LAND USE DEVELOPMENT LEVELS BY DESIGNATION AREA**

Designation	Acreage	Residential Units	Retail (sf)	Mixed Use	Hotel (rooms)	Office (sf)	Historic/Cultural (sf)	Open Space (acres)	Utilities (acres)	Parking
RCMU	48.83	1,704 to 2,104	1,062,100	491,000	600	38,000 to 491,000	485,390	---	---	7,425 spaces
ORMU	19.46	2,101	157,700	---	0	2,337,200	---	---	1.73	2,275 spaces
RMU	41.95	8,296	165,000	---	500	---	---	---	---	---
OS	38.03	---	---	---	---	---	---	38.03	---	---
TU	32.12	---	---	---	---	---	---	3.13	---	---
TOTAL	180.39	10,000 to 12,501*	1,384,000	491,000	1,100	0 to 2,828,200**	485,390	41.16	---	---

## Notes:

\*Assumes maximum residential buildout of mixed-use flex space.

\*\*Assumes maximum office buildout of mixed-use flex space.

As discussed in this chapter, the Specific Plan allows for a varying combination of uses. The EIR Analyzes Scenario is based on a conceptual illustration provided by the applicant. A parcel-by-parcel land use table for the EIR Analysis Scenario and a figure showing assumed uses for each parcel are provided in Appendix C.

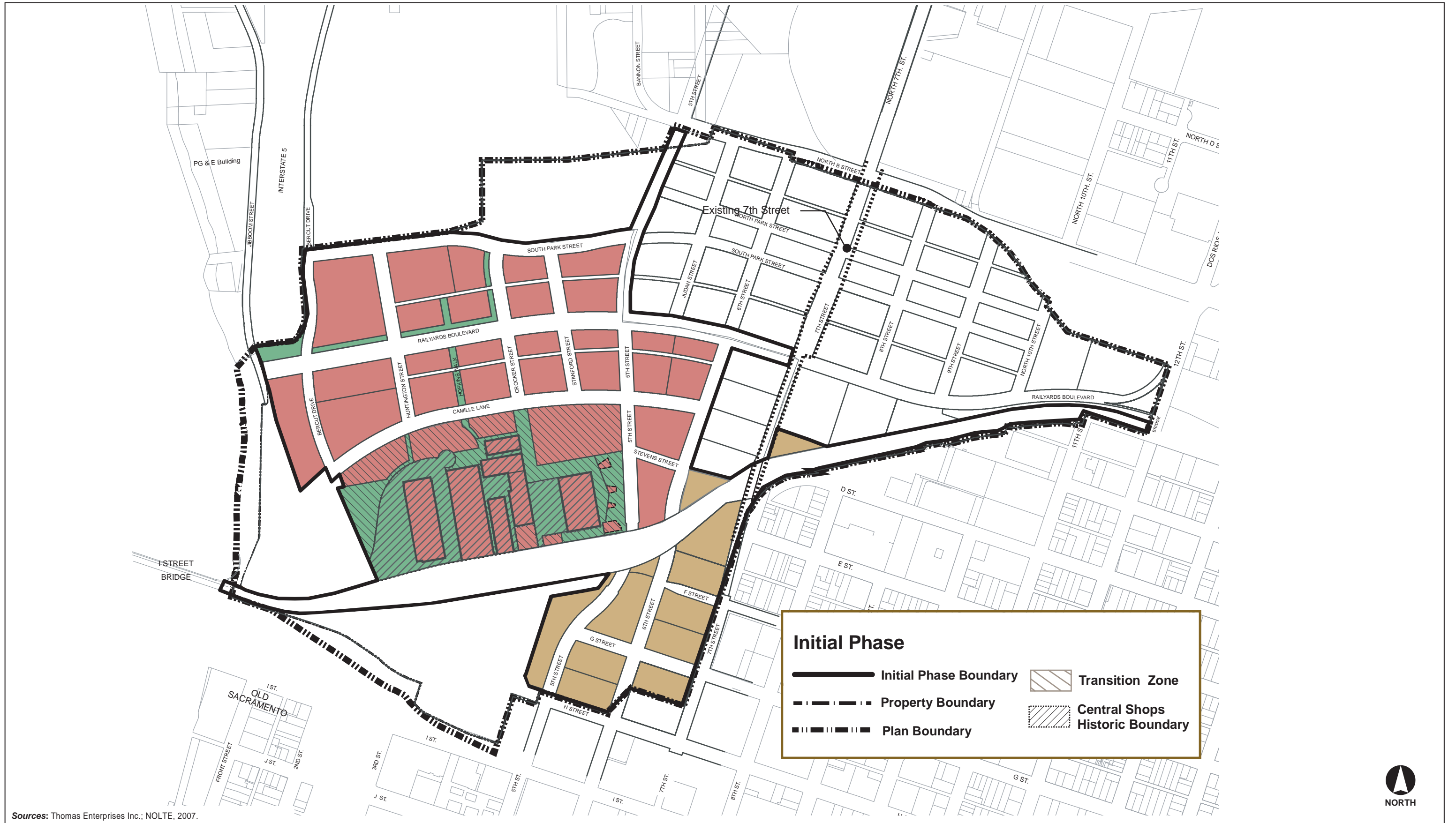
Source: Thomas Enterprises, *Railyards Specific Plan*, May 31, 2007.

<b>TABLE 3-3</b>	
<b>EIR ANALYSIS SCENARIO ASSUMPTIONS</b>	
<b>LAND USE MIXES AND PARCEL ASSUMPTIONS</b>	
<b>Land Use Mix</b>	<b>Parcels</b>
Residential	5a, 6a, 52N, 52S, 53N, 53S, 58N, 58S, 59N, 59S, 66N, 66S, 67N, 67S, 68N, 68S, 69N, 69S, 70S, 71N, 71S, portion of 3f,
Residential/Hotel/Retail	35
Residential/Office	47a, 48a, 48b
Residential/Retail	7a1, 7a2, 7b1, 7b2, 49a1, 49a2, 51a, 51b, 54N, 54S, 57N, 57S
Residential/Retail/Office	3d, 5b, 7b, 8a, 8b, 9a, 9b, 10a1, 10a2, 10a3, 10a4, 40, 41a, 41b, 42, 43a, 43b, 44a, 45, 46a, 46b
Hotel	3c
Office/Retail/Mixed Use	15, 16
Parking	3a, 17, 33, 47b
Retail	2a, 11a, 11b
Retail/Hotel	14
Retail/Office	12
Historic/Cultural	20, 22, 24, 25, 26, 27, 28, 29
Transportation	38, 39
Utilities	49b, 49c
Notes: Parcel number corresponds to Figure 3-5. Source: PBS&J/EIP, August 2007	

<b>TABLE 3-4</b>		
<b>EIR ASSUMPTIONS FOR MIXED-USE FLEX SPACE</b>		
<b>Parcel</b>	<b>Maximum Office (sf)</b>	<b>Maximum Dwelling Units* (DU)</b>
3d	32,000	28
5b	29,000	26
6b	47,000	42
7a	18,000	16
7b	58,000	52
8a	27,000	24
8b	38,000	34
9a	26,000	23
9b	38,000	34
10a	65,000	58
12**	43,000	--
15a	40,000	36
16a	30,000	27
<b>Maximum Total for Mixed-Use</b>	<b>491,000</b>	<b>400</b>
<b>Overall Maximum</b>	<b>2,828,200</b>	<b>12,501</b>
<b>Overall Minimum</b>	<b>85,994</b>	<b>10,000</b>
Notes: *Number of DUs based on an average of 1112.4 sf per DU. ** Residential development is restricted due to proximity to I-5. <sup>5</sup> As discussed in Chapter 3 the Specific Plan allows for a varying combination of uses. The EIR analyzes a scenario based in an "Analysis Scenario" provided by the applicant in Appendix C. As discussed in this chapter, the Specific Plan allows for a varying combination of uses. The EIR Analyzes Scenario is based in a conceptual illustration provided by the applicant. A parcel-by-parcel land use table for the EIR Analysis Scenario and a figure showing assumed uses for each parcel are provided in Appendix C. Source: PBS&J/EIP, June 2007.		

- 5 This EIR quantitatively analyzes impacts of the "Analysis Scenario" based on the information provided in the land use matrix and associated assumptions provide in the Specific Plan. The qualitative impacts analysis provided in the EIR assumes the related buildout of those uses identified in the "Analysis Scenario".





Sources: Thomas Enterprises Inc.; NOLTE, 2007.

FIGURE 3-6  
Initial Phase

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## **Sports and Entertainment Facility Overlay**

Recognizing that there could be, in the future, interest in developing a sports and entertainment facility in the Railyards, the Specific Plan includes an Sports and Entertainment Facility Overlay on approximately four blocks located north of the tracks and on either side of 7<sup>th</sup> Street. No proposals for a Sports and Entertainment Facility are active at present, and the Specific Plan does not provide for any related development within the land use designations described above. If a sports and entertainment facility was to be proposed, it may be within the area shown in Figure 3-7, Sports and Entertainment Facility Overlay, and would require a Specific Plan amendment as well as additional CEQA review and compliance. A comparative discussion of the likely environmental consequences of implementation of the Sports and Entertainment Facility Overlay are addressed briefly at the end of each environmental resource section of Chapter 6.

## **Districts**

The Specific Plan would establish five neighborhood districts, each with its own character, dominant uses and regulations. District boundaries are shown in Figure 3-8, District Boundaries. Land uses within each district would correspond to the land use designations described above and shown on Figure 3-5. The Districts are described further below.

### **Depot District**

The Depot District would encompass the general area between the relocated railroad tracks and the Specific Plan Area boundary with Old Sacramento and Downtown along H, I and G streets. The Depot District extends from the Sacramento River on the west to 7<sup>th</sup> Street on the east. The Depot District would include the SITF, including the existing depot building and a planned expanded terminal facility. The SITF as currently envisioned would accommodate inter-city passenger trains, regional bus, freight service, shuttle, taxi, and light rail service. The SITF would also provide the opportunity to include a proposed statewide high-speed rail service and a proposed trolley service. Outside of the SITF, the Depot District is designated ORMU, which would provide for a high concentration of office uses, mixed with residential and retail development. Fifth and Sixth streets would rise over the relocated tracks.

### **Central Shops District**

The proposed Central Shops District would be located north of the Depot District, bordered on the south by the relocated mainline rail tracks, on the west by I-5, on the east and north by the West End District. This district is intended to provide close connectivity to Old Sacramento, and to the Riverfront, Old Sacramento and East End District within the Railyards.

The existing Central Shops would be the focus of this district. The existing historic Central Shop buildings are brick structures, some dating from as early as 1868. Eight of the original buildings, would be structurally-stabilized, renovated, and adaptively-reused to accommodate a mixture of cultural, retail and entertainment uses. An historic preservation district is proposed to be listed on the City's historic register.

The land uses located within and adjacent to the Central Shops District would develop with "historic/cultural-themed" uses, such as a performing arts theatre complex with 1,200 and 600-seat theatres, exhibit space (which could include an extension of the Railroad Museum), a public marketplace with specialty food shops and restaurants, cafes, and a relatively small amount of retail and office development, art galleries, clubs and other entertainment-supporting uses. The historic/cultural uses assumed for and around the Central Shops District are identified in Table 3-5. No new buildings would be constructed within the proposed Historic Preservation District.



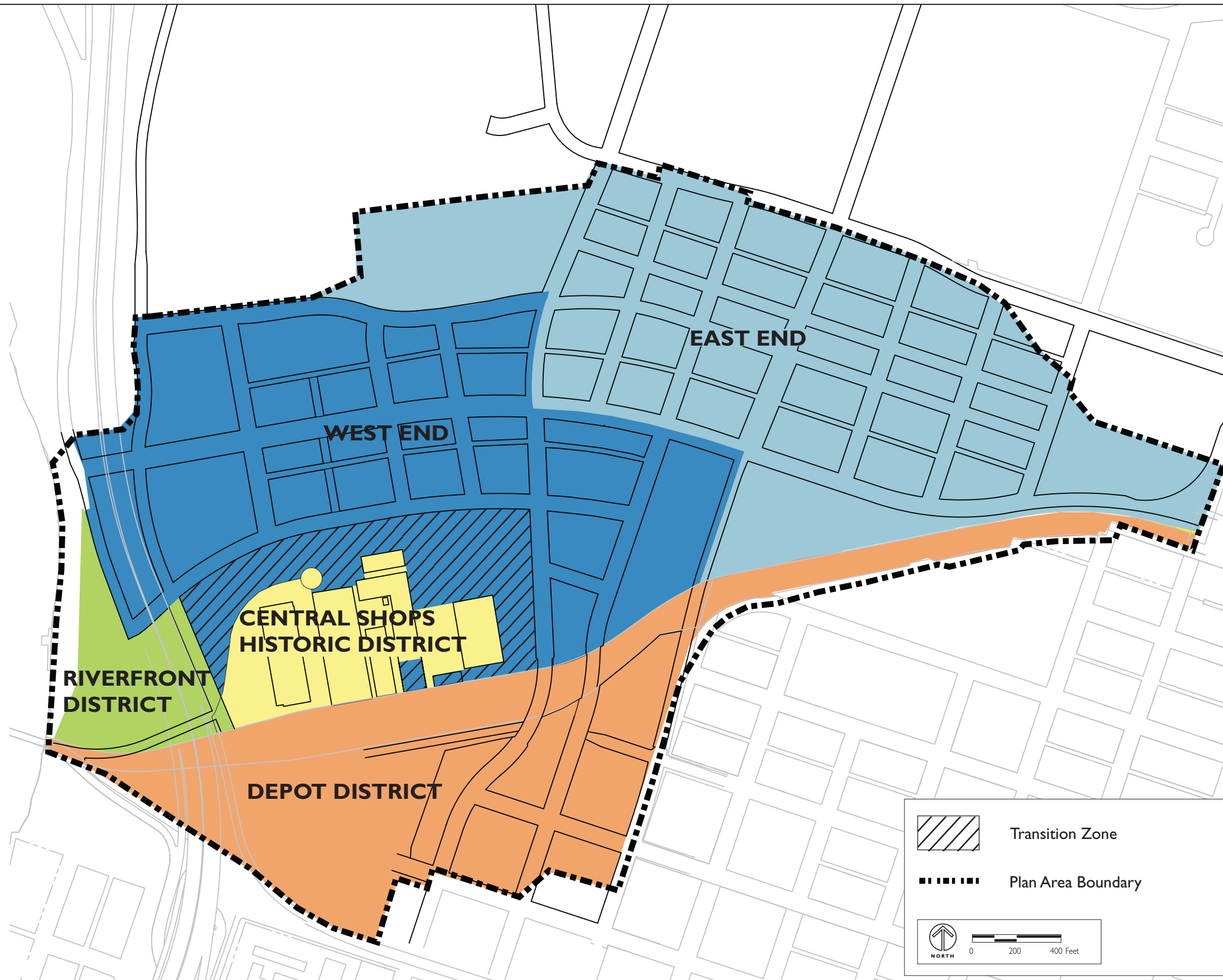




Sources: Railyards Specific Plan, 2007.

**FIGURE 3-7**  
**Specific Plan Land Use Map with Arena Overlay**





Sources: Railyards Specific Plan, 2007.

**FIGURE 3-8**  
**District Boundaries**



### West End District

The West End District would extend from the Central Shops District to South Park Street on the north, 7<sup>th</sup> Street to the east and the Riverfront District to the west. The West End District would be made up of RCMU, ORMU and Open Space designations. The western portion of the West End District would be shielded from the freeway by two large parcels. Parcel 2 is expected to include a 200,000 square-foot Bass Pro Shops outdoor gear store bounded by Bercut Drive, Huntington Street, Railyards Boulevard and South Park Street. Camille Lane, which would run east-west through the district, would connect the center of the Railyards to the Riverfront District. Buildings along Camille Lane are planned to be scaled down to provide a transition to the Central Shops to the south. A variety of pedestrian paths are expected to connect the Camille Lane area to the Central Shops. The proposed Performing Arts Center would be located in the West End District, at the southwest corner of Camille Lane and 5<sup>th</sup> Street. The portion of the West End District that abuts the Central Shops Historic District would be in a Transition Zone, bounded by the Central Shops Historic District, Camille Lane and 5<sup>th</sup> Street. The West End District also includes the Sports and Entertainment Facility Overlay, described above.

### East End District

The East End District would comprise most of the Specific Plan Area east of 7<sup>th</sup> Street and north of the West End District. Development in the East End would be intended to replicate the traditional grid system found in the neighborhoods to the east of the Railyards. Mid-block alleys are planned. The majority of the land uses would be residential, with some retail. In addition to the approximately six-acre "boxcar" parks between North Park and South Park streets, the approximately 10-acre Vista Park would be located in the northwestern corner of this district.

### Riverfront District

The Riverfront District would be located between the Sacramento River, I-5 and the I Street Bridge. An approximately four-acre portion of the Riverfront District is designated RMU, which allows for residential neighborhood, hotel, retail, educational, museums, hospitals, churches, and other public uses. The Riverfront District also includes an approximately 1.61-acre open space parcel adjacent to the freeway. The Specific Plan proposes to remove the elevated portion of Jibboom Street that connects to the I Street Bridge and replace the connection with a link from I Street to Bercut Drive. The removal of Jibboom Street and the creation of the new I Street connection are intended to improve connectivity to the Sacramento River by providing better-improved pedestrian access to the river, and create developable parcels along the riverfront, west of I-5.

The proposed Specific Plan does not anticipate development on the river side of the levee. No development or project features are proposed to extend into the river, except for a stormwater outfall. No marina or no boat access is planned.

## **Circulation**

### **Roadway Network**

The interior of the Specific Plan Area has no existing public roadways, except for 7<sup>th</sup> Street, which connects downtown Sacramento to the Richards Area. The Specific Plan proposes to extend existing city streets through the Railyards and to create new streets to provide a circulation grid. Roadways with direct access to the site include 5<sup>th</sup> Street, 6<sup>th</sup> Street, 7<sup>th</sup> Street, North 7<sup>th</sup> Street, North 10<sup>th</sup> Street, North 12<sup>th</sup> Street, F Street, G Street, H Street, Bercut Drive, and Jibboom Street. These streets would be extended into the Specific Plan Area, and some would extend entirely through the Specific Plan Area, connecting with existing streets in downtown and the Riverfront

TABLE 3-5

## EIR ASSUMPTIONS FOR HISTORIC/CULTURAL USES

Parcel #	Assumed Building Use	Gross Floor Areas				Uses <sup>1</sup>					
		1st	2nd	3rd	Total	Entertainment Exhibit	F&B	Retail	Market	Theater	Office
15a	Performing Arts Theater	100,000	0	0	100,000					100,000	
20	Paint Shop	56,278	0	0	56,278				56,278		
22	New Retail	6,500	0	0	6,500			6,500			
23	New Bay Car Shop 3	14,000	8,500	0	22,500		22,500				
24	Car Shop 3				38,711						
	North Bay	9,383	7,730	0				9,383			7,730
	Middle Bay	8,799	0	0			8,799				
	South Bay	11,017	0	0			11,017				
	Privy	594	594	594				1,782			
25	Planning Mill	21,014	21,014	0	42,028		21,014				21,014
26	Machine Shop	14,250	14,250	0	28,500			14,250			14,250
27	Blacksmith Shop	28,043	0	0	28,043	25,000		3,043			
28	Erecting Shop	93,134	0	0	93,134	93,134					
29	Boiler Shop	69,696	0	0	69,696	69,696					
<b>Total</b>		<b>432,708</b>	<b>52,088</b>	<b>594</b>	<b>485,390</b>	<b>187,830</b>	<b>63,330</b>	<b>34,958</b>	<b>56,278</b>	<b>100,000</b>	<b>42,994</b>

## Notes:

1. Illustrative of anticipated uses. For analytical purposes, actual uses and mix to be determined by market forces.

As discussed in this chapter, the Specific Plan allows for a varying combination of uses. The EIR Analyzes Scenario is based in a conceptual illustration provided by the applicant. A parcel-by-parcel land use table for the EIR Analysis Scenario and a figure showing assumed uses for each parcel are provided in Appendix C.

Source: Thomas Enterprises April 2007.

District. Streets within the Specific Plan Area would be organized in an urban grid. Figure 3-9 provides a circulation plan for the entire Specific Plan Area. See Chapter 6 in the Specific Plan and Section 6.12 in this Draft EIR for a description of proposed roadways.

### **Pedestrian and Bicycle Circulation**

Pedestrian features would be integrated throughout the Specific Plan Area. Pedestrian activity and safety would be addressed through relatively narrow street widths, street trees, and broad sidewalks. Pedestrian pathways would be separated from vehicular streets and when the two meet at intersections there would be a change in grade and materials to improve visibility and safety. Lighting would be provided for safety and visual access.

The proposed project also calls for a network of on- and off-street bicycle paths. Class I (off-street) bike paths would be provided on 7<sup>th</sup> Street between F Street and the underpass. Class II bike paths (minimum five-foot-wide minimum with painted lane striping) would be constructed along major streets including Railyards Boulevard, 5<sup>th</sup> Street, 6<sup>th</sup> Street, portions of 7<sup>th</sup> Street, South Park Street, North 10<sup>th</sup> Street, North B Street, Bercut Drive and Jibboom Street, allowing bicyclists to travel across the entire Railyards area from north to south and east to west. Bicycle parking would be located close to all residential buildings and commercial amenities. Figure 3-10 provides an overview of the bicycle network in the Specific Plan Area.

### **Transit Systems**

#### Sacramento Intermodal Transportation Facility

The proposed Specific Plan recognizes and is intended to coordinate with the City's planned expanded SITF. The centerpiece of the SITF is expected to be a regional intermodal terminal that could support increased commuter and intercity rail service, as well as an expanded Light Rail Transit (LRT) system. The intermodal terminal would provide a direct connection between these systems, bringing together Amtrak, the Capitol Corridor and the San Joaquin Corridor intercity rail services, intercity bus service, Regional Transit and other local fixed route bus services, regional bus and local shuttle services serving the area. The future SITF would be located on a 15.34-acre trapezoidal site<sup>6</sup> north of I Street bounded by 2<sup>nd</sup> Street and the riverfront on the west, 5<sup>th</sup> Street on the east, and the proposed main rail line to the north and the approximately 16.78-acre relocated track alignment. The SITF site currently contains the existing Depot, rail lines, and associated land and structures. A concept for the SITF was developed and evaluated by the City of Sacramento following a series of public outreach forums conducted in 2003. The City gathered input from the public and project stakeholders and identified four alternatives for evaluation.

The alternative plans contained many of the same essential facility components, but were designed with different configurations and slight changes in the types of structural amenities. After analyzing the advantages and disadvantages of each objective, the project consulting team determined that Alternatives A and B best fulfilled the goals and objectives for the SITF as determined by the project stakeholders. The City Council ultimately identified Alternative B-Sacramento Northern as the preferred alternative.<sup>8</sup> The "Sacramento Northern" alternative would relocate the Historic Depot approximately 400' north along the historic 4<sup>th</sup> Street axis and integrate it into a new Terminal Building. This alignment would accommodate planned rail service growth and would improve rail operations. Despite the identification of the preferred alternative, no formal proposed project has

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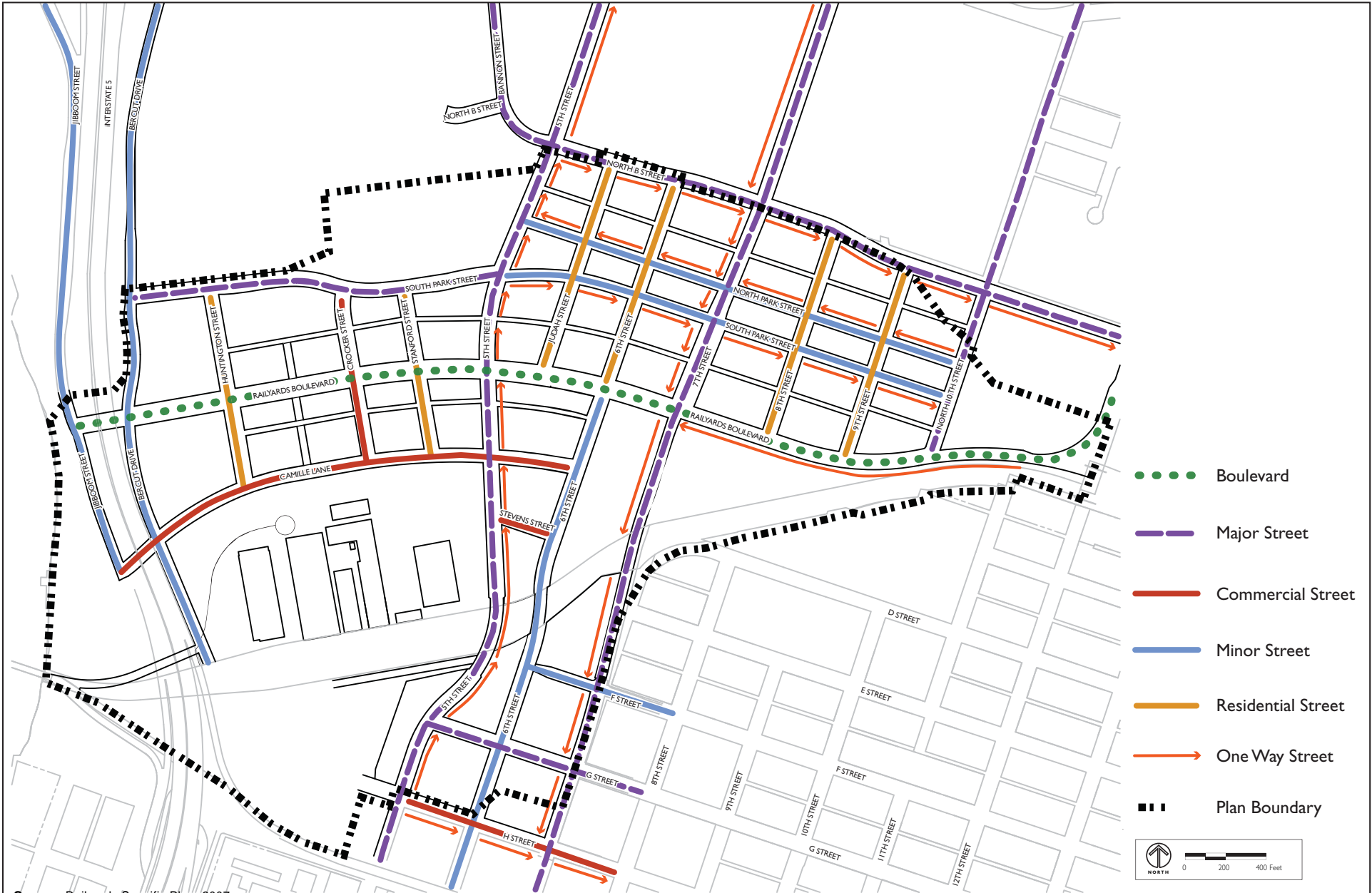
6 Plus 17 = 32 acres. The 15 acres does not include freight tracks or passenger platforms.

7 City of Sacramento, *Sacramento Intermodal Transportation Facility- Draft for Public Review Working Paper #8- S SITF Alternatives*, February 6, 2004.

8 City of Sacramento, *Sacramento Intermodal Transportation Facility- Draft for Public Review Working Paper #9- S SITF Alternatives*, September 29, 2004.







Source: Railyards Specific Plan, 2007.

**FIGURE 3-9**  
**Circulation Plan**

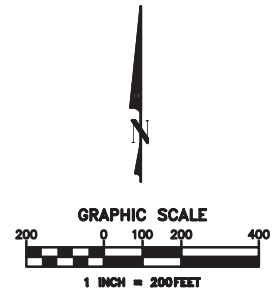
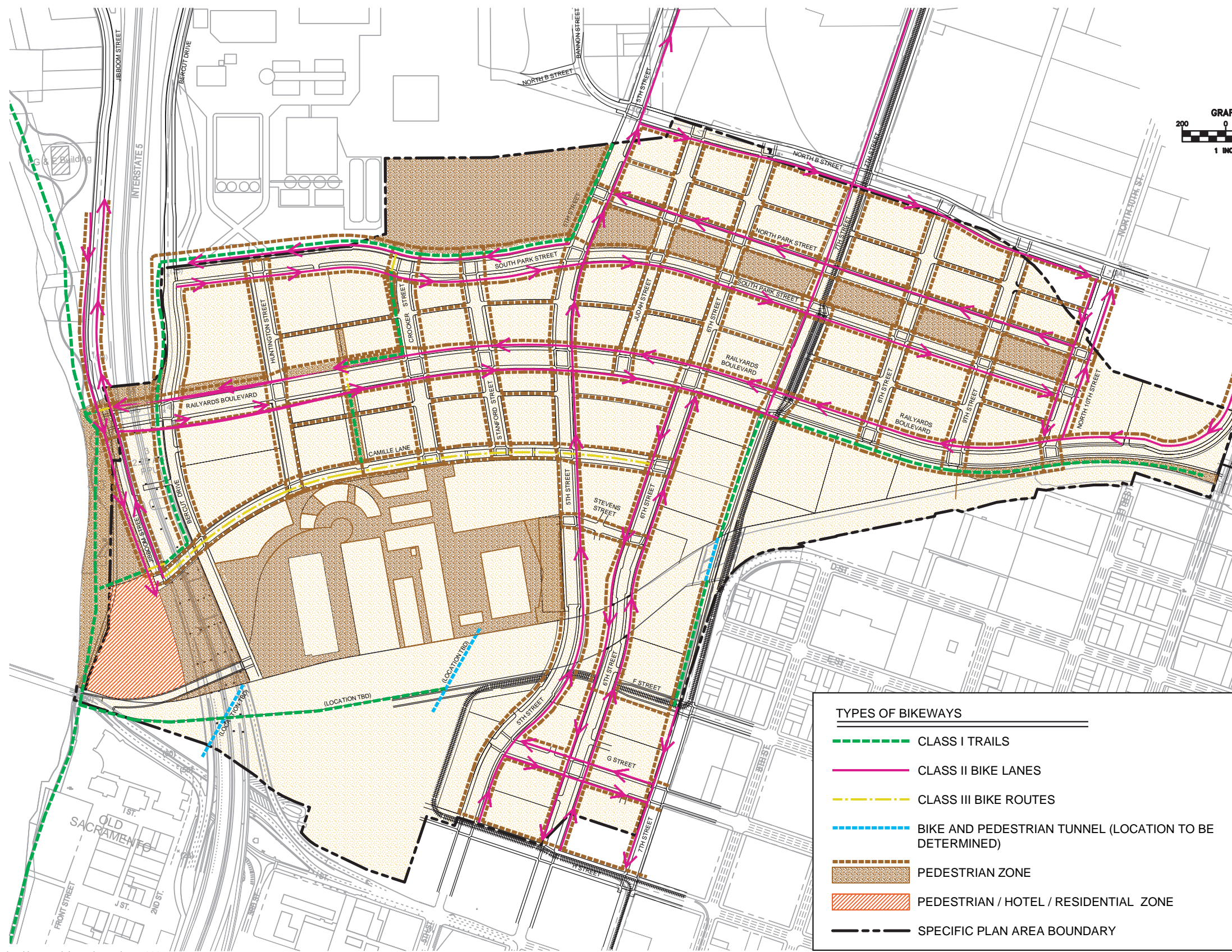


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Sources: Thomas Enterprises Inc.; Kimley-Horn and Associates, Inc., 2007.



been established. Although project level designs of the SITF have not been developed, this EIR evaluates relocation of the tracks as proposed in connection with implementation of the Specific Plan, and the possible relocation of the Depot. Numerous issues related to the technical feasibility of relocating the existing depot, funding, and other factors (including project-specific documentation under NEPA) will need to be examined and a more detailed plan developed prior to the final determination of feasibility of any one alternative.

Any future SITF may incorporate an intermodal terminal facility consisting of the Historic Depot and a proposed terminal extension. The current Historic Depot is a three-story facility with approximately 57,000 sf and an office and a basement. Any of the alternatives under consideration for the future SITF would incorporate the following uses within the proposed terminal and the historic Depot:<sup>9</sup>

- A ticketing area for Amtrak and Greyhound,
- Baggage claim area for Amtrak and Greyhound,
- Waiting area for Amtrak and Greyhound,
- Passenger amenities for Amtrak, Greyhound and RT (restrooms, phones, food service, vending service, telephone, internal circulation system, custodial service),
- Administrative and employee uses,
- Onsite parking for 350 spaces, and
- Joint-uses within the Specific Plan Area.

Table 3-6 provides the approximate square footages for the anticipated uses, which would be included within a typical Intermodal Facility Plan.

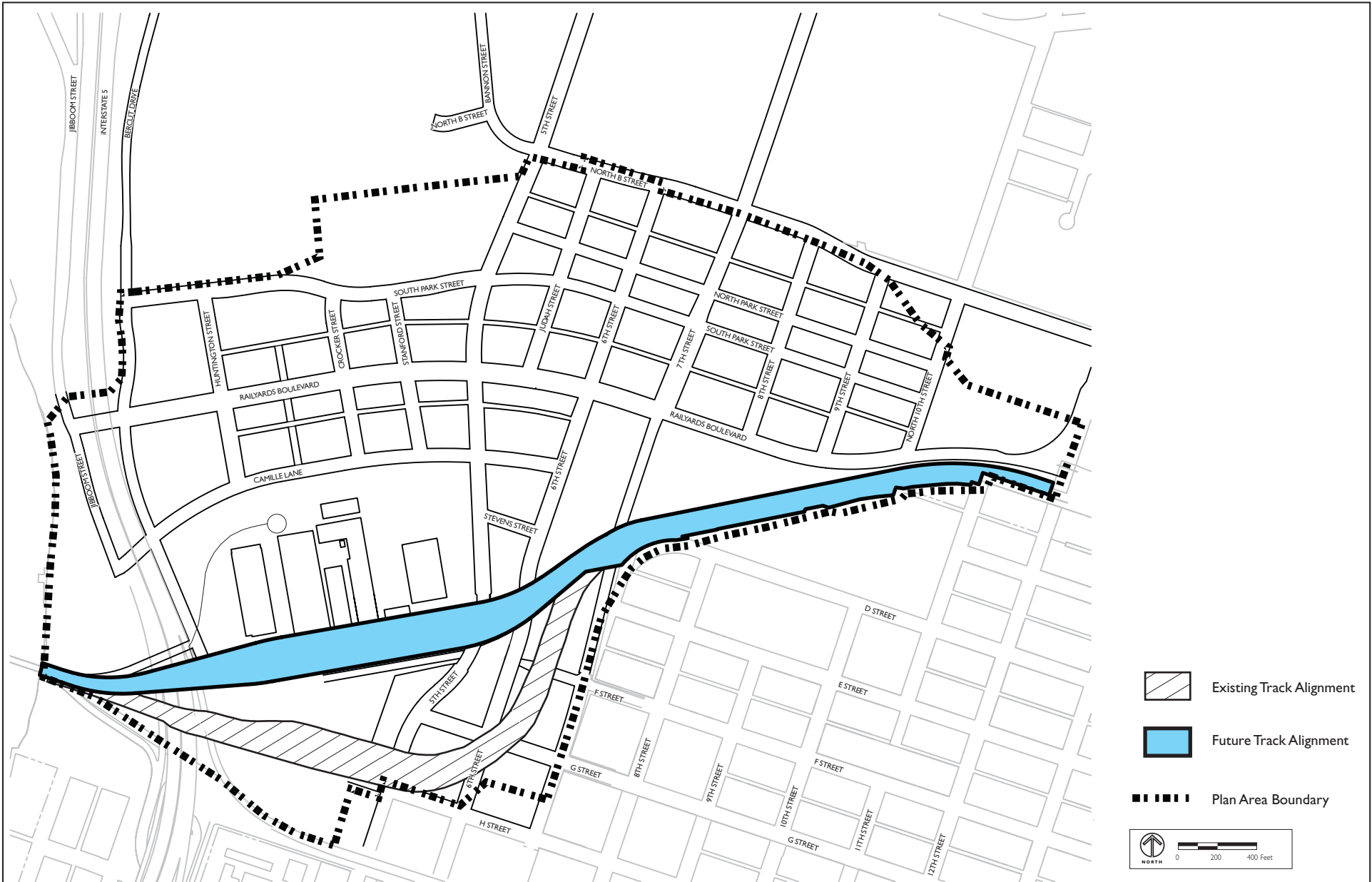
<b>Program Use</b>	<b>Square Footage</b>
Ticketing	2,660
Baggage	5,758
Waiting area	25,146
Passenger Amenities	10,553
Administration and Employee uses	60,632
Joint Development	22,762
<b>TOTAL</b>	<b>127,511</b>
Source: City of Sacramento, 2004.	

### Track Relocation

The portion of the two mainline railroad tracks from the I Street Bridge to the 7<sup>th</sup> Street overcrossing would be relocated to the north, just south of the Central Shops (see Figure 3-11). A third freight track may be added. The relocation of the heavy rail tracks would also include relocating passenger platform tracks, passenger platforms, and constructing sub and super structures for the 5<sup>th</sup> Street and 6<sup>th</sup> Street overcrossings. A total of at least three straight passenger platforms of 1,200, 1,400 and 1,600 would be constructed. A fully grade-separated, ADA-compliant pedestrian route would be provided between the Depot and terminal station facilities to the new loading platforms.

<sup>9</sup> City of Sacramento, *Sacramento Intermodal Transportation Facility - Draft for Public Review Working Paper #9- S SITF Alternatives*, September 29, 2004.





Source: Railyards Specific Plan, 2007.



**FIGURE 3-11  
Track Relocation**

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### Passenger Rail

Sacramento continues to experience an increasing demand for transportation services. The Capitol Corridor intercity train service experienced a 172 percent increase in ridership between 1998 and 2005. Currently, the Capitol Corridor intercity train service runs 32 passenger trains per day. Amtrak operates another eight trains per day through the Sacramento Station, and is expected to increase its ridership, which will necessitate an increase in the number of rail cars per train and/or trains serving the region.

### Light Rail

Light rail service currently extends to the Depot and would be available in the Specific Plan Area. Plans are underway to reorient this station to a north-south alignment on the east side of the SITF. It would then serve the Amtrak Folsom line and the proposed Downtown-Natomas-Airport (DNA) route. In 2003, Regional Transit developed a Locally Preferred Alternative for the DNA line, showing light rail traversing the Specific Plan Area along 7<sup>th</sup> Street, traveling west along Richards Boulevard towards the I-5 freeway, and crossing the American River into the Natomas area. Prior to full operation of the DNA line in the SITF, initial service may use a track alignment that operates on 7<sup>th</sup> Street between H Street and F streets in order to reduce operational costs and equipment needs. This “bypass” would also be used if LRT operations adjacent to the Sacramento Federal Building had to be temporarily suspended. A new station would be built at 7<sup>th</sup> and South Park streets.

### Local and Regional Bus Service

The ultimate bus system serving the Specific Plan Area would consist of a Regional Transit operation facility at the Intermodal facility and extensions to future downtown service provided by Regional Transit. Other municipal operators in the region serving downtown Sacramento would also serve the SITF; 7<sup>th</sup> Street would be designated as a transit-priority street connecting downtown with Richards Boulevard.

### Freight Rail

Union Pacific trains would continue to operate through the Specific Plan Area along the realigned tracks south of the Central Shops. Within the realigned rail corridor, the passenger tracks and platforms would be on the inside with freight tracks on the outer sides. Access controls would require passengers to use grade separations to reach their trains. This would make freight operations through the site more efficient and safer. Two freight tracks, one on each side of the corridor would be developed with the possibility of adding a third freight track on the north side of the corridor.

### High Speed Rail

The California High-Speed Rail Authority has been evaluating a high-speed rail line beginning in Sacramento, serving the Central Valley and terminating in Los Angeles and San Diego. Although high-speed rail is still in the initial stage of the planning process and may not be constructed for many years in the future, the Specific Plan would allow for future expansion of the SITF to accommodate high-speed rail passengers and provide for the required 1,300 feet of straight platform on elevated track at the SITF location.

### Utilities

Water, wastewater and drainage facilities proposed to be constructed in the Specific Plan Area are described briefly below. Additional details can be found in Chapter 8 of the Specific Plan and Section 6.11 of the Draft EIR.

## Water

A new water distribution system is proposed for the entire Specific Plan Area. Existing water mains would be abandoned and replaced by a grid network of water distribution lines beneath street rights-of-way with connections to the city's transmission mains at the Specific Plan Area boundaries (see Figure 3-12). A 42-inch water transmission main would be constructed in Bercut Drive from the water treatment plant to the south boundary of the project as shown in Figure 3-12.

## Wastewater and Stormwater

While a portion of the Specific Plan Area is currently served by a combined sewer and drainage system, as is most of the Central City, stormwater on most of the site percolates. Under the proposed project, separate drainage and sewer systems would be constructed throughout the Specific Plan Area.

### Sanitary Sewer

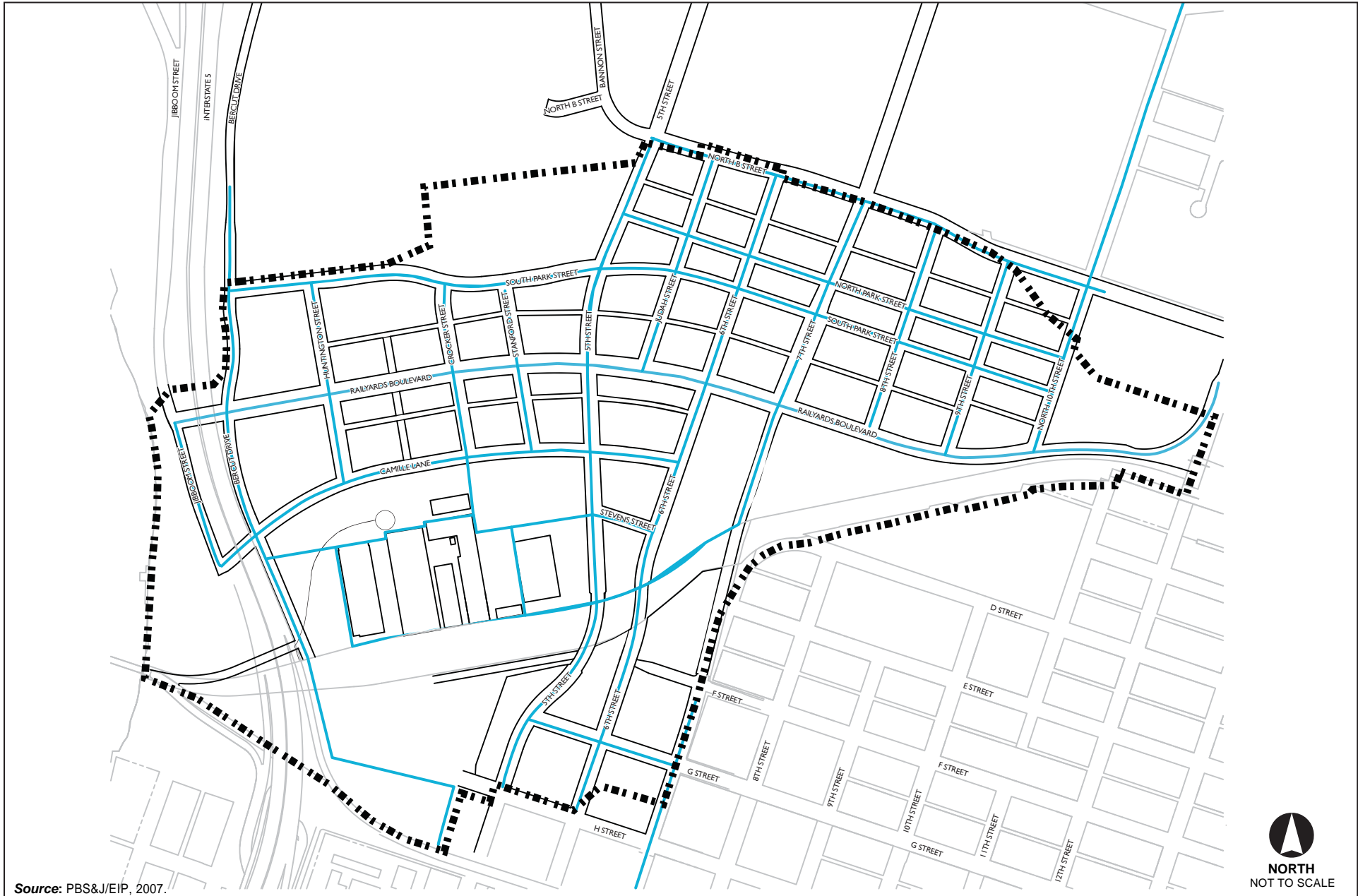
Sanitary sewage from most of the site would be collected in sewer lines and conveyed to the vicinity of 3<sup>rd</sup> and I streets, where it would enter a proposed reconstructed sewer on 3<sup>rd</sup> Street (see Figure 3-13). A small area along 7<sup>th</sup> Street south of the relocated main line railroad tracks would discharge into an existing 18- and 24-inch combined sewer flowing east to 7<sup>th</sup> Street. This existing sewer serves the existing Amtrak depot but would not be used for the new SITF.

In addition to flows from the Specific Plan Area itself, the City of Sacramento proposes to divert sanitary sewage from the Richards Boulevard area to a proposed pump station at the corner of Railyards Boulevard and 9<sup>th</sup> Street en route to the proposed 3<sup>rd</sup> Street sewer. As shown in Figure 3-13, the diversion would start at 12<sup>th</sup> Street and North B streets with a pipeline running southwesterly along the northerly side of the main line railroad tracks. To avoid trenching in the existing scrap metal yard, the pipeline would run south on 12<sup>th</sup> Street to the Specific Plan Area boundary, then west to Railyards Boulevard. This pipeline would flow to a pump station on the east side of 7<sup>th</sup> Street. The pump station discharge gravity pipeline would cross the new main line track alignment and proceed westerly along the southerly side of the track, changing to a gravity line, and discharging into a sewer flowing southerly to 3<sup>rd</sup> and I streets.

### Drainage

The existing drainage system, which currently discharges to the City's combined sewer/drainage system, would be removed. A new gravity collection system would be constructed as shown in Figure 3-14. The gravity system would drain to an underground detention storage facility, referred to as the cistern, which would be located near the northwesterly corner of the Specific Plan Area, as shown in Figure 3-14. The four subbasins within the Specific Plan Area would drain as follows:

- The majority of the Specific Plan Area, approximately 227 acres, would drain by gravity to the cistern located near the northwest corner of the Specific Plan Area.
- An approximately 3.6-acre area fronting on 7<sup>th</sup> Street, along the east side of the existing main line railroad embankment, is about six feet lower than the track and Central Shops area. This area would continue to drain east to 7<sup>th</sup> Street.
- A small area fronting on 12<sup>th</sup> Street (approximately 2.5 acres) would continue to drain east to 12<sup>th</sup> Street.
- The northern slope of the railroad embankments along the north project boundary (approximately 4 acres) would continue to drain northerly to drainage facilities in the Richards Boulevard Area discharge to the American River through City Pump Station 111.



Source: PBS&J/EIP, 2007.



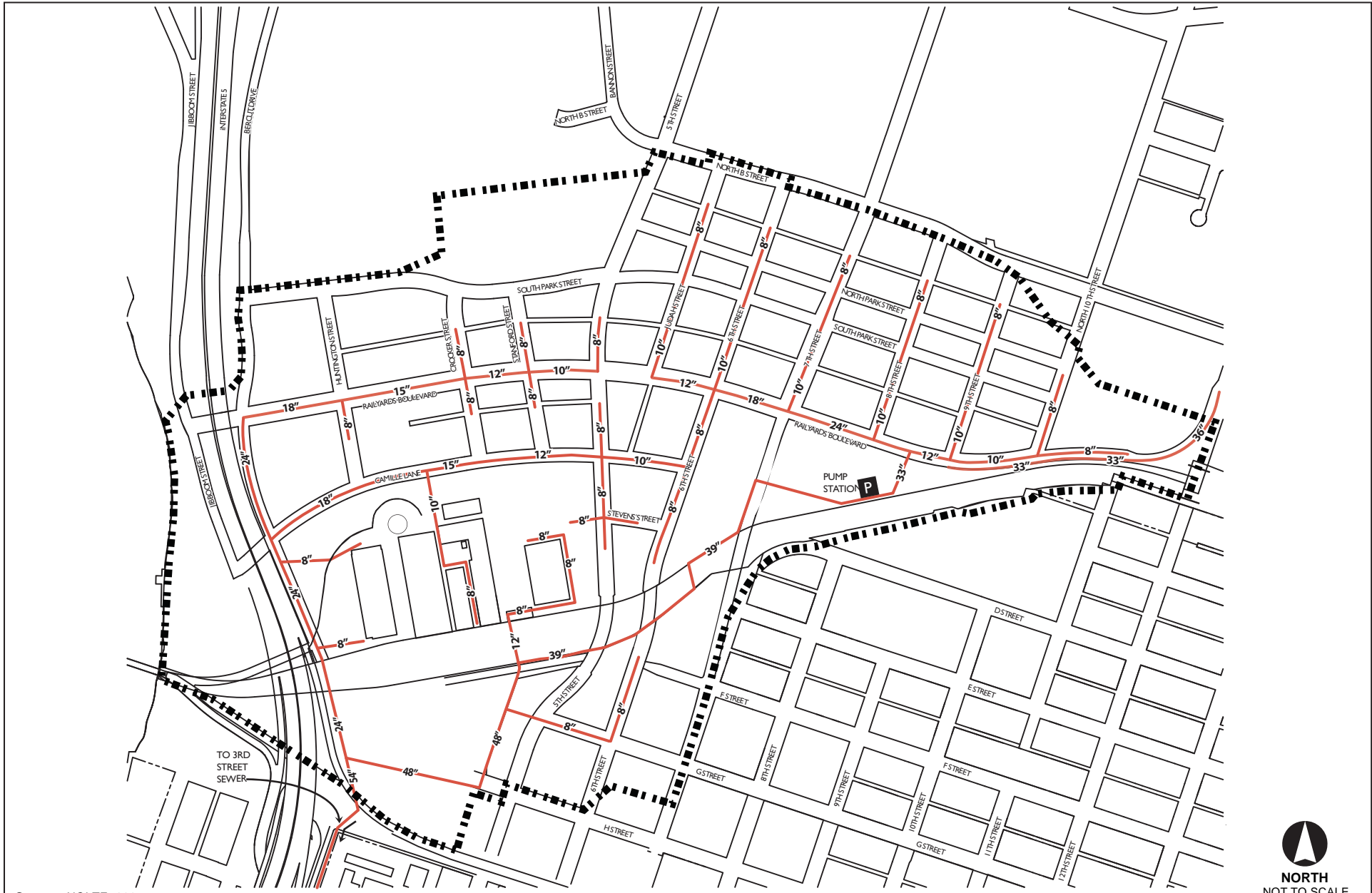
**FIGURE 3-12**  
**Water Supply System**

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Source: NOLTE, 2007.



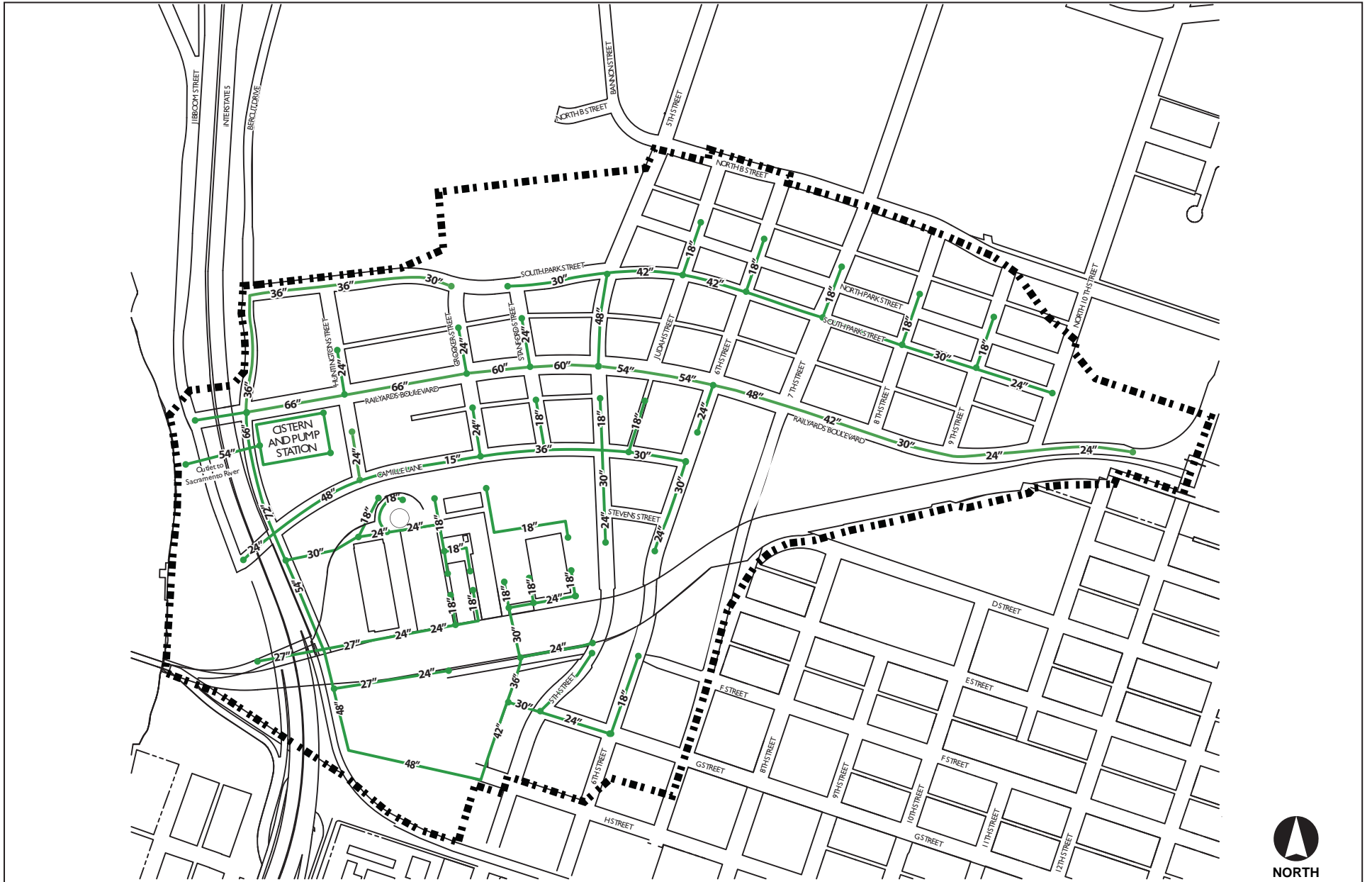
**FIGURE 3-13**  
**Sewer System**

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Source: NOLTE, 2007.

**FIGURE 3-14**  
**Drainage System**





The cistern would detain the first-flush component of the storm flow in a separate chamber, and discharge this volume by pumping during off-peak periods to the combined system in the vicinity of 3<sup>rd</sup> and I streets. Drainage flows which exceed the first-flush storage capacity would be stored in a second chamber and pumped to the Sacramento River and discharged through a newly constructed outfall. The second chamber would serve to attenuate high peak storm flows to the river and provide water quality treatment. The outfall is in the preliminary design phase, but is generally expected to include four 30-inch and one 15-inch pipelines extending from the pump station to the Sacramento River. A vertical concrete headwall approximately six-to eight-feet tall with flap gates would be installed at the end of each pipe, along with an erosion control structure. Total width of the outfall structure would be approximately 30 to 35 feet wide. A conceptual design of the outfall structure is shown in Figure 3-15.

## **Energy**

Gas service would be provided by the Pacific Gas and Electric Company (PG&E), which currently serves the limited uses on the site and is responsible for the transmission and distribution of gas to much of northern and central California. Gas distribution pipelines in the Central City core adjoining the Specific Plan Area are a combination of low pressure and medium-pressure pipelines. PG&E is in the process of phasing out low-pressure lines and replacing them with medium-pressure pipelines. PG&E would install new distribution facilities as needed to serve development, according to California Public Utilities Commission rules. In general, lines would be located within street rights-of-way. The existing electrical infrastructure is provided by SMUD, serves only a small portion of the site, is antiquated, and is unable to meet project needs. SMUD has determined that it would be necessary to construct an entirely new substation (21 kV [kilovolts], 40 MW [megawatts]) to serve the proposed project. Details of how SMUD would supply the substation from the 115 kV system have not been determined.

All of the facilities that would be built in the proposed Specific Plan would be in compliance with Title 24 (California Energy Efficiency Standards) regarding energy usage.

## **Offsite Infrastructure**

- In order to implement the Specific Plan, the following offsite infrastructure would be required:
  - Outfall to the Sacramento River, described above,
  - Extension of 5<sup>th</sup> Street, 6<sup>th</sup> Street, and North 10<sup>th</sup> Street to North B Street, and Bercut Drive to Richards Boulevard.

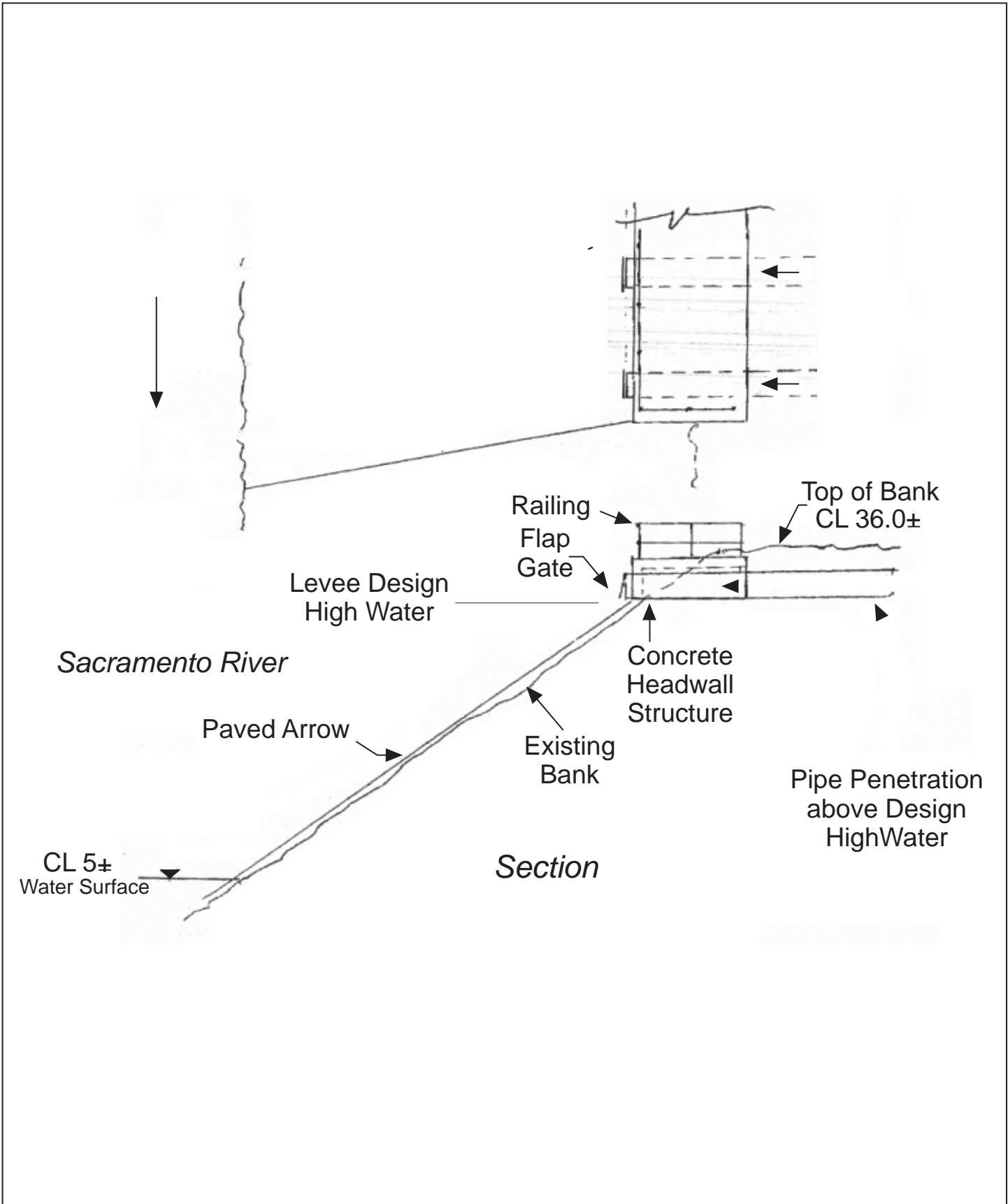
## **Public Services**

The proposed project addresses public services including schools, police, fire and parks, as described briefly below. For more detail, please see Chapter 8 of the Specific Plan and Section 6.10 of this DEIR.

## **Public Open Space**

The Specific Plan would provide a total of about 41.2 acres of publicly-accessible open space and parks, as depicted in Figure 3-16, including the approximately 10-acre Vista Park east of the Sacramento River Water Treatment Plant, River Park and a series of mid-block, rectangular “boxcar” parks in the East End District. As discussed above, the open space could consist of pedestrian trails, plazas, play fields, bicycle parks, and incidental cultural, institutional and retail uses. Proposed parks and open space are described in more detail in Chapter 6 of the Specific Plan and Section 6.9 of this Draft EIR.





Source: NOLTE, 2007.

FIGURE 3-15  
**Potential River Discharge - Illustrative Sketch**



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Railyards Specific Plan EIR

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Source: Railyards Specific Plan, 2007.

**FIGURE 3-16**  
**Public Open Space**



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Railyards Specific Plan EIR



## **Schools**

The proposed project would generate a demand for additional school services, but at lower rates than typical suburban development, due to the increased density of residential uses. Typically in the West, high-density urban housing tends to generate demand for schools at a fraction of the rate of more traditional suburban housing. Education facilities are allowed under the RCMU, ORMU and RMU designations. A potential school site has been identified at the eastern tip of the Specific Plan Area (see Figure 3-17). Due to its downtown location, any school facility built within the Specific Plan Area would likely be an “urban” school, and would include characteristics such as compact hardscape recreation areas, multi-story classroom facilities, and space saving solutions such as rooftop recreation areas.

Regardless of whether a school site is located within the Specific Plan Area, new development within the Specific Plan Area would contribute toward the provision of schools to serve the children of new residents and employees. This contribution would occur in the form of in-lieu fees, to fund either school expansion and construction outside the planning area, off-site or on-site land dedication, and/or the construction of a school facility within the area.

## **Police Services**

Law enforcement services would be provided by the City of Sacramento Police Department. The Specific Plan Area identifies two potential locations for joint police and fire stations, shown in Figure 3-17. It is anticipated that a new station would be located in a multi-story, multi-use building.

## **Fire Protection Services**

Fire protection would be provided by the City of Sacramento Fire Department. The proposed level of development within the Specific Plan Area would likely necessitate the construction of a new fire station. As described above, the potential locations for a joint fire and police station are shown in Figure 3-17.

## **Other Project Elements**

### **Goals and Policies**

Chapter 4 of the Specific Plan Area contains the goals and policies that would guide development of the Specific Plan Area. These goals and policies address community character, circulation, utilities, community services, historic resources, and hazardous substances. Specific policies that would reduce the environmental impacts of the Specific Plan are identified in the relevant technical sections in Chapter 6 of this Draft EIR.

### **Design Guidelines**

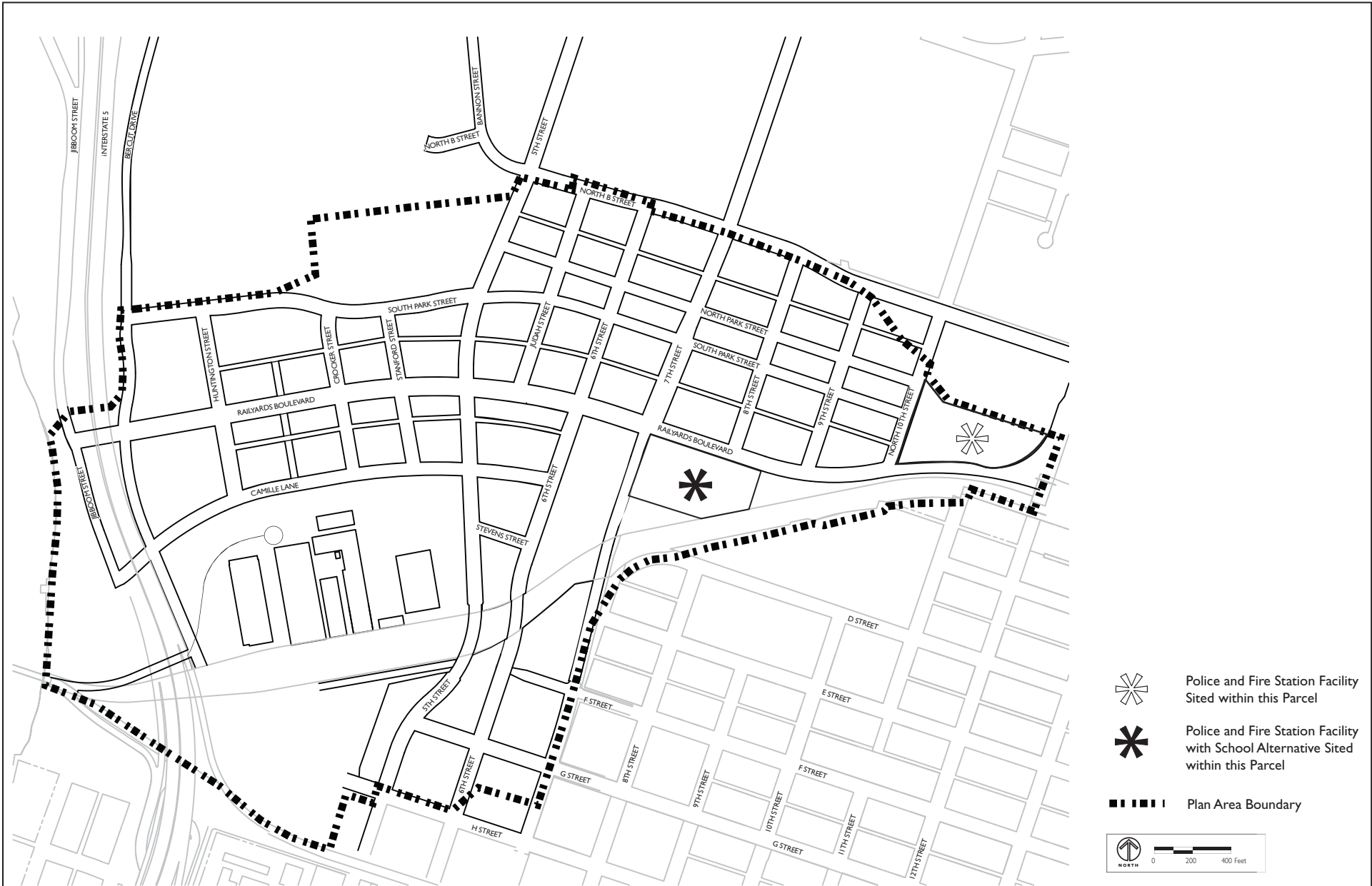
The Design Guidelines define the architectural and site design standards for buildings and related structures in the Specific Plan Area. The Design Guidelines address building placement, setbacks, heights, massing, streetscapes, landscaping, lighting and signage. Those Design Guidelines that would reduce the environmental impacts of the Specific Plan are identified in the relevant technical sections in Chapter 6 of this Draft EIR.

### **Special Planning District**

A special planning district (SPD) is proposed for the Specific Plan Area. The SPD includes zoning designations, development standards and permitted uses with the various districts in the Specific Plan Area. Development Standards are included in the Special Planning District Ordinance and address development types, densities, open space requirements, parking requirements, building heights, signage, and lot coverage requirements. Those Development Standards that would reduce







Source: Railyards Specific Plan, 2007.

**FIGURE 3-17**  
**Potential School, Police Station and Fire Station Sites**



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the environmental impacts of the proposed project are identified in the relevant technical sections in Chapter 6 of this Draft EIR.

### **Building Heights**

Figure 5-2 of the Specific Plan (reproduced as Figure 3-18) depicts building height restrictions in some areas of the Railyards. The street wall along 7<sup>th</sup> Street south of the realigned tracks would be limited to a height of 35 feet. After a 30-foot step back, building heights would be allowed to step up to 85 feet. Most of the area adjacent to the Central Shops and North and South Park streets would also be limited to 85 feet, with 120 feet allowed in some areas. In the Riverfront district, two building areas would allow heights up to 350- and 450-feet, respectively, over 85-foot building bases. Buildings would be limited to 35-feet as they approach the river, with no building allowed within 80-feet of the property boundary (see Figure 3-19). No building height restrictions are proposed for the remainder of the Specific Plan Area.

For a list of project approvals (e.g., development agreement, General Plan amendment), please see Chapter 1, Introduction.

### **PROJECT APPROVALS AND ENTITLEMENTS**

Following staff analysis and public review of the EIR, the Specific Plan and related entitlements may be considered for approval by the appropriate decision-making bodies as set forth in the City Code. The City actions that may be considered include, but are not limited to:

- Certification of this EIR;
- Adoption of a Mitigation Monitoring and Reporting Program (MMRP);
- Rescission of the existing onsite entitlements and adoption of the Specific Plan;
- Approval of the Special Planning District, including development standards;
- Approval of Design Guidelines;
- Approval of a Development Agreement;
- Master Tentative Map;
- Approval of a General Plan amendment;
- Approval of a Zoning Code amendment;
- Community Plan amendment;
- Financing Plan;
- Approval of a Redevelopment Plan;
- Owner Participation Agreement; and
- Approval of amendments to sections 18.36 et seq. and 18.48 et seq. of the City Code.

In addition to the approvals required from the City of Sacramento, development of the proposed project would require entitlements, approvals, and permits from other local, state, and federal agencies. Such other project approvals may include, but are not limited to the following:

- Redevelopment Agency of Sacramento;
- National Pollutant Discharge Elimination System (NPDES) permit from the RWQCB;





Source: Railyards Specific Plan, 2007.

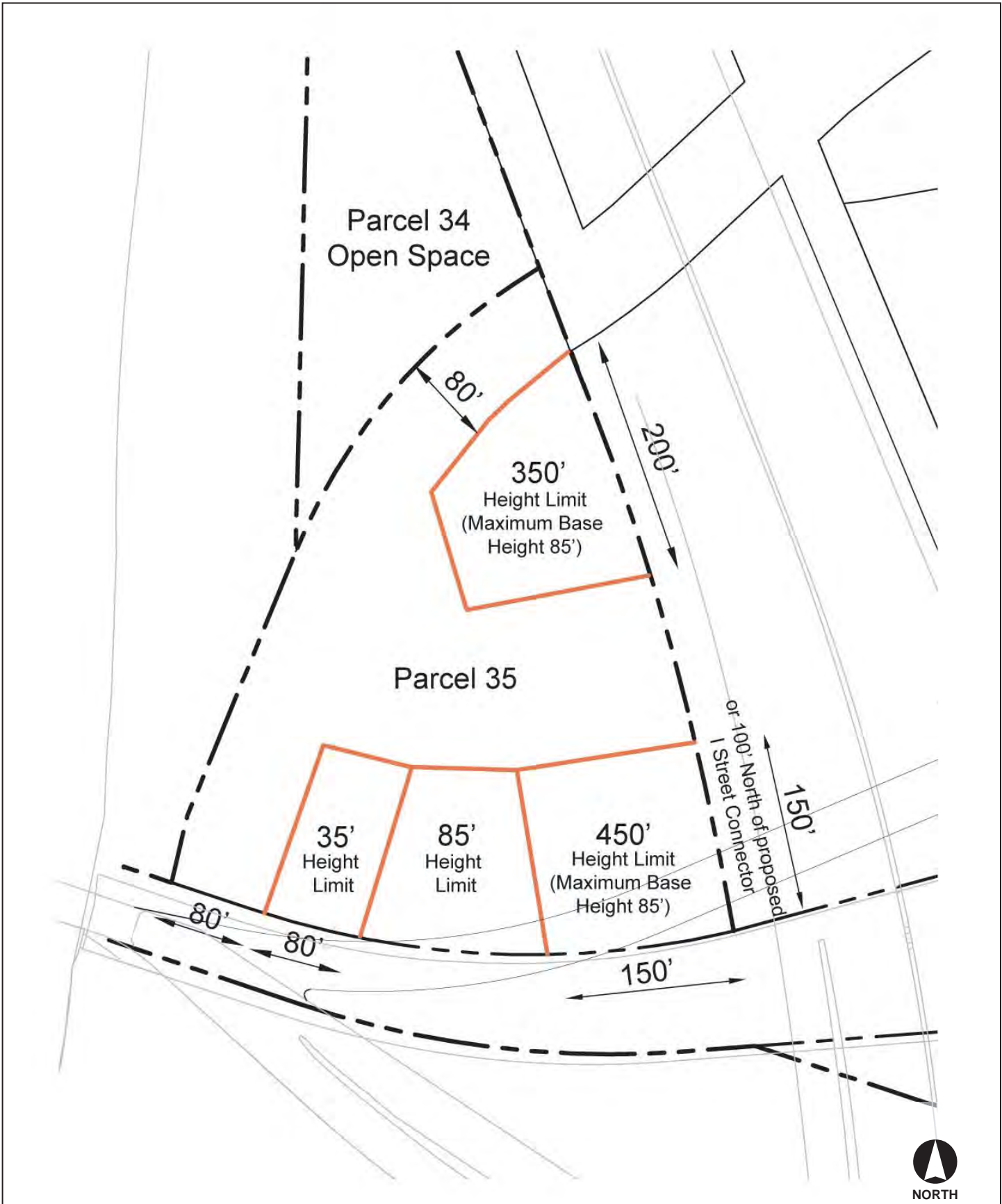


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**FIGURE 3-18**  
**Building Height Limits**

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Source: Railyards Specific Plan, 2007.



**FIGURE 3-19**  
**Riverfront District Height Diagram**

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City of Arcadia





- General Construction Permit from RWQCB;
- Department of Toxic Substances Control (DTSC) clearances;
- Sacramento Metropolitan Air Quality Management District (SMAQMD) permit to operate required for any commercial and office uses;
- Federal Transit Administration for relocation of the tracks;
- California Public Utilities Commission for relocation of the tracks;
- Potential actions by the State Lands Commission;
- Encroachment permit from the State Reclamation Board;
- Authorization under Section 404 of the Clean Water Act for construction of the Sacramento River outfall;
- Streambed Alteration Agreement from the California Department of Fish and Game for construction of the Sacramento River outfall; and
- Encroachment permits from Caltrans for construction and connection of roads to adjacent state and federal highways.

As discussed in Chapter 1, the EIR will also be used in connection with the consideration by the City of specific projects pursuant to the Specific Plan, and possibly for the later modification of such projects.



## **4.0 PLANS AND POLICIES CONSISTENCY ANALYSIS**



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## 4.0 PLANS AND POLICIES CONSISTENCY ANALYSIS

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### INTRODUCTION

This chapter of the EIR analyzes the consistency of the proposed Specific Plan with applicable plans and policies. CEQA Guidelines Section 15125(d) states that the environmental setting of an “EIR shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans.” The consistency of the proposed project with the City of Sacramento General Plan, the Central City Community Plan (CCCP), and the City’s Comprehensive Zoning Ordinance are evaluated in this chapter. Information for this chapter was obtained from adopted City plans and project plans.

A number of comments pertaining to land use were received in response to the Notice of Preparation. Some of these comments were comments on the merits or other aspects of the proposed project and did not raise environmental issues. Comments regarding land use compatibility are addressed in Section 6.7, Land Use. No comments were received regarding consistency of the proposed Specific Plan with adopted plans or policies.

### ENVIRONMENTAL SETTING

The Specific Plan Area is in the Central City of Sacramento, bounded by the industrial Richards Boulevard Redevelopment Area to the north, the Sacramento River to the west, Old Sacramento and the Central Business District to the south, and primarily residential and occasional office and industrial uses in the Alkali Flat neighborhood to the southeast (see Figure 4-1).

#### Land Use and Zoning Designations

The City of Sacramento General Plan designates the Specific Plan Area as a Special Planning District (SPD). The CCCP guides development in the Central City, including the Specific Plan Area. The CCCP designates the Specific Plan Area as Parks/Open Space, Riverfront Commercial Recreational, Central Shops Historical District, Residential Mixed-Use, Downtown Commercial Mixed-Use, Transit-Oriented Commercial Mixed-Use, Public Utilities, and Transportation/Rail Intermodal (see Figure 4-2).

The Specific Plan Area is identified as the Railyards SPD in the zoning code, and is zoned Heavy Industrial (M-2-T-SPD, M-2-SPD(C), and M-2-SPD(W)), Transportation Corridor (TC-T-SPD), Central Business District (C-3-T-SPD), and Office (OB-SPD). In addition, the following overlay zones apply to the Specific Plan Area: Residential Mixed-Use, Downtown Commercial Mixed-Use (CMUD-1), Transit-oriented Commercial Mixed-Use (CMUD-2), Central Shops (CSD), Riverfront Commercial Recreational (RCRD), Corridor/Rail Intermodal Terminal (TR), Parks and Open Space (OS), and Public Utilities (PU) (see Figure 4-3).

### REGULATORY SETTING

#### Federal

There are no applicable federal agencies, plans, or policies that oversee local planning issues.

#### State

There are no applicable State agencies, plans, or policies that oversee local planning issues.



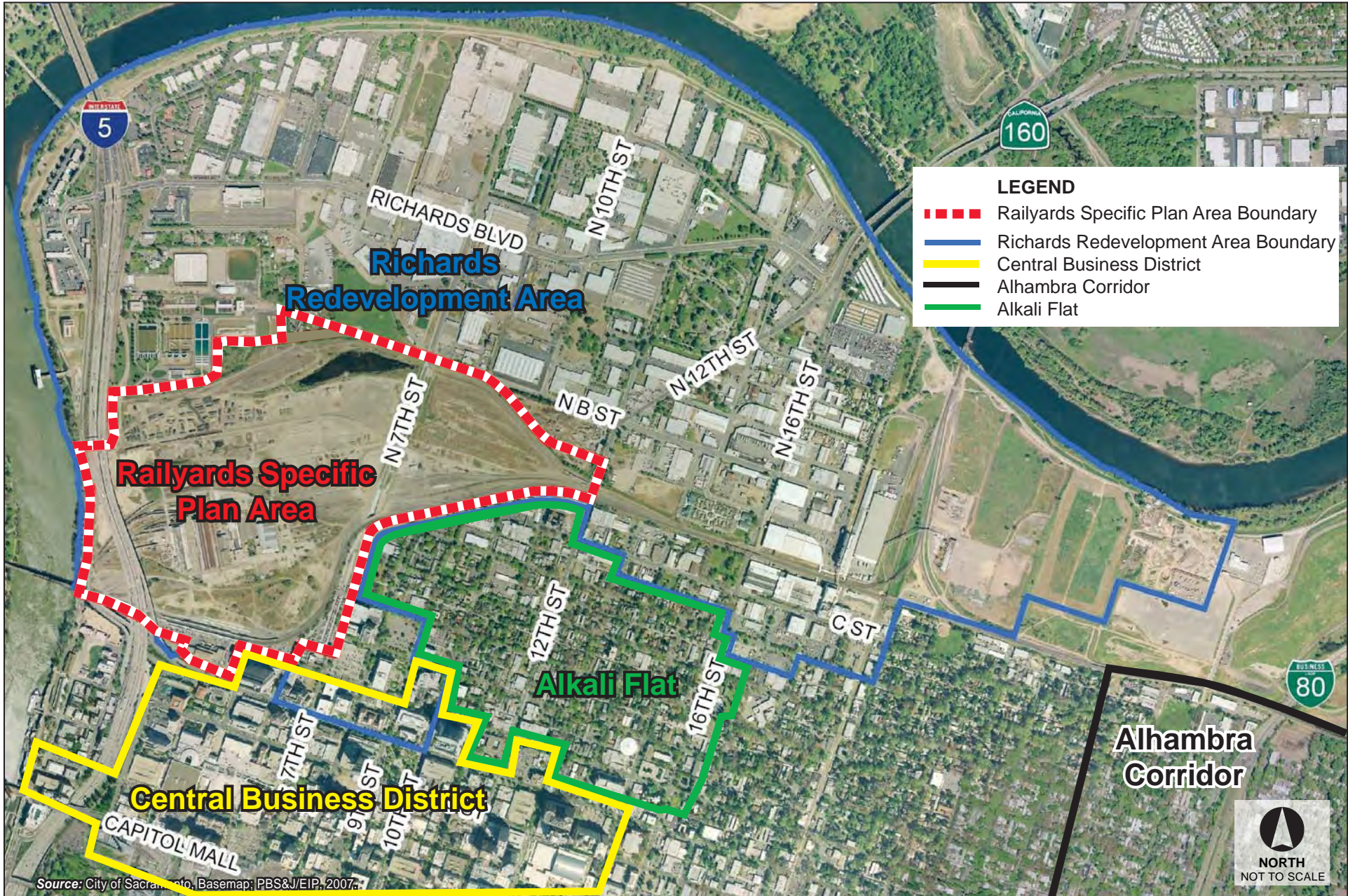


FIGURE 4-1  
Existing Land Use







- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| Transportation/Rail Intermodal        | Riverfront Commercial Recreations    |
| Transit Oriented Commercial Mixed Use | Downtown Commercial Mixed Use        |
| Residential Mixed Use District        | Central Shops Historical District    |
| Parks/Open Space                      | Railyard Specific Plan Area Boundary |
| Public Utilities                      | Highway                              |



Source: City of Sacramento, Development Services, 2006.

**FIGURE 4-2**  
**Existing General Plan/Community Plan Designations**

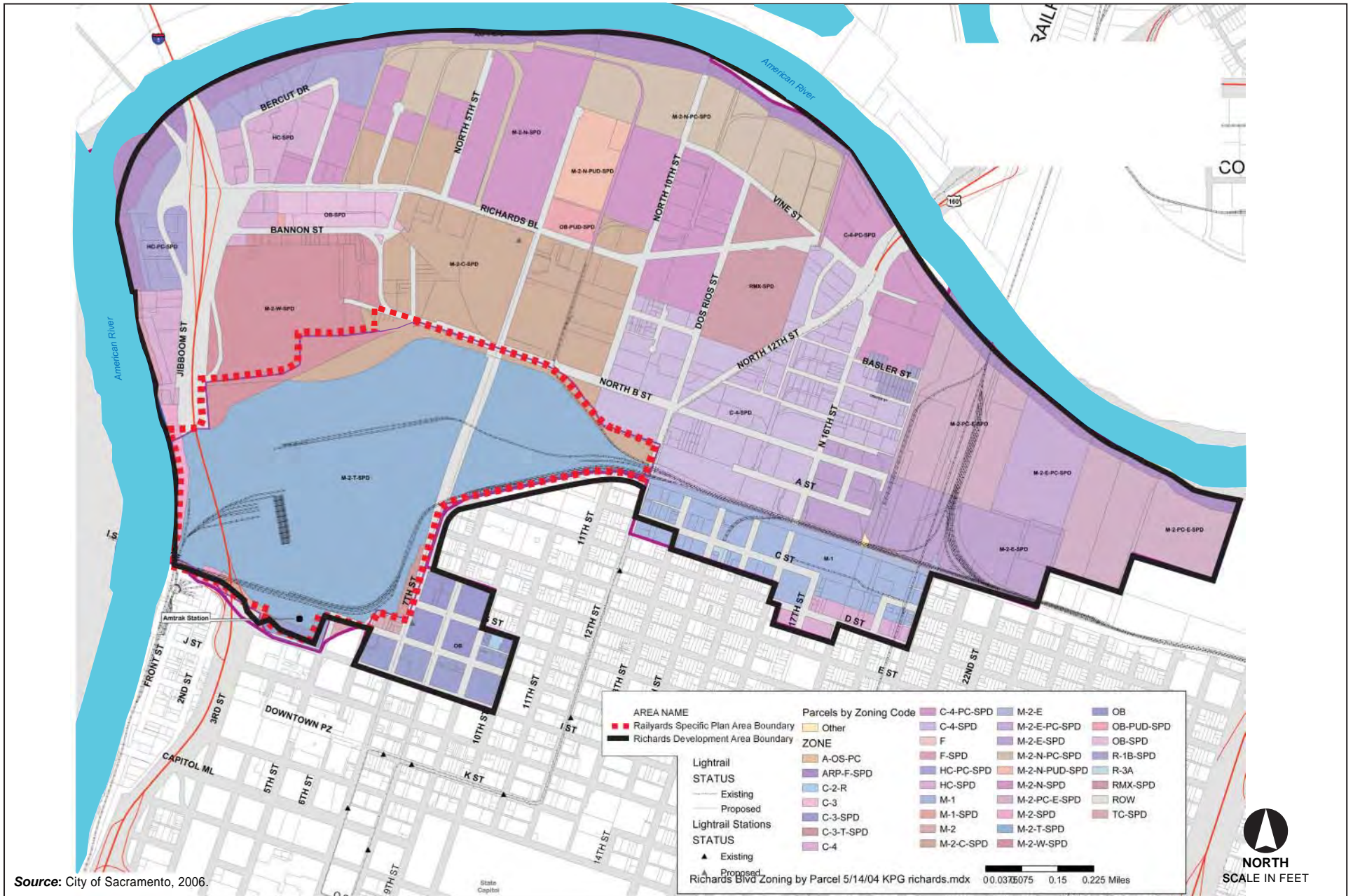
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Railyards Specific Plan EIR





Source: City of Sacramento, 2006.

**FIGURE 4-3**  
**Existing Zoning**



## Local

### City of Sacramento General Plan

The Sacramento General Plan (General Plan) was most recently updated in 1994. The General Plan is a 20-year policy guide for physical, economic, and environmental growth and renewal of the City. A total of nine elements are contained within the General Plan. Each element contains goals and policies intended to guide buildout of the City. Applicable goals and policies from the General Plan are listed in Table 4-1.

The land use designations of the General Plan define the appropriate types, densities, and function of uses for each land use designation. The General Plan land use designation for the Specific Plan Area is SPD, which is defined below:

SPD	Includes areas where an orderly transition of land uses is anticipated due to infrastructure, access, service, or marketing changes.
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The City is updating its General Plan, with completion anticipated in 2008. However, that plan is still under development and the proposed policies and land use designations have not yet been adopted.

### Central City Community Plan

The CCCP serves as a development guide for the public and private sector when planning physical improvements in the Central City area. The CCCP includes the area bounded by the Sacramento River to the west, the American River to the north, Sutter's Landing and Alhambra Boulevard to the east, and Broadway to the south. The CCCP includes text and land use diagrams that were adopted by the City of Sacramento City Council in May 1980. Since that time, the CCCP has been amended numerous times. The policies and land use designations for the Specific Plan Area were amended in 1994 with the adoption of the previous Specific Plan. The CCCP is part of the City's General Plan, and provides a refinement of the goals and objectives of the General Plan to serve as a guideline for development specifically within the CCCP area. The primary goal of the CCCP is to continue revitalization of the Central City to provide a viable living, working, shopping, and cultural environment with a full range of day and night activities for residents, employees, and visitors. The CCCP land use designations for the Specific Plan Area are Parks/Open Space, Riverfront Commercial Recreational, Central Shops Historical District, Residential Mixed-Use, Downtown Commercial Mixed-Use, Transit Oriented Commercial Mixed-Use, Public Utilities, and Transportation/Rail Intermodal. These uses are defined below. Applicable policies from the CCCP are listed in Table 4-2.

- Parks/Open Space: Intended for public recreational purposes, and permits community centers, interpretive centers, cultural, and educational facilities.
- Riverfront Commercial Recreational: Intended for cultural, commercial-recreational, retail, and entertainment uses to enhance the riverfront environment.
- Central Shops Historical District: Primarily provides for the preservation, rehabilitation, reconstruction, and reuse of the historic Central Shops for cultural, commercial-recreational, and retail uses.
- Residential Mixed-Use: Intended for medium to high-density multi-family housing with supporting commercial uses that contribute to an active day and nighttime environment.
- Downtown Commercial Mixed-Use: Intended to provide an area for the expansion of the existing commercial and administrative uses to reinforce the downtown core as a major employment center. Intended for intense office, retail, commercial, and high-density residential use.

<b>TABLE 4-1</b>	
<b>CITY OF SACRAMENTO GENERAL PLAN—GOALS AND POLICIES</b>	
<b>Applicable General Plan Goal/Policy</b>	<b>Project Consistency Discussion</b>
<b>Overall Urban Growth Policies</b>	
<b>Policy 2.</b> It is the policy of the City that adequate housing opportunities be provided for all income households and that projected housing needs are accommodated.	<b>Consistent.</b> The proposed project would provide more than 10,000 housing units, in an area that currently provides no housing opportunities. Residential densities would vary from 10 to 310 units per acre. In addition, the proposed goals and policies encourage a variety of housing and long-term affordability of low and moderate-income housing (Goal GO-1, Goal HO-2).
<b>Policy 3.</b> It is the policy of the City to actively promote the continued vitality and diversification of the local economy, and to expand employment opportunities for City residents.	<b>Consistent.</b> The proposed project includes more than four million square feet (msf) of new retail and office uses. The addition of this space will provide new employment opportunities.
<b>Policy 3A.</b> It is the policy of the City to provide continued support of private and public efforts that promote the Central City's role as the region's commercial office, employment and cultural center; and at the same time provide close-by housing within identifiable residential neighborhoods.	<b>Consistent.</b> The proposed project is designed to create a mixed-use community that includes cultural, entertainment, residential, office, and retail uses. With its location adjacent to the Central Business District, the proposed project would promote the Central City as the regional center for these activities and uses.
<b>Policy 5.</b> It is the policy of the City to promote infill development, rehabilitation, and reuse that contributes positively to the surrounding area and assists in meeting neighborhood and other City goals, including the following: a. neighborhood conservation and enhancement b. redevelopment/blight abatement c. economic development, particularly neighborhood serving retail, office, and employment d. historic preservation e. provision of a range of housing types within communities and neighborhoods, including opportunities for owner-occupied and move-up housing f. development supportive of transit and other alternative modes of transportation g. trip reduction and air quality improvement h. environmental improvement i. compatibility with existing neighborhood and commercial areas	<b>Consistent.</b> Redevelopment of the proposed project represents a large infill development within the Central City, and achieves the goals of General Plan Policy 5. The proposed project would redevelop the Specific Plan Area with a mix of uses, including retail, office, and a range of residential uses. The proposed project will include the future Sacramento Intermodal Transit Facility (SITF) and the type and intensity of uses supportive of transit. A key principle of the proposed project is to preserve the historical and cultural resources of the area. The proposed project would create the Central Shops District to highlight the area's history and resources.
<b>Residential Goals and Policies</b>	
<b>Goal A.</b> Maintain and improve the quality and character of residential neighborhoods in the City.	<b>Consistent.</b> Although there are no existing residential neighborhoods within the Specific Plan Area, the proposed project would maintain the character of the adjacent Alkali Flat residential neighborhood through scaling and massing techniques.
<b>Policy A.6.</b> Prohibit the intrusion of incompatible uses into residential neighborhoods through adequate buffers, screening and zoning practices that do not preclude pedestrian access to arterials that may serve as transit corridors.	<b>Consistent.</b> As described in Section 6.7, the proposed project would not result in an incompatible use with the Alkali Flat residential neighborhood. In addition, Specific Plan Policy CC-2.3 requires an appropriate scale transition to the Alkali Flat neighborhood.
<b>Goal B.</b> Provide affordable housing for all income groups.	<b>Consistent.</b> The proposed project would provide a range of housing types, including long-term opportunities for low and moderate-income groups.
<b>Goal C.</b> Meet the fair share regional housing needs for all economic segments within the City.	<b>Consistent.</b> The proposed project includes more than 10,000 residential units, providing a significant portion of the regional housing needs for a variety of income groups.
<b>Commerce and Industry Land Use Goals and Policies</b>	
<b>Goal A.</b> Maintain and enhance downtown's role as regional office, retail, and employment center, with special emphasis given to promoting visitor service and cultural/entertainment uses.	<b>Consistent.</b> Conformance with the implementing policies, as discussed below, would result in consistency with this goal.

**TABLE 4-1**

**CITY OF SACRAMENTO GENERAL PLAN—GOALS AND POLICIES**

Applicable General Plan Goal/Policy	Project Consistency Discussion
<b>Policy 1.</b> Provide incentives for regional commercial and office development projects locating within the downtown area.	<b>Consistent.</b> The proposed project would provide significant new commercial and office space in the Central City, directly adjacent to the Central Business District.
<b>Policy 2.</b> Actively support the development of cultural and entertainment facilities and events in the downtown area.	<b>Consistent.</b> The proposed project would include cultural and entertainment uses in the downtown area, including the historic Central Shops District and the West End District, which could include a new sports and entertainment facility.
<b>Policy 3.</b> Actively support efforts to develop visitor and convention facilities in the downtown area.	<b>Consistent.</b> The proposed project would include a new sports and entertainment facility overlay, which could draw visitors from the greater Sacramento region to the downtown area. The proposed project would also provide supporting visitor services, including hotels.
<b>Goal B.</b> Promote the re-use and revitalization of existing developed areas, with special emphasis on commercial and industrial districts.	<b>Consistent.</b> The proposed project would redevelop the 244-acre Specific Plan Area, previously used by UP.
<b>Goal C.</b> Promote new employment opportunities, particularly for the under-employed and economically disadvantaged.	<b>Consistent.</b> The proposed project would include more than 4 msf of commercial and office use providing space for businesses that would employ up to 15,200 people. Future businesses in the Specific Plan Area would provide a range of employment opportunities. A key principle of the Specific Plan Area is to reinforce the downtown as a major employer.
<b>Goal D.</b> Promote economic vitality and diversification of the local economy.	<b>Consistent.</b> The proposed project would promote economic vitality by providing a mix of consumers and retailers, including specialty interests such as sports and entertainment and historic resources.
<b>Housing Goals and Policies</b>	
<b>Policy 1.E.</b> The City shall continue to promote appropriate and compatible infill housing.	<b>Consistent.</b> The proposed project would provide infill housing compatible with the existing and planned adjacent uses, as described in Section 6.7.
<b>Policy 1.F.</b> The City shall continue to develop and support transit oriented residential development along transit corridors.	<b>Consistent.</b> The proposed project would introduce more than 10,000 residential units in a transit-oriented development. The Specific Plan Area is centered around transit corridors, including the 7 <sup>th</sup> Street light rail line and the SITF.
<b>Policy 3.B.</b> The City shall encourage the development of a variety of housing styles and lot sizes to accommodate residents who wish to "move-up" within their community plan area.	<b>Consistent.</b> Residential densities in the Specific Plan Area would vary from 10 to 310 units per acre. In addition, the proposed goals and policies encourage a variety of housing styles and sizes and long-term affordability of low and moderate-income housing
<b>Policy 5.B.</b> The City shall continue to work with neighborhood residents in ensuring that all our neighborhoods are safe, decent and pleasant places to live and work. This includes working with schools, community oriented policing, addressing problem properties, and ensuring new development is compatible with existing neighborhoods.	<b>Consistent.</b> A key principle of the proposed project is to reinforce the downtown as a place to live. As such, the proposed project includes policies to provide adequate community services. In addition, the uses allowed in the proposed Specific Plan would be consistent with the adjacent Alkali Flat neighborhood (see Section 6.7) and would provide additional connectivity between the Alkali Flat neighborhood, the Specific Plan Area, and the Richards Boulevard Area.
<b>Policy 5.D.</b> Promote quality residential infill development in infill areas or designated infill sites through flexible development standards.	<b>Consistent.</b> The infill residential development proposed in the Specific Plan Area would be guided by development standards to ensure high-quality design.
<b>Policy 8.A.</b> Wherever possible, develop, incorporate and support energy conserving programs in the production and rehabilitation of housing to improve the environment and reduce household energy costs.	<b>Consistent.</b> All housing built in the Specific Plan Area would be in compliance with Title 24 (California Energy Efficiency Standards). Development of the proposed project would provide an opportunity to use innovative energy systems such as combined heating and power, solar panels, and other building design measures which would provide significant energy savings. At this stage, however, it is unknown what energy conserving measures would be implemented. It is the goal of the proposed project to implement energy conserving measures wherever feasible.

TABLE 4-1

CITY OF SACRAMENTO GENERAL PLAN—GOALS AND POLICIES

Applicable General Plan Goal/Policy	Project Consistency Discussion
<b>Circulation Goals and Policies</b>	
<p><b>Goal B.</b> Provide all citizens in all communities of the City with access to a transportation network which serves both the City and region, either by personal vehicle or transit. Make a special effort to maximize alternatives to single occupant vehicle use, such as public transit.</p>	<p><b>Consistent.</b> The proposed project would include the proposed SITF, which is intended to facilitate local and regional transit usage. In addition, the plan designates a mix of uses to create a walkable community. The proposed pedestrian and bicycle circulation features would encourage alternative transit. The East End would include a linear park running east-west through the district, providing a dynamic linear pedestrian connection throughout the neighborhood and to other districts. The Central Shops would include a network of pedestrian paths and alleyways, and the removal of parts of Jibboom Street would improve walkability along the riverfront. The removal of Jibboom Street could hinder traffic flow from Sacramento to West Sacramento, but alternative routes would be available. Bicycle use would be encouraged via on-street bikeways along Railyards Boulevard, 6<sup>th</sup> Street, and 7<sup>th</sup> Street; off-street bikeways through the East End District to the Central Shops, the West End, and the Depot Districts; and a bike path along the berm at the northern boundary of the Specific Plan Area. See Figure 3-8.</p>
<p><b>Streets and Roads Goal C.</b> Create and maintain a street system which protects residential neighborhoods from unnecessary levels of traffic.</p>	<p><b>Consistent.</b> The proposed project provides building densities and a circulatory plan that encourage walkability and live/work environments, which would reduce potential project generated trips and take traffic off of residential streets. The Dowling Associates evaluation of the anticipated proposed project trip generation and intersection impacts were performed using the current General Plan traffic impact threshold of LOS C. The evaluation determined that the proposed project would trigger significant and unavoidable traffic impacts at existing and proposed intersections within the vicinity of the Specific Plan Area. However, the Specific Plan Area is located within an urban context that consists primarily of mixed use, retail, and office uses. The intersections that would be impacted by increased traffic levels are not located in residential communities and neighborhoods and are primarily collector roads.</p>
<p><b>Policy C.1.</b> Continue wherever possible to design streets and to approve development applications in such a manner as to eliminate high traffic flows and parking problems within residential neighborhoods.</p>	<p><b>Consistent.</b> As mentioned above, the proposed project provides a street design that concentrates trips on collectors that do not encroach upon residential densities. The proposed project would also provide alternative forms of transportation such as transit facilities, walkways, and bikeways which would remove additional trips off of existing and proposed roadways and intersections.</p>
<p><b>Goal D.</b> Work towards achieving an overall Level of Service C on the City's local and major street systems.</p>	<p><b>Not Consistent.</b> The proposed project would result in 32 intersections with LOS D, E, and F. Seven roadway segments would have LOS D or worse. Mitigation measures have been identified that would maximize the opportunity to achieve an overall Level of Service C in the City. Failure of individual intersections or street segments in the downtown area to maintain LOS C during the AM or PM peak periods does not create an inconsistency with this overall citywide goal.</p>
<p><b>Policy 1.</b> Assess the impacts of land use decisions on the surrounding City street system.</p>	<p><b>Consistent.</b> This EIR discloses potential effects on the City street system that would result from implementation of the proposed project.</p>
<p><b>Central City Transportation Goal C.</b> Develop a balanced transportation system which will encourage the use of public transit, multiple occupancy of the private automobile, and other forms of transportation.</p>	<p><b>Consistent.</b> As stated previously, the proposed project includes an area designated for the proposed SITF and would encourage a number of transit alternatives by design of the proposed project, including light rail, walking, and biking.</p>
<p><b>Policy 1.</b> Encourage the use of light rail transit and other alternative methods of transportation to facilitate the circulation in the downtown core, through the Specific Plan Area and the Richards Boulevard Area.</p>	<p><b>Consistent.</b> Consistent with this policy, the proposed project includes plans for the proposed SITF and light rail extension to the Richards Boulevard Area and Natomas to the north. The Specific Plan Area would also increase pedestrian and bicycle connections between the Richards Boulevard Area, the Specific Plan Area, and downtown. Bike paths along 6<sup>th</sup> Street and 7<sup>th</sup> Street would provide north-south connections from the Richards Boulevard Area to downtown. Proposed paths on Railyards Boulevard, F Street, and G Street would facilitate access from the Specific Plan Area to the east.</p>



TABLE 4-1

## CITY OF SACRAMENTO GENERAL PLAN—GOALS AND POLICIES

Applicable General Plan Goal/Policy	Project Consistency Discussion
<b>Central City Transportation Goal D.</b> Provide an adequate amount of parking to support continued downtown development prosperity, alternative modes of transportation, and the Central City Urban Design Plan.	<b>Consistent.</b> The proposed project would provide a minimum of 21,508 parking spaces, including 1,028 spaces in the Depot District dedicated for transit users. The parking ratios proposed in the Specific Plan establish minimum parking capacity, encourage parking facilities that will optimize efficient use of parking facilities, and promote alternate modes of transportation. These ratios acknowledge that additional parking may be provided to provide optimum parking within the Specific Plan Area.
<b>Policy 1.</b> Provide additional parking as part of development projects and in free standing parking structures.	<b>Consistent.</b> The proposed project would include a minimum of 21,508 off-street parking spaces. These spaces would be accommodated in above-ground parking facilities and limited below-ground parking.
<b>Central City Transportation Goal E.</b> Create a multi-modal transportation center in the Central City.	<b>Consistent.</b> The proposed project fulfills Central City Transportation Goal E by accommodating the future SITF in the Depot District. The SITF would ultimately bring together Amtrak, the Capitol Corridor and the San Joaquin Corridor intercity rail services, intercity bus service, Regional Transit, and other local fixed route bus services, regional bus, and local shuttle services.
<b>Policy 1.</b> Support the development of a regional intermodal transportation center in the Richards Boulevard Redevelopment Area.	<b>Not Consistent.</b> The proposed project would relocate the City's designation for the regional intermodal transportation center from the intersection of 7 <sup>th</sup> Street and North B Street (at the border of the Specific Plan Area and the Richards Boulevard Area) to the Depot District, near the intersection of I Street and 5 <sup>th</sup> Street. This is currently the City's preferred location for the location of the SITF. Approval of the project would amend this policy.
<b>Parking Goal A.</b> Provide adequate off-street parking for new development and reduce the impact of on-street parking in established areas.	<b>Consistent.</b> The Specific Plan would provide for a minimum of 21,508 off-street parking spaces. Those parking spaces would be provided in the Specific Plan Area to accommodate residents and visitors of the Specific Plan Area. Additional on-street parking would be provided in the form of parking lanes as well.
<b>Policy 1.</b> Continue to use parking standards which will provide adequate off-street parking.	<b>Consistent.</b> The proposed project would provide a minimum of 21,508 off-street parking spaces. Additional on-street parking would be provided in the form of parking lanes as well. Provision of these parking spaces is consistent with the standards set forth under the City's Zoning Code Section 17.640.020.
<b>Pedestrian ways Goal A.</b> Increase the use of the pedestrian mode as a mode of choice for all areas of the city.	<b>Consistent.</b> The proposed project includes a number of policies supportive of pedestrian activity, including encouraging public-oriented ground level uses, enhanced pedestrian pathways, and connections to the downtown area (Policies CC-1.3, C-5.1, and C-5.2). As described above, the proposed project would provide a linear park running east-west through the district, providing a dynamic linear pedestrian connection throughout the neighborhood and to other districts. The Central Shops would include a network of pedestrian paths and alleyways, and the removal of parts of Jibboom Street and creation of a pedestrian/bicycle path would improve walkability along the Sacramento riverfront.
<b>Policy 1.</b> Require new subdivisions and planned unit developments to have safe pedestrian walkways that provide direct links between streets and major destinations such as bus stops, schools, parks, and shopping centers.	<b>Consistent.</b> The proposed project would create pedestrian connections to downtown, the Alkali Flat neighborhood, the Sacramento River, the River District, and within the Specific Plan Area. Streetscape designs would encourage pedestrian activity and safety via relatively narrow street widths, street trees, and broad sidewalks.

<b>TABLE 4-1</b>	
<b>CITY OF SACRAMENTO GENERAL PLAN—GOALS AND POLICIES</b>	
<b>Applicable General Plan Goal/Policy</b>	<b>Project Consistency Discussion</b>
<p><b>Policy 3.</b> Encourage existing and new commercial and office establishments to develop and enhance pedestrian pathways using planting, trees and creating pedestrian crosswalks through parking areas or over major barriers such as freeways or canals.</p>	<p><b>Consistent.</b> The proposed project would promote the use of landscaping, trees, and art in public places to enhance pedestrian walkways and includes a network of plazas and open spaces. The project proposes pedestrian/bicycle crossing structures to cross major barriers in the Specific Plan Area, including the rail line. A separated bike path would cross the rail line at the 7<sup>th</sup> Street underpass, and a bike path integrated in the street would provide another rail line crossing at 6<sup>th</sup> Street. Pedestrian crossings of the rail line would be provided at 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> streets. A dedicated pedestrian/bike path would cross I-5 on 5<sup>th</sup> Street, and street access would be provided on Railyards Boulevard, connecting pedestrians and bicyclists to the riverfront.</p>
<p><b>Bikeways Policy 17.</b> To provide bicycle-transit facilities in new and existing pedestrian and transit friendly developments. (Vol-1 Sec 14 pg 2 BWMP)</p>	<p><b>Consistent.</b> A network of on- and off-street bicycle paths, including Class I and II facilities, would extend across the site in several locations (see details above). In addition, the proposed project would provide bicycle parking near all residential buildings and commercial areas.</p>
<b>Conservation and Open Space Goals and Policies</b>	
<p><b>Outdoor Recreation Goal A.</b> Conserve and protect the Sacramento and American Rivers, their shorelines and parkways.</p>	<p><b>Consistent.</b> The proposed project designates the portion of the Specific Plan Area adjacent to the Sacramento River as open space, intended to protect and enhance the City's connection to the river.</p>
<b>Health and Safety Goals and Policies</b>	
<p><b>Noise Policy A.1.</b> Require an acoustical report for any project, which would be exposed to noise levels in excess of those shown as normally acceptable in Figure 3. The contents of the acoustical report shall be described in the Noise Assessment Report Guidelines. No acoustical report shall be required where City staff has an existing acoustical report on file, which is applicable.</p>	<p><b>Consistent.</b> An acoustical analysis was prepared as part of this EIR. The analysis identifies noise levels resulting from construction and operation of the proposed project.</p>
<p><b>Noise Policy A.2.</b> Require mitigation measures to reduce noise exposure to the "Normally Acceptable Levels" (Figure 3) except where such measures are not feasible.</p>	<p><b>Consistent.</b> The proposed project includes mitigation measures to reduce noise exposure levels to the Normally Acceptable Levels, where feasible.</p>
<p><b>Noise Goal B.</b> Reduce noise exposure around airports to the maximum acceptable exterior noise levels set forth in Table 1 or to the "normally acceptable" exterior levels described in Figure 3 depending upon the land use.</p>	<p><b>Consistent.</b> The Specific Plan Area is not near an airport.</p>
<b>Preservation Goals and Policies</b>	
<p><b>Goal A.</b> To maintain a comprehensive, citywide preservation program.</p>	<p><b>Consistent.</b> See implementing policy below.</p>
<p><b>Policy A.1.</b> The City shall promote the recognition, preservation, and enhancement of historic and cultural resources throughout the city.</p>	<p><b>Consistent.</b> The proposed project would preserve the historic buildings in the Specific Plan Area the Central Shops would be part of a Historic District. The shops and Depot could be reused but all alterations would comply with the City's Preservation Ordinance and Secretary of Interior Standards.</p>
<p><b>Goal B.</b> To protect and preserve important historic and cultural resources that serve as significant, visible reminders of the city's social and architectural history.</p>	<p><b>Consistent.</b> See discussion of Policy A.1.</p>
<p><b>Policy B.2.</b> The City shall review new development, alterations, and rehabilitation/remodels in design review areas, preservation areas, and other areas of historic resources for compatibility with the surrounding historic context.</p>	<p><b>Consistent.</b> Adaptive reuse of the individual proposed buildings within the Specific Plan Area would be subject to the City's Preservation Ordinance and Secretary of Interior Standards, which would ensure consistency.</p>

**TABLE 4-1**

**CITY OF SACRAMENTO GENERAL PLAN—GOALS AND POLICIES**

<b>Applicable General Plan Goal/Policy</b>	<b>Project Consistency Discussion</b>
<p><b>Policy B.8.</b> The City shall regard demolition of historic resources as a last resort, to be permitted only after the City determines that the resource retains no reasonable economic use, that demolition is necessary to protect health, safety, and welfare, or that demolition is necessary to proceed with a new project where the benefits of the new project outweigh the loss of the historic resource.</p>	<p><b>Consistent.</b> The proposed Specific Plan would not cause the demolition of any designated historic resources. If any change to historically significant structures would occur, implementation of Design Guidelines and compliance with the City's Preservation Ordinance would ensure protection of historic resources.</p>
<p><b>Goal E.</b> To identify and protect archaeological resources that enrich our understanding of the early Sacramento area.</p>	<p><b>Consistent.</b> See the implementing policy below.</p>
<p><b>Policy E.3.</b> The City shall not knowingly approve any public or private project that may adversely affect an archaeological site without first consulting the North Central Information Center of the California Historical Resources Information System, requiring a site evaluation as may be indicated, and attempting to mitigate any adverse impacts according to the recommendations of a qualified archaeologist. City implementation of this policy shall be guided by Section 15064.5 of the CEQA Guidelines (March 1999) or relevant sections as amended. To this end, the City shall require that upon discovery of archaeological resources during excavation or construction, all construction affecting the site shall cease and the contractor shall contact the City Preservation Office or City Environmental Coordinator.</p>	<p><b>Consistent.</b> Compliance with the mitigation measures identified in this EIR would result in consistency with this policy. As described in Section 6.3, the developments within the proposed Specific Plan Area would be required to implement mitigation measures to ensure protection of any potential archaeological resources.</p>
<p><b>Goal F.</b> To provide incentives to encourage owners of historic properties to preserve and rehabilitate their properties.</p>	<p><b>Consistent.</b> See implementing policy below.</p>
<p><b>Policy F.4.</b> The City shall encourage the adaptive reuse of historic resources where appropriate.</p>	<p><b>Consistent.</b> The proposed project would result in the adaptive reuse of the historic Central Shops buildings.</p>

<b>TABLE 4-2</b>	
<b>CENTRAL CITY COMMUNITY PLAN—GOALS AND POLICIES</b>	
<b>Applicable General Plan Goal/Policy</b>	<b>Project Consistency Discussion</b>
<b>Primary Goal.</b> The primary goal of the Specific Plan Area is to continue revitalization of the Sacramento Central City area as a viable living, working, shopping and cultural environment with a full range of day and night activities.	<b>Consistent.</b> An objective of the proposed project is to create a dynamic 24-hour urban village, which includes over 10,000 residential units, and commercial, retail, and entertainment uses adjacent to the existing Central City.
<b>Housing and Residential Goal.</b> Provide adequate housing for all residents of the Central City at all socio-economic levels, and in particular provide the opportunity for low and moderate income persons to reside within the Central City. And further, provide a choice of housing types by developing new housing and conserving existing housing.	<b>Consistent.</b> The proposed project would provide more than 10,000 housing units, in an area that currently provides no housing opportunities. Residential densities would vary from 10 to 310 units per acre. In addition, the proposed goals and policies encourage a variety of housing and long-term affordability of low and moderate-income housing (Goal GO-1, Goal HO-2).
<b>Sub-Goal 1.</b> Provide the opportunity for developing viable and livable high density planned residential complexes of various scales within designated areas to meet present and future housing needs.	<b>Consistent.</b> As described above, the proposed project includes over 10,000 residential units, many at high-densities.
<b>Sub-Goal 2.</b> Provide the opportunity for mixture of housing with other uses in the same building or site at selected locations to capitalize on the advantages of close-in living.	<b>Consistent.</b> The Retail/Residential Mixed-Use and Office/Residential Mixed-Use areas would allow housing mixed with a variety of uses within the same building and area.
<b>Sub-Goal 5.</b> Provide rental and homeownership opportunities to meet the needs of elderly persons, low and moderate income families, and other groups with specialized housing needs.	<b>Consistent.</b> Residential densities in the Specific Plan Area would range from 10 to 310 units per acre. In addition, the proposed goals and policies encourage a variety of housing types and long-term affordability of low and moderate-income housing (Goal GO-1, Goal HO-2). The type of housing proposed could serve the elderly, low income, or those with other specialized housing needs.
<b>Sub-Goal 8.</b> Create more identifiable neighborhood units which have clear boundaries and a nucleus for activities.	<b>Consistent.</b> The proposed project would divide the 244-acre Specific Plan Area into six distinct districts. Each district would have a neighborhood feel and identifiable character. The largest residential district, the East End District, would be centered on a proposed a linear park running east-west through the district, providing a dynamic linear pedestrian connection and open space area. .
<b>Commercial Goal.</b> Provide for a range of commercial activities which meet the needs of the residents, employees and visitors to the Central City.	<b>Consistent.</b> The proposed project would include more than four msf of commercial and office space. This would permit a mix of commercial activities, including specialty interests such as sports and entertainment and historic areas. Supporting commercial uses would be permitted in the residential/retail mixed use and office/residential mixed use areas. In addition, the proposed project would permit neighborhood-serving businesses and services, primarily on ground floors and in corner shops, in the residential East End.
<b>Sub-Goal 2.</b> Encourage mixed land uses including high density residential uses in and around the Central Business District in order to increase the economic viability and livability of the area.	<b>Consistent.</b> The proposed project would be a high-density, mixed-use project directly adjacent to the Central Business District. The proposed project would increase economic and housing opportunities in the area.
<b>Sub-Goal 4.</b> Continue to provide cultural and entertainment activities in the Central City so as to increase usage of the Central Business District.	<b>Consistent.</b> The proposed project would include a designated Central Shops District, which would feature the Railyards history and culture.
<b>Sub-Goal 9.</b> Encourage the development of transitional land use areas with land uses compatible with adjacent developments.	<b>Compatible.</b> As described in Section 6.7, the proposed project would be compatible with existing and planned adjacent land uses. In addition, Specific Plan Goal CC-2 requires appropriate building heights and scale transitions to surrounding areas.
<b>Office Goal.</b> Provide the opportunity for office development in appropriate areas of the Central City, placing emphasis for development in and around the Central Business District.	<b>Consistent.</b> The proposed project would provide a maximum of approximately 2.8 msf of office space, if the 0.5 msf of mixed-use space is developed as office space, in an area adjacent to the Central Business District.

TABLE 4-2

## CENTRAL CITY COMMUNITY PLAN—GOALS AND POLICIES

Applicable General Plan Goal/Policy	Project Consistency Discussion
<b>Sub-Goal 1.</b> Encourage public and private office development, where compatible with the adjacent land uses and circulation system, in the Central Business District, Southern Pacific Railyards and Richards Boulevard Area.	<b>Consistent.</b> The project proposes office development. As described in Section 6.7 and Section 6.12, the development would be compatible with the adjacent uses and circulation system. Office uses would also be located near transit corridors and the SITF.
<b>Transportation Goal.</b> Encourage the development of an overall balanced system of transportation which emphasizes public transit, protects residential neighborhoods, promotes alternatives to the single occupant automobile commuter; and which provides for safe, convenient and efficient movement of people and goods in the Central City.	<b>Consistent.</b> The proposed project includes an area designated for a new SITF, and would encourage a number of transit alternatives in the Specific Plan Area, including light rail, walking, and biking.
<b>Sub-Goal 4.</b> Provide adequate off-street parking to meet the needs of shoppers, visitors and residents.	<b>Consistent.</b> The proposed project would provide up to 21,508 off-street parking spaces and additional on-street parking. These spaces would be used by residents and visitors of the Specific Plan Area.
<b>Sub-Goal 5.</b> Restrain the projected increase in parking spaces needed for long-term employee parking by promoting public transit improvements, carpool programs, employer sponsored bus passes and other alternatives to the single occupant car usage.	<b>Consistent.</b> Compliance with the mitigation measure identified in this EIR will result in consistency with this sub-goal. As described in Section 6.3, the proposed project would be required to implement mitigation measures designed to designate right-of-way for a light rail line, help fund improvements to bus and light rail services, provide designated bike routes, and construct pedestrian trails throughout the Specific Plan Area.
<b>Community Services and Facilities Goal.</b> Provide adequate community services and facilities within convenient access to serve the general and specialized needs of all residents.	<b>Consistent.</b> The proposed project would provide public open spaces, and would provide locations for an urban school and a combined police and fire station.
<b>Parks and Recreation Goal.</b> Provide adequate parks and recreation facilities and services within convenient access of Central City residents.	<b>Consistent.</b> The proposed project would not provide the type and amount of park space and recreation facilities typical for suburban areas, but would provide amenities that are limited in the Central City. The proposed project would not achieve the City's Service Level Goal for park provision. However, the proposed project would include open spaces, public plazas, parks, and facilities intended to preserve the urban characteristics of the City. The proposed project would also be located near existing Central City parks, open space, and plazas, thereby providing convenient access of parks and recreation amenities to Central City residents.
<b>Environmental Goal.</b> Improve the physical quality of the environment for Central City residents, shoppers, employees and visitors.	<b>Consistent.</b> The proposed project would renovate and reuse an area of the Central City that is currently inaccessible to residents and visitors. In addition, the Specific Plan would provide for a number of resident and visitor amenities, including the resort center and historic attractions. The proposed project would also provide new access to the Sacramento riverfront.
<b>Sub-Goal 1.</b> Provide an environment which is free of annoying noise, hazardous materials and continue to reduce air pollution.	<b>Consistent.</b> As described in Sections 6.1, 6.5, and 6.8 of this EIR, the proposed project would be required to adhere to existing regulations for the emission of noise, hazardous materials, and air pollutants. The provision of alternative modes of transportation would also reduce vehicular noise and production of air contaminants.
<b>Sub-Goal 5.</b> Support programs for the preservation of historically and architecturally significant structures which are important to the unique character of the Central City.	<b>Consistent.</b> The proposed project would preserve and reuse onsite historic resources, including the Central Shops and the historic rail Depot.
<b>Sub-Goal 9.</b> Protect and enhance the unique visual features such as entrances into the Central City, attractive arterials, notable landmarks, and access to views of the rivers.	<b>Consistent.</b> The Railyards site was integral to the City's development for the last 150 years. The project would enhance access to the historic Central Shops buildings, some of the oldest and most historic in Sacramento and the western US. In addition, the project would provide improved access to about 3.4 acres of open space along the Sacramento River.

<b>TABLE 4-2</b>	
<b>CENTRAL CITY COMMUNITY PLAN—GOALS AND POLICIES</b>	
<b>Applicable General Plan Goal/Policy</b>	<b>Project Consistency Discussion</b>
<b>Sub-Goal 10.</b> Ensure that property contaminated by hazardous substances is remediated to the extent necessary to protect the health and safety of all possible site users and users of adjacent sites, consistent with applicable laws and regulations.	<b>Consistent.</b> Redevelopment of the Specific Plan Area would facilitate continued remediation of the site, resulting in clean-up to levels consistent with active reuse of the site. This EIR addresses remediation of the existing contamination in Section 6.5.
<b>Energy Goal.</b> Encourage the efficient use of energy and natural resources in the Central City.	<b>Consistent.</b> All facilities that would be built in the Specific Plan Area would be in compliance with Title 24 (California Energy Efficiency Standards). Development of the Specific Plan Area would provide an opportunity to use innovative energy systems such as combined heating and power, which would provide significant energy savings. At this stage, however, it is unknown what energy conserving measures would be implemented. It is the goal of the proposed project to implement energy conserving measures wherever feasible. In addition, the proposed project would encourage the use of alternative modes of transportation by creating a walkable, transit-friendly community. This would reduce use of natural resources, particularly fuel.
<b>Sub-Goal 1.</b> Consider energy savings in developing land use patterns and circulation/transportation.	<b>Consistent.</b> See response above.
<b>Sub-Goal 2.</b> Encourage implementation of energy saving measures including passive and solar energy devices which will reduce consumption in existing and new buildings.	<b>Consistent.</b> As described above, the proposed project would provide an opportunity to significantly reduce energy use in the proposed development. Examples of energy conserving measures for the proposed project could include solar electric features, thermal energy storage systems, and advanced energy saving architectural features. At this stage of the planning process, precise building designs are not known. However, the proposed project would implement energy saving measures in building design wherever feasible.
<b>Southern Pacific Railyards<sup>1</sup></b>	
<b>Goal A.</b> Reinforce the Central City as the region's principal transportation hub through the creation of a "state-of-the-art" intermodal terminal.	<b>Consistent.</b> The proposed project would include an area designated for the future development of the SITF.
<b>Goal B.</b> Reinforce the downtown and Central City as the major employment center of the region.	<b>Consistent.</b> The proposed project would provide more than four msf of commercial and office use. Future businesses in the Specific Plan Area would provide a range of employment opportunities. A key objective of the proposed Specific Plan is to reinforce the downtown as a major employer.
<b>Goal C.</b> Create opportunities for a new in-town residential neighborhood that can reinforce the downtown and Central City as a place to live.	<b>Consistent.</b> The proposed Specific Plan would include more than 10,000 (and up to approximately 12,500) residential units.
<b>Goal D.</b> Preserve the historic and cultural resources of the area.	<b>Consistent.</b> The proposed project would preserve and adaptively reuse the remaining Central Shops buildings. In addition, the historic passenger depot would be preserved in the Depot District.
<b>Goal E.</b> Provide adequate facilities and open space to support and enhance the proposed land uses.	<b>Consistent.</b> Approximately 41 acres of open space, public plazas, and parks would be provided within the Specific Plan Area. The proposed project would not provide the type and amount of park space and recreation facilities typical for suburban areas, but would provide amenities that are limited in the Central City. The Specific Plan Area will not achieve the City's Service Level Goal for park provision. However, the parks and recreation amenities that would be provided by the proposed project would be spread throughout the Specific Plan Area to provide a range of recreation opportunities and enhance the existing parks, open space, and plazas in the Central City.

<b>TABLE 4-2</b>	
<b>CENTRAL CITY COMMUNITY PLAN—GOALS AND POLICIES</b>	
<b>Applicable General Plan Goal/Policy</b>	<b>Project Consistency Discussion</b>
<b>Goal F.</b> Complete the Central City's circulation system and, in so doing, improve accessibility to and within the downtown area.	<b>Consistent.</b> The proposed project would provide circulation links between the downtown area and River District to the north, and would provide interconnectivity for automobiles, bicycles, and pedestrians. Key connections would include the extension of 5 <sup>th</sup> Street to Richards Boulevard, improvement to Jibboom Street and Bercut Drive, extension of 10 <sup>th</sup> Street to North B Street, the connection of Railyards Boulevard to 12 <sup>th</sup> Street, movement of the UP railroad tracks, and the connection of 5 <sup>th</sup> , 6 <sup>th</sup> , and 7 <sup>th</sup> streets.
<b>Goal G.</b> Ensure that the Specific Plan Area is remediated to the extent necessary to protect the public health and safety of all possible site users and users of adjacent properties, consistent with applicable laws and regulations.	<b>Consistent.</b> Redevelopment of the Specific Plan Area would accommodate continued remediation of the site, resulting in clean-up to levels consistent with active reuse of the site. This EIR addresses remediation of the existing contamination in Section 6.5.
<b>Parks Goal A.</b> Provide a system of parks and recreational facilities that serves the needs of future residents and employees, and that enhances the overall identity of the Central City and the Specific Plan Area.	<b>Consistent.</b> The proposed project would provide a network of parks, open spaces, and public plazas designed to enhance the urban experience of the Central City, provide opportunities for social interaction and civic activity, and enhance and strengthen the civic and public realm.
<b>Schools Goal B.</b> Provide adequate school facilities to serve the needs of Railyards and Sacramento residents.	<b>Consistent.</b> The proposed project would meet statutory requirements for the payment of school impact fees to local school districts. In addition, the proposed project would allow for the development of an urban school with multi-story classroom facilities and compact hardscape recreation areas.
<b>Public Safety Goal C.</b> Provide for the expansion of existing public safety facilities in the Specific Plan Area, including fire and police protection services.	<b>Consistent.</b> The proposed project would allow for the development of a combined public safety facility to meet the needs of the Sacramento Police Department and the Sacramento Fire Department.
Notes: 1. The CCCP contains a separate section providing more detailed policies specific to the Southern Pacific Railyards (now Union Pacific).	

- Transit Oriented Commercial Mixed-Use: Intended for medium and high-density support and government office uses, commercial uses which promote and enhance transit ridership, and multi-family residential.
- Public Utilities: Intended for stormwater detention and/or ongoing remediation activities.
- Transportation/Rail Intermodal: Intended for the main rail line, intermodal center, and other transportation-related uses.

City of Sacramento Zoning Ordinance

The City of Sacramento Zoning Ordinance (Sacramento City Code Title 17) is intended to encourage the most appropriate use of land; conserve, stabilize, and improve the value of property; provide adequate open space for recreational, aesthetic, and environmental amenities; and control the distribution of population to promote health, safety, and the general welfare of the population of the City (Section 17.04.020). To achieve this goal, the Zoning Ordinance regulates the use of land, buildings, or other structures for residences, commerce, industry, and other uses required by the community. The Zoning Ordinance also regulates the location, height, and size of buildings or structures, yards, courts, and other open spaces; the amount of building coverage permitted in each zone; and population density and divides the City into zones of such shape, size, and number best suited to carry out these regulations and to provide for their enforcement.

The adopted zoning code identifies the Specific Plan Area as the Railyards SPD. Within the SPD the following zones are identified: Heavy Industrial (M-2-T-SPD, M-2-SPD(C), and M-2-SPD(W)),

Transportation Corridor (TC-SPD), Central Business District (C-3-SPD), and Office (OB-SPD). In addition, the following overlay zones apply to the Specific Plan Area: Residential Mixed-Use (RMU), Downtown Commercial Mixed-Use (CMUD-1), Transit-oriented Commercial Mixed-Use (CMUD-2), Central Shops (CSD), Riverfront Commercial Recreational (RCRD), Corridor/Rail Intermodal Terminal (TR), Parks and Open Space (OS), and Public Utilities (PU). The “T” supplementary zoning designation indicates that hazardous materials remediation is required.

The Railyards SPD Zoning Ordinance (Municipal Code 17.124) is intended to guide the reuse of the Railyards and establish a new role for the area as a transit-oriented mixed use district. The SPD establishes the necessary procedures and substantive provisions to implement the planning principles, objectives, and policies of the adopted Specific Plan (1994). The SPD code identifies detailed development standards, such as height, bulk, setbacks, signage, parking, design review, preservation, and remediation. To ensure consistency with the adopted Specific Plan (1994), the SPD code requires a special permit for all new development within the Specific Plan Area.

### Central City Neighborhood Design Guidelines

The Central City Neighborhood Design Guidelines are part of the City’s Design Review Program and are intended to provide design guidance for projects in a way that respects and enhances existing neighborhoods and ensures that building design is compatible with its surroundings in terms of scale, mass, building patterns and details. Consistency with the guidelines is analyzed in Section 6.13.

### Sacramento Riverfront Master Plan

The Sacramento Riverfront Master Plan (Master Plan) is a joint effort between the City of Sacramento and the City of West Sacramento to create a comprehensive plan for both sides of the Sacramento River. The plan was originally created in 1994 and updated in 2003. The Master Plan is a study plan, not a regulatory plan, intended to guide future decision making. The Master Plan encourages pedestrian activity with high quality landscaping and design and includes a wide mix of contemporary uses such as open space, public gathering sites, housing and commercial activity. The Master Plan incorporates portions of the Specific Plan Area. The Riverfront District portion of the proposed project is designated in the Master Plan as “Railyards Park”. The Master Plan also includes a proposed Railroad Technology Museum in the historic Central Shops, and suggests mixed use and public institutional uses in the remainder of the Specific Plan Area.

## **LAND USE CONSISTENCY ANALYSIS**

### **Methods of Analysis**

An inconsistency is identified if the proposed project conflicts with the specific policies of the City’s General Plan, CCCP, or Comprehensive Zoning Ordinance. Regional plans addressing specific environmental issues, such as the Sacramento Area Regional Ozone Attainment Plan, are addressed in the applicable technical sections of this EIR. This chapter differs from the technical sections in Chapter 6, in that only issues of consistency of the Specific Plan with City land use policies are addressed, as opposed to environmental impacts and mitigation measures. The analysis below complies with Section 15125(d) of the CEQA Guidelines, which requires EIRs to discuss inconsistencies with general plans and regional plans as part of the environmental setting. Ultimately, it is within the authority of the City Council to interpret City policies and to determine if the project is consistent or inconsistent with adopted plans and policies. Any inconsistencies with plans or policies adopted for the purpose of mitigating an environmental effect will be further discussed in appropriate sections of the EIR.



## **Project Components**

This policy consistency analysis is based on the proposed Specific Plan as described in the EIR Analysis Scenario and the proposed Specific Plan (See Chapter 3 Project Description and Appendix C). The following goals and policies from the Specific Plan are relevant to this analysis:

**Goal CC-1 Create a mixed-use urban environment that will become an integral part of the Central City.**

Policies

- CC-1.3. Require active and public-oriented ground level uses that contribute to the pedestrian environment.
- CC-1.4. Designate a pattern of open spaces and pedestrian ways that creates strong linkages with surrounding areas, contributes to a distinct sense of place, and results in a rich sequence of spatial experiences.

**Goal CC-2 Reinforce urban form and character and materials through the appropriate height of buildings and scale transitions to surrounding areas.**

Policy

- CC-2.3. Ensure an appropriate scale transition to the Alkali Flat neighborhood.

**Goal HO-1 Provide for a range of residential types that address the housing needs of a diverse population.**

Policy

- HO-1.1. Encourage a wide diversity of multi-family housing types and a mixture of rental and ownership housing.

**Goal HO-2 Provide housing affordable to a range of income groups.**

Policy

- HO-2.1. Ensure long-term affordability of low and moderate income housing.

**Goal C-5 Create and reinforce safe and efficient pedestrian connections within the Plan Area and in relation to surrounding districts.**

Policy

- C-5.1. Extend pedestrian connections from the downtown area into the Plan Area, as well as Old Sacramento, the Riverfront and the Richards Boulevard area.

Policy

- C-5.2. Enhance pedestrian pathways using landscaping, trees and art in public places.

## **Consistency with Adopted Plans, Policies, and Zoning**

### **City of Sacramento General Plan**

Applicable goals and policies from the General Plan are listed in Table 4-1, followed by a discussion of the proposed project's consistency with each goal or policy. As discussed in the table, the proposed Specific Plan generally would be consistent with the applicable General Plan policies.

In addition, the proposed project appears to be consistent with the intent of the Special Planning District designation, which is intended to accommodate large-scale planned projects. The proposed project would require a General Plan amendment to accommodate the proposed land uses. The General Plan amendment would change the current SPD designation to Residential/Commercial Mixed-Use (RCMU), Office/Residential Mixed-Use (ORMU), Residential Mixed-Use (RMU), Transportation Use (TU), and Open Space (OS) (see Figure 3-5 for the proposed land use plan and proposed General Plan designations).

### **Central City Community Plan**

Applicable goals and policies from the CCCP are listed in Table 4-2. As shown in the table, the proposed Specific Plan generally would be consistent with the CCCP's adopted goals and policies.

The CCCP designates the Specific Plan Area as Parks/Open Space, Riverfront Commercial Recreational, Central Shops Historical District, Residential Mixed-Use, Downtown Commercial Mixed-Use, Transit Oriented Commercial Mixed-Use, Public Utilities, and Transportation/Rail Intermodal. These uses are defined in the regulatory setting. The CCCP notes that a specific plan, development agreement, zoning code amendments, and other implementing actions would be required prior to development of the proposed project, and that the precise configuration of new development will be specified in later implementing documents, such as the current Specific Plan.

The Specific Plan includes land uses very similar to the plan envisioned in the CCCP. Specific locations and combinations of uses are different than identified in the CCCP, particularly the location of the proposed SITF. Approval of the Specific Plan would require a Community Plan amendment. However, the proposed Specific Plan generally would be consistent with the intent of the CCCP goals, policies, and land use designations for the Specific Plan Area.

### **City of Sacramento Zoning Ordinance**

The Specific Plan Area is identified as the Railyards SPD in the zoning code, and is currently zoned Heavy Industrial (M-2-SPD, M-2-SPD(C), and M-2-SPD(W)), Transportation Corridor (TC-SPD), Central Business District (C-3-SPD), and Office (OB-SPD). In addition, the following overlay zones apply to the Specific Plan Area: Residential Mixed-Use, Downtown Commercial Mixed-Use (CMUD-1), Transit-oriented Commercial Mixed-Use (CMUD-2), Central Shops (CSD), Riverfront Commercial Recreational (RCRD), Corridor/Rail Intermodal Terminal (TR), Parks and Open Space (OS), and Public Utilities (PU).

As described in the regulatory setting, the Railyards SPD Zoning Ordinance was intended to implement the adopted Specific Plan (1994). As part of the entitlement process for the proposed project, the City would adopt a new Special Planning District under the City Zoning Ordinance. The revised Railyards SPD would reflect the development standards required under the proposed Specific Plan. Because approval of the proposed project would require adoption of a new SPD, the proposed Specific Plan would be consistent with the City's Zoning Ordinance.

## **5.0 POPULATION AND HOUSING**

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## 5.0 POPULATION AND HOUSING

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### INTRODUCTION

The purpose of this chapter is to identify, estimate, and evaluate population and housing changes that would be caused by development of the proposed project. This chapter also describes the existing population and housing levels in the City of Sacramento, Sacramento County, and the Old Sacramento, Alkali Flat, and Richards Boulevard Area neighborhoods adjacent to the Specific Plan Area.

This chapter also summarizes City plans and policies pertaining to housing and commercial/office uses, including affordable housing policies and policies related to the maintenance of a jobs/housing balance. Potential inconsistencies with adopted City plans or policies are identified.

No comments were received in response to the NOP relating to population or housing issues.

Sources used in the preparation of this section include:<sup>1</sup>

- U.S. Census (2000);
- Sacramento Area Council of Governments (SACOG);
- California Department of Finance (DOF); and
- City of Sacramento Planning Department (market-based population, employment, and housing projections).

The information contained in this chapter is used as a basis for analysis of project and cumulative impacts in the technical sections of this EIR. However, changes in population and housing, in and of themselves, are generally characterized as social and economic effects, not physical effects on the environment. CEQA provides that economic or social effects are not considered significant effects on the environment unless the social and/or economic effects are connected to physical environmental effects. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (CEQA Guidelines Section 15382). The direction for treatment of economic and social effects is stated in Section 15131(a) of the CEQA Guidelines:

Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on physical changes.

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1 As shown above, this chapter contains information from a variety of sources. Each of these sources uses different modeling and different assumptions to project growth, resulting in different results. While there are differences in the numbers, however, the growth trend demonstrated by each of these sources is consistent.

## ENVIRONMENTAL SETTING

### Population

#### Regional Population

According to SACOG, the greater Sacramento area, including the counties of Sacramento, Placer, El Dorado, Yolo, Sutter, and Yuba, experienced high population growth between 1990 and 2000. The area had a regional population of approximately 1,565,600 in 1990 and 1,922,600 in 2000, an increase of approximately 23 percent, making it one of the fastest growing areas in the State.<sup>2</sup> Current trends in population growth are expected to continue, with regional population projected to reach 2,677,831 by 2020.<sup>3</sup>

#### City of Sacramento Population

Between 1980 and 2000, the City of Sacramento experienced a 47.6 percent change in population. According to the U.S. Census, the City's population was 275,741 in 1980 and 407,018 in 2000.<sup>4</sup> By 2004, the City's population was 458,342, an increase of 12.6 percent over the City's population in 2000.<sup>5</sup> The City's share of the total county population has decreased since 1980, from 35.2 percent to 33.4 percent in 2000, while the City's share of the state population has remained relatively constant (1.1 to 1.2 percent). DOF estimates Sacramento's January 1, 2004, population at 444,005 and January 1, 2006, population at 457,514, an increase of 13,509 or 3 percent.<sup>6</sup> SACOG's population projections for the City of Sacramento project a population of 473,125 in 2010, and up to 517,035 by 2020, an increase of 43,910, or 9 percent.<sup>7</sup>

The current population of the Central City area was approximately 48,980 in 2006.<sup>8</sup> The Central City includes the area between the Sacramento River on the west, the American River to the north, Sutter's Landing and Alhambra Boulevard to the east, and Broadway to the south.

To the north of the Specific Plan Area is the Richards Boulevard Area, which consists primarily of industrial and office uses, along with highway commercial near I-5, a limited amount of housing, and a variety of social services. To the southeast of the Specific Plan Area lies the Alkali Flat historic residential neighborhood, and directly to the south of the Specific Plan Area lie Old Sacramento and the downtown area. These neighboring districts and the downtown street grid would be connected with the Specific Plan Area by extending 5<sup>th</sup> and 6<sup>th</sup> streets, widening 7<sup>th</sup> Street, and by creating Railyards Boulevard, which would run west-east from 12<sup>th</sup> Street to Jibboom Street.

#### Alkali Flat

The approximately 79-acre Alkali Flat residential neighborhood is located to the southeast of the Specific Plan Area. Alkali Flat is the oldest remaining residential neighborhood in Sacramento.<sup>9</sup> The

2 Sacramento Area Council of Governments, *Demographics*, [www.sacog.org/demographics/pophs/coci.cfm](http://www.sacog.org/demographics/pophs/coci.cfm), accessed July 11, 2006.

3 Sacramento Area Council of Governments, Projection Data, 12-16-04, <http://www.sacog.org>, accessed June 16, 2006.

4 U.S. Census, Abstract of the United States, 2003, No. HS-7. Population of the Largest 75 Cities: 1960 to 2000, Statistical <http://www.census.gov>, accessed May 30, 2007.

5 U.S. Census, American FactFinder, <http://www.factfinder.census.gov>, accessed July 11, 2006.

6 California Department of Finance, Demographic Research Unit, <http://www.dof.ca.gov>, accessed June 16, 2006.

7 Sacramento Area Council of Governments, Projection Data, 12-16-04, <http://www.sacog.org>, accessed June 26, 2006.

8 Carlos Porras, City of Sacramento Planning Department, personal communication, July 7, 2006.

9 Sacramento Housing and Redevelopment Agency, <http://www.shra.org/Content/CommunityDevelopment/AlkaliFlat/EconHist.pdf>, accessed June 28, 2006.

neighborhood currently houses approximately 2,296 residents, and contains low-, moderate-, and high-income housing interspersed with commercial uses and office buildings.<sup>10</sup>

### Richards Boulevard Area

The Richards Boulevard Area is comprised of approximately 1,050 acres of land located north of the Specific Plan Area within the City of Sacramento. The land is divided into approximately 700 separate parcels held by over 200 property owners. Most of the development is concentrated in the western two-thirds of the planning area (generally west of the Union Pacific Railroad tracks), while the eastern one-third of the planning area (a former landfill site) is largely undeveloped. The U.S. Census estimated that the area had a population of approximately 1,579 residents in 2000.<sup>11</sup>

## **Housing**

### **Regional Housing Supply**

Although housing sales in the Sacramento region have slowed from record levels in 2004, homebuilders are continuing to add to the region's housing supply, albeit at reduced levels. In 2005, new home sales dropped to 14,094 in the six-county Sacramento region, down 18 percent from the record 17,155 in 2004.<sup>12</sup> The housing market has slowed considerably recently due to several factors including higher interest rates and economic uncertainty.

### **City of Sacramento Housing Supply**

The City of Sacramento had a total of 182,045 housing units in 2005, of which 168,782 were occupied units, and 13,263 were vacant.<sup>13</sup> SACOG projects that Sacramento will reach 207,910 housing units by 2025.<sup>14</sup> Since 1999, approximately 87 percent of the constructed units were single-family units, 12.5 percent were multi-family units, and less than one percent were mobile homes.

### **Alkali Flat Housing Supply**

A Redevelopment Implementation Plan is currently underway for the Alkali Flat neighborhood. The current Implementation Plan for this project area began in 2005 and extends to 2009. The housing compliance aspect of the plan (for affordable housing program planning) covers a 10-year period from 2000 and extends to 2009. One of the key purposes of the Implementation Plan is to provide safe housing through the development and rehabilitation of a mixture of housing types for all income groups. Two new buildings are under construction on the Globe Mills site, a designated City Historic Landmark located one block north of the Alkali Flat North National Historic District. The buildings will contain enough units to house 110 low-income seniors. The existing historic mill buildings located on the Globe Mills site will be renovated and converted to 31 market-rate one- and two-bedroom apartments.<sup>15</sup> Another proposed housing project in the Alkali Flat neighborhood includes the 524 Building Preservation, a project to rehabilitate an existing structure on 12<sup>th</sup> Street to a mixed-use

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10 Sacramento Housing and Redevelopment Agency, *Sacramento Revitalization, Alkali Flat Implementation Plan*, 2005.

11 U.S. Census Bureau, American Fact Finder, <http://factfinder.census.gov>, accessed June 22, 2007.

12 Sacramento Business Journal, *Homebuilders Cut Staff as Sales Slow*, August 28, 2006, <<http://sacramento.bizjournals.com/>> (October 24, 2006).

13 U.S. Census, American FactFinder, Selected Housing Characteristics, <http://www.factfinder.census.gov>, accessed May 30, 2007.

14 Sacramento Area Council of Governments, SACOG Projections, City of Sacramento, 3/15/01, <http://www.sacog.org>, accessed May 30, 2007.

15 Sacramento Housing and Redevelopment Agency, Alkali Flat Projects, <http://www.shra.org/Content/CommunityDevelopment/AlkaliFlat/AFProjects.htm>, accessed June 28, 2006.

project, which would include six one bedroom apartments and one studio.<sup>16</sup> Additional housing is also proposed on currently vacant land along 10<sup>th</sup> Street.

### Richards Boulevard Housing Supply

According to the Richards Boulevard Area Plan, there are a minimum of 150 acres of land that could be used for the development of approximately 3,900 residential units, assuming an average density of 26 dwelling units (du) per acre. The plan also states that the land north of Richards Boulevard would be most suitable for residential development, while office development would be concentrated south of Richards Boulevard.<sup>17</sup>

The Richards Boulevard Area Plan also calls for construction and rehabilitation of existing units in the Dos Rios and Dreher-Basler areas. Within these areas, there is an opportunity for alternative housing, such as live/work, single room occupancy, and transitional cottage housing, which could serve low and very low income populations.<sup>18</sup>

Also planned in the Richards Boulevard Area Plan is the Township 9 development. The Township 9 project would be a mixed-use development located on approximately 65 acres, with commercial office and retail uses, and between 2,350 and 2,981 residential units.<sup>19</sup>

### Jobs-Housing Balance

The concept of jobs/housing balance refers to the relationship of residences to jobs in a given community or area. Assuming a reasonable match between the affordability of housing and the incomes of jobs in the local market, if the number and proximity of residences is proportionate to the number and proximity of jobs, the majority of the employees would have the opportunity to work and reside in the same community. A well-balanced ratio of jobs and housing can contribute to reductions in the number of vehicle trips resulting from commuting due to employment opportunities in closer proximity to residential areas. Such a reduction in vehicle trips would necessarily result in lower levels of air pollutant emissions and less regional congestion on area roadways and intersections. As noted above, another important consideration in evaluating the jobs/housing balance is whether housing in the community is affordable to local employees. The availability of an adequate housing supply, presenting various price levels including those that are reasonably available to those holding jobs that are offered in the community, provides the potential to reduce the length of commutes between residences and work sites.

In 2005, the City of Sacramento had an employment base of 214,267, with a total of 182,045 housing units. Of these housing units, 168,782 were occupied, and 13,263 were vacant.<sup>20</sup> Based on the number of occupied housing units, the employee per housing unit ratio was 1.3.<sup>21</sup> Another estimate by SACOG indicates an employee per housing unit ratio of 1.78 in 2005.<sup>22</sup> Ratios exceeding 1.0 indicate that many jobs are filled by employees not residing within the City, who likely commute greater distances from their homes to their jobs. The extent to which this occurs depends on a variety of factors related not only to employment and housing in the City, but economic factors

16 Sacramento Housing and Redevelopment Agency, Alkali Flat Projects, <http://www.shra.org/Content/CommunityDevelopment/AlkaliFlat/AFProjects.htm>, accessed June 28, 2006.

17 ROMA Design Group, *Richards Boulevard Area Plan*, June 1992, p. 41.

18 ROMA Design Group, *Richards Boulevard Area Plan*, June 1992, p. 41.

19 City of Sacramento, *Township 9 DEIR*, February 2007, p. 2-6.

20 U.S. Census American Fact Finder, Sacramento city, California, 2005 American Community Survey Data Profile Highlights, <http://factfinder.census.gov>, accessed May 30, 2007.

21 An employee per unit ratio that exceeds 1.0 reflects the fact that there are more jobs than housing units within the City. An employee per unit ratio of 1.0 would mean that there is one job per housing unit.

22 Sacramento Area Council of Governments, SACOG Projections, City of Sacramento, 3/15/01, <http://www.sacog.org>, accessed May 30, 2007.



affecting the City and region, including, importantly, the affordability of housing. Greater commuting distances could result in greater regional traffic congestion and increased impacts to the physical environmental, such as air quality.

## REGULATORY SETTING

### Federal

There are no specific federal regulations pertaining to population that address environmental impacts associated with the Specific Plan Area.

### State

There are no specific State regulations pertaining to population that address environmental impacts associated with the Specific Plan Area.

### Local

#### City of Sacramento General Plan

The various goals, policies, and implementation programs of the City of Sacramento General Plan seek to minimize population-related impacts by providing a comprehensive framework for the preparation of individual specific plans that ensure that local and regional concerns are adequately addressed in the planning of major new growth areas and that such areas are planned to avoid adverse economic impacts on existing urban centers. The following are applicable goals and policies relating to employment and housing issues from the adopted City of Sacramento General Plan Housing Element (2003).

#### HOUSING SUPPLY

**Goal 1 Provide adequate housing sites and opportunities for all households.**

##### Policies

- 1.E. The City shall continue to promote appropriate and compatible infill housing.
- 1.F. The City shall continue to develop and support transit oriented residential development along transit corridors.

**Goal 3 Housing Mix, Balance, and Neighborhood Compatibility: Promote a variety of housing types within neighborhoods to encourage economic diversity and housing choice.**

##### Policy

- 3.B. The City shall encourage the development of a variety of housing styles and lot sizes to accommodate residents who wish to “move up” within their community plan area.

**Goal 5 Housing Quality and Neighborhood Improvement**

##### Policies

- 5.B. The City shall continue to work with neighborhood residents in ensuring that all our neighborhoods are safe, decent, and pleasant places to live and work. This includes working with schools, community oriented policing, addressing problem properties, and ensuring new development is compatible with existing neighborhoods.
- 5.D. Promote quality residential infill development in infill areas or designated infill sites through flexible development standards.

**Goal 8 Energy Conservation**

##### Policy

- 8.A. Wherever possible, develop, incorporate, and support energy conserving programs in the production and rehabilitation of housing to improve the environment and reduce household energy costs.

## Affordable Housing Requirements

### *Sacramento Zoning Code*

Chapter 17.190 in the City-Wide Programs Division of the City of Sacramento Zoning Code (the Code) provides direction for the provision of affordable housing in residential projects. The ordinance specifically addresses the provision of inclusionary components for very low and low-income households in all residential development projects that are not otherwise exempt. A low-income household is defined as one whose income does not exceed 80 percent of the median Sacramento County income, while a very-low-income household is one that is defined as one whose income does not exceed 50 percent of the median Sacramento County income. The ordinance requires that 15 percent of all residential units within a project are affordable, with 10 percent affordable to very-low-income households and 5 percent affordable to low-income households. Residential development that is exempted from the provision of affordable housing as well as alternatives to the Standard Inclusionary Housing Component regulations are defined in the Code.

### *SACOG Affordable Housing Compact*

In addition to its Inclusionary Housing Ordinance requirements, the Railyards Specific Plan Area is part of a redevelopment project area, and therefore subject to state redevelopment law requirements for affordable housing. State law requires the redevelopment agency to ensure that 15 percent of all housing units newly constructed or substantially rehabilitated in the redevelopment project area must be affordable and targeted to low and moderate income households and at least 40 percent of these units must be targeted to very low income households.

The City of Sacramento has voluntarily joined the SACOG Compact, which provides the following voluntary average jurisdiction-wide production goals for participating jurisdictions:

- At least four percent of all new housing construction will be affordable to very low-income families.
- At least four percent of all new housing construction will be affordable to low-income families.
- Up to two percent of the 10 percent goal could be met by housing affordable to moderate-income families.

The compact goals are not considered mandatory standards for each particular development project.

## Project Components

The proposed project would develop up to approximately 12,500 residences within the Central City, which would generate an estimated population of up to 26,252 new residents at the Specific Plan Area. The proposed project would also develop up to approximately 2.8 million square feet (msf) of office space, 1.4 msf of retail space, 1,100 hotel rooms, and 485,390 sf of historical/cultural uses, all of which would generate employment within the City. Housing developed within the Specific Plan Area would help to address the City's shortage of housing in the Central City area and bring more population to the area. Additional employment opportunities in the Specific Plan Area would help to reinforce the downtown area as the primary employment center in the region. The following proposed project goals and policies address housing and employment within the City:

Community Character

**Goal CC-1 Create a mixed-use urban environment that will become an integral part of the Central City.**

Policies

- CC-1.5. Create a high density, predominantly residential neighborhood with a strong mix of neighborhood amenities (eg. local retail services), as planned in the East End District.
- CC-1.6. Encourage a mixture of high density government and commercial office uses in close proximity to the existing Central Business District and the planned SITF.

Housing

- Goal HO-1 Provide for a range of residential types that address the housing needs of a diverse population.**
- Goal HO-2 Provide housing affordable to a range of income groups.**
- Goal HO-3 Create a cohesive neighborhood that is well integrated in terms of housing type, tenure and cost.**

Policies

- HO-1.1. Encourage a wide diversity of multi-family housing types and a mixture of rental and ownership housing.
- HO-2.1. Ensure long-term affordability of low and moderate income housing.
- HO-2.2. Ensure that affordable units are built in a manner that maintains the high quality design of the community.
- HO-3.1. Encourage elderly housing and a mixture of low and moderate income housing that is well integrated with market-rate housing.
- HO-3.2. Phase new housing in consideration of market forces and funding availability.
- HO-3.3. Make maximum use of available city, county, state and federal programs which support affordable housing.
- HO-3.4. Encourage, where possible, vertical mixed integration of housing and other uses.
- HO-3.5. Promote housing types that have potentially less significant impacts on the environment such as senior housing, assisted living housing and special needs housing.

## **PROPOSED PROJECT SETTING AND ANALYSIS**

The proposed project seeks approval from the City of Sacramento for entitlements to develop the 244-acre Specific Plan Area, which would permit a mixed-use development consisting of high-density housing, complemented by cultural, office, hotel, and retail uses surrounding parks and open space. The proposed project includes an overlay zone, which could potentially be developed as a sports and entertainment facility, reducing the total number of residential units and/or commercial and retail space. The proposed project would increase the number of residents living in downtown Sacramento by creating an urban village that provides a mixture of residential units, including affordable housing. The residential component of the proposed project would be incorporated throughout the Specific Plan Area with a focus on creating an amenitized residential neighborhood in the northeast portion of the Specific Plan Area, within the East End District. Office uses would be located throughout the Specific Plan Area.

Currently, the proposed project site contains the historic Depot, Union Pacific mainlines for freight and passenger trains, Sims Metal, and vacant buildings known as the Central Shops. The Central Shops area was previously the location of rail equipment production and maintenance. Currently, the California State Railroad Museum leases two of these buildings to repair and maintain its historic train stock. There are no existing residential uses within the Specific Plan Area. The Specific Plan Area currently contains vacant office uses in the Depot building.

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## **Changes in Population and Housing**

### **Proposed Project Population**

The proposed project would construct between 10,000 and to approximately 12,500 high-density residential units, which would include town homes, apartments, rental and for-sale condominiums, and affordable housing. Assuming an average household size of 2.1 persons, based on population factors used in the Urban Decay Assessment prepared for the proposed project (see Appendix N), this would result in a projected population increase ranging from 21,000 to as many as 26,252. A factor of 2.1 persons per unit was used to determine population of the proposed project, rather than the average household size of 2.57 used by the U.S. Census Bureau for the City of Sacramento. This is due to the Specific Plan Area's location near the downtown area of the City. Downtown households tend to comprise of singles, childless couples, and empty nesters, and are therefore generally smaller than households in other areas of the City. As stated above, increases in population are not, in and of themselves, considered physical environmental effects. Potential physical environmental effects resulting from the Specific Plan Area's population growth are analyzed in the appropriate technical sections of this EIR.

### **Proposed Project Housing Supply**

The proposed project would construct a minimum of 10,000 and up to as many as approximately 12,500 residential units in the Specific Plan Area. The proposed project includes high-density residential uses incorporated throughout the Specific Plan Area. The final number of units constructed would be determined by market forces, and would be in part dependant on the amount of office developed and whether a sports arena is developed in the Specific Plan Area.

### **Proposed Project Affordable Housing Component**

The precise details regarding the provision of affordable housing units in the Specific Plan Area will be developed in the preparation of an inclusionary housing plan between the City and the private developers of the proposed project. At a minimum, the development of the Specific Plan Area will conform to the affordability standards of the Community Redevelopment Law.

### **Proposed Project Jobs/Housing**

The proposed project includes approximately 244 acres of transportation, office, residential, retail, public, hospitality, open space, and parking uses. Transportation-, hospitality-, office-, retail-, and public-related uses would all generate significant staff employment, providing a wide variety of jobs such as hotel staff, municipal employee, retail worker, etc. Because the proposed project includes a substantial amount of mixed-use designations, it is not possible to precisely predict the exact number of housing units or jobs that will be created in the Specific Plan Area. As stated above, the number of residential units developed by the proposed project could range from 10,000 to approximately 12,500. If the maximum number of residential units is constructed, it would result in less office space. Depending on how the mixed-use component of the Specific Plan Area is developed, office space could vary between approximately 2.3 msf to 2.8 msf square feet. More office space would result in more jobs created within the Specific Plan Area; however, this would result in fewer residential units. Similarly, if the event/sports area is developed within the possible Sports and Entertainment Facility Overlay, more jobs would be created by that use, but fewer residential units would be developed.

Employment estimates for the proposed project are based on an employee ratio assumption of one employee for every 300 sf of commercial space and one employee per 400 sf of retail space.<sup>23</sup> The 1,100 hotel rooms would generate approximately 1,100 employees, based on one employee per

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23 Tom Kear, Dowling Associates, written communication, June 28, 2006.

room.<sup>24</sup> Based on this assumption, the number of jobs available within the Specific Plan Area would range from approximately 12,400 to 15,200, assuming the retail employee ratio for the Central Shops. To the extent that housing is increased in the Specific Plan Area, employment would decrease; conversely, the lower amount of housing, there would be a higher amount of employment within the Specific Plan Area.

Based on these estimates, the ratio of jobs to housing within the Specific Plan Area would range from as low as 0.9:1 to as high as 1.41:1 (see Table 5-1). This is based on the assumption that the scenario in which the maximum number of dwelling units is developed (approximately 12,500) would result in the least amount of jobs (12,400), while the scenario in which the minimum number of residential units is developed (10,000) would result in the greatest number of jobs (15,200). The first scenario would contain more housing units than jobs, which may help to bring the jobs to housing unit ratio into balance throughout the City. The second scenario would be similar to the City's current jobs to housing unit ratio and would not aid in bringing the ratio closer to 1.0. The development of more housing units within the Specific Plan Area would aid in creating housing near employment centers, thereby meeting the project's objective to bring the jobs to housing unit ratio into closer balance and cut down on commuting. By creating more jobs and less housing within the Specific Plan Area, the jobs to housing units ratio would remain the same.

	<b>Minimum Housing</b>	<b>Maximum</b>
Residential Population	21,000	26,252
Housing Units	10,000	12,500
Employment	15,200	12,400
Jobs/Housing Ratio	1.52:1	0.99:1

Source: Thomas Enterprises, 2007; PBS&J/EIP, 2007.

### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility Overlay is implemented, portions of the Plan Specific Plan Area (Parcels 48, 47a, and a portion of 49a) would be developed as an event/sports arena, rather than mixed-use containing residential, office, and retail uses. This could result in the development of fewer dwelling units and less office and retail space, resulting in fewer new residents and fewer jobs in the Specific Plan Area. The reduction of residents and jobs in the Specific Plan Area could create less demand for services and public utilities, and result fewer impacts on traffic congestion, air quality, noise, and other areas. However, the development of an event/sports arena could replace those demands and impacts generated by residents and employees with different demands and impacts resulting from arena patrons and employees instead. Each technical section of this EIR provides a qualitative analysis of the potential physical impacts that could result if the Sports and Entertainment Facility Overlay is approved.

24 City of Sacramento, Railyards Specific Plan/Richards Boulevard Area Plan Draft Environmental Impact Report, June 10, 1992, page 4.7-40, Table 4.7-24.



## **6. ENVIRONMENTAL ANALYSIS**

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## **6.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS**



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## 6.0 INTRODUCTION TO THE ENVIRONMENTAL ANALYSIS

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### INTRODUCTION

This EIR evaluates all of the environmental effects that fall under the purview of CEQA and that would be potentially affected by the implementation of the proposed Railyards Specific Plan. As a result of the characteristics of the proposed Specific Plan, some issues that are considered as physical environmental effects under CEQA would not be affected and, thus, are not further analyzed in this EIR. A discussion of those issues that were not further analyzed in the EIR can be found later in this chapter.

### SECTION FORMAT

Chapter 6 is divided into technical sections (e.g., 6.1 Air Quality) that present for each environmental issue area the environmental setting, regulatory setting, standards of significance, and impacts to the environment, and, where available, feasible mitigation measures for significant impacts. An analysis of project-specific and cumulative impacts for each issue area is included. Further, at the end of each section, is a brief discussion of the proposed Sports and Entertainment Facilities Overlay that is included in the Plan.

Each technical environmental section begins with a description of the project's **environmental setting** (i.e., existing conditions) and a **regulatory setting** as it pertains to a particular issue. The environmental setting provides a point of reference for assessing the environmental impacts of the project and project alternatives. The environmental setting discussion addresses the conditions that exist prior to implementation of the project. This setting establishes the baseline by which the project and project alternatives are measured for environmental impacts.

The setting description in each section is followed by an **impacts** and **mitigation** discussion. The impact and mitigation portion of each section includes impact statements, prefaced by a number in bold-faced type. An explanation of each impact is followed by an analysis of its significance. The subsection concludes with a statement that the impact, following implementation of the mitigation measure(s) and/or the continuation of existing policies and regulations, would be reduced to a less-than-significant level or would remain significant and unavoidable.

A “significant effect” is defined by Section 15382 of the CEQA Guidelines as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment...[but] may be considered in determining whether the physical change is significant.”

The analysis of environmental impacts considers both the construction and operational phases associated with implementation of the proposed Specific Plan. As required by Section 15126.2(a) of the CEQA Guidelines, direct, indirect, short-term, long-term, onsite, and/or off-site impacts are addressed, as appropriate, for the environmental issue area being analyzed. This EIR assumes compliance with applicable laws and other regulations.

Mitigation measures, if available, pertinent to each individual impact appear after the impact discussion section. The reduction of the impacts and the potential reduction in significance provided by identified mitigation measures are also evaluated. An example of the format is shown below.

### **Specific Plan Impact 6.X-1**

General discussion of impact for the total project in paragraph form. Statement of the *level of significance* before mitigation in italics.

### **Mitigation Measures**

Statement of ability of mitigation measure to reduce impact to a ***less-than-significant level*** in bold and italics.

6.X-1 a) *Recommended mitigation measure in italics and numbered in consecutive order.*

Each section also includes **Standards of Significance**, which identify the City of Sacramento standards used to evaluate impacts of the analyzed project. The Standards of Significance used for this project were derived from the thresholds provided in CEQA Guidelines Appendix G and the City of Sacramento's established significance standards. Where applicable, local responsible agency thresholds were incorporated into the Standards of Significance.

In most cases, the impact analysis considers the effects of buildout of the proposed Specific Plan EIR Analysis Scenario (as described in Chapter 3). In some sections, such as Transportation and Circulation, the effects associated with the development of the Initial Phase (described in Chapter 3, Project Description) are also evaluated.

### **Cumulative Impacts**

An analysis of cumulative impacts follows the Specific Plan impacts and mitigation measures evaluation in the each section. As defined in CEQA Guidelines Section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other past, present and reasonably foreseeable projects causing related impacts. An introductory statement that defines the cumulative analysis methodology and the cumulative context being analyzed for respective sections (e.g., SACOG projections, the Sacramento Air Basin) is included at the beginning of each chapter. In some instances an impact may be considered less than significant as a result of the implementation of the Initial Phase or full buildout of the proposed Specific Plan as evaluated in this EIR, but would be considered potentially significant in combination with development of the surrounding area. In some instances, a potentially significant impact may result on a project level but would not result in a cumulatively considerable impact. The cumulative impacts analysis is formatted the same as the project-specific impacts, as shown above.

### **SPORTS AND ENTERTAINMENT FACILITY OVERLAY**

A comparative and qualitative analysis of potential impacts generated under the Sports and Entertainment Facility Overlay scenario relative to the proposed project analysis follows at the end of each technical section. Although such a facility is not currently included in the analysis scenario for the proposed Specific Plan, and no details are available about the size, scale or other characteristics of such a facility, this EIR addresses the environmental issues that would be created if the Overlay is implemented in the future. The focus of this discussion is to address the likely difference in CEQA impacts between implementation of the Sports and Entertainment Facility Overlay and the Specific Plan as currently analyzed in this EIR, and where applicable, highlight the mitigation differences under the two implementation scenarios. For each technical section in Chapter 6, the EIR presents a qualitative analysis indicating which impacts would be increased, reduced or avoided, and which mitigation measures would be required under the Sports and Entertainment Facility Overlay. The Sports and Entertainment Facility Overlay discussion is included at the end of each technical section. If, at a time in the future, a proposal is made to implement the Sports and Entertainment

Facility Overlay, project-specific environmental analysis would be required based on the specifics of the proposed facility.

## TERMINOLOGY USED IN THE EIR

This EIR uses the following terminology to describe environmental effects of the Specific Plan:

- **Standards of Significance:** A set of criteria used by the lead agency to determine at what level or “threshold” an impact would be considered significant. Standards of Significance used in this EIR include those standards provided by the City of Sacramento. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, State, and local regulations and ordinances.
- **Less than Significant Impact:** A project impact is considered less than significant when it does not reach the applicable standard of significance and would therefore cause no substantial change in the environment (no mitigation required).
- **Potentially Significant Impact:** A potentially significant impact is an environmental effect that may cause a substantial adverse change in the environment; however, additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.
- **Significant Impact:** A project impact is considered significant if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by the evaluation of project effects in the context of specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce these effects to the environment where feasible.
- **Significant and Unavoidable Impact:** A project impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment that cannot be feasibly avoided or mitigated to a less-than-significant level if the project is implemented. A Statement of Overriding Considerations must be adopted if the project is approved and significant impacts cannot be mitigated to less-than-significant levels.
- **Cumulative Impacts:** According to CEQA, “cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the “project’s incremental effect is cumulatively considerable” (CEQA Guidelines, Section 15130 (a)).
- **Mitigation Measure:** The CEQA Guidelines (Section 15370) define mitigation as:
  - a) Avoiding the impact altogether by not taking a certain action or parts of an action;
  - b) Minimizing impacts by limiting the degree of magnitude of the action and its implementation;
  - c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
  - d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
  - e) Compensating for the impact by replacing or providing substitute resources or environments.

**ISSUES CONSIDERED, BUT NOT FURTHER EVALUATED IN THE DRAFT EIR**

Upon review of the Specific Plan, it was determined that, due to the physical characteristics of the Specific Plan Area and the project, several subsection issues would not be further considered in the Draft EIR:

**Biological Resources- Conflicts with a recognized Habitat Conservation Plan.**

The Specific Plan Area is located in a primarily urbanized environment that is not within the boundaries of a local Habitat Conservation Plan (HCP), a Natural Communities Conservation Plan (NCCP), or any other habitat conservation plan. All impacts to sensitive species habitat are addressed in Chapter 6.2 of this EIR. Therefore, this issue is not further considered in this EIR.

**Seismicity, Soils, and Geology- Soils capability of supporting septic tanks.**

There are no plans to provide wastewater service via septic tank or other alternative wastewater disposal systems. All proposed sewer impacts would involve connections to existing service systems, so the ability of the project soils to support septic is not further considered in this EIR.

**Hydrology and Water Quality- Impacts resulting from seiche, tsunami, or mudflow.**

Due to the relatively flat topography of the site the potential for mudflow or a mudslide would be highly unlikely. Although there is potential for inundation from a major seiche from the Sacramento River, the probability of seiche is very low. Further, the Specific Plan Area is not located in an area subject to tsunami waves. Therefore, the project's potential to expose people or structures to a significant risk of flooding, as a result of inundation by seiche, tsunami, or mudflow was not further considered in this EIR.

**Mineral resources – Loss of Availability of Important Mineral Resources**

The Specific Plan Area is located in a disturbed environment, surrounded by urban uses. Due to the site's previous use as an active railyard and based on previous environmental analysis of the site, no risk of impact to important mineral resources is anticipated. Therefore, the potential for the proposed Specific Plan to cause loss of a local or regionally identified mineral resource was not further considered in this EIR.

## **6.1 AIR QUALITY**

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### INTRODUCTION

This section addresses impacts of construction and operation of the proposed Specific Plan on ambient air quality and the potential for exposure of people (especially sensitive individuals who consist of children, the elderly, acutely ill, and chronically ill) to unhealthful pollutant concentrations. Air pollutants of concern for Sacramento County include ozone ( $O_3$ , which results from reactive organic gases, ROG, and nitrogen oxides,  $NO_x$ ) carbon monoxide (CO), and particulate matter (PM) in two size fractions: 10 microns or less in diameter ( $PM_{10}$ ) and 2.5 microns or less in diameter ( $PM_{2.5}$ ).

Comments received in response to the NOP requested that the project reduce congestion and improve air quality by providing alternative transportation modes of choice. Two letters were received from the SMAQMD. The first letter, dated April 10, 2006, requested that the movement of the Union Pacific rail lines be included in the analysis, examine the air quality effects of street rerouting, perform short-term and long-term air quality projections and mitigate air quality impacts to the extent feasible using the SMAQMD's standard on-site mitigation measures, development of an Operational Air Quality Mitigation Plan, and examination of health effects of toxic air contaminants (TACs) from mobile sources, locating non-residential uses closest to the freeway or orienting residential buildings away from the freeway with a setback or buffer zone. The second letter, dated April 14, 2006, included suggestion for potential mitigation and project features to reduce air quality impacts, including but not limited to not locating residences and sensitive receptors close to the I-5 freeway, encouraging pedestrian and bicycle transportation, and connecting the proposed project to local neighborhoods and projects to encourage pedestrian and bicycle transportation. Generally, it was recommended that mitigation measures be incorporated into the project to reduce the impacts to air quality caused by construction and operation of the proposed project.

Sources reviewed for this section include the Sacramento Metropolitan Air Quality Management District (SMAQMD) Guide to Air Quality Assessment in Sacramento County, the California Air Resources Board (CARB) website, and the City of Sacramento General Plan (General Plan).

### ENVIRONMENTAL SETTING

A region's air quality is influenced by the region's climate, topography, and pollutant sources. The characteristics of the region encompassing the City of Sacramento are such that the area has a potential for high concentrations of regional and localized air pollutants.

#### Climate and Topography

Hot dry summers and mild rainy winters characterize the Mediterranean climate of the Sacramento Valley. During the year the temperature may range from 20 to 115 degrees Fahrenheit with summer highs usually in the 90s and winter lows occasionally below freezing. Average annual rainfall is about 20 inches with snowfall being very rare. The prevailing winds are moderate in strength and vary from moist clean breezes from the south to dry land flows from the north.

The Specific Plan Area is located north of the City of Sacramento's existing central business district, south of the Richards Boulevard Area, and to the east of the Sacramento River and I-5. The City of Sacramento is the major metropolitan area of Sacramento County, which is located at the southern end of the Sacramento Valley, and is bounded by the Coast and Diablo ranges on the west and the Sierra Nevada on the east. The county is fifty-five miles northeast of the

Carquinez Strait, a sea-level gap between the Coast Range and the Diablo Range; the intervening terrain is flat.

Between late spring and early fall, a layer of warm air often overlays a layer of cool air from the Delta and San Francisco Bay, resulting in stagnation of air called an inversion. Typical winter inversions are formed when the sun heats the upper layers of air, trapping below them air that has been cooled by contact with the colder surface of the earth during the night. Although each inversion type predominates at certain times of the year, both types can occur at any time of the year. Because inversions inhibit the mixing of air in the atmosphere, they can prevent air pollution from dispersing, contributing to higher pollutant concentrations.

The Ozone (O<sub>3</sub>) season (May through October) in the Sacramento Valley is characterized by stagnant air or light winds with the delta sea breeze arriving in the afternoon out of the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Valley. During about half of the days from July to September; however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the Valley, the Schultz Eddy causes the wind pattern to circle back south. Essentially this phenomenon causes the air pollutants to be blown south toward the Sacramento area. This phenomenon’s effect exacerbates the pollution levels in the area and increases the likelihood of violating federal or state standards. The Eddy normally dissipates around noon when the delta sea breeze arrives.<sup>1</sup>

### **Criteria Air Pollutants**

Criteria air pollutants are a group of pollutants for which federal or State regulatory agencies have adopted ambient air quality standards. Criteria air pollutants include O<sub>3</sub>, CO, nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), PM<sub>10</sub>, PM<sub>2.5</sub> and lead. Table 6.1-1 lists the health effects associated with these pollutants. Most of the criteria pollutants are directly emitted. Ozone, however, is a secondary pollutant that is formed in the atmosphere by chemical reactions between nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG). According to the most recent emissions inventory data for Sacramento County, mobile sources are the largest contributors of both ROG and NO<sub>x</sub>.<sup>2</sup>

Criteria air pollutants are classified in each air basin, county, or in some cases, within a specific urbanized area. The classification is determined by comparing actual monitoring data with State and federal standards. If a pollutant concentration is lower than the standard, the area is classified as “attainment” for that pollutant. If an area exceeds the standard, the area is classified as “non-attainment” for that pollutant. If there are not enough data available to determine whether the standard is exceeded in an area, the area is designated “unclassified”. The ambient air quality standards and the Sacramento Valley Air Basin’s (SVAB) attainment status for the criteria pollutants are summarized in Table 6.1-2.

Monitors that collect air quality data are located throughout the SVAB. The closest monitoring station to the project area is the Sacramento, T Street station, located in downtown Sacramento at 1309 T Street. This monitoring station is operated by the CARB. Recent air quality data collected at this monitoring site is summarized in Table 6.1-3. Classifications for the key criteria pollutants in the SVAB are discussed below under Existing Ambient Air Quality.

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- 1 Sacramento Metropolitan Air Quality Management District, *Guide to Air Quality Assessment in Sacramento County*. July 2005, page 1-7.
  - 2 California Air Resources Board website, [www.arb.ca.gov/app/emsmv/emssumcat\\_query](http://www.arb.ca.gov/app/emsmv/emssumcat_query), accessed June 26, 2006.

TABLE 6.1-1

## HEALTH EFFECTS OF MAIN CRITERIA AIR POLLUTANTS

Pollutant	Adverse Effects
Ozone	<ul style="list-style-type: none"> <li>- Ozone can irritate lung airways and cause inflammation. Other symptoms include wheezing, coughing, and breathing difficulties during exercise or outdoor activities. People with respiratory problems are most vulnerable, but even healthy people that are active outdoors can be affected when O<sub>3</sub> levels are high.</li> <li>- Repeated exposure to O<sub>3</sub> pollution for several months may cause permanent lung damage.</li> <li>- Even at very low levels, ground-level O<sub>3</sub> triggers a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses like pneumonia and bronchitis.</li> <li>- Ground-level O<sub>3</sub> interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, other pollutants, and harsh weather.</li> <li>- Ozone reduces crop and forest yields and increases plant vulnerability to disease, pests, and weather.</li> </ul>
Carbon Monoxide	<ul style="list-style-type: none"> <li>- The health threat from lower levels of CO is most serious for those who suffer from heart disease. For a person with heart disease, a single exposure to CO at low levels may cause chest pain and reduce that person's ability to exercise; repeated exposures may contribute to other cardiovascular effects.</li> <li>- Healthy people can be affected by high levels of CO as well. People who breathe high levels of CO can develop vision problems, reduced ability to work or learn, reduced manual dexterity, and difficulty performing complex tasks. At extremely high levels, CO is poisonous and can cause death.</li> <li>- CO contributes to the formation of ground-level O<sub>3</sub>, which can trigger serious respiratory problems.</li> </ul>
Particulate Matter	<ul style="list-style-type: none"> <li>- Particle pollution, especially fine particles, contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Numerous scientific studies have linked particle pollution exposure to a variety of problems, including: increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function, aggravated asthma, development of chronic bronchitis; irregular heartbeat, nonfatal heart attacks; and premature death.</li> <li>- Particles can be carried over long distances by wind and then settle on ground or water. The effects of this settling include: making lakes and streams acidic; changing the nutrient balance in coastal waters and large river basins; depleting the nutrients in soil; damaging sensitive forests and farm crops; and affecting the diversity of ecosystems.</li> </ul>
Nitrogen Dioxide	<ul style="list-style-type: none"> <li>- One of the main constituent involved in the formation of ground-level O<sub>3</sub>, which can trigger serious respiratory problems.</li> <li>- Reacts to form nitrate particles, acid aerosols, as well as NO<sub>2</sub>, which also cause respiratory problems.</li> <li>- Contributes to formation of acid rain; to nutrient overload that deteriorates water quality; and to atmospheric particles that cause visibility impairment.</li> <li>- Reacts to form toxic chemicals.</li> </ul>

Source: Environmental Protection Agency, 2006. <http://www.epa.gov/air/urbanair/6poll.html>.

TABLE 6.1-2

## STATE AND FEDERAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards <sup>1</sup>	National Standards <sup>2</sup>		Sacramento County State Status/ Classification	Sacramento County National Status/ Classification
		Concentration <sup>3</sup>	Primary <sup>3,4</sup>	Secondary <sup>3,5</sup>		
Ozone	8-hour 1-hour <sup>f</sup>	0.07 ppm 0.09 ppm	0.08 ppm --	Same as Primary	Nonattainment/ Serious	Nonattainment/ Severe
Carbon Monoxide	8-hour 1-hour	9 ppm 20 ppm	9 ppm 35 ppm	None	Attainment/ None	Attainment/ None
Nitrogen Dioxide	Annual Mean 1-hour	0.03 ppm 0.18 ppm	0.053 pm --	Same as Primary	Attainment/ None	Attainment/ None
Sulfur Dioxide	Annual Mean 24-hour 3-hour 1-hour	-- 0.04 ppm -- 0.25 ppm	0.03 ppm 0.14 ppm -- --	-- -- 0.5 ppm --	Attainment/ None	Attainment/ None
Fine Particulate Matter (PM <sub>10</sub> )	Annual Mean Annual Geometric Mean 24-hour	20 µg/m <sup>3</sup> 30 µg/m <sup>3</sup> 50 µg/m <sup>3</sup>	-- -- 150 µg/m <sup>3</sup>	Same as Primary -- Same as Primary	Nonattainment	Nonattainment
Fine Particulate Matter (PM <sub>2.5</sub> )	Annual Mean 24-hour	12 µg/m <sup>3</sup> --	15 µg/m <sup>3</sup> 35 µg/m <sup>3</sup>	Same as Primary	Not Designated/ None	Not Designated/ None

## Notes:

ppm = parts per million, µg/m<sup>3</sup> = micrograms per cubic meter.

- California standards for O<sub>3</sub>, CO (except Lake Tahoe), SO<sub>2</sub> (1 and 24 hour), NO<sub>2</sub>, suspended particulate matter—PM<sub>10</sub>, PM<sub>2.5</sub>, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
- National standards, (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM<sub>10</sub>, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m<sup>3</sup> is equal to or less than one. For PM<sub>2.5</sub>, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.
- Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
- National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
- National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects to a pollutant.

Source: CARB [www.arb.ca.gov/adam](http://www.arb.ca.gov/adam), accessed February 22, 2007.

<b>TABLE 6.1-3</b>			
<b>SUMMARY OF AIR POLLUTANT DATA FROM T STREET MONITORING STATION, SACRAMENTO (COMPARED TO FEDERAL AND STATE STANDARDS)</b>			
<b>Pollutant</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
<b>Ozone (1-hour)</b>			
Highest 1-hour (ppm)	0.105	0.108	0.106
Days>0.125 ppm (Fed)	0	0	0
Days>0.09 ppm (Cal)	1	4	6
<b>Ozone (8-hour)</b>			
Highest 8-hour (ppm)	0.075	0.087	0.090
Days>0.08 (Fed) <sup>1</sup>	0	1	3
<b>Carbon Monoxide</b>			
Highest 8-hour (ppm)	2.96	3.64	N/A
Days>=9.5 ppm (Fed)	0	0	0
Days>=9.1 ppm (Cal)	0	0	0
<b>Particulate Matter (PM<sub>10</sub>)</b>			
Highest federal Concentration	58.0	53.0	109.0
Highest State Concentration	58.0	55.0	111.0
Days>50 ug/m <sup>3</sup> (Cal)	1	4	8
Days>150 ug/m <sup>3</sup> (Fed)	0	0	0
<b>Particulate Matter (PM<sub>2.5</sub>)<sup>2</sup></b>			
Highest 24-hour federal concentration (ug/m <sup>3</sup> )	46.0	59.0	54.0
Highest 24-hour State concentration (ug/m <sup>3</sup> )	52.5	63.8	54.0
Days>65 ug/m <sup>3</sup> (Fed)	0	0	0
<b>Nitrogen Dioxide</b>			
Highest 1-hour (ppm)	0.072	0.071	0.077
Days>.25 ppm (Cal) <sup>3</sup>	0	0	0
Annual (Fed) > 0.053 ppm	0	0	0
Notes:			
1. There is no State 8-hour ozone standard.			
2. There is no State 24-hour PM <sub>2.5</sub> standard.			
Source: California Air Resources Board. www.arb.ca.gov, accessed June 19, 2007.			

### Existing Ambient Air Quality

The criteria air pollutants most relevant to air quality planning and regulation in the SVAB include O<sub>3</sub>, CO, and PM<sub>10</sub>. Each of the relevant criteria pollutants is briefly described below in the context of the SVAB attainment status.

**Ozone (O<sub>3</sub>)** is a gas that is formed when ROG and NO<sub>x</sub>—both byproducts of internal combustion engine exhaust—undergo slow photochemical reactions in the presence of sunlight. Ozone concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable. The federal government uses a number of different classifications to describe the extent to which an area is in nonattainment for the federal ozone standard. The SVAB is currently classified as being in nonattainment for O<sub>3</sub>, which means that the SVAB has exceeded the standard more than four times over the last three years.

**Carbon Monoxide (CO)** is a colorless, odorless gas produced by the incomplete combustion of fuels. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. Because CO is emitted directly from internal combustion engines—unlike O<sub>3</sub>—and motor vehicles operating at slow speeds are the primary source of CO in the SVAB, the highest ambient CO concentrations are generally found near congested transportation corridors and intersections. Additional traffic generated by a project may

increase congestion at nearby intersections, and consequently increase the likelihood of creating high levels of CO.

Through control measures adopted by State, local and federal agencies, all areas of the SVAB have attained the California and federal CO standards.

**Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>)** consists of extremely small, suspended particles or droplets. PM<sub>10</sub> refers to particles 10 microns or smaller in diameter. PM<sub>2.5</sub> is a subset of PM<sub>10</sub> and refers to particles 2.5 microns or smaller in diameter. Some sources of PM<sub>10</sub>, like pollen and windstorms, are naturally occurring. However, in populated areas, most PM<sub>10</sub> is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities. PM<sub>2.5</sub> is mostly a product of incomplete combustion of fuels. Diesel engines are a particularly noteworthy source of a type of PM<sub>2.5</sub> that has been identified for its severe long-term adverse health impacts and widespread exposure to much of the state's urban population. Small-diameter particulates are of concern because they can be inhaled deep into the lungs and cause respiratory problems.

Monitoring data for the southern SVAB shows that the Basin currently is in attainment of the federal PM<sub>10</sub> standard. The SMAQMD must request redesignation to attainment and submit a maintenance plan to be formally designated to attainment. The SVAB is unclassified for federal PM<sub>2.5</sub> standards. The Sacramento region is officially in non-attainment status for the more stringent state PM<sub>10</sub> and PM<sub>2.5</sub> standards.

### **Toxic Air Contaminants**

In addition to the criteria air pollutants, another group of airborne substances, called TACs, are known to be highly hazardous to health, even in small quantities. TACs are airborne substances capable of causing short-term (acute) and/or long-term (chronic or carcinogenic) adverse human health effects (i.e., injury or illness).

TACs can be emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. Natural sources of emissions include windblown dust and wildfires. Farms, construction sites, and residential areas can also contribute to toxic air emissions. Due to mounting scientific evidence of adverse health effects, the CARB has recently identified diesel particulate matter (DPM) as a TAC. Regulation of TACs is achieved through federal and state controls on individual sources. The 1990 CAA Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated Hazardous Air Pollutants (HAP), with a goal of achieving the EPA one in one million cancer risk from TACs. All major stationary sources of designated HAPs are required to obtain and pay the required fees for an operating permit under Title V of the federal CAA Amendments.

TAC impacts are assessed using a maximum individual cancer risk (MICR) that estimates the probability of a potential maximally exposed individual (MEI) contracting cancer as a result of sustained exposure to TACs over a constant period of 24 hours per day for 70 years for residential receptor locations. The CARB and local air districts have determined that any stationary source posing an incremental cancer risk to the general population (above background risk levels) equal to or greater than 10 people out of 1 million to be excessive. For stationary sources, if the incremental risk of exposure to project-related TAC emissions meets or exceeds the threshold of 10 excess cancer cases per 1 million people, the CARB and local air district require the installation of best available control technology (BACT) or maximum available control technology (MACT) to reduce the risk threshold. To assess risk from ambient air concentrations, the CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. According to the map prepared by the CARB showing the estimated inhalation cancer risk for TACs

in the State of California, the project area has an existing estimated risk that is between 750 and 1,500 cancer cases per 1 million people in 2010.<sup>3</sup> This represents the lifetime risk that between 750 and 1,500 people in 1 million may contract cancer from inhalation of toxic compounds at current ambient concentrations under an MEI scenario.

### **Odors**

Part of any air quality analysis includes an evaluation of whether odor impacts will result from implementation of the project. The apparent presence of an odor in ambient air depends on the properties of the substance emitted, its concentration when it is emitted from a source, and the dilution of emission between the emission point and the receptor. Water treatment plants can be major sources of odors; the Sacramento River Water Treatment Plant is adjacent to the northwest corner of the project site.

### **Sensitive Receptors**

Sensitive receptors include individuals as well as specific land uses. Some individuals are considered to be more “sensitive” than others to air pollutants. The reasons for greater sensitivity than average include health problems, proximity to the emission source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be sensitive receptors to poor air quality because the very young, the old and the infirm are more susceptible to respiratory infections and other air quality related health problems than the general public. Residential uses are considered sensitive receptors because people in residential areas are often at home for extended periods of time, so they can be exposed to pollutants for extended periods. Recreational areas are considered moderately sensitive to poor air quality because vigorous exercise associated with recreation places a high demand on the human respiratory function.

Sensitive receptors in the vicinity of the proposed project area include residential uses to the south and east, in the Alkalai Flat neighborhood and at the Ping Yuen residences across I Street from the Specific Plan Area. Residences to be constructed as part of the proposed project, once completed, would also be affected by emissions resulting from operation of the various project components included within the proposed project.

### **Health Effects of Air Pollutants**

#### **Ozone**

Individuals exercising outdoors, children and people with preexisting lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible sub-groups for O<sub>3</sub> effects. Short-term exposures (lasting for a few hours) to O<sub>3</sub> at levels typically observed in Northern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. Elevated O<sub>3</sub> levels are associated with increased school absences. In recent years, a correlation between elevated ambient O<sub>3</sub> levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in high O<sub>3</sub> communities.

Ozone exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposure to a combination of pollutants that include O<sub>3</sub> may be more toxic than exposure to O<sub>3</sub> alone. Although lung volume and resistance

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3 California Air Resources Board, Map of Estimated Cancer Risk from Air Toxics, 2004.

changes observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

### Carbon Monoxide

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart.

Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport and competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes.

Reduction in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Recent studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.

### Particulate Matter

A consistent correlation between elevated ambient fine PM (PM<sub>10</sub> and PM<sub>2.5</sub>) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. In recent years, some studies have reported an association between long-term exposure to air pollution dominated by fine particles and increased mortality, reduction in life-span, and an increased mortality from lung cancer.

Daily fluctuations in PM<sub>2.5</sub> concentration levels have also been related to hospital admissions for acute respiratory conditions in children, to school and kindergarten absences, to a decrease in respiratory lung volumes in normal children and to increased medication use in children and adults with asthma. Recent studies show lung function growth in children is reduced with long-term exposure to PM.

The elderly, people with pre-existing respiratory or cardiovascular disease and children appear to be more susceptible to the effects of high levels of PM<sub>10</sub> and PM<sub>2.5</sub>.

### Nitrogen Dioxide

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO<sub>2</sub> at levels found in homes with gas stoves, which are higher than ambient levels found in California. Increase in resistance to air flow and airway contraction is observed after short-term exposure to NO<sub>2</sub> in healthy subjects. Larger decreases in lung functions are observed in individuals with asthma or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups.

In animals, exposure to levels of NO<sub>2</sub> considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of O<sub>3</sub> exposure increases when animals are exposed to a combination of O<sub>3</sub> and NO<sub>2</sub>.



## Odors

The science of odor as a health concern is still new. Merely identifying the hundreds of ROG<sup>s</sup> that cause negative odors poses a big challenge. Offensive odors can potentially affect human health in several ways. First, odorant compounds can irritate the eye, nose, and throat, which can reduce respiratory volume. Second, the ROG<sup>s</sup> that cause odors can stimulate sensory nerves to cause neurochemical changes that might influence health, for instance by compromising the immune system. Finally, unpleasant odors can trigger memories or attitudes linked to unpleasant odors, causing cognitive and emotional effects such as stress.

## Toxic Air Contaminant Emissions

TACs are airborne substances that are capable of causing chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. They include both organic and inorganic chemical substances that may be emitted from a variety of common sources including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. Unlike the “criteria” pollutants previously discussed, air quality standards have not been established for TACs.

A Health Risk Assessment (HRA) was performed by Environ to estimate the potential health risks associated with TACs associated with implementation of the proposed project and is included as Appendix O of this EIR. An HRA is a study used to estimate the increased risk of health problems in people who are exposed to different amounts of toxic substances by combining the results of studies on the health effects of various animal and human exposures to toxic air pollutants with the results of studies that estimate the level of people’s exposures at different distances from the sources of the pollutants. Overall, the HRA for the proposed project provides data on existing health conditions, evaluates potential health risk impacts associated with implementation of the proposed project, and identifies feasible mitigation measures for potentially significant impacts.

## Existing Emission Sources and Concentrations

There are many types of air pollutant sources in Sacramento County. These sources can be divided into two categories: mobile and stationary sources. The CARB maintains an emission inventory of air pollutants within the State’s air basins and counties inside those air basins. Table 6.1-4 presents the latest emission inventory of ROG, NO<sub>x</sub>, CO, and PM for Sacramento County. The “On-road Mobile Sources” category of the inventory is the primary source of ROG, NO<sub>x</sub>, and CO in Sacramento County. The “Miscellaneous Processes” category, which includes activities such as construction and farming operations, contributes almost all of the PM generated in Sacramento County.

## **Toxics**

The CARB has conducted studies to determine the total cancer inhalation risk to individuals due to outdoor toxic pollutant levels. According to the map prepared by the CARB showing the estimated inhalation cancer risk for TACs in the State of California, the project area has an existing estimated risk that is greater than 750 in a million.<sup>4</sup> This means that it is probable that if the million people were exposed to this level of airborne TAC over their lifetime (24 hours a day, seven days a week over 70 years), 750 may contract some form of cancer. While TACs are produced by many different sources, the largest contributor to inhalation cancer risk in California is diesel particulates. DPM, a particular type of PM<sub>2.5</sub>, is emitted into the air via heavy-duty diesel trucks, buses, construction equipment, and passenger cars. According to CARB’s Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles, the existing

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4 California Air Resources Board – Environmental Maps: Inhalable Cancer Risk. Accessed via ARB website: [www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm](http://www.arb.ca.gov/toxics/cti/hlthrisk/hlthrisk.htm)

<b>Source Category</b>	<b>ROG</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>
<b>Stationary Sources</b>				
Fuel Combustion	0.35	3.32	3.45	0.48
Waste Disposal	0.25	0.05	0.04	0.01
Cleaning and Surface Coatings	5.48	-	-	-
Petroleum Production and Marketing	4.23	-	-	-
Industrial Processes	1.10	0.31	0.19	1.14
Total Stationary Sources	11.41	3.69	3.68	1.64
<b>Area-Wide Sources</b>				
Solvent Evaporation	13.79	-	-	0.01
Miscellaneous Processes	4.11	39.77	3.08	38.31
Total Area-Wide Sources	17.89	39.77	3.08	38.32
<b>Mobile Sources</b>				
On-Road Vehicles	27.30	255.62	51.79	1.76
Other Mobile	10.75	91.68	26.54	1.79
Total Mobile Sources	38.06	347.30	78.32	3.55
<b>Natural (Non-Anthropogenic) Sources</b>				
Total Natural Sources	-	-	-	-
<b>TOTAL</b>	<b>67.36</b>	<b>390.76</b>	<b>85.08</b>	<b>43.51</b>

Source: California Air Resources Board. [www.arb.ca.gov/app/emsinv/emssumcat\\_query](http://www.arb.ca.gov/app/emsinv/emssumcat_query), accessed 3/2/05.

average statewide potential cancer risk from DPM is over 500 potential cancer cases per one million people. Based on the CARB data, the existing ambient TAC risk within the project area already exceeds the 10 cancer cases per 1 million people risk threshold for stationary sources, which is not an established threshold for mobile TAC. Levels of TACs are likely exacerbated by the fact that the project site is located near I-5 and the Union Pacific rail line.

## REGULATORY SETTING

Air quality in the project area is regulated by the U.S. Environmental Protection Agency (U.S. EPA), the CARB, and the SMAQMD. These agencies develop rules or regulations to meet the goals or directives imposed on them through legislation. Although U.S. EPA regulations may not be superseded, both State and local regulations may be more stringent. In general, air quality evaluations are based on air quality standards developed by the federal and State governments.

Since many air pollution problems are regional in nature, the federal government sometimes designates multi-county areas or areas consisting of several different air districts as "Nonattainment Areas". The "Nonattainment Area" designation for areas comprising more than one district means that these individual local agencies must work together to solve regional air pollution problems. The Sacramento Ozone Nonattainment Area includes all of Sacramento County and parts of Yolo, Solano, Sutter, and Placer Counties.

## Federal

### U.S. Environmental Protection Agency

The U.S. EPA is the federal agency responsible for setting and enforcing the federal ambient air quality standards for atmospheric pollutants. The U.S. EPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain locomotives. The U.S. EPA also has jurisdiction over emissions sources outside state waters (outer

continental shelf), and establishes various emissions standards for vehicles sold in states other than California.

As part of its enforcement responsibilities, the U.S. EPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, State, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs.

### Federal Clean Air Act

The Federal Clean Air Act (FCAA) (FCAA 42 USC 7401-7661), as amended, establishes air quality standards for several pollutants. These standards are divided into primary standards and secondary standards. Primary standards are designed to protect public health, and secondary standards are intended to protect public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. The FCAA requires that regional plans be prepared for non-attainment areas illustrating how the federal air quality standards will be met. The CARB approved the most recent plan in 1994 for the Sacramento ozone non-attainment area, and submitted it to the U.S. EPA. The plan was approved by the U.S. EPA in 1996. The SIP plan consists of a list of ROG and NO<sub>x</sub> control measures for demonstrating future attainment of ozone standards. The steps to achieve attainment will continue to require significant emissions reductions in both stationary and mobile sources.

### Eight-Hour Ozone Standard

The federal eight-hour ozone standard was established in response to human health studies indicating that longer O<sub>3</sub> exposures at lower levels also resulted in adverse health effects, including coughing, increased asthma attacks, chronic lung inflammation, decreased lung function, and decreased lung defenses against bacterial infections. The eight-hour standard was established in order to complement, not replace, the existing one-hour standard. Both federal ozone standards now apply, along with California's own one-hour ozone standard.

### Federal Ozone Attainment Plan

The SVAB is subject to a 1994 Federal Ozone Attainment Plan (the Sacramento Area Regional Ozone Attainment Plan). This plan was adopted by five air districts in the Sacramento area in order to build upon existing State and local air quality programs. The Plan contains adopted measures, implementation and adoption schedules for new measures, emission inventories, modeling results, contingency measures, and emissions reduction demonstrations that guide reduction of emissions in the Sacramento Region. Sacramento County needed to demonstrate attainment of federal ozone standards by 2005. In February 2006, the CARB approved the Sacramento Regional Nonattainment Area 8-Hour Ozone Rate of Progress Plan to update the previous plan with new emissions factors for attainment of the 1-Hour and 8-Hour federal ozone standards. The U.S. EPA has established the new attainment deadline for the Sacramento Region as 2013.

### Toxic Air Contaminants

Regulation of TACs is achieved through federal and State controls on individual sources. The 1990 federal CAA Amendments offer a comprehensive plan for achieving significant reduction in both mobile and stationary source emissions of certain designated HAP. All major stationary sources of designated HAP's are required to obtain and pay the required fees for an operating permit under Title V of the federal CAA Amendments.

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## State

### California Clean Air Act

The State of California air quality standards are generally more stringent than the corresponding federal standards for the criteria air pollutants. The California Clean Air Act (CCAA) requires non-attainment areas to plan for the eventual attainment of the standards. Areas have been designated as attainment or non-attainment with respect to the ambient air quality standards. The timeframe given to meet state air quality standards would depend upon the severity of air quality problems. The California Health and Safety Code Section 40914(A) requires that air districts design a plan to achieve an annual reduction in district-wide emissions of five percent or more for each non-attainment criteria pollutant or its precursor, averaged every consecutive three-year period, beginning at base year 1987.

### California Air Resources Board

The CARB, a part of the California EPA (Cal-EPA), is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, the CARB conducts research, sets State ambient air quality standards, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. The CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. The CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

### Toxic Air Contaminants

The Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588), California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 air toxics and is the primary air contaminant legislation in the State. Under the Act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high-priority designated facilities are required to submit a health risk assessment and communicate the results to the affected public. The TAC control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources of TACs, and developing new rules and regulations to reduce TAC emissions. The purpose of AB 2588 is to identify and inventory TAC emissions and to communicate the potential for adverse health effects to the public.

Assembly Bill (AB) 1807, enacted in September 1983, sets forth a procedure for the identification and control of TACs in California. The CARB is responsible for the identification and control of TACs, except in their pesticide use. AB 1807 defines a TAC as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. The CARB prepares identification reports on candidate substances under consideration for listing as TACs. The reports and summaries describe the use of and the extent of emissions in California resulting in public exposure, together with their potential health effects.

In 1998, the CARB identified DPM as a toxic air contaminant under the AB 1807 program. DPM is emitted into the air via heavy-duty diesel trucks, construction equipment, and passenger cars. In October 2000, the CARB released the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. This plan identifies DPM as the predominant TAC in California and proposes methods for reducing diesel emissions.

### Reducing Particulate Matter in California

As a first step in the implementation of Senate Bill (SB) 656 -- Reducing Particulate Matter in California, the CARB approved a list of the most readily available, feasible, and cost-effective control measures that can be employed by air districts to reduce PM<sub>10</sub> and PM<sub>2.5</sub> (collectively referred to as PM) in 2004. The list is based on rules, regulations, and programs existing in California as of January 1, 2004, for stationary, area-wide, and mobile sources. As a second step air districts must adopt implementation schedules for selected measures from the list. The implementation schedules will identify the appropriate subset of measures, and the dates for final adoption, implementation, and the sequencing of selected control measures. In developing the implementation schedules, each air district will prioritize measures based on the nature and severity of the PM problem in their area and cost-effectiveness. Consideration is also given to ongoing programs such as measures being adopted to meet national air quality standards or the state ozone planning process. The consideration and adoption of air district rules in their implementation schedules, coupled with CARB's ongoing programs, will ensure continued progress in reducing public exposure to PM and attainment of the State and federal standards.

In July 2007, the CARB adopted a regulation aimed at reducing diesel particulate matter (DPM, a particular form of PM<sub>2.5</sub>) and NO<sub>x</sub> emissions from the state's in-use off-road diesel engines. The rule will affect an estimated off-road vehicles used in construction, mining, airport ground support and other industries. The proposed regulation would require equipment fleets to apply exhaust retrofits that capture PM before it is emitted to the air, and to accelerate turnover of fleets to newer, cleaner engines.

### Global Climate Change

In 2006, California enacted the California Global Warming Solutions Act (AB 32). The Act requires California to reduce its emission of GHGs to the statewide level emitted in 1990 by 2020. The Act charges the CARB with the task of developing, with public input, a plan for reducing GHG emissions and implementing that plan by January 2012.

## **Local**

### Sacramento Metropolitan Air Quality Management District

The SMAQMD is the primary agency responsible for planning to meet federal and State ambient standards in the SVAB. In order to demonstrate the area's ability to eventually meet the federal ozone standards, the SMAQMD, along with the other air districts in the nonattainment area, maintain the region's portion of the SIP for O<sub>3</sub>. The Sacramento Air Basin's part of the SIP is a compilation of regulations that govern how the region and State will comply with the FCAA requirements to attain and maintain the federal ozone standard. The compilation of rules that comprises the Sacramento Nonattainment Area's portion of the SIP is contained in the Sacramento Area Regional Ozone Attainment Plan. The most recent update of the Plan was adopted by the SMAQMD on January 26, 2006.

As of June 1, 2006, the SMAQMD established an updated mitigation fee rate of \$14,300 per ton of emissions in excess of the SMAQMD NO<sub>x</sub> threshold. The mitigation fee is based on the Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program) cost effectiveness cap. The Carl Moyer Program was named in honor of Dr. Carl Moyer who worked to create the program in an effort to improve California's air quality in the name of public interest. The Carl Moyer Program is a grant program, implemented by a partnership of CARB and local air districts that fund the incremental cost of cleaner-than-required engines, equipment, and other sources of pollution. The Carl Moyer Program grants provide funding for early or extra emission reductions, for example, by accelerating the development and commercialization of advanced emission control technology,

accelerating the turnover rate of old equipment to newer and cleaner equipment, or helping to reduce costs to the regulated community. Projects to reduce emissions from on-road heavy-duty vehicles, idle reduction technologies, off-road diesel equipment, transportation refrigeration units, off road spark-ignition equipment, marine vessels, locomotives, and agricultural engines are also eligible for grants.

The SMAQMD rules that relate to development within the SVAB and are of relevance to the proposed project are summarized below:

Rule 201

**General Permit Requirements:** Requires any project that includes the use of certain equipment capable of releasing emission to the atmosphere as part of project operation to obtain a permit from the SMAQMD prior to operation of the equipment. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact the SMAQMD to determine if a permit is required. Portable construction equipment with an internal combustion engine over 50 horsepower are required to have a SMAQMD permit or a CARB portable equipment registration.

Rule 401

**Ringelmann Chart:** Prohibits individuals from discharging into the atmosphere from any single source of emissions whatsoever any air contaminant whose opacity exceeds certain specified limits.

Rule 402

**Nuisance:** Prohibits a person from discharging, from any source whatsoever, such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such person or the public or which cause or have a natural tendency to cause injury or damage to business or property.

Rule 403

**Fugitive Dust:** Requires a person to take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation.

Rule 411

**Boiler NOx:** Sets NOx and CO emissions from industrial, institutional, and commercial boilers, steam generators, and process heaters.

Rule 442

**Architectural Coatings:** Sets ROG limits for coatings that are applied to stationary structures or their appurtenances. The rule also specifies storage and cleanup requirements for these coatings.

Rule 460

**Adhesives and Sealants:** Limits ROG from the application of products used for bonding two surfaces. Also regulates the storage and disposal of solvents associated with such applications.

### **City of Sacramento General Plan**

The existing 1988 City of Sacramento General Plan does not contain an Air Quality Element and there are no specific goals or policies that pertain to air quality. The City of Sacramento is currently updating its 1988 General Plan, which will include an Air Quality Element.

### **Central City Community Plan**

The City of Sacramento has also created plans for the various neighborhoods within the City. The proposed project site falls under the Central City Community Plan. The Central City Community Plan contains the following subgoal under its environmental goal:

- Provide an environment which is free of annoying noise and continue to reduce air pollution.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The analysis in this section focuses on the nature and magnitude of the change in the air quality environment due to construction and operation of the proposed project. Air pollutant emissions would result from construction activities, project operations, and increased traffic volumes. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to thresholds of significance recommended by the SMAQMD.

The SMAQMD is the primary local agency responsible for air quality in the Sacramento Valley, and has published air quality thresholds of significance for use by lead agencies when making determinations of significance for a project. The SMAQMD thresholds establish standards for three types of impacts – short-term impacts from construction, long-term impacts from project operation, and cumulative impacts. The net increase in emissions generated by these activities and other secondary sources have been estimated and compared to thresholds of significance recommended by the SMAQMD. The methodology for estimating emissions and significance thresholds described in the SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (Guide) and other guidance documents were used in this analysis.

### **Construction Emissions**

Construction emissions from the proposed project were estimated by SMAQMD methodologies and judged according to the thresholds established by the SMAQMD. The construction activities associated with the individual projects under the proposed project would generate dust and exhaust emissions including ROG, NO<sub>x</sub>, and PM<sub>10</sub> and PM<sub>2.5</sub>.

### **Operational Emissions**

Operational emissions refer to the emissions that are generated by the normal day-to-day activity of the project. These activities include the heating and cooling of buildings, landscape maintenance, emissions from increased traffic, and the use of consumer products. The average daily operational emissions of criteria pollutants are estimated by using the URBEMIS 2002 emissions model. To be conservative, the year 2025 was selected as the analytical buildout year.

### **Localized CO Concentrations**

The CALINE4 dispersion model for predicting CO concentrations is the preferred method of estimating pollutant concentrations at sensitive receptors near congested roadways and intersections. For each intersection analyzed, CALINE4 adds roadway-specific CO emissions calculated from peak-hour turning volumes to the existing ambient CO air concentrations. For this analysis, CO concentrations were calculated based on a simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District. The simplified model is intended as a screening analysis in order to identify a potential CO hotspot. This methodology assumes worst-case conditions and provides a screening of maximum, worst-case CO concentrations. For the 8-hour standard, to ensure an adequate margin of safety, the highest 8-hour CO reading for 2005 from the T Street station was used as the background concentration.

### **Toxic Air Contaminants**

TACs can produce both acute (short-term) and chronic (long-term) adverse health impacts. Both construction and operational activities would emit TACs, of which the primary pollutant of concern is DPM. As such, a HRA was performed by the Environ Corporation to determine the potential human health risk from exposure to DPM during construction and operation of the proposed project.

The HRA addressed potential exposure from three primary sources of DPM: diesel trucks operating on site and along I-5, diesel powered trains that use the railway lines that cross the site, and diesel emissions from vehicles that would use the proposed Sacramento Intermodal Transportation Facility (SITF). For potential impacts associated with I-5 and the railway lines, a screening analysis was performed as recommended by the SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways*. As insufficient information is currently available to perform a detailed quantitative analysis of health risk impacts associated with the SITF, a qualitative analysis was done by comparing potential impacts from similar SITFs from two recent risk assessments (for the proposed Vallejo Station Project and the proposed Union City Inter-modal Station Passenger Rail Project to the proposed project).

## **Issues Not Addressed in the Impacts Analysis**

### **Global Climate Change**

There is evidence that the Earth's climate has been warming over the past century as a result of the buildup in the atmosphere of greenhouse gases (GHGs) emitted from human activity. The burning of fossil fuels is the largest source of GHGs, particularly CO<sub>2</sub>. Greenhouse gases act much like a blanket, trapping the Earth's heat in the atmosphere and resulting in an increase in the global mean temperature. A warmer global climate could have significant effects on local and regional weather patterns, agricultural production, flooding and water resources, and the distribution of plant and animal species among other impacts.

The City is aware of several recent letters from the California Attorney General's Office stating the need to address the issue of global warming in CEQA documents. The City acknowledges the importance of this issue and believes that any potential impacts related to global warming would be considered cumulative in nature. A cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. The City believes that it is not appropriate to address the issue within the confines of the typical CEQA analysis of cumulative impacts for the following reasons.

1) CEQA Guidelines Section 15130(a) states:

An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in section 15065(a)(3). Where a lead agency is examining a project with an incremental effect that is not "cumulatively considerable," a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

CEQA Section 15065(a)(3) states :

"Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The very nature of global warming makes it impossible to identify either the incremental effect or the effects of other current and foreseeable projects, pursuant to the CEQA process. Therefore there is no basis for determining what is "cumulatively considerable" which would typically lead to a CEQA threshold of significance.

2) CEQA Guidelines Section 15130(a)(2) states:

When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the lead agency's conclusion that the cumulative impact is less than significant.



While advances have been made in the past few years in scientific activity to assess the potential impact of future climate change due to global warming and related potential impacts on issues such as flood risk and water supply, projections of future changes are still highly speculative and dependent on assumptions and generalizations.

3) CEQA Guidelines Section 15130(b)(3) states:

Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

Because climate change is a global phenomenon, no geographic limitation exists.

4) CEQA Guidelines Section 15130(b)(5) states:

An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Lacking the necessary facts and analysis to support a conclusion as to the "significance" of global warming, and the lack of any adopted methodology or thresholds of significance the City is unable to determine the effectiveness of potential mitigation measures.

In addition to the difficulty in following the CEQA requirements described above, to accurately account for CO<sub>2</sub> emissions attributable to the project, it would be necessary to differentiate between new sources that otherwise would not exist but for the project, and existing sources that have simply relocated to the Specific Plan Area (presumably, from any place in the world). The City believes that the appropriate approach to addressing the issue of global warming is through the adoption of policies, ordinances, and regulations rather than the imposition of conditions on a project-by-project basis as discussed below.

In part to address deteriorating air quality issues, the City Council adopted Smart Growth Principles into the General Plan in 2001. Smart Growth changes development patterns by supporting projects that incorporate land uses, transportation management, and infrastructure that discourage urban sprawl and promote infill development, reduce vehicle emissions, and improve air quality.

The City's Infill Program adopts numerical and qualitative infill development goals, targets specific types of infill development, and offers focused procedural and financial incentives to help achieve infill development goals.

As part of the Sustainability Master Plan (Plan), currently being prepared, the City will integrate environmentally sustainable practices into City policies, procedures, and operations that will provide tools for measuring the City's progress towards sustainability. The foundation for the Plan is the United Nations Environmental Accords, a set of 21 actions that the United Nations asked city governments to adopt and implement over a seven-year period. The City's plan will be adopted by 2008. The pertinent goals and targets identified in the Plan will be incorporated into the City's General Plan. The goals and targets will serve as a policy framework for the City to ensure that sustainability concerns are incorporated into the City's decision-making processes.

The City's Building Department is currently working on an ordinance to adopt the Leadership in Energy and Environmental Design (LEED) Green Building Rating System at the Silver certification standards for new buildings in the City. LEED is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings and promotes a whole-building approach to sustainability by recognizing performance in five key areas: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. To earn certification, a building project must meet certain prerequisites and performance credits within each category. Projects are awarded Certified, Silver, Gold, or Platinum certification

depending on the number of credits they achieve. LEED Silver is awarded to projects that achieve at least 50% of the core credits available. Points are earned for certain efficiencies in categories such as Indoor Environmental Quality, Building Materials and Resources, and Energy and Atmosphere.

In addition to City policies and ordinances, existing federal and State programs are credited with reducing green house gases in California. The City requires compliance with the California Energy Commission's Title 24 energy efficiency standards for buildings, appliance energy efficiency standards, diesel-engine idling restrictions, the required use of E6 fuel (6% ethanol, 94% gasoline), and vehicle emission standards, which help to reduce the production of greenhouse gases throughout the City.

The City also is a member of the Sacramento Area Council of Governments (SACOG), which covers a six-county area. SACOG adopted a Metropolitan Transportation Plan (MTP) to provide a regional vision for all modes of surface transportation and a guide for regional transportation investments. The MTP uses State and federal funds that come to the region for programs designed to meet goals which include: clean air; design of communities to encourage local walk, bicycle, and transit travel; and for improvements to main routes that serve longer distance travel around the region - specifically freeways, rail lines, and major roadways and streets that serve regional traffic.

Although building designs have not yet been prepared, some or all of the following energy conservation measures that would reduce greenhouse gas emissions would be included in individual building designs as feasible and appropriate:

#### **Architectural Items**

- Specified products will consider locally produced and manufactured items as much as possible where appropriate.
- The specified products will include options for use of recycled content.
- Exterior wall systems will be fully insulated beyond minimum Energy Code standards.
- The roofing systems will include insulation that meets or exceeds minimum Energy Code requirements.
- Glazing will specify insulated Low-E glass with thermal break window frame systems.

#### **Mechanical & Plumbing Systems**

- Variable Frequency Drives (VFDs) will be specified for hot and chilled compressors and water pumps.
- Air Handling Units (AHU) will utilize a 100% Outside Air Economizer Cycle.
- "Low flow" water efficient fixtures will be specified throughout.
- Electronic faucets will be specified where appropriate.
- Hot water circulating systems will minimize wait time and water loss at fixtures. The systems will be specified to operate on a timer to maximize hot water system efficiency.
- The VFDs will modulate to match actual building demands.

#### **Electrical Systems**

- All light fixtures for indoor use will be Fluorescent type with T-8 or T-5 lamps and Electronic Ballasts.

- All exterior Light fixtures will be HID type.
- Use occupancy sensors for all areas allowed by code, such as offices and conference rooms.
- Use VFD's as a means of motor starting on mechanical equipment.
- Energy star rated motors and fixtures will be specified for the project.

### **Landscape**

- The landscape plans will call for the use of drought tolerant plant species where ever possible in order to avoid excessive water demand.
- Use of mulch will be specified for landscape areas to further retain moisture.

### **Irrigation**

- Irrigation systems will be designed so that the application rate does not exceed the infiltration rate of the soil, and will minimize overspray and runoff.
- Control valves will be installed to account for different site specific characteristics (i.e. full sun/full shade, level/sloping, shrub/lawns, street trees, etc.).
- Rain sensors will interrupt the normal irrigation cycle when significant amounts of rainfall are detected.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project would increase NO<sub>x</sub> levels above 85 pounds per day for short-term effects (construction);
- The project would increase either O<sub>3</sub> precursors, NO<sub>x</sub> or ROG, above 65 pounds per day for long-term effects (operation);
- The project would emit pollutants at a level equal to, or greater than, 5% of the CAAQS (50 micrograms/cubic meter for 24 hours) if there is an existing or projected violation; however, if a project is below the ROG and NO<sub>x</sub> thresholds, it is assumed that the project is below the PM10 threshold as well;
- The project would result in CO concentrations that exceeds the 1-hour State ambient air quality standard of 20.0 parts per million (ppm) or the 8-hour State ambient standards of 9.0 ppm;
- The project would substantially increase the risk of exposure to TACs;
- The project would generate substantial odors and/or expose a sensitive population to substantial noxious odors; or
- The project could cause substantial ground-level winds, resulting in hazardous conditions for pedestrians.

### **Project Components**

The proposed Specific Plan does not contain any goals or policies that directly address air quality. However, the proposed Specific Plan does include elements intended to reduce reliance on

automobiles and improve energy efficiency, which could reduce the amount of air pollution generated by the project. In addition, an Air Quality Mitigation Plan (AQMP) has been prepared for the proposed Specific Plan (see Appendix E).

### **Project-Specific Impacts and Mitigation Measures**

#### **6.1-1 The proposed project would generate particulate matter during grading of construction site(s) and construction of the proposed structures.**

Prior to actual building construction, the building sites would have to be graded and prepared for development. Grading activities involve clearing and leveling the land using heavy equipment such as scrapers, bulldozers, and backhoes. Particulate matter (e.g. fugitive dust, PM<sub>10</sub>, or PM<sub>2.5</sub>) is generated during this process as the ground is disturbed. The total amount of particulate matter generated is normally determined by the size of the graded area. The larger the area, the more particulate matter is created. Particulate emissions would also occur during other construction phases.

The SMAQMD recommends a PM<sub>10</sub> threshold of significance that is equal to the CAAQS for PM<sub>10</sub> of 50 µg/m<sup>3</sup>. The SMAQMD's Guide to Air Quality Assessment in Sacramento County (Guide) specifies a methodology for evaluating whether a project would exceed this PM<sub>10</sub> standard during construction. Appendix B of the Guide contains Table B.1 – Particulate Matter Screening Level for Construction Projects. This table lists various acreages and mitigation associated with the various acreage ranges which would reduce PM<sub>10</sub> impacts to less-than-significant levels. As long as a project's maximum acreage graded per day falls into one of the acreage ranges, and the appropriate mitigation measures are applied, the project would be considered to have a less than significant particulate matter impact, but without mitigation, project construction would have a *significant impact*.

#### **Mitigation Measures**

According to the SMAQMD Guide, compliance with Mitigation Measure 6.1-1 would decrease fugitive dust (PM<sub>10</sub>) impacts from grading associated with the proposed project to a level that is considered ***less than significant***.

6.1-1 *The following measures are required by the SMAQMD for level one mitigation, and shall be implemented during grading at all project sites:*

- a) *Water all soil with sufficient frequency as to maintain soil moistness.*
- b) *Maintain two feet of freeboard space on haul trucks.*

*In addition, the following measures shall be implemented to further reduce the PM<sub>10</sub> impact during construction activity:*

- c) *All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry brushes is expressly prohibited except where preceded or accompanied by sufficient water or chemical stabilizer/suppressant.)*
- d) *Wheel washers for all exiting trucks shall be installed, or all trucks and equipment leaving the site shall be washed off.*
- e) *Excavation and grading activity shall be suspended when winds exceed 20 mph.*

- f) *During clearing, grading, earth-moving, or excavation operations, fugitive dust emissions shall be controlled by watering exposed surfaces two times per day, watering haul roads three times per day or paving of construction roads, or dust-preventative measures. All onsite unpaved roads and offsite unpaved access roads shall be effectively stabilized of dust emissions using water or a chemical stabilizer or suppressant.*
- g) *Onsite vehicle speeds on unpaved roads shall be limited to 15 mph.*

#### **6.1-2 Construction of the proposed project would generate emissions of ozone precursors.**

In addition to PM<sub>10</sub> generated by grading, infrastructure installation, building construction, etc., the other pollutants of concern during construction are the O<sub>3</sub> precursors ROG and NO<sub>x</sub>. The SMAQMD has not developed a threshold of significance for ROG in construction equipment exhaust. Their main effort of ROG control is to limit the ROG in architectural coatings through SMAQMD Rule 442. However, heavy-duty diesel construction equipment emits substantial amounts of NO<sub>x</sub>, and the SMAQMD has developed a threshold of 85 pounds per day for NO<sub>x</sub>, from construction activity.

Many and various pieces of construction equipment would be used during construction of the proposed project. Much of this equipment likely would be diesel-fueled and would emit NO<sub>x</sub> as part of the fuel-combustion process. The amount of NO<sub>x</sub> emitted per day during construction would depend on the number and type of equipment used, which would vary from day to day over the total 20-year construction period. Consequently, SMAQMD recommendations for the type and number of construction equipment appropriate to each construction stage were used (i.e., the equipment lists in Chapter 3, Table 3.1 of the SMAQMD CEQA Guide were scaled up, also as recommended by the SMAQMD, to fit the acreage and building heights specified in the Project Description) along with SMAQMD recommended equipment NO<sub>x</sub> emission rates (i.e., from Table 3.2 of the CEQA Guide) to estimate average daily NO<sub>x</sub> emissions for each year of the 20-year construction schedule, as shown in Table 6.1-5. Appendix D1 contains calculations of construction emissions. Construction NO<sub>x</sub> emissions would exceed the SMAQMD threshold of 85 pounds per day by a considerable margin and would have a *significant impact*.

#### Mitigation Measures

Compliance with the following measures would reduce the impact to a ***less-than-significant level***.

6.1-2 *The following measures shall be incorporated into construction contracts and included on all construction plans:*

- a) *The project applicant and/or contractor shall provide a plan, for approval by the City of Sacramento and the SMAQMD, demonstrating that the heavy-duty (> 50 horsepower) off-road vehicles to be used in the construction project, including owned, leased and subcontractor vehicles, would achieve a project wide fleet-average 20% NO<sub>x</sub> reduction and 45% particulate reduction compared to the most recent CARB fleet average at time of construction. The SMAQMD shall make the final decision on the emission control technologies to be used by the project construction equipment; however, acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.*

Phase/Year	NO <sub>x</sub> Emissions
<b>Phase 1A</b>	
2010	484
2011	484
<b>Phase 1B</b>	
2012	579
2013	579
<b>Phase 2</b>	
2014	358
2015	358
2016	358
2017	358
<b>Phase 3</b>	
2019	621
2020	621
2021	621
2022	621
2023	621
<b>Phase 4</b>	
2024	426
2025	426
2026	426
2027	426
2028	426
2029	426
Threshold	85/ lb/day

Source: PBS&J/EIP, 2007. Calculation data sheets are provided in Appendix D.

- b) *The project applicant and/or contractor shall submit to SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that shall be used an aggregate of 40 or more hours during any phase of the construction project. The inventory shall include the horsepower rating, engine production year, projected hours of use or fuel throughput for each piece of equipment, and its compliance status with respect to CARB emission reduction regulations for off-road diesel equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours prior to the use of subject heavy-duty off-road equipment, the project applicant and/or contractor shall provide SMAQMD with the anticipated construction timeline, including start date and name and phone number of the project manager and on-site foreman.*
- c) *The project applicant and/or contractor shall ensure that emissions from all off-road diesel powered equipment used on the project site do not exceed 40% opacity for more than three minutes in any one hour. Any equipment found to exceed 40% opacity (or Ringelmann 2.0) shall be repaired immediately and SMAQMD shall be notified within 48 hours of identification of non-compliant equipment. A visual survey of all in-operation equipment shall be made at least weekly by contractor personnel certified to perform opacity readings, and a monthly summary of the visual survey results shall be submitted to the SMAQMD throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which*

*no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.*

- d) *Limit vehicle idling time to five minutes or less.*
- e) *The project applicant shall pay into the SMAQMD's construction mitigation fund to offset construction-generated emissions of NO<sub>x</sub> that exceed SMAQMD's daily emission threshold of 85 lbs/day. The project applicant shall coordinate with the SMAQMD for payment of fees into the Heavy-Duty Low-Emission Vehicle Program designed to reduce construction related emissions within the region. Fees shall be paid based upon the applicable current SMAQMD Fee. The applicant shall keep track of actual equipment use and their NO<sub>x</sub> emissions so that mitigation fees can be adjusted accordingly for payment to the SMAQMD.*

Implementation of Mitigation Measures 6.1-2(a) through (d) (which are the SMAQMD standard mitigation measures for projects with significant construction-phase NO<sub>x</sub> emissions) would result in a minimum 20% reduction of NO<sub>x</sub> construction emissions according to the SMAQMD Guide. While the proposed project's impact would be substantially reduced through implementation of Mitigation Measures 6.1-2(a) through (d), the impact during construction would remain significant. However, the mitigation fee collected under Mitigation Measure 6.1-2(e) would enable the SMAQMD to reduce emissions from other NO<sub>x</sub> sources off-site to offset the project construction NO<sub>x</sub> emissions that exceed the SMAQMD's threshold.

*In addition to the above, the following NO<sub>x</sub> reducing measures shall be incorporated in all construction contracts:*

- f) *Construction equipment shall be kept in optimum running condition at all times.*
- g) *When appropriate, use alternative fueled (such as aqueous diesel fuel) or catalyst equipped diesel construction equipment.*
- h) *When appropriate, replace fossil-fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).*

### **6.1-3 Operation of the proposed project would result in the generation of increased ROG and NO<sub>x</sub> emissions.**

Implementation of the proposed Specific Plan would generate an increase in criteria pollutants associated with operation of new residential, commercial, and recreational. ROG and NO<sub>x</sub> are the primary criteria pollutants of concern in Sacramento County because they react to form O<sub>3</sub>, which is considered a criteria pollutant. The County is currently in nonattainment of the federal and State ozone standards. The SMAQMD has developed thresholds of significance for these pollutants. PM<sub>10</sub>, while an issue in Sacramento County, is not typically produced in high amounts by project operation. The SMAQMD sets no standards for PM<sub>10</sub> for the long-term operational phase of a project.

Emissions would be created by the proposed project in two ways; (1) Stationary equipment used to operate the facilities (water heaters and boilers) would create O<sub>3</sub> precursors of ROG and NO<sub>x</sub>, and (2) the increase in traffic generated by the project would also contribute ROG and NO<sub>x</sub>. All new stationary equipment would require a permit from the SMAQMD prior to operation. This would ensure that the equipment achieves the lowest achievable emission rate for its equipment class. Consequently, the newer equipment may actually be held to more stringent emission standards than existing equipment.

The amount of ROG and NO<sub>x</sub> pollutants that would be generated by operation of the project was calculated using the URBEMIS 2002 modeling program. The modeling was performed using the methodology described in the “Methods of Analysis” portion of this section. For this analysis, modeling all the project components as a whole was performed and emissions were calculated for the year of the proposed project buildout. Operational emissions for each new building include emissions from vehicle trips generated by the building occupants. As shown in Table 6.1-6, the combined impact from operation the proposed project would exceed the SMAQMD thresholds of 65 lbs/day for ROG and NO<sub>x</sub>. This would create a *significant impact*.

Emissions Source	Emissions in Pounds per Day	
	ROG	NO <sub>x</sub>
Water and Space Heating	10.62	140.40
Landscape Maintenance	0.63	0.07
Consumer Products	596.86	—
Architectural Coatings	264.05	—
Motor Vehicles	300.00	244.93
<b>Maximum Daily Emissions</b>	<b>1,172.17</b>	<b>385.40</b>
SMAQMD Thresholds (lb/day)	65	65
Significant Impact	<b>Yes</b>	<b>Yes</b>
Source: PBS&J/EIP, 2007. Calculation sheets are provided in Appendix D2.		

### Mitigation Measures

Compliance with Mitigation Measure 6.1-3 would provide the additional O<sub>3</sub> precursor reductions needed to achieve the minimum 15 percent recommended by the SMAQMD. Nonetheless, this reduction would not reduce operational impacts to a level that is below the standard of significance, since most emissions associated with the project are the result of vehicle trips. There are no other feasible mitigation measures available. This impact would remain a ***significant and unavoidable impact***.

6.1-3 *The project applicant shall implement the emission reduction strategies contained in the Railyards AQMP (see Appendix E). The AQMP shall be endorsed by the SMAQMD prior to the first building permit. Documentation confirming implementation of the AQMP shall be provided to the SMAQMD and the City of Sacramento prior to issuance of occupancy permits.*

The SMAQMD recommends that lead agencies require projects to reduce their O<sub>3</sub> precursor emissions by 15 percent. The SMAQMD has prepared a list of measures and corresponding reduction credits that can be applied to meet the required 15 percent reduction in emissions. Each emission reduction measure is assigned a point value, which is “approximately equivalent to the percentage reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current ITE Trip Generation Handbook.” The emission reduction measures are organized into the following categories:

- Bicycle, Pedestrian and Transit
- Parking
- Commercial Building Design



- Residential Development
- Mixed Use
- Building Components
- Transportation Demand Management (TDM) measures

The project applicant has prepared a Draft Air Quality Mitigation Plan (AQMP) to identify measures that could be implemented by the project for reduce air emissions.

According to the Draft AQMP, the following measures would be incorporated into the proposed project design:

- The project site is located within ½ mile of an existing Class I or Class II bike lane and provides a comparable bikeway connection to that existing facility (1 point).
- The project provides a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site (1 point).
- Project provides high density or mixed-use proximate to transit (2 points).
- Project provides high-density residential development (3 points).
- Multiple and direct street routing (grid style) (1 point).
- Development of projects predominately characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or in a single site in an integrated development project with functional interrelationships and a coherent physical design (3.8 points).

The AQMP prepared for the proposed project and endorsed by the SMAQMD also recommends the following emission reduction strategies (and the associated point value):

- Site design and building placement minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and non-residential uses that impede bicycle or pedestrian circulation are eliminated (1 point).
- Bus or streetcar service provides headways of one hour or less for stops with ¼ mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting) (0.5 points).
- Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic-calming measures (1 point).
- Customer paid parking system (7.2 points).
- Provide parking less than code (12 points max).
- Parking facilities are not adjacent to street frontage (1.5 points).
- Affordable housing component (0.4 point).
- Project does not feature fireplaces or wood burning stoves (0.67 points).

- Install energy star roof materials (0.18 points).
- Project exceeds Title 24 requirements by 20% (0.67 points).
- Orient 75 or more percent of homes and/or buildings to face either north or south (within 30 degrees of N/S) (0.34 points).
- Measures to reduce heat islands by incorporating strategies so that 50% of the site's hardscape had shade coverage within 15 years of occupancy, at least 50% of the site's paving materials have a solar reflectance index of at least 29 and/or the site's hardscape is comprised of an open grid pavement system (1.0 points maximum x 1[100% mixed use]).

If all of the above emission reduction measures were implemented, a 35.65 percent reduction could occur. This would exceed the 15 percent emission reduction/mitigation guideline established by the SMAQMD. Because the project is designed as a high-density, mixed-use, transit-oriented development, much of the reduction would be achieved by project design. Most of the selected measures listed above would not require monitoring beyond completion of proposed project construction. Nonetheless, even with the inclusion of the above-mentioned design features, NO<sub>x</sub> and ROG emissions associated with either of the two project scenarios would still exceed the SMAQMD threshold of 85 lbs/day.

#### **6.1-4 Operation of the proposed project could cause an increase in CO concentrations from project-related traffic.**

While motor vehicles emit the O<sub>3</sub> precursors ROG and NO<sub>x</sub>, they also generate CO, which is a directly emitted pollutant. CO levels are highest at intersections where there is congestion and traffic is slow. The proposed project would add traffic to existing roadways and to new roadway intersection proposed as part of the proposed project. To the extent that increases in traffic volumes lower the level of service (LOS), busy intersections could experience higher concentrations of CO. LOS "D" or worse results in conditions where traffic is no longer "free flow." The traffic section (see Section 6.12 Transportation and Circulation) identifies a number of intersections where LOS would be "D" or worse in future near-term (2013) or long-term (2030) years during a.m. or p.m. peak hours under project build-out conditions. CO modeling results for existing, near-term with Project (2013), and long-term with Project (2030) conditions for these intersections can be found in Table 6.1-7.

As shown in Table 6.1-7, the modeling showed that 8-hour CO concentrations would not exceed the NAAQS or CAAQS under future with project conditions. This would consequently be considered a ***less-than-significant impact***.

#### Mitigation Measures

*None required.*

#### **6.1-5 Implementation of the proposed project could result in a substantial increase in exposure of sensitive receptors to toxic air contaminants.**

As previously mentioned, the proposed project would generate a less-than-significant impact related to cancer risks generated from vehicle emissions (specifically, diesel emissions) under buildout conditions. The amount of emissions generated under buildout conditions would be far greater than

TABLE 6.1-7

**ESTIMATED EXISTING AND PROJECTED FUTURE  
MAXIMUM 8-HOUR CO CONCENTRATIONS<sup>a</sup>**

<b>Modeled Intersection</b>	<b>Existing Conditions (2007)<sup>b</sup></b>	<b>Near Term Future With the Initial Phase (2013)<sup>c</sup></b>	<b>Long Term Future With the Full Project (2030)<sup>d</sup></b>	<b>Project Impact</b>
I-5 Southbound Ramps and Richards Boulevard	4.5 ppm	4.4 ppm	3.8 ppm	No
I-5 Northbound Ramps and Richards Boulevard	5.0 ppm	4.8 ppm	4.0 ppm	No
Bercut Drive and Richards Boulevard	4.6 ppm	5.1 ppm	4.0 ppm	No
North 5 <sup>th</sup> Street and Richards Boulevard	4.4 ppm	4.2 ppm	4.1 ppm	No
North 7 <sup>th</sup> Street and Richards Boulevard	4.5 ppm	4.6 ppm	3.8 ppm	No
North 10 <sup>th</sup> Street and Richards Boulevard	4.3 ppm	4.2 ppm	4.0 ppm	No
12 <sup>th</sup> Street and North 16 <sup>th</sup> Street and Vine Street	N/A <sup>e</sup>	6.5 ppm	N/A	No
I-5 Southbound Ramps and Bannon Street	N/A	N/A	3.8 ppm	No
I-5 Northbound Ramps and Bannon Street	N/A	N/A	4.0 ppm	No
Bercut Drive and Bannon Street	3.7 ppm	4.5 ppm	3.9 ppm	No
North 5 <sup>th</sup> Street and Bannon Street	N/A	N/A	3.9 ppm	No
North 7 <sup>th</sup> Street and Bannon Street	N/A	N/A	3.9 ppm	No
12 <sup>th</sup> Street and Bannon Street	N/A	N/A	4.1 ppm	No
North 7 <sup>th</sup> Street and North B Street	4.0 ppm	4.1 ppm	3.8 ppm	No
North 10 <sup>th</sup> Street and North B Street	3.8 ppm	4.3 ppm	3.8 ppm	No
12 <sup>th</sup> Street and North B Street	4.8 ppm	4.8 ppm	4.2 ppm	No
North 16 <sup>th</sup> Street and North B Street	5.4 ppm	4.8 ppm	4.1 ppm	No
Bercut Drive and South Park Street	N/A	3.9 ppm	3.7 ppm	No
Bercut Drive and Railyards Boulevard	N/A	4.1 ppm	3.8 ppm	No
Crocker Street and Railyards Boulevard	N/A	3.9 ppm	3.8 ppm	No
Judah Street and Railyards Boulevard	N/A	4.0 ppm	3.7 ppm	No
6 <sup>th</sup> Street and Railyards Boulevard	N/A	4.0 ppm	3.8 ppm	No
7 <sup>th</sup> Street and Railyards Boulevard	N/A	4.2 ppm	3.9 ppm	No
Bercut Drive and Camille Lane	N/A	3.9 ppm	3.9 ppm	No
7 <sup>th</sup> Street and F Street	4.0 ppm	4.0 ppm	3.9 ppm	No
5 <sup>th</sup> Street and G Street	N/A	4.4 ppm	4.0 ppm	No
6 <sup>th</sup> Street and G Street	N/A	4.3 ppm	3.9 ppm	No
7 <sup>th</sup> Street and G Street	4.0 ppm	4.2 ppm	3.9 ppm	No
6 <sup>th</sup> Street and H Street	4.0 ppm	4.7 ppm	3.9 ppm	No
7 <sup>th</sup> Street and H Street	4.0 ppm	4.4 ppm	3.9 ppm	No
8 <sup>th</sup> Street and H Street	4.1 ppm	4.1 ppm	3.8 ppm	No
16 <sup>th</sup> Street and H Street	4.9 ppm	4.4 ppm	3.9 ppm	No
Jibboom Street and I Street	4.3 ppm	4.5 ppm	4.0 ppm	No
3 <sup>rd</sup> Street and I Street	N/A	N/A	3.9 ppm	No
5 <sup>th</sup> Street and I Street	4.9 ppm	4.7 ppm	4.0 ppm	No
6 <sup>th</sup> Street and I Street	4.7 ppm	4.9 ppm	4.0 ppm	No
7 <sup>th</sup> Street and I Street	4.6 ppm	4.3 ppm	3.9 ppm	No

TABLE 6.1-7

**ESTIMATED EXISTING AND PROJECTED FUTURE  
MAXIMUM 8-HOUR CO CONCENTRATIONS<sup>a</sup>**

<b>Modeled Intersection</b>	<b>Existing Conditions (2007)<sup>b</sup></b>	<b>Near Term Future With the Initial Phase (2013)<sup>c</sup></b>	<b>Long Term Future With the Full Project (2030)<sup>d</sup></b>	<b>Project Impact</b>
3 <sup>rd</sup> Street and J Street	5.0 ppm	5.1 ppm	4.2 ppm	No
3 <sup>rd</sup> Street and L Street	4.5 ppm	4.5 ppm	3.9 ppm	No
5 <sup>th</sup> Street and L Street	4.5 ppm	4.2 ppm	3.9 ppm	No
5 <sup>th</sup> Street and Capitol Mall	4.2 ppm	4.0 ppm	3.8 ppm	No
3 <sup>rd</sup> Street and P Street	4.9 ppm	4.4 ppm	4.0 ppm	No
Richards Boulevard and 12 <sup>th</sup> Street	N/A	N/A	4.1 ppm	No

## Notes:

Calculation sheets are provided in Appendix D.

The state and federal eight-hour average CO standard is 9.0 ppm.<sup>5</sup> No exceedances of applicable standards were estimated. These estimated concentrations are based on the traffic impact analysis prepared by Dowling Associates, Inc.

- Modeled with the simplified CALINE4 screening procedure developed by the Bay Area Air Quality Management District and accepted by the SMAQMD. Concentrations correspond to a location between 25 to 50 feet from the edge of the given intersection.
- Existing levels refer to 2007 and include worst-case background concentrations of 3.64 ppm for eight-hour CO concentrations for the years 2004 through 2006. Background concentrations are based on a three-year running average of the highest one-hour and eight-hour concentrations measured at the Pomona air monitoring station. This scenario presents conditions resulting from cumulative projects only.
- These estimates refer to 2013 and include worst-case background concentrations of 3.64 ppm eight-hour average for the years 2004 through 2006. These projected backgrounds were based on future CO emission trends. This scenario presents conditions resulting from 2013 baseline condition with the Initial Phase of the proposed project.
- These estimates refer to 2030 and include worst-case background concentrations of 3.64 ppm eight-hour average for the years 2004 through 2006. These projected backgrounds were based on future CO emission trends. This scenario presents conditions resulting from 2030 baseline condition with full buildout of the proposed project.
- Intersection does not exist under this analysis scenario.

Source: PBS&J/EIP, 2007.

5 Bay Area Air Quality Management District. BAAQMD CEQA Guidelines—Assessing the Air Quality Impacts of Projects and Plans. December, 1999. pages 37–46.

what would be produced during any of the construction phases or during simultaneous construction and operation. The exposure of sensitive receptors to TAC during remediation of the Specific Plan Area has been, and will continue to be, addressed under the oversight of the Department of Toxic Substances Control (DTSC) that is charged with ensuring that all remedial measures are protective of human health and the environment. Additional discussion is provided in Section 6.5, Hazards and Hazardous Substances.

The discussion that follows addresses exposure of sensitive receptors to toxic air contaminants in the operational phase, i.e. upon full buildout of the proposed Specific Plan.

A HRA was performed by the Environ Corporation using the guidance provided by the CARB and SMAQMD, and is presented in its entirety in Appendix O. As discussed in the HRA, there are three potential sources of DPM near sensitive receptors of concern, which are residential land uses near a freeway, residential land uses near the rail line, and residential land use near the SITF.

To analyze potential cancer risks associated with freeway DPM emissions, a screening approach was used in accordance with the CARB guidance and SMAQMD recommendations. For this analysis, peak hour traffic volumes of I-5 near the proposed Specific Plan Area provided in the Traffic Study were used. Since the traffic on I-5 would increase as the proposed project is built out, conditions in the Year 2030 indicate the busiest freeway operating conditions.

Traffic volumes south of the Richards Boulevard southbound off-ramp and north of the I Street northbound on-ramp were summed up to estimate the total peak traffic on the section of I-5 in the vicinity of the project area, which is estimated to be between 17,702 and 18,983 trips for the three scenarios in 2030, then rounded up to 20,000 trips to compare to the nearest entry in Table 2 from the SMAQMD guidance. Based on this comparison, if the nearest new residence is placed no closer than 50 feet west of I-5 and 200 feet east of I-5, the cancer risks from the freeway DPM are considered less than the threshold in the SMAQMD guidance (446 per million).

As the proposed Specific Plan allows for residential development railway lines (particularly parcels 17, 35, 44, 47, 48, 49, 51 and 52) on which Union Pacific currently operates freight trains, a cancer risk analysis for railway DPM emissions was performed and included in the HRA. While the approach described in the SMAQMD guidance does not directly address the railway lines, in consultation with the SMAQMD, the equivalent freeway traffic volume was estimated for the DPM emissions from the railway lines, and the screening tables were then used to assess the DPM cancer risks, similar to the methodology used for freeway DPM emissions. Since the engine information is not available for the freight trains, the emissions information for Union Pacific locomotives from the Roseville Rail Yard Study<sup>6</sup> was used to estimate the DPM emissions of the freight trains. For the passenger trains, one locomotive engine per train is assumed. Since these engines were all likely manufactured prior to 2001 and no specific emission information is available, the U.S. EPA Tier 0 controlled DPM emission factor of line-haul engines was used to estimate DPM emissions. It should be noted that these Tier 0 emission factors are the current standards for these engines and that the proposed future year standards require retrofitting and would result in much lower DPM emission factors. The DPM emission rates from the freight trains and the passenger trains were summed up to be and converted to equivalent peak hour vehicle traffic, using the weighted average of the DPM emission rates based on relative vehicle miles traveled (VMT) (0.0376 g/vehicle-mile), which were estimated from Table 3 of the SMAQMD guidance. This resulted in a value of 2,997 vehicles per hour rounded up to 4,000 vehicles per hour, the nearest entry in Table 1 from the SMAQMD guidance. Based on this screening analysis, no matter where the new

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6 A major study of DPM emissions and their associated health risks to people living near the UPRR rail yard in Roseville CA; performed by the CARB Stationary Source Division, released October 14, 2004.

residences are placed, the cancer risks from the locomotive DPM are considered lower than the threshold in the SMAQMD guidance (446 per million).

As there is insufficient information to allow a detailed evaluation of the health risks that could result from the SITF, a qualitative analysis was performed in the HRA to evaluate the potential for impacts on human health. The primary source of TACs from an SITF is the exhaust from diesel-powered transit equipment. Diesel engines emit a complex mixture of air pollutants, composed of gaseous and solid material. The SITF would allow the integration of rail, bus, bicycle and pedestrian transport. The buses and locomotives serving the SITF have the potential to emit DPM. To evaluate potential health risks, two recent risk assessments for the proposed Vallejo Station Project and the proposed Union City Inter-modal Station Passenger Rail Project, which involve similar SITFs, were identified and compared to conditions of the proposed project. These evaluations resulted in incremental cancer risks at the nearest resident of 8 and 9 in a million, respectively. In addition, the CARB is in the process of implementing measures to reduce diesel exposure from buses, including imposing stricter diesel exhaust standards on bus fleets, requiring low sulfur fuel for buses, and the Transit Fleet Vehicle Rule which requires reductions in the total DPM emissions from all diesel transit fleet vehicles statewide. In addition, while the CARB does not have jurisdiction over locomotive engines, they do regulate fuel used in intrastate locomotives, including requiring diesel fuel sold for intrastate diesel-electric locomotives operating in California to meet the CARB diesel fuel specifications. As a result of CARB and U.S. EPA diesel risk reduction measures, risks of exposure to emissions at the SITF are likely to be reduced in future years, and this impact would be *less than significant*.

#### Mitigation Measures

*None required.*

#### **6.1-6 The proposed project could generate objectionable odors or expose on-site sensitive uses to odors from existing odor sources.**

Objectionable odors are a localized phenomenon and are confined to the vicinity of the emitter of the odor. Construction activities do not usually emit offensive odors. Although construction activities occurring in association with the proposed project could generate airborne odors associated with the operation of construction vehicles (i.e., diesel exhaust) and the application of interior and exterior architectural coatings, these emissions would only occur during daytime hours, would generally be restricted to the immediate vicinity of the construction site and activity, and would not affect a substantial number of people.

Offensive odors are usually associated with land uses that include agriculture, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. Potential operational airborne odors could result from cooking activities associated with new residences and restaurants. However, these odors would be similar to existing residential and restaurant uses in the vicinity and would be confined to the immediate vicinity of the new buildings. The other potential source of odors would be new trash receptacles within the proposed project area.

Trash receptacles within the project area will be required to have lids that enable convenient collection and loading and will be emptied on a regular basis, in compliance with City of Sacramento regulations for the collection of solid waste.

The existing Sacramento River Water Treatment Plant (SRWTP) is adjacent to the project site to the northwest. However, uses proposed for on-site parcels (#2 and 3a, a retail facility and parking structure) adjacent to the SRWTP would not be odor-sensitive and because of their width would

provide a buffer of several hundred feet between the SRWTP and the nearest on-site odor-sensitive use.(e.g. residential uses south of Southpark Street and east of 5th Street.)

The project's land use plan and compliance of future on-site uses with City waste collection regulations would prevent substantial objectionable odors, thereby ensuring that this impact would remain **less than significant**.

#### Mitigation Measures

*None required.*

#### **6.1-7 The proposed Specific Plan could alter wind speed at ground level (pedestrian level).**

The proposed Specific Plan could result in the creation of a new microclimate due to the density of development and the construction of multiple structures over 100 feet in height (see Figure 3-18 Building Heights). Buildings over 100 feet in height can create uncomfortable and/or hazardous wind accelerations at ground level, depending on size, surrounding buildings and design. The Specific Plan Area could experience strong southwest winds particularly during summer months, which could exacerbate wind risks associated with buildout of the proposed Specific Plan. Excessive wind speeds (e.g., over 35 miles per hour) at ground level are considered substantial enough to affect pedestrians. This would be a *significant impact*.

#### Mitigation Measures

Implementation of the following measure would reduce the above impact to a **less-than-significant level** by ensuring that buildings are designed to avoid excessive ground-level wind speeds.

6.1-7 *During design review for buildings over 100 feet in height, the applicant shall demonstrate that ground-level winds would not exceed 35 miles per hour as the result of the building design. If necessary to determine the potential ground-level wind speeds, wind-tunnel testing will be conducted.*

The extent to which a building will affect wind speeds depends on its bulk, massing, orientation and relationship to existing. Even with very tall buildings, these elements can be configured in a manner that minimizes ground-level wind speeds.

#### **Cumulative Impacts and Mitigation Measures**

Ozone precursors emitted anywhere in the SVAB can affect O<sub>3</sub> air quality throughout the SVAB. Therefore, the proposed project's cumulative context for O<sub>3</sub> precursor emissions would be existing and future development in the entire SVAB. In contrast, CO, PM<sub>10</sub>, and TAC effects are limited to the immediate vicinity of their specific sources. Consequently, the proposed project's cumulative context for CO, PM<sub>10</sub>, and TAC emissions would be existing and proposed future development in the immediate vicinity of the project site.

#### **6.1-8 Project construction activities would contribute to cumulative increases in ozone precursors.**

Construction activities that occur simultaneously with proposed project construction in the SVAB would contribute emissions of O<sub>3</sub> precursors. While those emissions would be temporary, combined they could exceed the SMAQMD thresholds. As specified in Impact 6.1-2, without the imposition of SMAQMD required NO<sub>x</sub> reductions, significant levels of O<sub>3</sub> precursors could be generated during project construction. Therefore, the project's contribution to this cumulative impact would be considerable and this would be a *significant cumulative impact*.

### Mitigation Measures

Implementation of the following mitigation measures would reduce the project's contribution to less than cumulatively considerable and this cumulative impact would be ***less than significant***.

#### 6.1-8 *Implement Mitigation Measures 6.1-2 (a) through (e).*

Implementation of Mitigation Measures 6.2-1(a) through (d) (which are the SMAQMD standard mitigation measures for projects with significant construction-phase NO<sub>x</sub> emissions) would result in a minimum 20% reduction of project NO<sub>x</sub> construction emissions. The implementation of the mitigation fee collected under Mitigation Measure 6.2-1(e) would enable the SMAQMD to reduce emissions from other NO<sub>x</sub> sources off-site to offset the project construction NO<sub>x</sub> emissions that exceed the SMAQMD's threshold; this would substantially reduce project emissions. Further, implementation of the SMAQMD standard mitigation measures would be required for all other projects in the Sacramento area with significant construction-phase NO<sub>x</sub> emissions. Therefore, compliance with these measures would reduce the project's contribution to cumulative construction-phase NO<sub>x</sub> emissions to a less than considerable level, thereby reducing the cumulative impact to ***less than significant***.

#### **6.1-9 The proposed project would contribute to cumulative air quality degradation.**

.As discussed above, the SVAB is in non-attainment for O<sub>3</sub>. As growth occurs in the SVAB, vehicle use and other activities will increase the amount of ozone precursors in the basin. Increases in air pollutants would further degrade air quality and make attainment of the AQMP more difficult. The proposed Specific Plan would contribute to the cumulative degradation in air quality by generating vehicle trips and developing uses that rely on heating and cooling and other activities that require energy. As discussed under Impact 6.1-3, the proposed Specific Plan does contain a number of features that would lessen reliance on vehicles and promote energy efficiency, which would in turn reduce the amount of air pollution generated by project-related activities. Nonetheless, the proposed Specific Plan would generate a substantial amount of ROG, NO<sub>x</sub> and other pollutants. In addition, the SMAQMD Guide considers projects to be cumulatively significant if the project would require a change in the existing land use designation (e.g., general plan amendment, a rezoning) and if the projected O<sub>3</sub> precursor emissions from the new uses would be greater than the emissions anticipated for the site under the existing land use designation. The change in an existing land use designation would depart from assumptions used in the AQMP and could jeopardize regional attainment of the ozone standard. For these reasons, the project contribution to air quality degradation would be considerable and the cumulative impact would be *significant*. Therefore, the proposed Specific Plan contribution to long-term operational O<sub>3</sub> precursor emissions would be considered a *significant impact*.

### Mitigation Measures

Implementation of the emission reduction strategies included in the endorsed AQMP for the proposed project would reduce the project's contribution to operational emissions by more than 15%. However, even with the implementation of the endorsed AQMP, the project's contribution to operational emissions would remain above the SMAQMD significance threshold. Consequently, the project's contribution would remain considerable and cumulative operational O<sub>3</sub> precursor emissions would remain ***significant and unavoidable***.

#### 6.1-9 *Implement Mitigation Measure 6.1-3.*

#### **6.1-10 Project construction would contribute to cumulative increases in particulate matter in the vicinity of the Specific Plan Area.**



As specified in Impact 6.1-1, significant levels of particulate matter could be generated during project excavation, grading and other construction activities. These PM<sub>10</sub> emissions when combined with other construction projects in the vicinity of the site that occur at the same time could result in a significant cumulative increase. Because the project's particulate matter emissions would exceed established thresholds its contribution would be considerable and this is a *significant cumulative impact*.

#### Mitigation Measures

Implementation of the following mitigation measures would reduce fugitive dust emissions. Compliance with all measures specified below would reduce the project's contribution to construction particulate matter emissions to less than cumulatively considerable and this cumulative impact would be ***less than significant***.

6.1-10 *Implement Mitigation Measures 6.1-1(a) through (g).*

#### **6.1-11 The proposed project could contribute to cumulative emissions of CO concentrations from project-related traffic.**

In a cumulative analysis, project-related CO impacts are evaluated in combination with CO emissions from other existing and future development. The traffic study prepared for the proposed project predicts future (2030) traffic volumes at nearby intersections for both project and no-project scenarios. This evaluation also takes into account traffic from other sources that would be in existence at this future date. Maximum CO concentrations were determined by conducting modeling at the intersections that would have LOS of "D" or below in 2013 and 2030. Table 6.1-7 shows the expected maximum eight-hour CO concentrations for these intersections in 2013 and 2030 with buildout of the proposed project, and assumes cumulative traffic in the calculations. As shown on Table 6.1-7, even though LOS would be further degraded in the future, CO levels under any scenario would not exceed the NAAQS or CAAQS for CO. This would be a ***less-than-significant cumulative impact***.

#### Mitigation Measures

*None required.*

#### **6.1-12 The proposed project could contribute to cumulative increases in TACs.**

As discussed in Impact 6.1-5, an HRA was performed by the Environ Corporation using the guidance provided by the CARB and SMAQMD, and is provided in its entirety in Appendix O. While these do not provide guidance for cumulative impacts from TACs, the evaluation for DPM emissions provided in Impact 6.1-5 include cumulative traffic and railway data, and thus provides an analysis of potential cancer risks under cumulative conditions at buildout of the proposed project in the year 2030. As discussed in the HRA, there are three potential sources of DPM near sensitive receptors of concern, which are residential land uses near a freeway, residential land uses near the rail line, and residential land use near the SITF. Potential cancer risks from exposure to DPM from freeway in the Year 2030, which was determined to be the worst-case scenario and assumes cumulative development, and railway operations at sensitive receptors was determine to be less than the threshold identified in the SMAQMD guidance (446 per million). These evaluations resulted in incremental cancer risks at the nearest resident of 8 and 9 in a million, respectively, which is below the significance threshold established by SMAQMD. As a result, DPM emissions would not expose sensitive receptors to a substantial risk, and this cumulative impact would be ***less than significant***.

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### Mitigation Measures

*None required.*

#### **6.1-13 The proposed project could contribute to changes in wind levels throughout the Central City.**

Cumulative development, including the proposed Specific Plan, reduce average wind speed in the project vicinity. While the proposed Specific Plan could create accelerated winds in the immediate vicinity, it would not contribute to a general increase in wind levels throughout the downtown. Therefore, impacts associated with cumulative development would be considered ***less than significant***.

Development allowed under the proposed project could contribute to a slight reduction in the average wind speed within the Capitol Area. As new buildings are built, the “roughness” of the urban area increases, creating additional drag and friction. For this reason, average winds in urban centers are less than average winds at corresponding outlying sites. However, while the overall average wind is lessened as development in an urban center increases, greater spatial variation occurs and extremes in winds are increased. Individual buildings can create areas of increased and diminished winds. The increased winds near individual buildings can create hazardous or uncomfortable conditions, while areas with extreme shelter from the wind may be uncomfortably warm.

### Mitigation Measures

*None required.*

#### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility Overlay is implemented, impacts to air quality would be similar to anticipated proposed project impacts during construction. Described by the analysis scenario depending on the configuration of the facility, the total number of residents and non-residential square footage could be reduced. There maybe fewer residences and less office and retail space with development of the sports and entertainment facility, fewer vehicle trips would result from land uses within the Specific Plan Area on a daily basis. However, the development of a sports and entertainment facility would replace those vehicle trips with trips associated with facility employees and patrons of events held at the facility. The development that would be constructed within the Sports and Entertainment Facility Overlay would likely generate different vehicle trips and patterns of use than typical commercial uses (i.e., there may be fewer peak hour trips and increased trips during weekends and evenings associated with special events). In the event the Sports and Entertainment Facility Overlay is implemented, the vehicle trip generation rate and associated impacts on air quality would vary from those analyzed in this document, and would depend on the specific size and design of the Sports and Entertainment Facility, which is not known at this time. If the Sports and Entertainment Facility Overlay is implemented, that project would be evaluated for additional impacts on air quality based on specific design capacities and operational characteristics.

## **6.2 BIOLOGICAL RESOURCES**

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## 6.2 BIOLOGICAL RESOURCES

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### INTRODUCTION

This section examines the potential impacts of the proposed Specific Plan on biological resources. Existing plans and policies relevant to biological resource issues associated with implementation of the Specific Plan are provided and discussed below. The impact assessment is based upon a series of expert biological field surveys of the site, queries of the California Department of Fish and Game's (CDFG) Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS), project plans and graphic renderings, the City's General Plan, and other relevant data sources as identified throughout this section. Where appropriate, mitigation measures intended to reduce impacts to biological resources are described.

No comment letters related to biological resources were received in response to the Notice of Preparation circulated for the Specific Plan Area.

### ENVIRONMENTAL SETTING

Descriptions of biological resources within the Specific Plan Area are based upon existing documentation for the Specific Plan Area, literature surveys, and four biological field surveys of the Specific Plan Area (June 1, 14, 15, and July 11, 2006). The Specific Plan Area is not within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

#### Site Characteristics

The Specific Plan Area has been extensively disturbed by past and on-going transportation, commercial, and industrial activities, as well as soil remediation work. Because of this, the majority of the Specific Plan Area has been given a land cover classification of vacant. The vacant classification includes area that support ruderal weedy vegetation, bare earth, and hardscape. Most of the vegetation on site consists of introduced or ruderal plant species. Some vacant land supports a few remnant native riparian species in the northern section of the Specific Plan Area. Biologists that have worked at the site as part of the ongoing remediation activities note that the vegetation on site is in a constant state of disturbance and, thus, it changes from year to year.<sup>1</sup>

The soil underlying the Specific Plan Area consists of deposits of silt and sand. This extends from the surface to a depth of 30 to 50 feet and includes fill placed over the area during the past 130 years. Elevation of the site ranges from approximately 10 feet to 40 feet above mean sea level (AMSL).

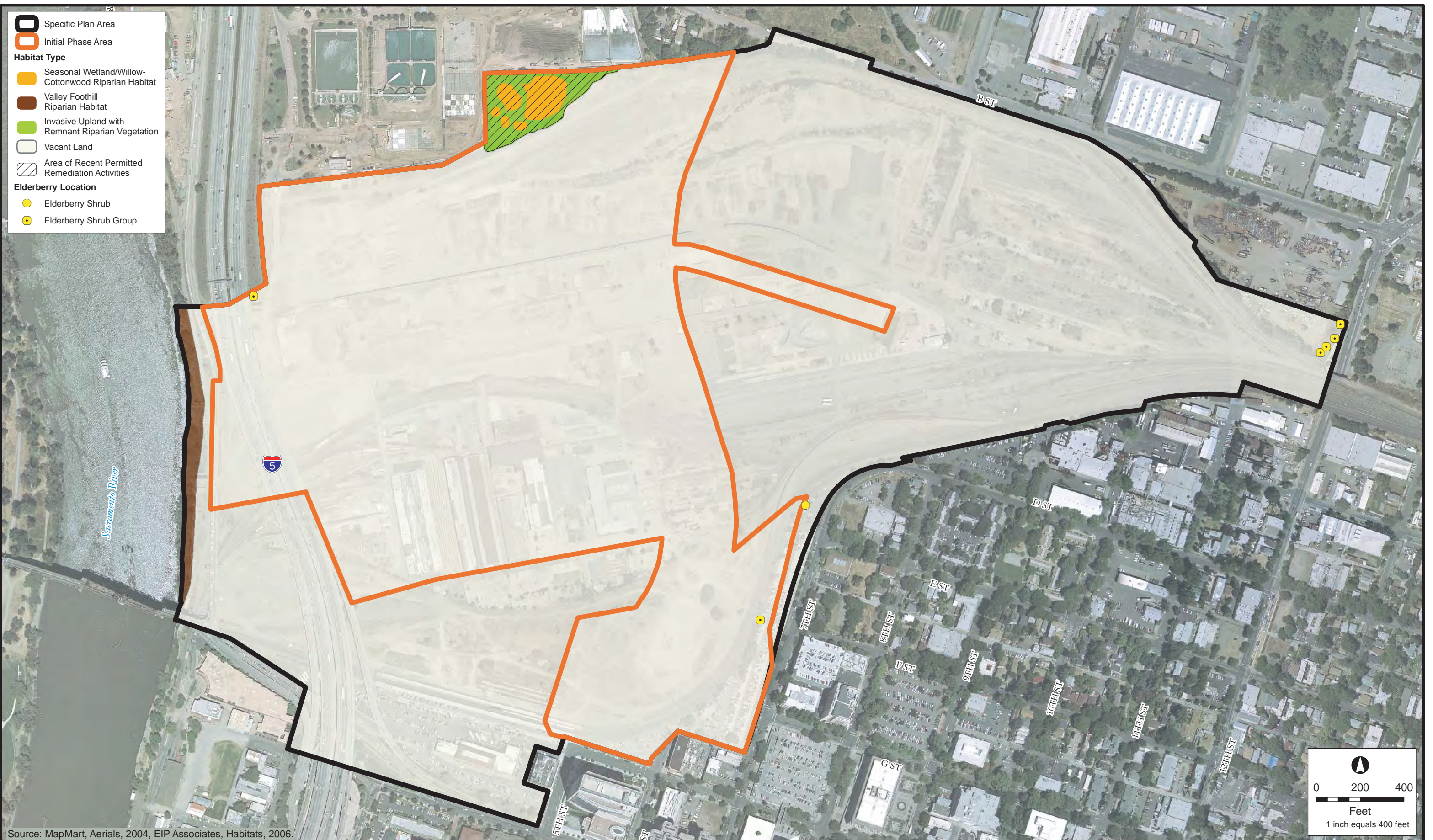
#### Adjacent and Existing Land Uses

Figure 6.2-1 provides an aerial photograph of the Specific Plan Area and the surrounding area that illustrates the topography, existing development, and surrounding land uses. The Specific Plan Area contains industrial structures that are primarily vacant and retired and active rail lines, as well as the Union Pacific Railroad (UPRR) tracks, Depot, and REA building. The site has been undergoing environmental remediation for many years. This environmental remediation is a separate project that has already been granted the necessary permits authorizing the remediation.

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1 Chris Wright, Senior Biologist, ERM, personal communication, June 2006.





Source: MapMart, Aerials, 2004, EIP Associates, Habitats, 2006.

FIGURE 6.2-1  
**On-Site Vegetation**

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### **Specific Plan Area Biological Resources**

This section describes the plant species, vegetation types, and wildlife species that were observed within or adjacent to the Specific Plan Area during the field surveys that were conducted on June 1, 14, and 15 and July 11, 2006. Biological surveys of the Specific Plan Area were conducted by walking 100-foot transects across the entire site to identify potential wetlands, special-status species habitat, and document the general biota associated with the Specific Plan Area. Land within 100 feet of the Specific Plan Area was also evaluated for the potential occurrence of sensitive species. The location of any observed special-status species or any signs indicating that such species could nest, forage, or otherwise use the Specific Plan Area (i.e., scat, prints, or sounds), as well as boundaries of wetlands and other waters of the U.S., were recorded using a Trimble ProXR GPS receiver.

### **Botanical Resources**

The Specific Plan Area consists primarily of extensively disturbed and modified vegetation. However, the Specific Plan Area includes approximately a one-quarter-mile stretch along the Sacramento River including portions of the levee where a stormwater discharge outfall would be located. The Specific Plan Area is also approximately one-half mile south of the American River Parkway, a 29-mile long stretch of riparian habitat. Many species of wildlife that nest or den in vegetation along the rivers can use the Specific Plan Area for foraging. As a consequence of the proximity of the local river corridors, vegetation within the Specific Plan Area provides somewhat greater habitat values than typical vacant urban land.

The offsite roadway improvements would be located immediately north of the Specific Plan Area, primarily in vacant, disturbed land.

### **Vegetation and Land Cover Types**

Four vegetation and land cover types are present in the Specific Plan Area: vacant, valley-foothill riparian, remnant riparian, and emergent wetland (Figure 6.2-1). The vacant land cover occupies most of the Specific Plan Area (Table 6.2-1). There was a small patch of remnant riparian and seasonal wetland habitat in the Former 0.1 Storage Area that has recently been removed as part of the permitted remediation activities on the site, and there is an approximately 100-foot wide section of riparian habitat along the Sacramento River. Immediately adjacent to the Specific Plan Area riverine habitat exists within the Sacramento River. Although not part of the Specific Plan Area, this riverine area is included in the analysis as it is immediately adjacent to proposed Specific Plan Area activities, and an outfall is proposed on the levee.

<b>Habitat/Land Cover</b>	<b>Specific Plan Area</b>
Vacant	233.9
Remnant Riparian	0.30
Valley-Foothill Riparian	1.7
Emergent Wetland	1.1
<b>Total</b>	<b>237.0</b>
Source: PBS&J/EIP, 2007.	

Surveys of the site resulted in observations of 47 different plant species (Table 6.2-2).

<b>Scientific Name</b>	<b>Common Name</b>
<i>Ailanthus altissima</i>	Tree-of-heaven
<i>Avena fatwa</i>	Wild oats
<i>Brassica rapa</i>	Birdsrape mustard
<i>Bromes dianthus</i>	Rip gut brome
<i>Centauries solstitialis</i>	Yellow start thistle
<i>Cephalanthus occidentalis</i>	Buttonbush
<i>Convolvulus arvensis</i>	Field bindweed
<i>Cynodon dactylon</i>	Bermuda grass
<i>Epilobium brachycarpum</i>	Annual fireweed
<i>Eriodictyon californicum</i>	Yerba santa
<i>Erodium botrys</i>	Filaree, storksbill
<i>Erodium cicutarium</i>	Red-stemmed filaree
<i>Eucalyptus sp.</i>	Eucalyptus
<i>Ficus carica</i>	Common fig
<i>Juglans californica</i>	California black walnut
<i>Lactuca serriola</i>	Prickly lettuce
<i>Liquidambar styraciflua</i>	Sweet gum tree
<i>Lolium perenne</i>	Perennial ryegrass
<i>Lotus purshianus var. purshianus</i>	Spanish clover
<i>Lotus wrightii</i>	Deer vetch
<i>Melilotus alba</i>	White sweet clover
<i>Nerium oleander</i>	Oleander
<i>Nicotiana glauca</i>	Tree tobacco
<i>Plantago major</i>	Broadleaf plantain
<i>Polypogon monspeliensis</i>	Rabbitfoot
<i>Populus fremontii</i>	Fremont cottonwood
<i>Prunus glandulosa</i>	Flowering almond
<i>Prunus spp.</i>	Almond tree
<i>Quercus agrifolia</i>	Live oak
<i>Quercus lobata</i>	Valley oak
<i>Raphanus sativus</i>	Wild radish
<i>Rubus discolor</i>	Himalayan blackberry
<i>Salix exigua</i>	Narrow leaf willow
<i>Salix gooddingii</i>	Goddings willow
<i>Salix lasiolepis</i>	Arroyo willow
<i>Senecio vulgaris</i>	Common groundsel
<i>Silibum marianum</i>	Milkthistle
<i>Sorghum halapense</i>	Johnsongrass
<i>Tamarix ramosissima</i>	Salt cedar
<i>Trifolium spp.</i>	Clover
<i>Ulmus Parvifolia</i>	Chinese elm
<i>Ulmus spp.</i>	Elm tree
<i>Verbascum thapsus</i>	Common mullein
<i>Vicia villosa</i>	Hairy vetch
<i>Vitis californica</i>	California wild grape
<i>Washingtonia filifera</i>	California fan palm

Source: PBS&amp;J/EIP, 2006.

### Vacant Land Cover

The vacant land cover occupies most of the 244-acre Specific Plan Area because it has been denuded of vegetation and converted to commercial, industrial, or transportation uses. Most of these areas are unable to support vegetation because habitat has been removed or replaced through construction of buildings, roads, or other hardscaped areas, or the ongoing activities associated with

last 100+ years of human use of the area (i.e., soil remediation activities). However, areas of vegetation occur within the vacant land cover. Pre-development vegetation has been removed and new species of plants have been introduced, either intentionally (ornamental species) or inadvertently (weeds).

At present, the dominant plant species in the Specific Plan Area include wild oats (*Avena fatwa*), rip gut brome (*Bromes dianthus*), yellow star thistle (*Centauries solstitialis*), vetch (*Vicia* sp.), field bindweed (*Convolvulus arvensis*), milk thistle (*Silybum marianum*), and tar weed (*Holocarpa* sp.) Other grassland plants observed during field surveys included cutleaf geranium (*Geranium dissectum*), wild mustard (*Brassica* spp.), and Italian thistle (*Carduus pycnocephalus*). Historically, this area was likely all part of the riparian woodlands associated with the Sacramento River. There are isolated remnants of this habitat remaining within the Specific Plan Area, including between the north embankment and North B Street. Representative species include individual willows (*Salix* spp.), cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), and California walnut (*Juglans hindsii*) trees. The groups and individual elderberry shrubs (*Sambucus* spp.) that occur within the Specific Plan Area are also remnants of this riparian habitat that had been incorporated into landscaping (Figure 6.2-1).

### *Riverine*

Riverine habitat adjacent to the Specific Plan Area is the Sacramento River. This habitat type is distinct from riparian habitat which occurs on the riverbanks. Riverine habitats are used for reproduction, food, water, migration and cover by many birds, reptiles, amphibians and invertebrates.

### *Emergent Wetland (Seasonal Freshwater Marsh)*

As classified by the National Wetland Inventory,<sup>2</sup> the only wetlands system within the study area is the palustrine system. A palustrine system includes “all non-tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens...”<sup>3</sup> This includes, but is not limited to, vegetative wetlands such as marshes, swamps, bogs, and ponds, as well as seasonal and emergent wetlands that may be dry for part of the year. The emergent wetland found within the Specific Plan Area is characterized by erect, rooted, herbaceous hydrophytes,<sup>4</sup> excluding mosses and lichens. This vegetation is present for most of the growing season in most years and is usually dominated by perennial plants. A cluster of emergent wetlands were found in the Former Oil Storage Area (FOSA) covering approximately 0.03 acres<sup>5</sup> (Figure 6.2-1). Wetlands were supporting plants including small willows and cottonwood, buttonbrush (*Cephalanthus occidentalis*), and Himalayan blackberry (*Rubus discolor*). It is important to note that although these wetlands were present at the time of the biological survey and the issuance of the NOP, they are within areas already permitted for remediation and were removed as a result of the separate remediation action. Permitted through the CVRWQCB, the applicant mitigated the fill of these wetlands through purchase of mitigation credits for 0.05 acres of wetland in an approved wetland mitigation bank.

### *Valley-Foothill Riparian Habitat and Remnant Riparian*

Valley-foothill riparian habitat is found regionally in valleys bordered by sloping alluvial fans, terraces, and lower foothills. It generally occurs where there are deep alluvial soils and a high water table, such as on floodplains or on flat to gently sloping areas adjacent to low-velocity streams. It is

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- 2 The NWI is a branch of the USFWS responsible for providing information on the nations wetland resources. Information about the NWI is online at: <http://www.fws.gov/nwi/>.
  - 3 Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979, Classification of wetlands and deepwater habitats of the United States, prepared for USFWS, Office of Biological Services. FSW/OBS-79/31, page 10.
  - 4 Hydrophytes or hydrophytic plants are those adapted for growing in saturated soils.
  - 5 Sycamore Environmental Consultants, Inc., 2006, Preliminary Jurisdictional Delineation Report for the Former Oil Storage Area at the Sacramento Rail Yards, November 2006.

represented by three plant communities: herb-scrub, willow-cottonwood woodland, and riparian forest. The trees species typically associated with this habitat type include cottonwood, willows, California sycamore (*Platanus racemosa*), and valley oak. Sub-canopy trees include white alder (*Alnus rhombifolia*), boxelder (*Acer negundo*), Oregon ash (*Fraxinus latifolia*), and the invasive tree of heaven (*Ailanthus altissima*).

Within the Specific Plan Area, Valley-foothill riparian habitat exists along the bank of the Sacramento River. At the time of the biological survey for this EIR and the issuance of the NOP, a degraded remnant patch of riparian habitat was found along the northern boundary of the Specific Plan Area within the FOSA. The remnant riparian habitat developed over a number of years surrounding small wetland depressions created by the removal of the oil storage facilities in the early 1950s. At the time of the biological survey, the FOSA contained a total of 0.30 acre of willow-cottonwood riparian. Subsequent to the survey, as part of the remediation-related permitted fill of the wetlands in the FOSA, the riparian vegetation was removed. Of the 0.30 acres of riparian habitat, 0.05 acre is within areas already permitted for remediation. The removal of the remaining 0.25 acres of remnant riparian habitat as part of the project is addressed under Impact 6.2-8, below.

### Wildlife Resources

The Specific Plan Area is predominated by non-native vegetation and vacant areas that primarily support common birds and mammals. Wildlife species that were observed or expected to occur in the Specific Plan Area are western scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), Brewer's blackbird (*Euphagus cyanocephalus*), yellow-billed magpie (*Pica nuttalli*), house finch (*Carpodacus mexicanus*), house mouse (*Mus musculus*), black rat (*Ratus ratus*), house cat (*Felis silvestris catus*), raccoon (*Procyon lotor*), and skunk (*Mephitis mephitis*). In addition, six roosts of bats were observed under the I-5 and I Street Bridge, and a purple martin (*Progne subis*) roost is located under the I Street Bridge. At least 36 terrestrial wildlife species were encountered during June 2006 biological surveys of the site (Table 6.2-3).

In addition to the terrestrial species identified above, both resident and migratory fish species use the Sacramento River. Fish residing within the Sacramento River include channel catfish (*Ictalurus punctatus*), white catfish (*Ictalurus catus*), hardhead (*Mylopharodon conocephalus*), largemouth bass (*Micropterus salmoides*), redeared sunfish (*Lepomis microlophus*), Sacramento sucker (*Catostomus occidentalis*), Sacramento pikeminnow (*Ptychocheilus grandis*), tule perch (*Hysterocarpus traski*), and Sacramento sucker (*Catostomus occidentalis*). The Sacramento splittail (*Pogonichthys macrolepidotus*) spawns in the Sacramento area, but lives in the Delta. Delta smelt primarily inhabit the brackish water of the mixing zone, but migrate upstream to spawn in freshwater sloughs and shallow edge-waters of the Delta. Anadromous<sup>6</sup> fish species use the Sacramento River as migration corridors between the ocean and spawning areas upstream. These species include steelhead (*Oncorhynchus mykiss*), Chinook (*Oncorhynchus tshawytscha*), striped bass (*Morone saxatilis*), green sturgeon (*Acipenser medirostris*), white sturgeon (*Acipenser transmontanus*), and American shad (*Alosa sapidissima*). Although striped bass is an anadromous species, young striped bass are present in the Sacramento River area year-round.

The open water zones of the Sacramento River provide cover and foraging for bird species. Many species of waterfowl, such as American coot (*Fulica americana*), use the open water for resting and escape. Gulls (*Larus* sp.) forage on open water, and species of insectivorous birds, such as black phoebe (*Sayornis nigricans*) and violet-green swallow (*Tachycineta thalassina*), hunt insect prey over the water.

<sup>6</sup> Anadromous species are those that spawn in freshwater, migrate to the ocean as juveniles, rear in the ocean for a period of time before returning to their natal streams as adults to spawn.

<b>Scientific Name</b>	<b>Common Name</b>
<i>Agelaius phoeniceus</i>	Red-winged Blackbird
<i>Anas platyrhynchos</i>	Mallard
<i>Aphelocoma californica</i>	Western Scrub Jay
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Buteo swainsoni</i>	Swainson's hawk (Fly by)
<i>Canis lupus</i>	Feral Dog
<i>Cathartes aura</i>	Turkey Vulture
<i>Charadrius vociferus</i>	Killdeer
Order Chiroptera	Bat
<i>Colaptes auratus</i>	Northern Flicker
<i>Columbia livia</i>	Rock Dove
<i>Corvus brachyrhynchos</i>	American Crow
<i>Damselfly sp.</i>	Blue damselfly
<i>Empidonax spp.</i>	Flycatcher
<i>Euphagus cyanocephalus</i>	Brewer's Black bird
<i>Falco sparverius</i>	American Kestrel
<i>Felis silvestris</i>	Feral Cat
<i>Gambusia sp.</i>	Mosquito fish
<i>Hirundo rustica</i>	Barn swallow
<i>Lepus californicus</i>	Black-tailed Jackrabbit
<i>Mephitis mephitis</i>	Skunk (tracks and odor)
<i>Mimus polyglottos</i>	Northern Mockingbird
<i>Murgantia histrionica</i>	Harlequin bug
Odonata Order	Dragonfly
<i>Passer domesticus</i>	House Sparrow
<i>Phasianus colchicus</i>	Ring-necked pheasant
<i>Pica nuttalli</i>	Yellow-Billed Magpie
<i>Procyon lotor</i>	Raccoon (tracks)
<i>Progne subis</i>	Purple martin
<i>Pseudacris regilla</i>	Pacific Chorus Frog
<i>Sayornis nigricans</i>	Black Phoebe
<i>Sceloporus occidentalis</i>	Western Fence Lizard
<i>Sturnus vulgaris</i>	European Starling
<i>Turdus migratorius</i>	American Robin
<i>Zenaidura macroura</i>	Mourning Dove
Source: PBS&J/EIP, 2006.	

In general, near shore waters, riverbanks, and adjacent riparian vegetation provide several specialized habitats for a variety of bird species. Steep banks provide nesting habitat for northern rough-winged swallow (*Stelgidopteryx serripennis*). In the near shore waters, mallard (*Anas platyrhynchos*) and wood duck (*Aix sponsa*) feed upon plants, and green heron (*Butorides striatus*) and belted kingfisher (*Ceryle alcyon*) forage for fish. Fish feed upon "insect drop" from riparian vegetation overhanging the water, and rocky substrates provide habitats for crayfish, sunfish, and bass.

### Wildlife Movement

Terms such as habitat corridors, linkages, crossings, and travel routes are used to describe physical connections that allow wildlife to move between patches of suitable habitat in undisturbed landscapes, as well as environments fragmented by urban development. Wildlife corridors are essential to the regional ecology of a species because they provide avenues of genetic exchange

and allow animals to access alternative territories as dictated by fluctuating population densities. Fragmentation of open space areas by urbanization creates “islands” of wildlife habitat that are more or less isolated from each other. Wildlife corridors are typically relatively small, linear habitats that connect two or more habitat patches that would otherwise be fragmented or isolated from one another.

The Specific Plan Area is surrounded on three sides by urban development. Because of this, most of the upland habitats of the Specific Plan Area are not between two higher quality habitats and therefore do not function as wildlife movement corridors. However, there are two areas where greater amounts of movement could occur: the Sacramento River and the Valley-foothill riparian habitat adjacent to the river. The Sacramento River is a regional wildlife corridor for anadromous fish including sturgeons, salmonids, and other aquatic species. Most riparian habitats also function as migration corridors because they provide food, water and cover and often link other habitats. In the case of the riparian vegetation on the project, the habitat is fragmented, highly disturbed, and isolated from other areas of riparian habitat. The riparian habitat also ends at the southern portion of the Specific Plan Area. This prevents this habitat from connecting to areas of higher quality habitat and acting as a movement corridor. The riparian habitat likely provides for local movement.

### **Special Status and Sensitive Biological Resources**

The following section addresses special-status biological resources observed, reported, or having the potential to occur on the site. These resources include plant and wildlife species and habitats that have been afforded special status and/or recognition by federal and state resource agencies, or private conservation organizations and special interest groups, such as the CNPS (List 1A, 1B, and 2). In general, the principal reason an individual taxon (species, subspecies, or variety) is given such recognition is the documented or expected decline or limitation of its population size, geographical extent, and/or distribution.

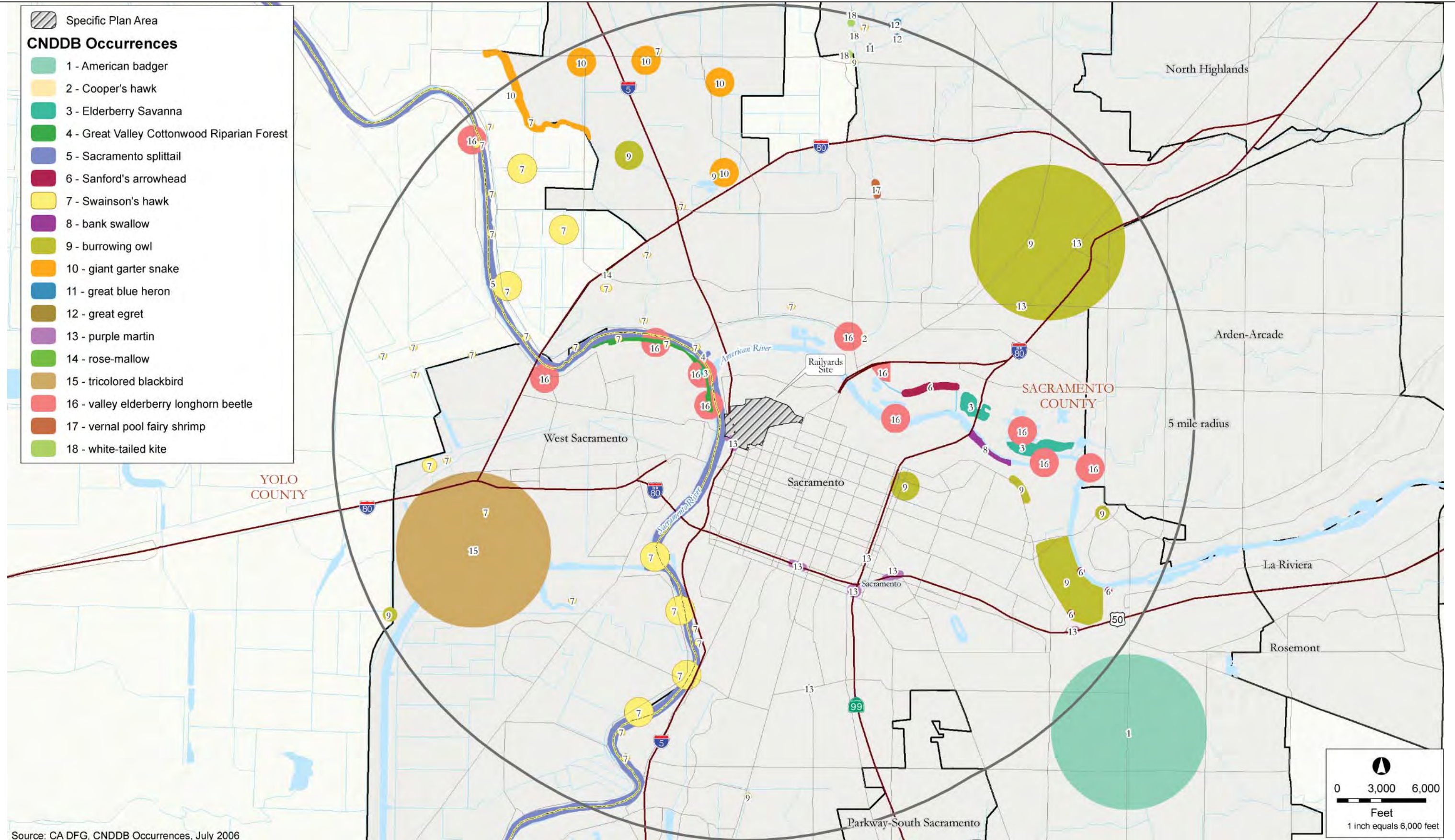
When the USFWS lists a species as threatened or endangered under the federal Endangered Species Act (FESA), areas of habitat considered essential to its conservation and survival may be designated as critical habitat. These areas may require special consideration and/or protection due to their ecological importance. Although critical habitat may be designated on state or private lands, activities on them are not restricted unless there is federal involvement or direct impacts to listed species are expected.

Information on sensitive species and habitats occurring in the vicinity of the project was obtained from the CDFG California Natural Diversity Database (CNDDDB) (information dated June 2006) for the U.S. Geological Survey's 7.5-minute Taylor Monument, Rio Linda, Sacramento West, Sacramento East, Florin, and Clarksberg quadrangle maps, and the CNPS's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNSPI 2006). Review of these databases indicates that there are 18 species reported within five miles of the Specific Plan Area (Figure 6.2-2). Data from all sources was compiled into a single list of special-status species (Appendix F). The 13 species that could occur in and/or be affected by the Specific Plan Area are discussed in more detail below (Table 6.2-4).

For those sensitive species identified as having a moderate to high likelihood of occurrence within the Specific Plan Area (according to Table 6.2-4), additional information regarding the likelihood of occurrence is provided in the paragraphs that follow, organized by species.

Figure 6.2-3 provides locations of where sensitive species could occur within a half-mile of the Specific Plan Area.

-  Specific Plan Area  
**CNDDB Occurrences**  
 1 - American badger  
 2 - Cooper's hawk  
 3 - Elderberry Savanna  
 4 - Great Valley Cottonwood Riparian Forest  
 5 - Sacramento splittail  
 6 - Sanford's arrowhead  
 7 - Swainson's hawk  
 8 - bank swallow  
 9 - burrowing owl  
 10 - giant garter snake  
 11 - great blue heron  
 12 - great egret  
 13 - purple martin  
 14 - rose-mallow  
 15 - tricolored blackbird  
 16 - valley elderberry longhorn beetle  
 17 - vernal pool fairy shrimp  
 18 - white-tailed kite



Source: CA DFG, CNDDB Occurrences, July 2006

**FIGURE 6.2-2**  
**Sensitive Species Occurrences within 5 mile Radius**

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TABLE 6.2-4

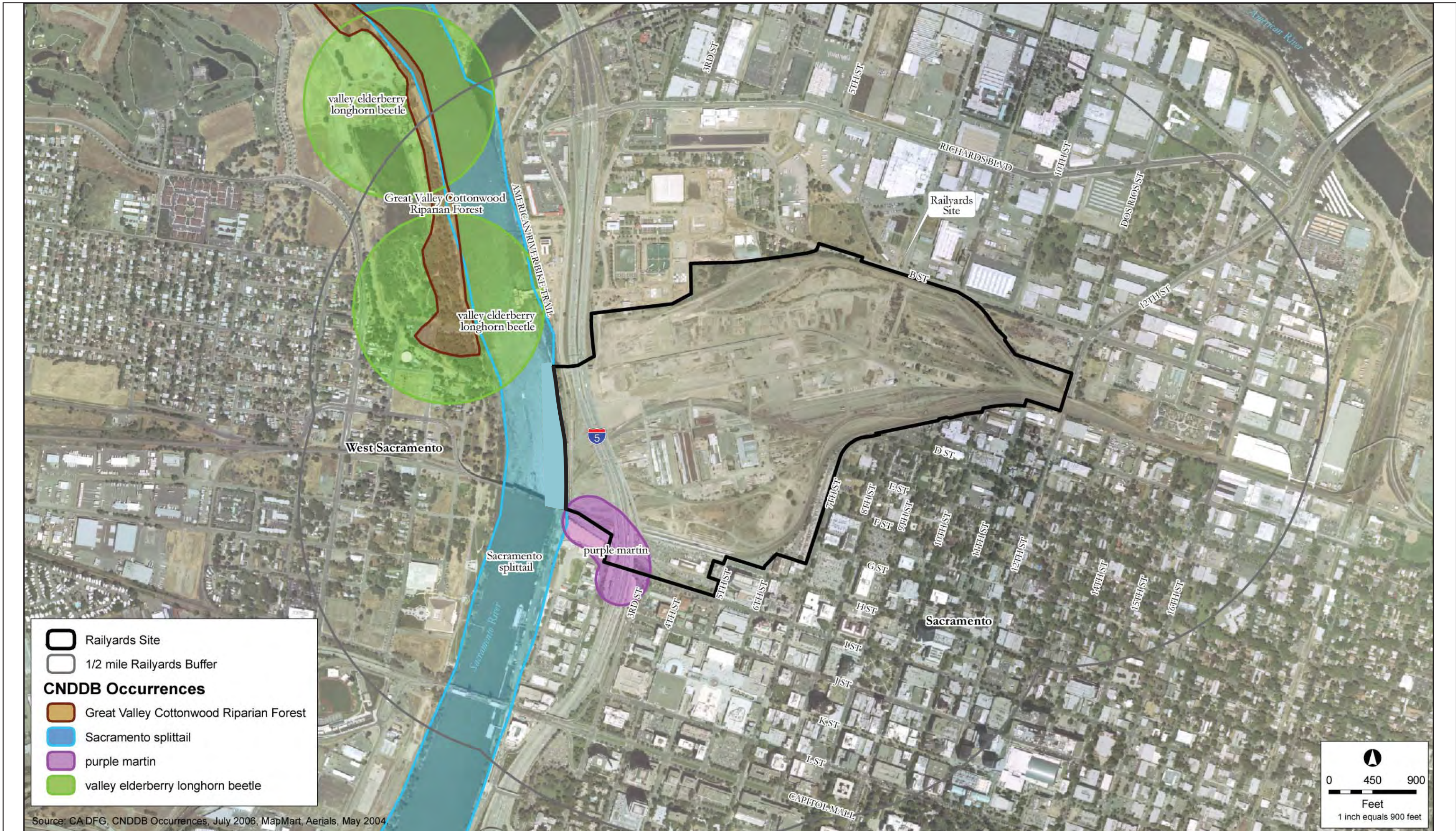
**SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE  
SPECIFIC PLAN AREA**

Common Name	Scientific Name	Status Fed/CA/CNPS	Habitat	Likelihood of Occurrence Within the Specific Plan Area
<b>Invertebrates</b>				
Valley elderberry longhorn beetle	Desmocerus californicus dimorphus	FT/none/none	Associated only with elderberry shrubs ( <i>Sambucus</i> sp.), usually in or near riparian areas.	<b>High.</b> Elderberry shrubs are present within the Specific Plan Area.
<b>Reptiles</b>				
Western pond turtle	Actinemys marmorata	FSC/CSC/none	Streams, rivers, ponds, marshes and other aquatic habitats. Requires secure basking area where they can easily escape to water. Upland nesting sites can be as much as 300 feet from aquatic habitat, but are usually closer.	<b>Moderate.</b> Seasonal wetlands and the Sacramento River are suitable habitat for this species.
<b>Fish</b>				
Green Sturgeon	Acipenser medirostris	FT/CSC/none	Long-lived anadromous species that migrates through the Sacramento to spawning grounds in the Feather and upper Sacramento rivers. Thought to spawn in deep holes with fast moving water over cobble substrates.	<b>High.</b> Suitable migratory habitat exists within the Sacramento River.
Central Valley Winter-run Chinook	Oncorhynchus tshawytscha	FE/SE/none	Occurs in the Pacific Ocean for most of its life. Travels to clean gravel beds in the upper Sacramento and portions of the American River for spawning.	<b>High.</b> Suitable habitat exists within the Sacramento River. No spawning habitat exists.
Central Valley spring-run Chinook	Oncorhynchus tshawytscha	FT/ST/none	Occurs in the Pacific Ocean for most of its life. Travels to clean gravel beds in the upper Sacramento and portions of the American River for spawning.	<b>High.</b> Suitable habitat exists within the Sacramento River. No spawning habitat exists.
Central Valley steelhead	Oncorhynchus mykiss	FT/--/none	Occurs in the Pacific Ocean for most of its life. Travels to clean gravel beds in the upper Sacramento and portions of the American River for spawning.	<b>High.</b> Suitable habitat exists within the Sacramento River. No spawning habitat exists.
Delta Smelt	<i>Hypomesus transpacificus</i>	FT/ST/none	Euryhaline (tolerant of a wide salinity range) species that spawns in freshwater dead-end sloughs and shallow edge-waters of channels of the Delta (59 FR 65256).  Occurs in Sacramento-San Joaquin Delta most of the year. Spawns in tidally influenced freshwater wetlands and seasonally submerged uplands along the Sacramento River, downstream from its confluence with the American River.	<b>High.</b> Adult Delta smelt are known to occur in the Sacramento River as far upstream as its confluence with the American River. As of 1993, Delta smelt were known to spawn in the Sacramento River as far upstream as the City of Sacramento (59 FR 65258). Spawning habitat for Delta smelt is thought to consist of substrates such as cattails and tules, tree roots, and submerged branches (Moyle 1976, Wang 1991 in 59 FR 65256). These substrates would be absent or scattered and of low quality within the Sacramento River in and adjacent to the project area due to levee maintenance.

TABLE 6.2-4

**SPECIAL STATUS SPECIES POTENTIALLY OCCURRING WITHIN THE  
SPECIFIC PLAN AREA**

Common Name	Scientific Name	Status Fed/CA/CNPS	Habitat	Likelihood of Occurrence Within the Specific Plan Area
Sacramento splittail	<i>Pogonichthys macrolepidotus</i>	FSC/CSC/none	Endemic to the lakes and rivers of the central valley, but now confined to the Delta, Suisun Bay & associated marshes. Prefers slow moving river sections, dead end sloughs. Requires flooded vegetation for spawning & foraging for young.	<b>High.</b> Suitable habitat exists within the Sacramento River. No spawning habitat exists.
<b>Birds</b>				
Burrowing owl	<i>Athene cunicularia</i>	FSC/CSC/none	Grasslands, open areas near human habitation; nests in old burrows of ground squirrels or other small mammals.	<b>Moderate.</b> The site provides potential foraging habitat for this species, and ground squirrel burrows provide suitable nesting habitat.
Swainson's hawk	<i>Buteo swainsoni</i>	none/ST/none	Grasslands and cultivated lands with scattered trees; nests in large trees or open riparian forest.	<b>Moderate (nesting).</b> Suitable nest trees are present along the river. Open areas of the Specific Plan Area and patchy ruderal vegetation does not provide suitable foraging habitat for this species
White-tailed kite	<i>Elanus leucurus</i>	None/None/CDFG fully protected	Forages in grasslands and croplands. Nests in large trees adjacent to foraging habitat.	<b>Moderate.</b> Suitable nest trees are present along the river. Open areas of the Specific Plan Area and patchy ruderal vegetation provides marginal foraging habitat for this species.
Purple martin	<i>Progne subis</i>	--/CSC/none	Nest in cavities in trees, under bridges and other human-made structures	<b>Observed.</b> Colony exists under I Street Bridge.
<b>Mammals</b>				
Pallid bat	<i>Antrozous pallida</i>	none/CSC/ none	Roosts in crevices in caves, mines, large rock outcrops, under bridges and in abandoned buildings. Forages on or near the ground in a wide variety of open habitats.	<b>High.</b> Roosting bats were observed under the I Street bridge.
Pacific Western big eared bat	<i>Corynorhinus townsendii townsendii</i>	none/CSC/none	Roosts in the open in large caves, abandoned mines and buildings. Very sensitive to roost disturbance.	<b>High.</b> Roosting bats were observed under the I Street bridge
Notes: Status: Federal FE Federally listed as Endangered FT Federally listed as Threatened FSC Federally listed as Species of Concern State ST State-listed as Threatened CSC California Department of Fish and Game designated "Species of Special Concern" CNPS 1B Rare or Endangered in California and elsewhere 2 Rare or Endangered in California, more common elsewhere Source: CDFG Natural Diversity Database (CNDDDB, 2006), and the CNPS Electronic Inventory 2003.				



Source: CA DFG, CNDDDB Occurrences, July 2006, MapMart, Aerials, May 2004.

**FIGURE 6.2-3**  
**Sensitive Species Occurrences**

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### Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is listed as a threatened species under the FESA. It occurs throughout the year in riparian woodlands and other Central Valley habitats containing elderberry shrubs (*Sambucus* spp.), upon which the VELB are completely dependent for all stages of their life cycle. The females lay their eggs in crevices in the bark. After hatching, the larvae burrow into the stems of the tree where they feed on the interior wood for the next one to two years until they form pupae, from which the adults emerge. The adults bore their way out of the stems, leaving a distinctive oval-shaped hole. As the larvae and adults are rarely seen, these borer holes are often the only evidence of this species' presence. After emergence from the stems, the adults remain in association with the elderberries, where they will feed on the elderberry foliage and eventually reproduce. All elderberry shrubs within the known range of the VELB that have one or more stems with diameters of one inch or greater at ground level, are considered potential habitat for this species. This potential habitat (i.e., elderberry shrubs) occurs primarily in the Elderberry Savanna along the American River Parkway, although isolated individual elderberry shrubs also occur along the Sacramento River and within the Specific Plan Area (Figure 6.2-1). Critical habitat was designated by the USFWS in 1980 (45 FR 58803) but it does not include the Specific Plan Area.<sup>7</sup>

Within the Specific Plan Area, elderberry shrubs were observed at four separate locations (Figure 6.2-1). Five stems over 3 inches were observed in the western side of the Specific Plan Area adjacent to I-5. Another five stems over 3-inches were mapped in the south eastern portion of the Specific Plan Area along 7<sup>th</sup> Street. The largest concentration of elderberries was in the metal debris yard in the far eastern side of the Specific Plan Area adjacent to 12<sup>th</sup> Street where 34 stems were observed. It is in this area that the only exit hole was also found. No VELB adults or boreholes were observed in any other areas during the June 15 or July 11, 2006 surveys.

Four elderberry shrubs were observed along North B Street outside of the Specific Plan Area. These shrubs are located within private property and access was not granted, thus a USFWS protocol level survey was not conducted. Two shrubs are adjacent to the Specific Plan Area but just outside of the property boundary. The shrubs look healthy and appeared to have stems at ground level greater than one inch in diameter. These shrubs are surrounded by other vegetation such as walnut trees, tree of heaven, milk weed, wild oats and prickly ox tongue. Two large shrubs were observed on the north of the Specific Plan Area on either side of I-5. The number of stems and size could not be determined, yet due to the shrubs' large size they are likely to be greater than one inch in diameter. None of the shrubs are located within riparian habitat.

The USFWS has issued a renewable take permit for the Railyards Remediation Project (TE023739). The take permit allows the remediation project (a separate and independent project) to remove 87 plants with up to 261 stems greater than 1 inch, and then maintain the property to prevent regrowth and/or recolonization.

### Western Pond Turtle

The western pond turtle (*Actinemys marmorata*) is an aquatic turtle that ranges throughout much of the state from the Sierra Nevada foothills to the coast - and in coastal drainages from the Oregon border to Baja California.<sup>8</sup> It occurs in suitable habitat throughout the region in ponds, slow moving streams and rivers, irrigation ditches, and reservoirs that have abundant emergent and/or riparian

7 USFWS, Valley Elderberry Longhorn Beetle, Final Critical Habitat, Sacramento County, California, 2002. Available online at [http://www.fws.gov/sacramento/es/animal\\_spp\\_acct/valley\\_elderberry\\_longhorn\\_beetl.htm](http://www.fws.gov/sacramento/es/animal_spp_acct/valley_elderberry_longhorn_beetl.htm), accessed July 11, 2006.

8 Stebbins, 1985. Stebbins, Robert C. A Field Guide to Western Reptiles and Amphibians, Second Edition, Revised. Houghton Mifflin Company, 1985.

vegetation. The turtle requires adjacent (i.e. within 200-400 meters of water) uplands for nesting and egg-laying - typically in soils with high clay or silt component on unshaded, south-facing slopes. The northwestern pond turtle is a State Species of Special Concern and is fairly common along the Sacramento and American Rivers.

### Green Sturgeon

The green sturgeon (*Acipenser medirostris*) is a long-lived, anadromous, native fish that occurs in low numbers in the San Francisco Estuary and Sacramento Rivers. Adults spawn in freshwater rivers from British Columbia south to the Sacramento River. In the Sacramento River spawning occurs near Red Bluff and in the Feather River. Larvae develop within these freshwater systems, migrate downstream and remain in the estuaries for between one and four years before migrating to the ocean. Mature adults move into estuaries in the spring, and spawning adults continue into natal rivers in late spring/early summer. Post spawning adults return to the estuary before migrating back to the ocean in late fall. Sub-adult fish also are thought to enter estuaries during summer and fall months. On April 7, 2006, National Oceanic & Atmospheric Administration (NOAA) Fisheries Service listed the southern distinct population segment, or DPS, of North American green sturgeon as threatened under the Endangered Species Act. The listing covers the sturgeon that uses the Sacramento River.<sup>9</sup> While green sturgeon migrate along the section of the Sacramento River adjacent to the Specific Plan Area, the Specific Plan Area does not support spawning habitat for adult fish, or rearing habitat for juveniles.<sup>10</sup>

### Delta Smelt

Delta smelt (*Hypomesus transpacificus*) is a state threatened species and was listed as a federal threatened species in 1993 (58 FR 12854). Critical habitat was designated for this species in 1994 and became effective on 18 January 1995 (59 FR 65256).

Delta smelt is a euryhaline (tolerant of a wide salinity range) species that spawns in freshwater dead-end sloughs and shallow edge-waters of channels of the Sacramento-San Joaquin Delta (59 FR 65256) between February and June. Adult smelt migrate upstream from the brackish water habitat of the mixing zone to spawn in freshwater areas, beginning in December to July and August (59 FR 65256). After hatching, larvae are transported downstream toward the mixing zone where they mature. The location of the mixing zone varies. When the mixing zone is contained within Suisun Bay, young Delta smelt are dispersed throughout a large expanse of shallow-water and marsh habitat. However, when the mixing zone is located upstream, it becomes confined in deep river channels that have smaller total surface area, fewer shoal areas, and swifter, more turbulent water currents (59 FR 65256).

Historically, Delta smelt congregated in upper Suisun Bay and Montezuma Slough (mainly during March to mid-June when the Sacramento and San Joaquin river flows are high (58 FR 12854). It is thought to have occurred from Suisun Bay to the City of Sacramento in the Sacramento River and Mossdale in the San Joaquin River (59 FR 65256). Spawning has been recorded in Montezuma and Suisun sloughs and their tributaries north of Suisun Bay, in the Sacramento River up to Rio Vista, and in Barker, Lindsey, Cache, Georgiana, Prospect, Beaver, Hog, and Sycamore sloughs (Radtke 1966 and Wang 1986 in 58 FR 12854; Wang 1991 in 59 FR 65256).

**Critical Habitat.** The Specific Plan Area is immediately adjacent to the upstream extent of Delta smelt critical habitat in the Sacramento River. The northern boundary of critical habitat occurs at the I Street Bridge, which is the southern boundary of the river portion of the Specific Plan Area. Critical habitat is designated as Suisun Bay (including the contiguous Grizzly and Honker Bays); the length

9 Moyle, Peter B. Inland Fishes of California, 2002, University of California Press.

10 Moyle, Peter B. Inland Fishes of California, 2002, University of California Press.

of Goodyear, Suisun, Cutoff, First Mallard (Spring Branch), and Montezuma sloughs; and the existing contiguous waters contained within the Delta, as defined in Section 12220 of the California Water Code (59 FR 65256).

The primary constituent elements of critical habitat for this species are physical habitat, water, river flow, and salinity concentrations required to maintain Delta smelt habitat for spawning, larval and juvenile transport, rearing, and adult migration (59 FR 65256). This critical habitat designation would be applicable to any in-water portion of the project, such as the stormwater outfall structure

### Chinook Salmon

Chinook salmon (*Oncorhynchus tshawytscha*) consists of three Evolutionary Significant Units (ESU's): Winter-run, Spring-run, and Fall/Late-fall-run Chinook. The runs of Chinook are distinguished based on the timing of the adult return to freshwater on their spawning migration. Adult and juvenile Chinook can move in the Sacramento River adjacent to the Specific Plan Area on their way to and from the ocean, but spawning does not occur in this section of river because there is no suitable spawning habitat.<sup>11</sup> At almost any time of year, there are Chinook at some life cycle stage or another within the Sacramento River (Table 6.2-5).

<b>Species</b>	<b>Adult Migration (peak)</b>	<b>Spawning (peak)</b>	<b>Juvenile Freshwater Residency</b>	<b>Outmigration (peak)</b>
Winter Run	Dec-July (Mar)	Apr-Aug (May-June)	5-10 months	July-Oct
Spring Run	Mar-Sep (May-June)	Aug-Oct (Sep)	3-15 months	Nov-Mar (Jan-Mar)
Fall Run	June-Dec (Sep-Oct)	Sep-Dec (Oct-Nov)	1-7 months	Dec-Mar
Late Fall Run	Oct-Feb (Dec)	Jan-Apr (Feb-Mar)	7-13 months	Apr-June (Dec-Mar)

Source: Moyle et. al. 1995, Moyle 2002.

Winter-run Chinook are listed as Endangered under the California and federal ESAs. They spawn in the Sacramento River and are distinguishable from other Chinook runs found in the river based on the timing of both upstream migration and the spawning season (Table 6.2-5). Prior to the construction of Shasta and Keswick dams in 1943 and 1955, respectively, winter-run Chinook spawned in the upper reaches of the Sacramento River, the McCloud River, the lower Pit River,<sup>12</sup> and Battle Creek. Presently, all winter-run Chinook spawning occurs on the mainstem of the Sacramento River downstream of Keswick Dam located near the town of Redding. Approximately 95% of the spawning occurs between Keswick Dam and the Red Bluff Diversion Dam.<sup>13</sup> Designated critical habitat extends from Keswick Dam to the mouth of San Francisco Bay at the Golden Gate Bridge, which includes the river within the Specific Plan Area.

Physical and biological features that are essential for the conservation of winter-run salmon include: (1) unimpeded access from the ocean to the spawning areas, in this case the upper Sacramento River, (2) the availability of clean gravel for spawning substrate, (3) adequate river flows for

11 Moyle, Peter B. Inland Fishes of California, 2002, University of California Press.

12 Moyle, Peter B. Inland Fishes of California, 2002, University of California Press.

13 Moyle, Peter B. Inland Fishes of California, 2002, University of California Press.

successful spawning, incubation of eggs, fry<sup>14</sup> development and emergence, and downstream transport of juveniles, (4) suitable water temperatures for successful spawning, egg incubation, and fry development, (5) habitat and prey free of contaminants, (6) riparian habitat for juvenile rearing, and (7) unimpeded passage of juveniles from their natal riffles to the ocean.<sup>15</sup>

Spring-run Chinook salmon are listed as a Threatened species under the California and federal ESAs. Spring-run Chinook enter the Sacramento River between March and September and move upstream into the headwaters, where they hold in pools until they spawn between August and October. Juveniles emigrate from the tributaries from mid- November through June; however, some juveniles spend a year in the streams and emigrate as yearlings the following October.<sup>16</sup> Typically, spring-run Chinook salmon utilize mid-to high-elevation streams that provide appropriate temperatures and sufficient flow, cover, and pool depth to allow over summering. Spawning occurs between September and October and, depending on water temperature, emergence occurs between November and February. Although Spring-run Chinook salmon emigration is highly variable, the emigration period extends from November to early May, with up to 69 percent of young-of-the-year out migrants passing through the lower Sacramento River between mid-November and early January.<sup>17</sup>

Central Valley Fall and Late Fall-run Chinook are not listed under the state or federal endangered species act but classified as a Species of Concern on April 15, 2004 due to specific risk factors. The fall-run Chinook salmon is the most abundant ESU, documented to comprise about 80% of the Sacramento Basin stock in the early 1980s. The ESU includes all naturally spawned populations of fall-run Chinook salmon in the Sacramento and San Joaquin River Basins and their tributaries, east of Carquinez Strait, California.

**Critical Habitat.** Critical habitat has been designated for both winter and spring-run Chinook. These critical habitat designations identify those physical and biological features of the habitat that are essential to the conservation of the species and that may require special management consideration or protection. The primary constituent element of critical habitat found within the Sacramento River is freshwater migration corridors free of obstruction with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival” (69 FR 74582). Within the Sacramento River this includes the river water, river bottom (including those areas and associated gravel used by Chinook and steelhead as spawning substrate), and adjacent riparian zone. The lateral extent of the Critical habitat includes the stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line (33 CFR 329.11). In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation. Bankfull elevation is the level at which water begins to leave the channel and move into the floodplain and is reached at a discharge which generally has a recurrence interval of 1 to 2 years on the annual flood series.

### Central Valley Steelhead

Central Valley steelhead (*Oncorhynchus mykiss*) population is an ESU that includes all naturally spawned populations of steelhead in the Sacramento and San Joaquin rivers and their tributaries, including areas adjacent to the Specific Plan Area. This species was federally listed as a

- 
- 14 Fry is the term used for small fish just after hatching. Most fry do not have well developed swimming capabilities.
- 15 National Marine Fisheries Service, 1997. Proposed recovery plan for the Sacramento River winter-run Chinook salmon. NMFS, Southwest Region, Long Beach, California. 288 pages plus appendices.
- 16 Moyle, Peter B. 2002. Inland Fishes of California, University of California Press.
- 17 Snider, B., and R.G. Titus. 2000. Timing, composition, and abundance of juvenile anadromous salmonid emigration in the Sacramento River near Knights Landing, October 1996.



Threatened species in March of 1998 (63 FR 13347). Following a court case in Oregon (*Aalsea Valley Alliance v. Evans*) NOAA Fisheries revised their hatchery policy, publishing a proposed rule in June 2004 that contained a process for inclusion of hatchery fish within the evaluation of a specific ESU (69 FR 31354). Shortly after publishing this proposed rule, NOAA Fisheries published proposed listing status for 27 ESUs of salmonids including the Central Valley steelhead (69 FR 33102). In January 2006, the Central Valley steelhead ESU was once again listed as threatened under the FESA (71 FR 834). Critical habitat was designated in September 2005 for this species that includes the Specific Plan Area. This listing became effective January 2, 2006 (70 FR 52488).

Steelhead begin their migration from the ocean when winter rains provide large amounts of cold water for migration and spawning. Peak migration periods for adult fish in the Sacramento River are in mid-winter. They typically spawn in tributaries to mainstream rivers, often long distances from the ocean. Juvenile steelhead generally spends one to three years in freshwater before migrating to the ocean.<sup>18</sup> Suitable steelhead conditions primarily occur in mid to high elevation streams. Because access to large areas of suitable rearing habitat has been blocked by dam construction, juvenile rearing is generally confined to lower elevation stream reaches where water temperatures during late summer and early fall can be high.<sup>19</sup> While steelhead migrate along this section of the Sacramento the Specific Plan Area does not support spawning habitat for adult fish, or rearing habitat for juvenile steelhead.<sup>20</sup>

**Critical Habitat.** The portion of the Sacramento River immediately adjacent to the Specific Plan Area is designated critical habitat for Central Valley steelhead. The primary constituent elements of critical habitat for this species are freshwater spawning, rearing, and migration areas; estuarine areas free of obstructions and of sufficient quality to support adult and juvenile rearing; and nearshore and offshore marine areas. The lateral extent of the Critical habitat includes the stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line (33 CFR 329.11). This critical habitat designation would be applicable to any in-water portion of the project, such as the stormwater outfall structure.

### Sacramento Splittail

Sacramento splittail (*Pogonichthys macrolepidotus*) was listed under the FESA as a threatened species in 1999 (64 FR 5963). The listing was prompted by long-term population declines and a corresponding reduction in range. The listing was challenged in court and in subsequent review, the USFWS determined that listing was not warranted and removed splittail from the list of threatened species (68 FR 55139). The species is a federal and State Species of Concern.

Sacramento splittail are primarily freshwater fish, but are tolerant of moderate salinity and can be found in brackish waters of the lower Sacramento-San Joaquin Delta. Typically, adults migrate upstream in January and February and spawn on seasonally inundated floodplains in March and April. In May, the juveniles migrate back downstream to shallow, brackish water rearing grounds, where they feed on detritus and invertebrates for 1-2 years before migrating back upstream to spawn.<sup>21</sup> Larvae remain in the shallow, weedy inshore areas near their spawning sites and move into the deeper offshore habitat as they mature. Historically, splittail were found as far north as Redding on the Sacramento River and as far south as the Friant Dam on the San Joaquin River. They were also common in San Pablo Bay and Carquinez Strait, but now appear to be largely confined to the Delta, Suisun Bay, Suisun Marsh, Napa River, Petaluma River, and other parts of the Sacramento-San Joaquin Estuary. Although this species has lost considerable habitat through much of its former range, it appears that the splittail has benefited from habitat-restoration and water-

18 Moyle, Peter B. *Inland Fishes of California*, 2002, University of California Press.

19 Moyle, Peter B. *Inland Fishes of California*, 2002, University of California Press.

20 Moyle, Peter B. *Inland Fishes of California*, 2002, University of California Press.

21 Moyle, Peter B. *Inland Fishes of California*, 2002, University of California Press.

management actions currently underway to benefit Central Valley fish, including several federally protected species. The principal spawning areas of splittail – the Yolo Bypass and the Cosumnes River – are largely protected and being further enhanced and restored. This species is likely to be present in the American and Sacramento Rivers and their tributaries, but the nearest significant breeding habitat is in the Yolo Bypass. Thus, the portion of the Sacramento River adjacent to the Specific Plan Area does not support spawning habitat for adult fish, or rearing habitat for juveniles.

### Burrowing Owl

Burrowing owls (*Athene cunicularia*) are yearlong residents in generally flat, open, dry grasslands, pastures, deserts, and shrub lands, and in grass, forbs and open-shrub stages of pinyon-juniper and ponderosa pine habitats. They use communal ground squirrel and other small mammal burrows for nesting and cover, as well as artificial structures such as roadside embankments, levees, and berms. They can exhibit high site fidelity, often reusing burrows year after year. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during their breeding season (March to August) or, alternatively, by the presence of molted feathers, cast pellets, prey remains (rodents, small reptiles, and large insects), eggshell fragments, or whitewash (guano), at or near a burrow. Burrowing owls are fairly tolerant of human activity near their nest burrows as long as suitable foraging habitat exists nearby. Known burrowing owl colonies are present along railroad right-of-ways and natural and artificial canals near foraging habitat, at several locations on the Cosumnes River College campus as well as less-developed areas in north, east and south Sacramento. Given the presence of burrowing mammals and bare ground for foraging, there is a moderate potential for this species to occur within the Specific Plan Area. Because large amounts of formerly suitable habitat have been lost, populations of burrowing owls have declined and they are now a State and federal Species of Concern.

### Swainson's Hawk

The Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species under the California ESA. This raptor is found primarily in open country, foraging in grasslands and agricultural fields, especially after disking or harvest. They use tall riparian trees (typically oaks or cottonwoods) for nesting, but will occasionally nest in large eucalyptus or other large ornamental trees if there is suitable foraging habitat nearby. The species has lost much of its former nesting habitat as a result of the significant reduction in riparian woodland and forest habitat throughout the state over the last 100 years, and is increasingly losing foraging habitat to urban development. Swainson's hawks can forage as far as 20 miles from the nest, but nests are generally more successful if suitable foraging habitat is present within an approximate 10-mile radius. Suitable foraging habitat is defined as annual grasslands, fallow fields, dry and irrigated pasture, and a variety of croplands including alfalfa, beet, tomato and other low growing row or field crops, rice (when not flooded), and cereal grain crops (including corn after harvest). When forced to travel greater distances from the nest, the adults must expend much more time and energy gathering food, leaving the eggs and young in the nests much more vulnerable to predation and the elements. The greatest concentration of nesting records for Swainson's hawks within the region occurs along the Sacramento River. Although no Swainson's hawks have been observed within the Specific Plan Area, the site is within the foraging range of numerous Swainson's hawk nests. However, it is highly unlikely that the discontinuous patches of ruderal vegetation within the Specific Plan Area provide significant foraging habitat for this species due to the high level of disturbance that occurs onsite.

### White-Tailed Kite

The white-tailed Kite (*Elanus leucurus*) is listed as a "fully protected" raptor under Section 3511 of the California Fish and Game code. White-tailed kites feed on rodents, small reptiles, and large insects in fresh emergent wetlands, annual grasslands, pastures, and ruderal vegetation. They breed between February and October. Although, like other raptors, kites build solitary nests, they

often roost, and occasionally nest communally, especially during the non-breeding season. Therefore, disturbance of a relatively small roost or nesting area could affect a large number of birds. The white-tailed kite can commonly be observed foraging in open grasslands throughout the region, but breeding sites are primarily located near riparian corridors along the Sacramento and American Rivers. No white-tailed kites were observed during the biological survey in June of 2006, but suitable nesting habitat occurs along the Sacramento River adjacent to the Specific Plan Area.

### Purple Martin

The purple martin (*Progne subis*) can be found throughout nearly the entire United States east of the Rocky Mountains. Although declining in many western states, it is also found in isolated areas of Canada, Oregon, Washington, California, Utah, Colorado, Arizona, New Mexico and Mexico. In California it is a CDFG species of special concern. It is an early spring migrant from its wintering grounds in South America. Generally, purple martins inhabit open areas with an open water source nearby. Martins adapt well in and around people, but are out-competed by starlings and sparrows in urban areas. Purple martins are colonial cavity nesters in abandoned woodpecker holes, human-made nest boxes, or cavities in other structures such as bridges and overpasses. Once established at a nest location, martins usually come back to the same site every year. There is a colony of martins that is known to use the underside of the I Street on-ramp to I-5, adjacent to the Specific Plan Area. This area has possibly been used by purple martins during the breeding season since 1974. At least six pairs were observed during the 2006 survey.

### Special-Status Bats

Special-status bat species with the potential to occur within the Specific Plan Area include the pallid bat (*Antrozous pallida*) and Pacific Western big eared bat (*Corynorhinus townsendii townsendii*); both are CDFG species of special concern. These species use hollow trees, caves, and rock crevices for roosting, and also use artificial structures such as mines, old buildings, and bridges if suitable structure and seclusion are available. Potential habitat for these species is present within the Specific Plan Area, and six roosts of unknown bat species were observed under the elevated section of I-5 and under the I Street Bridge and its approaches. Because specific identification was not possible, one of the sensitive species discussed above could roost within the Specific Plan Area.

## **REGULATORY SETTING**

### **Federal**

#### Federal Endangered Species Act of 1973

Section 3 of the FESA defines an endangered species as any species or subspecies of fish, wildlife, or plants "in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as any species or subspecies "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Designated endangered and threatened species, as listed through publication of a final rule in the Federal Register, are fully protected from a "take" without an incidental take permit administered by the USFWS under Section 10 of the FESA. Take, under Section 9, means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (50 CFR 17.3). The term "harm" in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). The term "harass" in the definition of "take" means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). Proposed endangered or threatened species are

those for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Section 7 of the FESA requires that federal agencies ensure that their actions are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. This obligation requires federal agencies to consult with the USFWS on any actions (issuing permits including Section 404 permits, issuing licenses, providing federal funding) that may affect listed species to ensure that reasonable and prudent measures will be undertaken to mitigate impacts on listed species. Consultation with USFWS can be either formal or informal depending on the likelihood of the action to affect listed species or critical habitat. Once a formal consultation is initiated, USFWS will issue a Biological Opinion (either a “jeopardy” or a “no jeopardy” opinion) indicating whether the proposed agency action will or will not jeopardize the continued existence of a listed species or result in the destruction or modification of its critical habitat. A permit cannot be issued for a project with a “jeopardy” opinion unless the project is redesigned to lessen impacts.

In the absence of any federal involvement, as in a privately-funded project on private land with no federal permit, Section 10(a) of the FESA empowers the USFWS to authorize incidental take of a listed species provided a habitat conservation plan (HCP) is developed. To qualify for a formal Section 10(a) permit, strict conditions must be met including a lengthy procedure involving discussions with USFWS and local agencies, preparation of a HCP, and a detailed Section 10(a) permit application.

#### Fish and Wildlife Coordination Act

Section 7 of Fish and Wildlife Coordination Act, 16 USC 742 et seq., 16 USC 1531 et seq., and 50 CFR 17 requires consultation if any proposed program facilities could jeopardize the continued existence of an endangered species. Applicability depends on federal jurisdiction over some aspect of the project. The administering agency for these authorities is expected to be the U.S. Army Corps of Engineers (Corps) in coordination with the USFWS.

#### Migratory Bird Treaty Act (MBTA)

The Migratory Bird Treaty Act (MBTA) makes it unlawful to “take” (kill, harm, harass, etc) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others. There are over 800 species listed in the MBTA including common species observed within the Specific Plan Area such as the American robin (*Turdus migratorius*), Brewer’s blackbird (*Euphagus cyanocephalus*), and northern mockingbird (*Mimus polyglottos*).

#### Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) requires that a permit be obtained from the Corps prior to the discharge of dredged or fill materials into any “waters of the United States or wetlands.” Waters of the United States are broadly defined in the Corps’s regulations (33 CFR 328) to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as: “Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (Federal Register 1982). Wetlands that are not specifically exempt from Section 404 regulations (such as drainage channels excavated on dry land) are considered to be “jurisdictional wetlands.” The Corps is required to consult with the U.S. Fish and Wildlife Service, Environmental Protection Agency, State Regional Water Quality Control Board, and California Department of Fish and Game (among other agencies) in carrying out its discretionary authority under Section 404.

The Corps grants two types of permits, individual and nationwide. Project-specific individual permits are required for certain activities that may have a potential for more than a minimal impact and necessitate a detailed application. The most common type of permit is a nationwide permit. Nationwide permits authorize activities on a nationwide basis unless specifically limited, and are designed to regulate with little delay or paperwork certain activities having minimal impacts. Nationwide permits typically take two to three months to obtain whereas individual permits can take a year or more. To qualify for a nationwide permit, strict conditions must be met.

The Sacramento River is a "Navigable Waters of the U. S.," as defined in the Federal Register (33 CFR part 329). Any development within the river, including floating structures such as the proposed docks and moorings must comply with Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the CWA (33 U.S.C. 1344). Section 10 requires that a permit be obtained from the Corps to obstruct or alter a Navigable Waters of the US such as the Sacramento River. Section 404 of the CWA requires that a "404 Permit" be obtained from the Corps to discharge dredged or fill material into a Waters of the U.S.

#### Section 401 of the Clean Water Act

This section of the Act requires a state-issued Water Quality Certification for all projects regulated under Section 404. In California, the RWQCB issues Water Quality Certifications with jurisdiction over the Specific Plan Area. The RWQCB—Sacramento issues Section 401 Water Quality Certifications for the area that include the project location.

#### **State**

#### California Endangered Species Act

The California Endangered Species Act (CESA) declares that deserving plant or animal species will be given protection by the state because they are of ecological, educational, historical, recreational, aesthetic, economic, and scientific value to the people of the state. CESA established that it is state policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. Listed species are generally given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

CESA authorizes that "Private entities may take plant or wildlife species listed as endangered or threatened under the CESA and FESA, pursuant to a federal incidental take permit issued in accordance with Section 10 of the FESA, if the CDFG certifies that the incidental take statement or incidental take permit is consistent with CESA (Fish & Game Code § 2080.1(a)).

#### California Environmental Quality Act—Treatment of Listed Plant and Animal Species

Although threatened and endangered species are protected by specific federal and State statutes, Section 15380(b), (c) and (d) of the CEQA Guidelines provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These would include those species identified as *endangered, rare, or threatened* as defined in Section 15380 (b) of the State CEQA Guidelines.

- 1) "Endangered" when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or

- 2) "Rare" when either:
- (A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environmental worsens; or
  - (B) The species is likely to become endangered within the foreseeable future throughout all or significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

Under Section 15380 (c) of the State CEQA Guidelines, "a species of animal or plant shall be presumed to be endangered, rare or threatened, if it is listed in:

1. Sections 670.2 or 670.5, Title 14, California Code of Regulations [otherwise known as the California Endangered Species Act, CESA]; or
2. Title 50, Code of Federal Regulations Section 17.11 or 17.12 pursuant to the Federal Endangered Species Act [FESA] as rare, threatened, or endangered."

Under Section 15380 (d) of the State CEQA Guidelines, "A species not included in any listing identified in subdivision (c) shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet the following criteria:

- o When its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including the loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors; or
- o Although not presently threatened with extinction, the species is existing in such small numbers through all or a significant portion of its range that it may become endangered if its environment worsens; or
- o The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered 'threatened' as the term is used in the FESA."

Two other sources for sensitive species are the California Species of Special Concern and Fully Protected Species lists; and the CNPS "RARE" listings. The status "State Species of Special Concern" and "Fully Protected Species" apply to animals not listed under the CESA and FESA, but which nonetheless either: (1) are declining at a rate that could result in listing; or (2) historically occurred in low numbers and known threats to their persistence currently exist. The CNPS Inventory of Rare and Endangered Vascular Plants of California is sanctioned by CDFG, and serves as a Species of Special Concern list for plants. For purposes of CEQA review, observed plant and wildlife Species of Special Concern, and plants with a CNPS designation of 1a, 1b, and 2, that could potentially occur in the area are considered sensitive species, as well as any others that meet the requirements under the State CEQA Guidelines Section 15380 (b).

The significance of impacts to a species under CEQA must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

### Fish and Game Code of California

The Fish and Game Code provides specific protection and listing for several types of biological resources.

Section 1580 of the Fish and Game Code presents the process and definition for Designated Ecological Reserves. Designated Ecological Reserves are significant wildlife habitats to be preserved in natural condition for the general public to observe and study.

Section 1600 of the Fish and Game Code requires a Streambed Alteration Agreement (SAA) for any activity that may alter the bed and/or bank of a stream, river, or channel. Typical activities that require a SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. As the Specific Plan Area would result in the removal of riparian vegetation and construction within or immediately adjacent to the river it will require a SAA for the project.

Section 2081(b) and (c) of the CESA allows CDFG to issue an incidental take permit for a state listed threatened and endangered species only if specific criteria are met. These criteria can be found in Title 14 CCR, Sections 783.4 (a) and (b). No Section 2081(b) permit may authorize the take of "fully protected" species and "specified birds." If a project is planned in area where a species or specified bird occurs, an applicant must design the project to avoid all take; the CDFG cannot provide take authorization under CESA.

#### Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act charges the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) statewide with protecting water quality throughout California. Typically, the SWRCB and RWQCB act in concert with the Corps under Section 401 of the CWA in relation to permitting fill of federally jurisdictional waters. The U.S. Supreme Court recently acted to limit the regulatory jurisdiction of the Corps under Section 404 of the CWA (USSC 2001). This action did not limit the state's regulatory jurisdiction over Waters of the State (Guzy and Porter 2001). Waters of the state are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as "...any surface water or groundwater, including saline waters, within the boundaries of the state." Currently, an applicant would delineate the wetlands on their property utilizing methodology presented in the 1987 Corps Wetland Delineation Manual (Environmental Laboratory 1987) and the delineation would be verified by the Corps. In cases where an area meets the criteria to be considered a wetland, but the Corps does not have jurisdiction, the applicant is referred to the appropriate RWQCB. For the Specific Plan Area, the Central Valley Regional Water Quality Control Board (CVRWQCB) could exercise its jurisdiction over wetlands where a project does not require a federal permit, but involves removal or placement of material into Waters of the State. As the wetlands that are currently identified within the Specific Plan Area are in areas where remediation is occurring, the filling of these wetlands (which were deemed "isolated" by the Corps) have been permitted under the remediation activities at the former oil storage area of the (General WDR Order No. 2004 0004-DWQ). Consequently, they will not be affected by implementation of the Specific Plan as the remediation activities are part of an ongoing, independent project.

#### Native Plant Protection Act of 1977

Native Plant Protection Act of 1977 and implementing regulations in Section 1900 et seq. of the Fish and Game Code designates rare and endangered plants, and provides specific protection measures for identified populations. It is administered by the CDFG.

#### Wetlands Resources Policy

This policy provides for the protection, preservation, restoration, enhancement, and expansion of wetland habitats in California. The administering agencies for this authority are the CDFG, the California Environmental Protection Agency (Cal-EPA), and the CVRWQCB.

### State Lands Commission

The California State Lands Commission (SLC) has exclusive jurisdiction over the beds of navigable rivers, sloughs, and lakes. The commission has the authority to grant Land Use Leases, which are required for any proposal to use navigable waterways for any purpose other than dredging (such as bridge piers). The waters of the Sacramento River would fall under the SLC's jurisdiction.

### **Local**

#### City of Sacramento General Plan

The City of Sacramento General Plan's conservation strategy focuses on habitat conservation, minimization of impacts on sensitive biological resources, and the preservation of plant and animal diversity as the most effective way to protect individual special status species.

The following City of Sacramento General Plan policies will guide the conservation and protection of biological resources in regards to the Specific Plan Area:

### **Preservation of Natural Resources**

**Goal A      Implement the Master Plan for Parks and Recreation**

Policy

2. Continue to implement the Heritage Tree Program.

**Goal C      Conserve and protect the planned open space areas along the American and Sacramento Rivers, floodways and undevelopable floodplains to the extent feasible.**

Policy

1. Retain the habitat areas where known endangered wildlife exists to the extent feasible.

**Goal E      Establish development standards for water related open space lands throughout the City to enhance the visual amenities of these uses.**

Policy

1. Explore ways to reverse degradation and pollution and enhance the natural beauty and wildlife habitats of creeks and drainage canals.

### City of Sacramento Tree Preservation Ordinance

The City of Sacramento has adopted an ordinance to protect trees as a significant resource to the community. It is the City's policy to retain trees when possible regardless of their size. When circumstances will not allow for retention, permits are required to remove trees that are within City jurisdiction. Removal of, or construction around, trees that are protected by the tree ordinance are subject to permission and inspection by City arborists. The City of Sacramento Urban Forest Services reviews project plans and works with City of Sacramento Development Services Department to minimize impacts to street trees from construction and development activities. The Sacramento City Code includes the following provisions to protect City trees:

**12.57.020 Definitions.**

"City street tree" means and includes any tree growing on a public street right-of-way. City street trees are maintained by the city.

"Maintenance easement private street tree" means and includes any tree growing within a maintenance easement. No parcel contains more than one maintenance easement private street tree per forty (40) feet of street frontage. If there is more than one tree in the maintenance easement per forty (40) feet of street frontage, only the one closest to the street is a maintenance easement private street tree, and the other(s) are private trees.

"Street tree" means and includes both city street trees and maintenance easement private trees (Prior code §45.01.002).



**12.57.60.1 Protection of trees.**

- (a) No person shall remove, trim, prune, cut or otherwise perform maintenance on any city street tree without first obtaining a permit from the director pursuant to Chapter 12.57.070. (Prior Code Section 45.01.006).

**12.64.020 Definitions.**

"Heritage tree" means:

- (1) Any tree of any species with a trunk circumference of one hundred (100) inches or more, which is of good quality in terms of health, vigor of growth, and conformity to generally, accepted horticultural standards of shape for its species.
- (2) Any native species of oak (*Quercus* spp.), California buckeye (*Aesculus californica*), and sycamore (*Platanus racemosa*), having a circumference of 36 inches or greater when a single trunk or cumulative circumference of 36 inches or greater when a multi-trunk tree.
- (3) Any tree thirty (36) inches in circumference or greater in a riparian zone. The riparian zone is measured from the center line of the water course to thirty (30) feet beyond the high water line.
- (4) Any tree, grove of trees or woodland trees designated by resolution of the city council to be of historic or environmental value or of significant community benefit. (Prior code Section 45.04.211)

**12.64.040 Protection of heritage trees during construction activity.**

During construction activity on any property upon which is located a heritage tree, the following rules shall apply. Unless the express written permission of the director is first obtained, no person shall:

- (a) Change the amount of irrigation provided to any heritage tree from that which was provided prior to the commencement of construction activity;
- (b) Trench, grade or pave into the drip line area of a heritage tree;
- (c) Change, by more than two (2) feet, grade elevations within thirty (30) feet of the drip line area of a heritage tree;
- (d) Park or operate any motor vehicle within the drip line area of any heritage tree;
- (e) Place or store any equipment or construction materials within the drip line area of any heritage tree;
- (f) Attach any signs, ropes, cables or any other items to any heritage tree;
- (g) Cut or trim any branch of a heritage tree for temporary construction purposes; and
- (h) Place or allow to flow into or over the drip line area of any heritage tree any oil, fuel, concrete mix or other deleterious substance. Where written permission of the director [City Neighborhood Services Director] is sought under this section, the director may grant such permission with such reasonable conditions as may be necessary to effectuate the intent and purpose of this chapter. (Prior code Section 45.04.216).

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

Assessing potential impacts to biological resources resulting from the implementation of the Specific Plan Area began with a review of the available literature to determine the potential presence of special status biological resources within the Specific Plan Area. Upon completion of the literature review, a list of species potentially occurring within the Specific Plan Area was compiled (Appendix F). Subsequently, reconnaissance level field surveys were conducted to prepare a list of observed species and to assess habitat suitability for potentially occurring species. Biologists performed general surveys on June 1, 14, 15, and July 11, 2006, to assess the biological resources of the Specific Plan Area and within about 500 feet of the Specific Plan Area boundaries. Surveys were conducted by walking longitudinal transects of the Specific Plan Area and documenting observed plant species. Birds were identified by sight or call recognition, and the presence of nests or other evidence of breeding activity was noted. Surveys for mammals included searching for and

identifying diagnostic signs, including scat, footprints, scratch-outs, dusting bowls, burrows, and trails.

The analysis below considers the potential effects of the Specific Plan at a programmatic level. The Specific Plan Area is evaluated in relation to the sensitive biological resources that could occur onsite and on adjacent lands or within the Sacramento River.

Potential impacts are analyzed using information identified in the environmental setting and project description and comparing it to the Standards of Significance. When a project-related change in biological resources exceeds a threshold, a potentially significant impact is considered to occur as a result of the Specific Plan Area. Evaluation of the Specific Plan Area was done programmatically through an examination of potential impacts that could reasonably be assumed or inferred with respect to construction and/or operation of the Specific Plan Area. For significant impacts, mitigation measures were designed to reduce the impacts to less-than-significant levels wherever possible. For impacts that could not be reduced to less-than-significant levels, mitigation measures were designed to offset the impacts to the maximum extent possible. Because the majority of the site is vacant land containing few biological resources, the majority of the impacts identified under the Specific Plan Area relate to the effects of construction of the outfall facilities on sensitive species of fish.

Impacts to sensitive or rare species would be significant if they are expected to affect any of the following: (1) a species listed as threatened or endangered by the state of California or federal government at the time the Notice of Intent and Notice of Preparation for this EIR were published; (2) a major population or subpopulation of a species that would result in the regional decline of this species; (3) a relative large number of individuals within a population that is considered rare or declining; (4) the species' metapopulation (e.g., if one of only a few known populations occurs in the impact zone, or if the species has extremely narrow habitat requirements); or (5) a habitat type or vegetation community in regional decline or that is regionally endemic.

Impacts to rare species would be less than significant if they are not expected to affect species or populations because: (1) a relatively small number of non-listed individuals would be impacted; (2) populations with a larger number of individuals are abundant in the region; (3) recovery and conservation efforts are documented to adequately conserve the species or habitat, and impacts would not affect the recovery or conservation of this species or habitat; or (4) the species or habitat is locally common and fairly abundant in the region

### **Standards of Significance**

For purposes of this environmental document, an impact would be significant if any of the following conditions or potential thereof, would result with implementation of the Specific Plan Area:

- Take of an endangered species or unauthorized take of a threatened species under the CESA or FESA;
- Have a substantial adverse affect on or result in increased mortality or reduced reproductive success that would lead to the local extirpation of, or reduction in the population below self-sustaining levels of any species identified or published as an endangered, threatened, rare, candidate, sensitive, or special-status species by CDFG or USFWS, and meets the definition of Section 15380 (b), (c) or (d) of the CEQA guidelines.
- Result in the net reduction of protected wetland habitat as defined in Section 404 of the CWA or result in alteration of desirable functions and values through direct removal, filling, hydrological interruption, or other means;

- Result in a net loss of riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations; or by the California Department of Fish and Game; or by the U.S. Fish and Wildlife Service;
- Result in the isolation or interruption of contiguous habitat which would disrupt animal movement patterns such that it would interfere substantially with the movement of resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; or
- Conflict with any local policies or ordinances protecting biological resources, such as the Heritage Tree Ordinance (City Code 12.64.040).

### **Specific Plan Components**

The proposed land use plan (Figure 3-4 and Appendix C) would result in the removal of vegetation and construction of stormwater facilities within riverine-riparian habitat and potentially within riverine habitat. It would also involve the discharge of stormwater flows into the Sacramento River which could impact water quality and sensitive natural resources within the river. The following Specific Plan Area policy addresses water quality:

#### Policy

CS-3.2. Design the storm drainage system to meet the design criteria of the City's Department of Utilities, Sacramento City and County design standards and the terms of the City's NPDES permit.

### **Impacts and Mitigation Measures**

#### **6.2-1 Development of the Specific Plan could result in the loss of potential foraging habitat for Swainson's hawk.**

Swainson's hawks require large, open grasslands with abundant prey in association with suitable nest trees. Suitable foraging areas include native grasslands or lightly grazed pastures, alfalfa and other hay crops, and certain grain and row croplands. Suitable nest sites may be found in mature riparian forest, lone trees or groves of oaks, other trees in agricultural fields, and mature roadside trees.

The Specific Plan Area is within the foraging territories of at least 36 pairs of nesting Swainson's hawks (Figure 6.2-2). Nevertheless, this species has not been observed foraging within the Specific Plan Area during site visits in the summer of 2006. It is very unlikely that it forages in the Specific Plan Area because the site is comprised of highly altered, discontinuous ruderal habitat and barren soil that are not recognized as suitable or significant foraging habitat by the CDFG.<sup>22</sup> Therefore, conversion of the Specific Plan Area from vacant and barren land to mostly urban land cover would not result in the conversion of areas recognized as suitable or significant Swainson's hawk foraging habitat by the CDFG. This is considered a ***less-than-significant impact*** to Swainson's hawk.

#### Mitigation Measure

*None required.*

#### **6.2-2 Development of the Specific Plan could result in the loss of potential nesting habitat for Swainson's hawk, white-tailed kite, and other sensitive riparian-nesting species, and burrowing owls.**

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22 California Department of Fish and Game, 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California.

Suitable nesting habitat for Swainson's hawks, white-tailed kites, burrowing owls, and other sensitive riparian-nesting avian species, such as herons and egrets, exist in valley-foothill riparian habitat along the Sacramento River. Although the site consists of low quality foraging areas, the Specific Plan Area contains valley-foothill riparian habitat and, thus, it contains potential nesting habitat for such bird species. However because such habitat is fragmented and has a limited understory the riparian habitats within the Specific Plan Area are considered marginal nesting habitat. Nonetheless, the construction of the proposed Sacramento River outfall could result in the loss of an active nest or in mortality of nest occupants. This would be considered a *potentially significant impact*.

In addition, offsite roadway improvements such as the extension of 5<sup>th</sup> Street and improvements to North B Street would require the removal of some potential nesting trees. If project-related development activities resulted in the loss of an active nest and mortality of the nest occupants, this would be a *potentially significant impact*.

As discussed above in *Regulatory Framework*, migratory avian species that may use portions of the site for nesting during breeding season are protected under MBTA. Specific Plan implementation and construction-related activities including, but not limited to, grading, materials laydown, facilities construction, vegetation removal, and construction vehicle traffic may result in the disturbance of nesting species protected by the MBTA. The MBTA protects many common species in addition to those considered sensitive for this project. Disturbance of nesting common species, such as American robin or Brewer's blackbird, is not considered a significant impact even though nesting birds are protected by the MBTA and the Fish and Game Code of California. However, the loss of nesting efforts of sensitive avian species (white-tailed kite or burrowing owl) would be considered a *potentially significant impact*.

#### Mitigation Measure

Implementation of Mitigation Measures 6.2-2(a) through 6.2-2(c) would require surveys for riparian-breeding species and impact-avoidance measures to ensure that the loss or take of these species will not occur. These measures would reduce this impact to a ***less-than-significant level***.

- 6.2-2 a) *Nesting Swainson's Hawk Habitat: If construction occurs during the breeding season (February 1-August 31), the project applicant shall conduct CDFG-recommended protocol-level surveys prior to construction as required by the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley or as required by the CDFG in the future. If active nests are found in the construction area, mitigation measures consistent with the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California shall be incorporated in the following manner or as directed by CDFG:*
- 1) *If an active nest is found no intensive new disturbances (e.g., heavy equipment operation associated with construction, use of cranes or draglines, new rock crushing activities) or other project-related activities that may cause nest abandonment or forced fledging, can be initiated within 200 yards (buffer zone) of an active nest between March 1 and September 15. The size of the buffer area may be adjusted if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the hawks. No project activity shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active.*
  - 2) *Nest trees shall not be removed unless there is no feasible way of avoiding removal of the tree. If a nest tree must be removed, a Management Authorization (including conditions to offset the loss of the nest tree) must be*

*obtained from CDFG with the tree removal period specified in the management Authorization, generally between October 1 and February 1.*

- 3) *If construction or other project-related activities that may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the project proponent) by a qualified biologist will be required to determine if the nest is abandoned. If the nest is abandoned and if the nestlings are still alive, the project proponent shall fund the recovery and hacking (controlled release of captive reared young) of the nestling(s).*
  - 4) *Routine disturbances, such as routine maintenance activities within 0.25 mile of an active nest, shall not be prohibited.*
- b) *Nesting habitat for other protected or sensitive avian species:*
- 1) *Vegetation removal and construction shall occur after between September 1 and January 31 whenever feasible.*
  - 2) *Prior to any construction or vegetation removal between February 1 and August 31, a nesting survey shall be conducted by a qualified biologist of all habitat within 500 feet of the construction area. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities and surveys will be conducted in accordance with CDFG protocol as applicable. If no active nests are identified on or within 500 feet of the construction site, no further mitigation is necessary. This survey can be carried out concurrently with surveys for other species provided it does not conflict with any established survey protocols. A copy of the pre-construction survey shall be submitted to the City of Sacramento. If an active nest of a sensitive species is identified onsite (per established thresholds), specific mitigation measures shall be developed in consultation with CDFG and USFWS. At a minimum, these measures shall include a 500-foot no-work buffer that shall be maintained between the nest and construction activity until CDFG and/or USFWS approves of any other mitigation measures.*
  - 3) *Completion of the nesting cycle shall be determined by qualified ornithologist or biologist.*
- c) *Burrowing Owl Nesting Habitat:*
- 1) *Prior to construction activity, focused pre-construction surveys shall be conducted for burrowing owls where suitable habitat is present within the construction areas. Surveys shall be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities and surveys shall be conducted in accordance with CDFG burrowing owl survey protocol.*
  - 2) *If unoccupied burrows are found during the non-breeding season, the project applicant may collapse the unoccupied burrows, or otherwise obstruct their entrances to prevent owls from entering and nesting in the burrows. This measure would prevent inadvertent impacts during construction activities.*

- 3) *If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be submitted to the City and CDFG, and no further mitigation is necessary.*

*If occupied burrows are found, impacts on the burrows shall be avoided by providing a buffer of 165 feet during the non-breeding season (September 1 through January 31) or 250 feet during the breeding season (February 1 through August 31). The size of the buffer area may be adjusted if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the owls. No project activity shall commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied. If the burrow is occupied by a nesting pair, a minimum of 7.5 acres of foraging habitat contiguous to the burrow shall be maintained until the breeding season is over.*

- 4) *If impacts on occupied burrows are unavoidable, onsite passive relocation techniques approved by CDFG shall be used to encourage owls to move to alternative burrows outside of the impact area. However, no occupied burrows shall be disturbed during the nesting season unless a qualified biologist verifies through non-invasive methods that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Mitigation for foraging habitat for relocated pairs shall follow guidelines provided in the California Burrowing Owl Consortium's April 1995 Burrowing Owl Survey Protocol and Mitigation Guidelines,<sup>23</sup> which ranges from 7.5 to 19.5 acres per pair.*

### **6.2-3 Development of the Specific Plan could result in take of an endangered and threatened fish species and degradation of designated critical habitat.**

The Sacramento River adjacent to the Specific Plan Area is known habitat for endangered Sacramento River winter-run Chinook; threatened Central Valley spring-run Chinook, Central Valley steelhead (steelhead), threatened Delta smelt, and green sturgeon. Designated critical habitat for steelhead and the three runs of Chinook includes the Sacramento River and adjacent riparian within the Specific Plan Area. Designated critical habitat for Delta smelt in the Sacramento River is south of, and immediately adjacent to, the river portion of the Specific Plan Area.

The Sacramento River functions as a regional migratory corridor for the above-mentioned species. The portion of the river adjacent to the Specific Plan Area does not serve as spawning or juvenile rearing habitat for salmonids or sturgeon. Spawning habitat for Delta smelt is thought to consist of substrates such as cattails and tules, tree roots, and submerged branches on which the adhesive eggs are attached (Moyle 1976, Wang 1991 in 59 FR 65256). This habitat is absent or scattered and of low quality within the Sacramento River in the vicinity of the project area due to levee maintenance. Because the area lacks spawning habitat and deep holding pools within the portion of the Sacramento River adjacent to the Specific Plan Area, adult salmonid, Delta smelt, and sturgeon residence time in this reach of the River would be expected to be transient and relatively brief.

Construction of the proposed stormwater outfall could result in in-water construction. Although engineering drawings are not available at this time as the outfall has not yet been designed, the general concept is currently expected to be a series of large diameter pipelines (four parallel ±30" diameter pipelines and one ±15" diameter pipeline) running from the pump station to the river and discharging above the normal river water elevation. The pipes and supporting structure would result

23 California Department of Fish and Game, 1995. Staff report on burrowing owl mitigation, Sacramento, CA.

in an approximately 35 foot-wide outfall. In addition, a vertical concrete headwall (approximately 6 - 8 feet tall) with flap gates would be installed at the end of each pipe, together with an erosion control discharge structure or concrete apron. Assuming the erosion control structure would be equal to the size of the outfall, the overall estimated size of the structure could be approximately 520 sf. The outfall construction footprint would be within designated critical habitat (both in-water and adjacent riparian habitat), and could result in the potential for increased pollutant loading into the Sacramento River and temporary construction impacts to river bottom. Specific impacts resulting from construction and operation of these facilities are discussed below.

### **Outfall Construction**

General construction activities associated with potential in-water disturbance could be necessary to construct the stormwater outfall facility. These activities could include ground disturbance, boring, grading, river bottom disturbance and/or any other activities related to construction of the outfall facilities such as access opportunities and temporary storage, staging, and maintenance areas. Construction of the outfall also would remove approximately 0.25 acres of riparian vegetation along the Sacramento River to install the stormwater outflow and provide access to the construction site. The construction activities associated with these actions could result in any of the following effects:

- Extended periods of localized, high suspended sediment concentrations and turbidity caused by channel disturbance could result in a reduction of feeding opportunities for sight-feeding fish, increased predation opportunities, reduced growth rates, increased levels of stress, respiratory impairment, decreased disease tolerance, and damage to gills.
- Increased sediment loading could cause the degradation of food-producing habitat downstream of the Specific Plan Area.
- Disturbance to the banks of the Sacramento River could result in increased erosion of these banks, particularly during highflow events.
- Water temperatures could increase as a result of removal of streamside vegetation and discharge of construction-related stormwater.
- Increased pollutant concentrations and decreased water quality could limit fish production, abundance, and distribution by reducing egg survival and causing direct mortality of fish or their prey. They could also result in altered oxygen diffusion rates, and acute and chronic toxicity to aquatic organisms, thereby reducing fish growth and survival.
- Permanently impact designated critical habitat and remove of river-bottom habitat.

In addition, refueling, operation, and storage of construction equipment and materials could result in accidental spills of pollutants, such as fuel, concrete, sealants, oil, and paint, into the river. Pollutants entering the river could cause mortality to, and reduced growth of, the egg, larval, and juvenile life stages of fish. Furthermore, these pollutants could adversely affect designated critical habitat for Chinook, delta smelt, and steelhead and the movement of special-status species if the pollutants entered the river.

As previously mentioned, riparian vegetation adjacent to the river could be removed as a result of construction of the stormwater outfall. Riparian vegetation is important as it provides shaded riverine aquatic (SRA) habitat, which is an important habitat component for all salmonids and other fish species because it provides cover, shelter, shade, and contributes to food production.<sup>24</sup> However, SRA, as defined by the USFWS, is, “the near-shore aquatic area occurring at the interface of the

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24 National Marine Fisheries Service, 2002. Old Ferry Road Bridge Seismic Retrofit Project Biological Opinion. NMFS, Southwest Region, Long Beach, California, August 2002.

river and adjacent woody riparian habitat, where the river bank is composed of eroding, earthen substrate supporting riparian vegetation which overhangs and/or protrudes into the water, and the water may contain woody debris, including logs, branches, leaves, and roots, as well as variable depths, velocities and currents.” As the onsite riparian vegetation is associated with the armoring (rip-rap) of the levee, it falls outside of this definition and would not be considered SRA.

The removal of 0.25 acre of valley-foothill riparian habitat within the Specific Plan Area would result in a localized reduction in the quality of habitat, including designated critical habitat for two runs of Chinook and Central Valley steelhead, until vegetation is fully reestablished. Willows should vegetate the site within 5 years, but larger components of riparian vegetation could require between 5 and 10 years to revegetate.<sup>25</sup> Despite the small amount of riparian vegetation that would be impacted relative to the Specific Plan Area, and the fact that no juvenile rearing or spawning habitat exists in or near the Specific Plan Area, the potential food production and shelter provided by this habitat could be lost for up to 10 years and, thus, could have a slight localized impact over the recovery period.

Although, as discussed above, it is anticipated that construction of the outfall could have minimal effects on protected Sacramento River fish species, much is not yet known about the design of and construction techniques that would be used to build the outfall. Thus, it is reasonable to conclude that construction of the outfall and removal of valley-foothill riparian vegetation adjacent to the river could result in the take of individual Sacramento River winter-run or spring-run Chinook, Central Valley steelhead, Delta smelt, or green sturgeon. Because the exact location and design specifics of the stormwater outfall are not finalized, it is reasonable to conclude that the development within the Specific Plan Area could also result in the removal of, or temporary impacts to, designated critical habitat for both Chinook, and steelhead, and Delta smelt, and/or the potential take of a listed species would be considered a *potentially significant impact*.

### **Operational Impacts**

As proposed, onsite drainage would be detained within a below-ground cistern. The cistern would be an underground detention basin designed to detain the initial portion of drainage runoff from the Specific Plan Area, and to provide water quality treatment by detaining the water quality volume component of the drainage discharge, allowing many impurities to settle out. The detention volume would consist of two components. The water quality component would be established by the depth factor given in the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, May 2007. A preliminary estimate of this volume is approximately 14 acre-feet. The first compartment of the cistern would capture an initial fraction of the water quality volume, and pump this volume to the combined sewer system. Thus, the most heavily polluted first-flush storm drainage would be prevented from reaching the balance of the cistern. The second compartment would be pumped to the river at a controlled rate which would discharge 75 percent of the water quality volume in 24 hours. The cistern would also contain a peak-shaving storm flow volume component which would serve to reduce high peak storm flows to a more sustainable rate for pumping to the river. Drainage flows that cause the water quality volume to be exceeded during large storms would cause the large river pumps to begin pumping to the Sacramento River. Thus, the cistern would be sufficient to capture the “first flush” of a storm event. Under normal conditions, this first flush would be transferred to the Combined Sewer and Stormwater System (CSS), while the remaining (post first flush) stormwater flow would be discharged directly to the Sacramento River.

The increase in new impervious surfaces proposed by the project would add additional flows to the Sacramento River which could modify the river’s hydrology and ecology. However, as the proposed

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25 National Marine Fisheries Service, Southwest Region, Old Ferry Road Bridge Seismic Retrofit Project Biological Opinion, August 2002.



stormwater conveyance system and cistern would serve as a detention and stormwater quality management facility and release stormwater to the river when flows are relatively high in the river, the incremental flow contributed to the Sacramento River from the project would be negligible when compared to the existing volume of flow in the Sacramento River and existing runoff from the Specific Plan Area (refer to Sections 6.6, Hydrology and Water Quality and 6.11, Public Utilities). Thus, it is unlikely project-related flows would alter the ecology of the river given the relationship between the existing volume of water in the Sacramento River and the projected stormwater flows from the Specific Plan Area.

Impacts on water quality are assessed as a function of potential pollutant types, concentrations, and load (effect of increased flow changes). These are evaluated qualitatively because specific design characteristics and land uses would greatly affect the amount, type, and susceptibility to runoff of potential pollutants into the Sacramento River. The effects associated with project-related additional flows and associated pollutant loading to the Sacramento River is described in Section 6.6, Hydrology and Water Quality and specifically within Impact 6.6-2 which identifies less than significant impacts to the water quality of the Sacramento River.

An increase in contaminated runoff, discharge of water with low dissolved oxygen levels, and/or elevated water temperatures into the Sacramento River could alter instream habitat for any of the three Chinook runs, steelhead, green sturgeon, delta smelt, or Sacramento splittail. The potential for impacts would be greatest during a higher-than-designed storm event when high first flush flows exceed the systems' storage capacity and are directly discharged to the river, resulting in release of concentrated pollutants. Under these conditions, low quality nutrient rich water with low dissolved oxygen levels that had been in the cistern throughout the dry season could be discharged into the river. Although it is conceptually intended that the outfall would only release stormwater during high flow events which would tend to quickly dilute any pollutant concentrations, the lack of operational designs require consideration of the potential for effects from such releases.

Operation of the stormwater outfall would require periodic maintenance that could result in the release of petroleum, sediment, or other hazardous substances to the Sacramento River. While the specific details related to the operation of the outfall have not been developed, impacts potentially include short-term changes in water quality such as local increases in turbidity and changes in dissolved oxygen.

Pollutants entering the river could cause mortality to, and reduced growth of, the egg, larval, and juvenile life stages of fish. If pollutants enter the river they could adversely affect Sacramento River winter-run Chinook, designated critical habitat for Chinook, steelhead, and delta smelt as it relates to water quality, or other special-status fish species such as Sacramento splittail or green sturgeon as these species use the Sacramento River for migration, spawning, and rearing.

Also, shading from overwater or nearwater structures, including the up to 30-story hotel/residential building located in the Riverfront District can reduce the abundance of aquatic plants and benthic macroinvertebrates, which are an important food source for fish. However, the project does not include piers or shade from floating docks, and the portion of the river that would be effected by shading from the buildings in the Riverfront District would not be expected to produce measurable effects as the section of the river that would be shaded would change with the time of day and time of year; thus, no one area would be permanently shaded.

Under the FESA, alteration of critical habitat for any of the three runs of Chinook, Central Valley steelhead, or delta smelt is considered the same as a take of the species. Consequently, the impacts of operation of the proposed outfall is considered a *potentially significant impact*.

As discussed under the Regulatory Setting, the CWA and Rivers and Harbors Act permits from the Corps will be required for installation of in-channel facilities. To achieve the goals of the CWA and the FESA, Section 7 of the FESA directs all federal agencies to use their existing authorities to conserve threatened and endangered species and, in consultation with the Service, to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat. Section 7 applies to management of federal lands, as well as other federal actions that may affect listed species, such as federal approval of private activities through the issuance of federal permits, licenses, or other actions. Regulations outlining the process for Section 7 consultation (or conferencing) are codified at 50 CFR part 402. As part of the CWA permitting the Corps will be required to consult with the USFWS under Section 7 to ensure that permitted actions do not jeopardize listed species or destroy or adversely modify designated critical habitat of three salmonid species in the area of the outfall.

### Mitigation Measure

In addition to previously discussed restrictions and requirements, implementation of Mitigation Measures 6.2-3(a) through 6.2-3(f) would restrict in-channel work to times outside the peak in and out migration (Table 6.2-5), replace permanently impacted habitat, implement Best Management Practices (BMPs) to prevent accidental loss and reduce potential construction impacts, and restore the removed riparian vegetation to mitigate for loss of riparian habitat. This, in combination with compliance with the CESA and FESA, CWA Regulations, National Pollution Discharge Elimination System (NPDES) Regulations, local water quality, and runoff standards, and implementation of Mitigation Measures 6.6-2(a) and (b), and 6.6-5 would reduce this impact to a ***less-than-significant level*** by minimizing impacts to rare and endangered species and their habitats, and ensuring stormwater water quality discharged to the river is within permitted discharge limits which will take into consideration potential impacts to riverine ecology and impacts to rare, threatened, or endangered species.

6.2-3 *To avoid, minimize, or compensate for potential impacts to protected and sensitive riverine species and critical habitat, and prevent any take of winter-run Chinook in the Specific Plan Area the following actions shall be undertaken by the project applicant*

- a) *Unless prior approval is granted by NMFS, USFWS, and/or CDFG, (as applicable) in-water work shall be restricted to the July 1 to October 15 period to avoid construction impacts to winter-run and spring-run Chinook salmon.*
- b) *Project-related impacts to riverine (e.g., valley-foothill) riparian vegetation shall be minimized by replacing lost vegetation onsite at a minimum ratio of 1:1, along the Sacramento River, if feasible. Mitigation and/or restoration plans for all habitats that require revegetation, habitat creation, restoration, and enhancement shall be approved by the regulatory agencies, as appropriate, and shall include construction specifications; irrigation schedules; planting palettes (showing container stock/box plantings, cutting specifications, and seed mixes); monitoring, maintenance, and remediation schedules; and success criteria, assurances and contingency measures. Revegetation specifications, species composition and density shall be developed by an experienced restoration ecologist. The restoration sites shall be evaluated to ensure that required revegetation has been performed in areas where temporary construction has been completed. A report documenting restoration efforts shall be submitted by the applicant to the City and applicable regulatory agencies. If necessary, remedial revegetation should occur during the same rainy season that the remedial recommendation is made. Restoration sites shall be monitored by qualified restoration ecologists for three to five years, or until success criteria are achieved. Restoration plans shall be included in the final construction documents. Grading and*

*revegetation activities shall comply with applicable regulations and mitigation measures identified in this EIR pertaining to dust, air emissions, noise, water quality and other potential environmental effects.*

c) *The project applicant shall plant riparian vegetation and install biotechnical features, such as brush piles, logs, and rootwads, to replace habitat impacted by construction of the outfall structure. These structures shall compensate for potential impacts associated with increased predation around the new structure. Specific measures shall include elements that contribute to nearshore cover in the immediate vicinity of the structure to increase the potential for juvenile fish while discouraging occupancy of the same structures by predaceous species. The precise amount and relative value of affected riparian and cover habitat would be determined during project-level analysis of proposed activities.*

d) *Because design of the outfall is conceptual it is unknown what the specific final design would be, if dredging will be required, or if permanent impacts to designated critical habitat would occur that could result in adverse effects to listed species. If the final design does result in permanent impacts to the river, and regulatory agencies determine this to result in adverse effects to listed species, the area of river-bottom permanently removed by the project shall be calculated and compensated at a minimum 1:1 ratio, or as required by permitting agencies. Mitigation would occur through creation, restoration, enhancement, and/or preservation of this habitat within an approved off-site location and/or mitigation bank at a ratio to be negotiated with the regulatory agencies. Mitigation banking would involve using mitigation credits from mitigation banks approved by the regulatory agencies (i.e., Kimball Island Mitigation Bank or alike). Final mitigation ratios and locations are to be negotiated with the regulatory agencies prior to riverbed disturbing activities and detailed mitigation requirements will be identified in the final regulatory agency permits.*

*Created, restored, or enhanced mitigation habitat will be conserved and managed per the regulatory agencies' permit requirements. For created, restored, or enhanced mitigation habitat the City will prepare a Riverbed Habitat Management Plan in coordination with, as applicable, the NMFS, USFWS and/or CDFG. Prior to commencing any activities that would impact riverbed critical habitat, the Habitat Management Plan will be approved by the applicable regulatory agencies and shall include, at a minimum; monitoring, maintenance, and remediation schedules; and success criteria, and assurances and contingency measures to ensure the viability of the mitigation areas. The Habitat Management Plan will, if required by permits, also place all acquired in permanent conservation easements, or other forms of protection to ensure the long-term protection of their biological resources. These long-term management plans and funding mechanisms will be reviewed and agreed to by the applicable regulatory agencies that have regulatory authority over the biological resources being mitigated; the terms will be based on reasonable management requirements designed to ensure the long-term biological resource viability at each mitigation site. If the off-site mitigation areas purchased are covered by an approved management program, the City will abide by the conditions of that program.*

e) *The project applicant shall require all contractors to develop Spill Prevention Plans (SPP) and Storm Water Pollution Prevention Plans (SWPPP). These plans shall contain BMPs to be implemented to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs shall include permanent and temporary erosion control measures, including the use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, proper*

*staging of fuel, out of channel equipment maintenance, and ultimately seeding and revegetating. Preventing contaminants from entering the river during construction and operation of the facilities would protect water quality and the instream aquatic species.*

- f) *The project shall adhere to current (e.g., those applicable at the time of construction) Regional Water Quality Control Board (Regional Board) water quality objectives for the Sacramento River Basin. These objectives currently require that project discharge cannot exceed 1 Nephelometric Turbidity Unit (NTU) when natural turbidity is between 0 and 5 NTUs, 20 percent of natural turbidity levels when natural turbidity is between 5 and 50 NTUs, 10 NTUs when natural turbidity is between 50 and 100 NTUs, or 10 percent when natural turbidity is greater than 100 NTUs. NTUs are an indicator of the amount of light that is scattered and absorbed by suspended particles. A biological monitor shall supervise construction activities when ground-disturbing and/or construction activities occur below the top of the bank of the Sacramento River (e.g., in-channel work) and if objectives are exceeded, in-water construction shall stop until objectives can be met.*
- g) *Implement Mitigation Measures 6.6-1 and 6.6-5.*

#### **6.2-4 Development of the Specific Plan could result in the removal of habitat for the Valley Elderberry Longhorn Beetle.**

Development within the Specific Plan Area would require the removal of elderberry bushes (or shrubs). Elderberry shrubs are the host plant for the VELB, a federally threatened species. The USFWS considers all elderberry shrubs in the Central Valley potential habitat for the beetle; therefore, unpermitted adverse effects on the shrubs would be considered "take" under the FESA. The USFWS assumes that impacts would occur wherever there is disturbance within 100 feet of an elderberry shrub. Based on 2006 surveys approximately 44 elderberry stems over 1 inch in diameter would be removed.

The USFWS issued a renewable take permit for the Railyards Remediation Project, (TE023739) which allows the removal of 87 plants with up to 261 stems greater than 1 inch. Although this permit is renewable, it is currently expired and until renewed the removal of elderberry shrubs that constitute VELB habitat would not be a permitted action. Maintenance that limits the growth of elderberry shrubs is an ongoing legal activity on the site.

Take of VELB would be considered a *significant impact* because it is a federal-listed threatened species. If take of VELB is required, it is the Project Proponent's responsibility to comply with the federal ESA and obtain a take permit from USFWS. Activities that are authorized or funded by federal agencies consult with USFWS under section 7 of the federal ESA to obtain a take permit. Activities that are not part of a federal action consult with USFWS under section 10 of the federal ESA. Prior to issuing the take permit the USFWS must determine that the take of VELB will not jeopardize the continued existence of the species. The USFWS issued Mitigation Guidelines for the Valley Elderberry Longhorn Beetle (USFWS September 1996) and determined that projects must follow the Guidelines to result in a non-jeopardy finding. The Guidelines call for 1) avoidance; 2) transplantation of the elderberry shrubs when they cannot be avoided; 3) planting additional elderberry seedlings; 4) planting additional associative tree species; and 5) perpetual preservation of the mitigation planting area. If the existing expired take authorization is renewed or if a new take authorization is obtained, removal of the elderberry shrubs would be mitigated according to the Guidelines. Compliance with the federal regulatory regime for the recovery of VELB ensures that removal of elderberry shrubs in the SRSP would be ***less than significant*** and no additional mitigation is necessary.

Mitigation Measure

*None required.*

**6.2-5 Development of the Specific Plan could affect habitat for the western pond turtle.**

The western pond turtle is a State Species of Special Concern and is fairly common along the Sacramento River. Although this species has not been documented within the Specific Plan Area, individuals could occur in the general location of the stormwater outfall. Implementation of the Specific Plan Area would result in alteration of the river bank which, if suitable habitat is present, could cause the loss of pond turtles if they are present at the time of construction. Although pond turtles nest in upland habitat, the uplands within the Specific Plan Area are not considered suitable nesting habitat because they are highly modified and subject to ongoing remediation activities. Because the site does not support nesting habitat, this assessment evaluates impacts to aquatic habitats. Any project-related activities that alter aquatic habitat through hydrologic interruption, placement of fill, or dewatering have the potential to impact this species. However, because pond turtles have not been identified onsite, and the substrate along the bank of the river consists of primarily large rip-rap (not a substrate normally used as habitat by the turtle), the Specific Plan is not expected to result in the local extirpation of the species or reduce the population of pond turtles along the Sacramento River to levels that are not self-sustaining. Therefore, impacts to this species would be ***less than significant***.

Mitigation Measure

*None required.*

**6.2-6 Development of the Specific Plan could result in the loss of a sensitive bat species roosting site, which could result in substantially increased mortality or reduced reproductive success.**

Special-status bat species with the potential to occur within the Specific Plan Area include the pallid bat and Pacific Western big eared bat. Potential habitat for these species is present within the Specific Plan Area, and six roosts of unknown bat species were observed under the I-5 and I Street Bridge. Identification of bats requires special surveys that were not conducted for this analysis. Therefore, the conservative assumption is that at least one species of sensitive bat is present within the Specific Plan Area. Because most species are sensitive to human-generated disturbance, construction activities associated with the project could result in increased mortality and reduced reproductive success through decreased foraging ability. If any of these sites are used as maternal roosts, the Specific Plan Area could result in the direct loss of baby bats. Because of their sensitivity to disturbance, development within the Specific Plan Area could result in the local extirpation of the I Street Bridge population. This exceeds established thresholds and is considered a ***significant*** impact.

Mitigation Measure

Implementation of Mitigation Measure 6.2-6 will identify active roost sites, exclude bats from roosting within the construction areas, and provide alternate roosting sites. This mitigation measure would reduce impacts to special-status bat species to ***less than significant***.

**6.2-6** *Prior to construction within 100 feet of the I-5 and I Street Bridge, the project applicant shall conduct a pre-construction survey during the time when bats would be expected to be present and active to determine the presence of roosting bats. This survey shall be conducted by a wildlife biologist qualified to identify the species of bats using these roosts. If no special status species bats are roosting, then no further mitigation is required.*

*If special status bat species, e.g. roosting bats, are present, prior to construction within 100 feet of the I-5 and I Street Bridge, the project proponent shall provide for a replacement roosting facility in the form of either a bat house or several bat boxes, immediately adjacent to the I-5 and I Street Bridge. The wildlife biologist who conducted the pre-construction surveys shall recommend appropriate bat exclusion devices (i.e., light weight polypropylene netting (<1/6" mesh), plastic sheeting, tube-type excluders, etc.) that shall be installed at the bridge to prevent roosting bats from being on the bridge when demolition or construction occurs, but located such that they would not interfere with nesting purple martins (which shall take priority due to their tendency permanently abandon nesting sites that have been subject to artificial exclusion devices). The exclusion devices can be designed to serve multiple purposes if the exclusion of other species (i.e., purple martins) is also required.*

**6.2-7 Construction near I-5 and the I Street Bridge could result in increased mortality and reproductive success of purple martins if construction would result in the loss of a breeding colony.**

A colony of purple martins nests in cavities within the I Street on-ramp to I-5, adjacent to the Specific Plan Area. Once established at a nest location, purple martins usually come back to the same site every year. This area has likely been used by purple martins during its breeding season since 1974. The project would realign portions of the Amtrak tracks under I-5 and would modify sections of the I Street bridge and remove the elevated portions of Jibboom Road that are in the vicinity of the colony. Loss of this colony, or disruption such that the project-related disturbance causes abandonment of active nests or an increased mortality or reduced reproductive success that would lead to the local extirpation of, or reduction in the population at this colony below self-sustaining levels, would be a *significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 6.2-7 will identify active roost and nest sites and provide for a construction window that would avoid impacts to roosting or nesting purple martins. It also excludes martins from nesting and roosting sites within the construction areas. Implementation of this mitigation measure would reduce impacts to purple martins to ***less-than-significant levels***.

- 6.2-7 a) *Prior to beginning construction activities the project applicant shall prevent nest establishment on the areas of the structure that would be directly affected. Nest prevention methods include, but are not limited to, installation of a barrier (such as netting) to prevent bird access to the structure and/or continued removal of deposited mud material under the structure early in the nesting season to prevent construction of habitable nests. If nest prevention cannot be accomplished prior to the start of construction, and birds establish nests, the nests shall be protected from construction activity that would disrupt nesting activities until the nestlings fledge (per 6.2-7(b)). After the nestlings have fledged, the nests shall be inspected by a qualified biologist to confirm the absence of eggs and nestlings, prior to nest removal and commencement of construction activities.*
- b) *Although purple martins are tolerant of human activities, if active nests are present no construction shall be conducted within 100 feet of the edge of the purple martin colony (as demarcated by the nest hole closest to the construction activity) during the purple martin breeding season from April 15 to August 1. The buffer area shall be avoided to prevent destruction or disturbance to the nest(s) until it is no longer active. The size of the buffer area may be adjusted if a qualified biologist and CDFG determine it would not be likely to have adverse effects on the martins. The site characteristics used to determine the size of the modified buffer should include; a)*

*topographic screening; b) distance from disturbance to nest; c) the size and quality of foraging habitat surrounding the nest; and d) sensitivity of the species to nest disturbances. No project activity shall commence within the buffer area until a qualified biologist confirms that any nests are no longer active. In addition, no equipment shall be parked or stored beneath the I Street on-ramp or the I-5 overpass at the I Street on-ramp during the breeding season (April 15 to August 1).*

**6.2-8 Development of the Specific Plan could result in net reduction of sensitive habitats including protected wetland habitat as defined in Section 404 of the Clean Water Act, riparian vegetation, and state jurisdictional waters/wetlands.**

The Sacramento River, and its tributaries and adjacent wetlands, rare jurisdictional waters of the United States and would be regulated under the CWA. As discussed above, at the time of the publication of the NOP and the initial biological survey for this EIR, a total of approximately 0.03 acres of emergent wetlands were within the Former 0.1 Storage Area (Figure 6.2-1). The Corps identified these wetlands as “isolated” wetlands and not under the jurisdiction of Section 404 of the CWA. The 0.03 acre of wetlands were filled and mitigated. The California Regional Water Quality Control Board issued the remediation project (an independent and ongoing project) a Waste Discharge Requirement (WDR) authorizing the filling of these isolated areas under the Porter-Cologne Water Quality Control Act. Consequently, no wetlands would be affected by implementation of the Specific Plan and there would be *no impact* on wetlands.

It is anticipated that grading and construction associated with the stormwater outfall could require fill to be placed below the ordinary high watermark of the Sacramento River. However, this riverine habitat is not a wetland or special aquatic site and therefore there would be *no impact*.

Direct impacts to riparian vegetation would be the removal of valley-foothill riparian vegetation on the east bank and levee of the Sacramento River and removal of remnant riparian habitat that was located in the Former Oil Storage Area, between South Park Street and North B Street. Both of these communities are identified as sensitive by the state (Figure 6.2-1).

Although the design of the proposed Sacramento River outfall is only conceptual at this point, to provide a conservative estimate of potential impacts, is estimated that the implementation of the Specific Plan would result in the removal of approximately 0.25 acres of valley-foothill riparian habitat, which is located along the banks of the Sacramento River. Valley-foothill riparian habitat on the levee extends up to approximately 100 feet wide and runs the entire length of the Specific Plan Area. Depending on the final project design, differing extents of riparian habitat would be affected by the construction of the stormwater outfall; however, it is assumed that approximately 0.25 acres of the valley-foothill riparian habitat would be removed or substantially modified either through permanent loss due to the construction of the outfall facility (approximately 520 square feet) or anticipated temporary construction impacts to areas adjacent to the outfall.

In addition, 0.30 acre of remnant riparian vegetation was located within the project footprint in the FOSA. As explained above, since the publication of the NOP, about this remnant riparian habitat was removed from the Former Oil Storage Area as part of fully permitted activities of the ongoing remediation efforts. Approximately 0.25 acre of this removed remnant riparian habitat remains unmitigated at this time and should be accounted for in the consideration of impacts of the proposed project. The removal of this riparian habitat, a total of approximately 0.50 acre when combining the potentially removed habitats on the Sacramento River bank and in the FOSA, would represent a net loss of riparian habitat and would be a *significant impact*.

In addition, as discussed above the California Regional Water Quality Control Board has issued the remediation project (an independent and ongoing project) a WDR authorizing the filling of the FOSA

isolated wetlands under the Porter-Cologne Water Quality Control Act. Included in this WDR was the requirement to purchase mitigation credits for impacts to 0.03 acres of wetland/riparian areas in the FOSA (between South Park Street and North B Street); the applicant purchased credits for 0.05 acre of wetland/riparian habitat. Consequently, the impacts to (remnant) riparian vegetation in the FOSA portion of the Specific Plan Area would be 0.25 acre. Total riparian impacts of the proposed project would be approximately 0.50 acre (0.25 of riverine riparian and 0.25 of remnant riparian in the FOSA portion).

The removal of scattered remnant riparian vegetation intermixed with more dominant invasive species between the north embankment and North B Street on what is classified as vacant land would not be considered significant.

Several indirect impacts to riparian communities could occur from construction activities associated with the Specific Plan Area. For example, erosion and sedimentation could affect water quality or natural hydrologic processes in, or adjacent to riparian plant communities. In addition, construction activities could produce enough dust to affect plants by reducing photosynthesis capabilities and overall plant health if heavy and prolonged enough. Construction-related grading, brushing and soil stockpiling can also often lead to exotic plant species being transported into adjacent native habitat, which can compete with native plants for resources. Vegetation trampling and soil compaction could also occur from construction personnel and equipment. Direct or indirect actions that would lead to the loss of riparian vegetation or that would result in the loss of function would be considered a *significant impact*.

As discussed under above Regulatory Setting and in Impact 6.2-3, any alterations of state-regulated waters (e.g., the Sacramento River) and immediately adjacent riparian vegetation must be in conformance with Section 1600 of the Fish and Game Code. Compliance with this regulation would include the preparation of mitigation plans that provide for no net loss of CDFG-regulated riparian habitat along the Sacramento River through the avoidance, creation, restoration, enhancement, and/or preservation of riparian habitat. Therefore, securing a Streambed Alteration Agreement would protect the hydrology and ecology of the River and ensure no net loss of riparian habitat along or within the river.

### Mitigation Measure

The overall goal of mitigation for impacts on riparian communities is that no net loss occurs as a result of the Specific Plan. Implementation of Mitigation Measures 6.2-3(b) and 6.2-8 would mitigate temporary and permanent impacts on riparian habitat within the Specific Plan Area, including areas not covered by Section 1600 of the Fish and Game Code. This would occur through the identification of the amount of riparian habitat removed and then the creation, restoration, enhancement, and/or preservation of riparian habitat; the implementation of Best Management Practices (BMPs) to prevent and reduce potential construction impacts; and the development of a detailed mitigation and/or restoration plan to offset loss of this community that would monitor its success, and ensure that that once mitigated or preserved, these sensitive communities are appropriately protected from disturbance. The results of this effort, in combination with compliance with State Fish and Game Code, NPDES Regulations, local water quality, and runoff standards regulations, would be either avoidance of existing features, or on or offsite mitigation as permitted by the regulatory agencies. Implementation of these mitigation measures would reduce the impact to sensitive riparian habitats to a ***less-than-significant level***.

- 6.2-8 a) *Following final design of the Sacramento River outfall, the loss of riparian habitat shall be quantified by a qualified biologist. In light of the determined loss of Sacramento River riparian habitat, combined with the removal of 0.25 acre remnant riparian habitat in the FOSA, the project applicant shall demonstrate no net loss of*



*sensitive riparian habitat through restoration, creation, enhancement, or preservation at a compensation ratio equivalent to the area lost to project development. This measure may be implemented through the Streambed Alteration Agreement or other regulatory mechanism to the satisfaction of the City.*

- b) *The project applicant shall include adequate signage and appropriate fencing along Specific Plan Area boundary adjacent to any sensitive habitats that remain or are created through mitigation. A signage and fencing plan shall be developed with the CDFG but at a minimum "Sensitive habitat" signs shall be installed along the sensitive habitat boundaries every 100 feet. The signs would inform recreationists of the sensitive habitat and species in the area and that unauthorized disturbance would be subject to penalties imposed by the CDFG and USFWS. Fencing shall be designed to allow free movement of wildlife but restrict human movement.*
  
- c) *Implement Mitigation Measure 6.2-3(b).*

**6.2-9 Development of the Specific Plan could result in the isolation or interruption of contiguous habitat which would interfere substantially with the movement of resident or migratory fish or wildlife species, migratory wildlife corridors, or impede the use of native wildlife nursery sites.**

As described within the Environmental Setting the terrestrial portions of the Specific Plan Area do not serve as wildlife corridors or linkages, and the construction and operation of the Specific Plan Area or the stormwater outfall would not result in disturbance to the extent that it would permanently and substantially interfere with the movement of resident or migratory fish or wildlife species. The proposed Specific Plan does not call for new overwater structures that would impact fish migratory behavior, and permanent impacts to riparian vegetation along the river would be limited to the approximately 520 square foot footprint of the outfall structure. This riparian vegetation is currently either completely isolated into very small patches, or is isolated by urbanized areas to the north, south, and east, and bounded by the river in the west. Consequently, these riparian areas do not serve a regional terrestrial wildlife corridor or linkage and impacts to connectivity would be limited to the loss of localized movement within the riparian areas. Given the small size of the outfall's footprint, and the revegetation requirements associated with Impact 6.2-8, the outfall structure and temporary construction impacts associated the Specific Plan Area would not be expected to substantially preclude wildlife movement along the levee. However, movement within the river also be affected by nighttime lighting spillover. The new temporary sources of nighttime lighting could increase predation efficiency and disrupt movements of fish within the river. The increase in light sources could alter local behavior of migratory fish such that movements are delayed, disrupted, or the fish are subject to increased predation (including shoreline angler access). This is considered a *potentially significant impact*.

Mitigation Measure

Implementation of Mitigation Measure 6.2-9 will provide mechanisms to reduce potential night lighting impacts by ensuring light spillover is minimized to the extent practicable in areas within 500 feet of the river. Implementation of this mitigation measure would reduce impacts to movements of sensitive fish species to ***less-than-significant levels***.

- 6.2-9 a) *To avoid degradation of habitat values for wildlife along the river portion of the site automobile headlights that are directed at a 90 degree angle onto the vegetation along the river shall be screened along the western project edge. This may be accomplished at the western foot of Railyards Boulevard and Camille Lane through the placement of a 3'-4' vegetated hedge or other structural methods that would not*

*additionally hinder wildlife movement through the aforementioned riverine riparian vegetation.*

- b) *Outdoor lighting within 500 feet of the river shall be of the minimum wattage required for the particular use and shall be directed to the specific location intended for illumination (e.g., roads, walkways, or recreation fields) to prevent stray light spillover onto sensitive habitat.*
- c) *All fixtures on elevated light standards west of I-5 within the project boundaries, such as in parking lots or along roadways, shall be shielded to reduce glare.*

#### **6.2-10 Development of the Specific Plan could conflict with local policies protecting trees.**

The City of Sacramento has adopted an ordinance to protect trees as a significant resource to the community. The Specific Plan Area supports mature trees in the remnant riparian and the valley-foothill riparian habitats. Other trees are scattered through the Specific Plan Area and along offsite roadway corridors where prior activities have not required their removal. Therefore, construction within the Specific Plan Area would likely result in the disturbance or loss of protected trees. Protected trees could be removed or affected during staging, trimming for equipment access, and other construction related activities. The loss of protected trees, including oak trees (*Quercus* sp.) could conflict with the City tree ordinance and is considered a *potentially significant impact*.

#### Mitigation Measure

Implementation of Mitigation Measure 6.2-10 would reduce this impact to a ***less-than-significant level*** through compliance with City ordinance and ensuring a no net loss of protected trees.

6.2-10 *The project applicant shall comply with the City's tree ordinance and implement the following tree-protection measures prior to and during project construction.*

*To the maximum extent feasible, the project design shall avoid loss of any protected tree. The project applicant shall retain a certified arborist to survey trees in the Specific Plan Area, including potential laydown areas, and identify and evaluate trees that will be removed. If the arborist's survey does not identify any protected trees that would be removed or damaged as a result of the Specific Plan Area, no further mitigation is necessary.*

*If protected trees (or their canopy) are identified within the affected area, measures shall be taken to avoid impacts on protected trees, as detailed in the City's tree ordinance. Protected trees that are lost as a result of the project will be replaced according to the provisions of the ordinance (Section 12.64.040), which generally requires a 1-inch-diameter replacement for each inch lost. Tree replacement shall occur after project construction and will be monitored by qualified arborists.*

*All native oaks greater than 6 inches in diameter at 48 inches above grade that are approved for removal or are critically damaged during construction shall be replaced by a greater number of the same species. At a minimum, one tree shall be planted for each inch in the diameter of the removed tree at 48 inches above grade. The exact size and number of replacement trees shall be determined by the City of Sacramento Urban Forest Services. A qualified biologist shall monitor trees during construction and the following spring and monitor the growth and survival of the newly planted trees. All revegetation plans shall require monitoring the newly transplanted trees for at least 5 years and the replacement of all transplanted trees that die during that period.*

### **Cumulative Impacts and Mitigation Measures**

As specified below cumulative impacts on biological resources are analyzed on either a Regional (Central Valley), County-wide, and City-wide level. For this analysis, buildout of the City's General Plan is assumed and the Sacramento Area Council of Governments regional Blueprint is also anticipated.

The primary effects of the Specific Plan, when considered with other projects in the region, would be the cumulative direct loss of sensitive or special-status wildlife species and their habitat, loss of wetlands and riparian vegetation, loss of wildlife movement corridors and migratory species, and conflicts with local plans or policies protecting biological resources. Specifically, present and probable future projects in the vicinity of the Specific Plan Area are anticipated to permanently remove plant and wildlife resources, which could affect special-status species and their habitat, sensitive natural plant communities including riparian and wetlands, wildlife movement and nesting and foraging habitat for resident and migratory avian species, and/or local policies or ordinances protecting biological resource.

#### **6.2-11 Development of the Specific Plan would contribute to the cumulative loss of special-status plant and wildlife species or their habitat in the region.**

As development in the City of Sacramento and in Sacramento County continues, sensitive plant and wildlife species native to the region and their habitat, including those species listed under State and FESA's and those individuals identified by state and federal resources agencies as Species of Concern, Fully Protected, or Sensitive, will be lost through conversion of existing open space to urban development. Although more mobile species might be able to survive these changes in their environment by moving to new areas, less mobile species could simply be locally extirpated. With continued conversion of natural habitat to human use, the availability and accessibility of remaining foraging and natural habitats in this ecosystem would dwindle and those remaining natural areas may not be able to support additional plant or animal populations above their current carrying capacities. Thus, the conversion of plant and wildlife habitat on a regional level as a result of cumulative development would therefore result in a regional *significant cumulative impact* on special status species and their habitats.

Construction of the Specific Plan Area would contribute to a loss of regional biological resources through the incremental conversion of habitat for special-status species to human use, and thus limit the availability and accessibility of remaining natural habitats to regional wildlife. It could also affect designated critical habitat and thus directly impact threatened and/or endangered species through habitat conversion or unauthorized take. However, terrestrial plant and wildlife habitat in the Specific Plan Area has been highly modified and is of relatively low quality. In addition, the 250 acres of habitat available in the Specific Plan Area is small from a regional perspective and, with the exception of the Sacramento River, is isolated from other areas of similar habitat by urban development. Although the habitat value in the Specific Plan Area is low, the Specific Plan Area would be required to participate in mitigation plans approved by the state (e.g., for Swainson's Hawk) resource agencies if need be, which would replace lost habitat and preserve contiguous areas of habitat. In addition, the Specific Plan Area would implement mitigation measures specifically designed to avoid, reduce, or mitigate impacts to special status/sensitive species and their habitat. Implementation of Mitigation Measure 6.2-1 requires surveys for nesting sensitive avian species to avoid impacts to nesting riparian species such as Swainson's hawks; Mitigation Measures 6.2-3(a) through 6.2-3(f) are designed to reduce potential impacts to special status riverine species and designated critical habitat through restricting any potential in-channel work to times outside the peak in and out migration, replace permanently impacted habitat, implement BMPs to reduce the impacts of in-channel structures, the introduction of pollutants, prevent and reduce potential construction impacts, restore removed riparian vegetation and critical habitat, and enhance existing

habitat; Mitigation Measures 6.2-5 through 6.2-10 provide mechanisms to identify sensitive species prior to ground disturbance and require mitigation that would result in no net loss of these species. Although these mitigation measures will reduce the impact to a level considered less than significant, the Specific Plan Area will still be converted to urban uses. The quality of this habitat and its current degraded and highly modified state make it relatively poor quality for wildlife species. Because of this, the Specific Plan's contribution to regional reductions in natural open space is not considerable. Therefore, implementation of these mitigation measures, in combination with compliance with State and FESA's, CWA Regulations, NPDES permit requirements, and the Fish and Game Code of California would reduce the Specific Plan Area's cumulative contribution to the Regional loss of special-status and sensitive plant and wildlife and their habitat to ***less-than-significant levels***.

#### Mitigation Measure

*None required.*

#### **6.2-12 Development of the Specific Plan would contribute to the cumulative loss of sensitive habitat including wetlands and riparian habitat in the region.**

Estimates of wetlands that historically existed in California range from 3 to 5 million acres. The current estimate of wetland acreage in California is approximately 450,000 acres; this represents an 85 to 90 percent reduction in total amount of wetlands within California. Within the Central Valley (the cumulative context for this analysis) which once had vast wetlands extending over some 4 million acres; these have diminished to a mere 300,000 acres.<sup>26</sup>

The Specific Plan Area also lies within the historic range of the Sacramento Valley riparian forests. Since the 1850s, the riparian forests along the Sacramento River and its tributaries have been reduced from approximately 800,000 acres to less than 20,000.<sup>27</sup> Historical descriptions of the Sacramento riparian forests in the 1800s characterized the riparian forests as non-uniform in width, ranging from 300 yards to 5 miles. According to these historical accounts, the forests formed continuous stands flanking the Sacramento River in some areas; however, large dense clumps of tree stands were more common. As a result of settlement in the Sacramento Valley, the riparian woodlands were cleared for farming, lumber, flood control, and riparian development. Currently along the Sacramento River, continuous stands of riparian forests remain, but continued development and modifications along the river have greatly diminished this resource.

As wetland and riparian habitats within the Central Valley have been reduced substantially from their native range, and probable future development within the region would continue to affect these resources. Continued development within the region would be considered to have a cumulatively *significant* loss of wetland and riparian vegetation within the Central Valley.

Implementing the Specific Plan Area would, in the short-term, remove approximately 0.5 acres of riparian vegetation (includes remnant and valley-foothill riparian). The loss of wetlands and riparian vegetation would be fully mitigated for a minimum of a one-to-one replacement ratio that would be subject to approval by the CDFG through Section 1600 of the Fish and Game Code of California. Compliance with this regulation would include preparation of a mitigation plan that provide for no net loss of riparian vegetation identified in the Specific Plan Area through the restoration or creation of riparian habitat to mitigate the permanent loss of the habitat or its functions. Additionally, NPDES Regulations, local water quality, and runoff standards would protect the hydrology and ecology of the Sacramento River and its associated wetland and riparian complexes. In addition, the Specific Plan

26 California Wetlands Information System. <http://ceres.ca.gov/wetlands/introduction/values.html>, accessed June 29, 2006.

27 Griggs, F.T., and Golet, G.H. 2002. *USDA Forest Service Gen. Tech. Rep, PSW-GTR-184.*

would implement mitigation measures specifically designed to avoid, reduce, or mitigate impacts riparian vegetation. Mitigation Measures 6.2-3(b) and 6.2-8 require that riparian resources be delineated and that alterations of, or discharges into, waters of the United States, sensitive riparian habitat, and state jurisdictional waters must be in conformance with Section 1600 of the Fish and Game Code and Section 404 and 401 of the CWA. Required mitigation plans shall provide for no net loss of riparian habitat identified in the Specific Plan Area through the restoration, creation, or preservation of riparian habitat to mitigate the permanent loss of this habitat. Because the Specific Plan would be required to mitigate in full at a minimum ratio of 1:1, there would be no net loss of sensitive habitats and the project would not have a considerable contribution to region-wide decline in wetlands or riparian vegetation. Therefore, implementation of these mitigation measures, in combination with compliance with State CWA Regulations, NPDES permit requirements, and the Fish and Game Code of California would reduce the Specific Plan Area's cumulative contribution to the regional loss of wetlands and riparian habitat to ***less-than-significant levels***.

#### Mitigation Measure

*None required.*

#### **6.2-13 Development of the Specific Plan could contribute to the cumulative reduction open space or impact riverine habitat, which would interfere substantially with the movement of resident or migratory fish or wildlife, or impede the use of native wildlife nursery sites within the region.**

Historically, habitats within the region (this impact's cumulative context), including the Specific Plan Area, Central Valley, foothills, Sacramento-San Joaquin Delta, and montane regions were contiguous. Development and agriculture has fragmented habitats and created habitat islands disconnected from migratory pathways. Construction of dams and other water supply projects has fragmented habitat and blocked access to spawning areas of native migratory species. Upland movement corridors include open lands that are physically connected to other open lands, have minimal barriers to movement, or are in close proximity to other open lands such that wildlife can easily move between them. Riverine habitat includes the Sacramento Bay-Delta areas, the Central Valley and foothill rivers and streams that act as migratory pathways for aquatic species and allow access to the smaller streams and floodplains that provide spawning and rearing habitat for riverine species.

As the patchwork of open lands, floodplains and spawning streams in the region continues to disappear under development, connections between the Central Valley, foothills, Delta, and montane regions, including the Specific Plan Area, become more tenuous, and force wildlife and riverine species to either expend more energy or expose themselves to increased mortality by moving greater distances between noncontiguous habitat patches or to abandon some patches entirely.

From a qualitative level, if past trends continue, the amount of open space and habitat suitable for use by migratory species within the region is expected to decrease. Urbanization of formerly vacant or agricultural lands, new barriers to movement of aquatic species, and altered hydrologic regimes would result in continued habitat fragmentation, increased anthropogenic disturbance, and an overall reduction in current terrestrial and aquatic wildlife movement opportunities within the region. As such, the regional loss of contiguous areas of undeveloped land and open waters that are currently utilized as local movement corridors or regional migratory flyways would be considered cumulatively significant. This cumulative loss of open space and wildlife movement opportunities within the region is considered a *significant impact*.

As is discussed under Impact 6.2-9, the barren ground and fragmented ruderal vegetation that dominates the Specific Plan Area is not suitable for substantial terrestrial wildlife movement. Additionally, the site is surrounded on three sides by urban development indicating that the site does not provide a linkage to regional open space habitat. Given the small size of the outfall footprint and temporary construction effects and in light of the conclusion that these effects would not preclude wildlife movement along the levee, the loss of riverine and terrestrial riparian habitat within the Specific Plan Area would only minimally contribute to the loss of remaining open space and movement corridors in the Sacramento River and is considered a potentially significant impact. The removal of 0.25 acre of valley-foothill riparian habitat and installation of the designed stormwater outfall facility would not create barriers (physical or water quality) to instream or on-bank movement. The project-related disruption of these movement corridors is a less-than-considerable contribution to the overall reduction in habitat for wildlife movement. Because the contribution of the Specific Plan Area is less-than-considerable, this is a ***less-than-significant cumulative impact*** to the regional loss of wildlife movement opportunities.

#### Mitigation Measure

*None required.*

#### **Sports and Entertainment Facility Overlay**

Implementation of a Sports and Entertainment Facility Overlay would alter the acreage of proposed land uses under each land use category; however, the overall footprint or acreage of the Specific Plan Area (approximately 244 acres) would not change. As the overall footprints and general types of activities associated with the development of the area (i.e., hardscape, tree removal, grading, noise, light) would not substantially change under the Sports and Entertainment Facility Overlay (in regard to biological resources). No substantial differences in impacts to biological resources would be expected. The same areas would be involved in grading and construction, the stormwater outfall would be constructed, and impacts to rare and endangered species and habitat would not substantially differ from the impacts of development of the Railyards Specific Plan without an arena. Mitigation measures identified within this section would need to be implemented to reduce the potential impacts of the project to less-than-significant levels. No new significant or substantially increased impacts would be expected.

## **6.3 CULTURAL RESOURCES**

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## 6.3 CULTURAL RESOURCES

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### INTRODUCTION

This section documents known cultural resources on or in the vicinity of the Specific Plan Area, identifies any archaeological resources that are currently listed on or are potentially eligible for listing in the National Register of Historic Places (NRHP), and assesses the archaeological sensitivity of the Specific Plan Area, presenting the characteristics and general locations of potentially significant archaeological resources. This section identifies historic architectural resources that are considered historical resources under CEQA, in accordance with Section 15064.5(a) (2)-(3) of the CEQA Guidelines using the criteria outlined in Section 5024.1 of the California Public Resources Code. The historical resources are those properties that are properties listed in, determined eligible for listing in, or that appear eligible for listing in the California Register of Historical Resources (CRHR). Properties listed in or eligible for listing in the NRHP are automatically eligible for listing in the CRHR. The historical resources also include properties that are listed in or are eligible for listing on the Sacramento Register of Historic and Cultural Resources (Sacramento Register), under the City of Sacramento Municipal Code, Chapter 17.134. The information in this section is based on reports prepared by JRP Historical Consulting, LLC (historic resources) (see Appendix H) and the Anthropological Studies Center (ASC) at Sonoma (archaeological resources) (see Appendix G) as well as previous studies in the area. A records search at the North Central Information Center of the California Historical Resources Information System (NCIC) was completed by ASC. Prehistoric archaeology is the study of the past before written records. Historic archaeology is the study of societies that had some system of writing. Historic resources generally refer to the built environment, but can include a location (e.g. a district, site, building, structure, or object) and are defined above and in the Regulatory Setting below.

In the public scoping meeting held March 29, 2006, concerns were expressed about the interface between the proposed project and the Alkali Flat neighborhood, which is in the NRHP. The Alkali Flat Neighborhood Improvement Association (AFNIA) also submitted a letter expressing concerns with the “massing, setbacks, and building heights that are proposed along 7<sup>th</sup> Street” in relation to the “small scale Victorian building east of 7<sup>th</sup> Street” in the historic neighborhood. The AFNIA letter also expressed concern about preserving the connectivity between the neighborhood and the Railyards and Old Sacramento, Sacramento’s only three National Register districts, and noted the opportunity that appropriate development at the intersection of 7<sup>th</sup> and F streets could “reinforce and strengthen Sacramento’s heritage.” It should be noted that the SP Railyards as a whole is not currently listed as a district but that the Depot Building is listed individually. However, it is widely believed, and has been recommended by cultural resource professionals, that a National Register eligible district exists at the Railyards.

### RESOURCE TYPES

Potential prehistoric resource types are discussed as sites; an archaeological site is the location of past human activities evidenced by material remains. Different types that could be found at the project site include occupation sites, multiconstitutional sites, lithic sites, sparse lithic scatter, isolated artifact or features, contact sites, and a mortuary complex. Historic-era resource characteristics and locations can often be pinpointed from archival documents. Historical research indicates the potential for eight resource types within the Initial Study area. These are described in *Sacramento Railyards: Initial Phase: Archaeology* prepared by ASC (see Appendix G).

## SETTING

In the following setting two areas would be referred to; the Specific Plan Area and the Initial Phase Area. The Initial Phase Area, as referred to here and in the ASC Report, is referred to as the Initial Phase Area elsewhere in the EIR. The Specific Plan Area refers to the entire geographic area covered on a programmatic level by the analysis in this EIR (see Figure 3-4). The Project Area (a.k.a. the Initial Phase Area) refers to a smaller area covered in greater detail by the technical report prepared by ASC (see Figure 3-6).

## Prehistoric

Although human activity in parts of California's Central Valley has been documented as far back as 9,000 to 12,000 years before the present, claims of similar antiquity for the Sacramento locality have not been supported.<sup>1</sup> This absence of evidence might be due to geomorphological processes such as sedimentation rates, or might result from land-use practices and social/technological organization of early peoples, or a combination of these factors. Archaeological evidence of Paleoindian and Early Archaic period use of the region has been identified at several sites in the Sierra foothills within 60 miles of Sacramento in the form of temporally diagnostic tools, radiocarbon dates, and obsidian-hydration rim values.<sup>2</sup> Far more evidence exists for substantial human occupation of the Sacramento locality and environs beginning about 4,000 to 5,000 years ago.<sup>3</sup> The period from ca. 5,000 years ago to Euroamerican contact has been divided into several eras on the basis of observed differences in archaeological remains

The first published prehistoric cultural sequence for central California,<sup>4</sup> ultimately known as the Central California Taxonomic System, or CCTS, had its inception in the Sacramento–San Joaquin Delta and environs. The sequence, based in large part on changes in burial position and grave goods within large, stratified sites, identified three distinctive culture horizons: Early, Middle, and Late. The scheme has undergone much revision,<sup>5</sup> but the labels for these three distinctive periods remain in general use. The sequence begins with the Windmill pattern, followed by the Berkeley pattern, and the Augustine pattern. These three patterns—which equate with the Early, Middle, and Late periods of the CCTS—are briefly outlined below,

**Early Period/Windmill pattern (ca. 3000 – 500 B.C.).** The pattern is named for the Windmill site (CA-SAC-107), a mound in the Deer Creek–Cosumnes River area. The artifact assemblage of the pattern consists of heavy stemmed and leaf-shaped projectile points of chert and obsidian and relatively rare milling equipment; objects found as grave goods, including charmstones and abalone ornaments, were highly stylized and well-made. The rigid mortuary complex of the Windmill pattern—with its ventrally extended burials (i.e., lying face down) with head oriented to the west—

1 Moratto, Michael J., *California Archaeology*. Academic Press, Orlando, Florida, 1984.

2 Moratto 1984; Peak, Ann S., and Harvey L. Crew, An Archaeological Data Recovery Project at CA-CAL-S342, Clarks Flat, Calaveras County, California. In *Cultural Resources Studies, North Fork Stanislaus River, Hydroelectric Development Project, Volume 2*. Sacramento, 1990; Pryor, John, and Russell Weismann, Archaeological Investigations at the Skyrocket Site, CA-CAL-629/630, *the Royal Mountain King Mine Project. Proceedings of the Society for California Archaeology 4*. San Diego, 1991.

3 Brienes, West, & Schultz, *Overview of Cultural Resources*, 1981.

4 Lillard, Heizer, and Fenenga, *An Introduction to the Archaeology of Central California*. Sacramento Junior College, Department of Anthropology, Bulletin 2, Sacramento, 1939; Lillard, J.B., and W.K. Purves, *The Archaeology of the Deer Creek–Cosumnes Area, Sacramento County, California*. 1936.

5 Beardsley, Richard K., *Temporal and Areal Relationships in Central California Archaeology*. University of California Archaeological Survey Reports 24 and 25. Berkeley, 1954; Bennyhoff and Fredrickson 1994; Bennyhoff and Hughes 1987; Fredrickson, David A., *Early Cultures of the North Coast Ranges, California*. Doctoral dissertation, University of California, Davis, 1973; Ragir 1972.

suggests a tightly controlled social organization. Although an emphasis on hunting has been inferred, dependence on anadromous fish may account for such early organization.<sup>6</sup>

**Middle Period/Berkeley pattern (500 B.C. – A.D. 900).** The onset of the Middle period was marked by the Berkeley pattern, with its abrupt shift in burial mode (from prescribed extension to flexed) and a milling-tool kit dominated by the mortar and pestle. Projectile points were concave-base or side-notched forms, with a shift away from Napa obsidian to western Great Basin sources. Shell beads, imported from the coast and fashioned into elaborately varying forms, became common in this period, with some human burials accompanied by thousands of beads and other grave goods. An emphasis on bone tools during this period reflects a resourceful adaptation to the generally stone-poor Delta region. Despite the indications of prosperity and increased sedentism, there is also considerable flux during this period, with a continuation of various Windmill traits in the south that suggests retention of earlier traits by a displaced group. Middle-period sites are relatively common in lower Sacramento valley, including site CA-SAC-43, an intensively investigated site on the Sacramento River to the south.<sup>7</sup>

**Late Period/Augustine Pattern (A.D. 900 – Historic).** The influx of new groups entering the Central Valley from the north (the related Nisenan and Patwin in the Sacramento area), beginning as early as A.D. 700, is marked by a shift in artifact assemblage, exchange networks, and ceremonial affiliation (e.g., appearance of the banjo-shaped abalone ornaments of the Kuksu cult). Among the stylistic changes in the valley was a greater elaboration of utilitarian forms, such as dressed mortars. An important change in technology—the introduction of the bow and arrow replacing the dart and atlatl—is represented in the smaller side-notched projectile points of Napa obsidian. During the early phase of the Augustine pattern, some social disorganization associated with more stressful environmental conditions is suggested.

The later part of the Late period marks a return to stability and increased sedentism in the area. Social stratification and elaborate ceremonialism are evidenced among grave goods, while wide-ranging exchange networks can be inferred from shell beads and other exotic items. The ethnographic distribution of cultural groups is assumed to have been in place by this time throughout much of central California, and the lifeways from the onset of this period were probably very similar to those encountered at first Euroamerican contact.

The ethnographic period, defined by the advent of written descriptions of native life, marks the close of prehistoric times. During the time of European exploration in the late 18th century, Nisenan, the group native to the area, were encountered in the Sacramento vicinity and surrounding area. Nisenan villages were located atop knolls along the edges of rivers and wetlands. Ethnographies mention one village center, *Momol*, located near the confluence of the American and Sacramento rivers. A large village, it extended a few miles east of the American River and north and south along the Sacramento River.<sup>8</sup> Two other Nisenan villages, *Pushuni* and *Seku-mni*, were recorded as being situated about 5 miles north-northeast and 10 miles east of Old Sacramento, respectively, on the opposite side of the Sacramento River.<sup>9</sup>

6 Schulz, P. D., *Osteoarchaeology and Subsistence Change in Prehistoric Central California*. Doctoral dissertation, Department of Anthropology, University of California, Davis, 1981.

7 Bouey, Paul D., *Final Report on the Archaeological Analysis of CA-SAC-43*. Far Western Anthropological Research Group, Davis, California, prepared for Department of the Army, Corps of Engineers, Sacramento, 1995.

8 Wilson, Norman, L and Arlean H. Towne 1978.

9 Kroeber 1925; Russo, Marianne, and Dorothea Theodoratus, Discover Park Construction Site Examination for Archeological Resources in the Area of CA-SAC-26. On file, North Central Information Center of the California Archaeological Inventory, California State University, Sacramento, 1981.

The Sacramento locality is situated within 7 miles of the somewhat arbitrary boundary delineating regions occupied by speakers of other languages within the same linguistic family as the Nisenan language—Patwin to the west and Plains Miwok to the south. All of these peoples visited the rivers and wetlands in the Sacramento area during the winter months to gather certain plants, hunt and fish, and interact with neighboring villages to obtain items through trade and form social and political alliances. Weather conditions in the summer made the plains and marshes inhospitable, and village groups regularly relocated to the eastern or western foothills. Within half a century of European contact, several epidemics attributed to malaria, smallpox, and a variety of introduced diseases; overt hostilities between native and non-native groups; and the effects of missionization decimated native groups throughout the Central Valley, leaving a substantially reduced population.<sup>10</sup>

## Historic

Sacramento is located in the upper Central Valley of California at the confluence of the Sacramento and American rivers. The Specific Plan Area occupies the southern edge of a large expanse of low-lying land south of the confluence of the American and Sacramento rivers (see Figure 3-1). Before filling and development of the area, the American River flowed through the northern part of the Specific Plan Area, emptying into the Sacramento River at a point roughly aligned with modern E Street. The American River was rechanneled into its current course after devastating floods in 1862.<sup>11</sup>

There were two small lakes within or adjacent to the Initial Phase Area: Willow Lake just east of the Initial Phase Area, and Sutter Lake, portions of which were within the southern part of the Initial Phase Area. Sutter Lake was also called Lake Sutter, China Lake, and China Slough. Both are within the larger Specific Plan Area.

Sutter Lake was divided into two branches at its western end. The south branch connected it to the Sacramento River, and the north to the American. Higher ground between the branches created a northwest- to southeast-oriented promontory. This promontory is shown subdivided on the 1854 U.S. Coast Survey map and labeled the "American Fork Addition," more commonly known as "Slater's Addition." It was laid out in lots on the map, and the Sacramento Gas Works was shown at the northwest end of Slater's Addition on the bank of the Sacramento River.

There was higher land along the north edge of Sutter Lake, although it was not developed until the Railyards was constructed, and in the southeastern part of the Initial Phase Area, comprising city blocks GH67 to DE67. Settlement had begun in this area in the 1850s, with a fair amount of development between H and F streets by 1854. The earliest recorded historical activity within the Initial Phase Area was a possible dock at 4<sup>th</sup> and I streets<sup>12</sup> and the construction of Sacramento's first levee along I Street in the 1850s.<sup>13</sup> These areas are within the proposed Depot District.

There was also a largely Chinese settlement on the south edge along I Street, and extending up the western and eastern edges of the lake.<sup>14</sup> This residential area is within the proposed Depot District. There was also a residential neighborhood along the east side of Depot District, on the west side of 7<sup>th</sup> Street. Another 19th-century residential neighborhood lay at intersection of the historical

10 Cook, Sherburne F., *The Conflict Between the California Indian and White Civilization*. University of California Press, Berkeley, 1976; Moratto 1984.

11 McGowan, Joseph A., *History of the Sacramento Valley*, Lewis Historic Publishing Co., New York, 1961, page 188.

12 Joslyn, D. L., *The Sacramento General Shops: Southern Pacific Company--Pacific Lines*. Online document available at the Central Pacific Railroad Photographic History Museum web site, [http://cprr.org/Museum/Sacramento\\_Shops.html](http://cprr.org/Museum/Sacramento_Shops.html), (accessed June 19th, 2006), page 8.

13 Praetzelis and Praetzelis 1990b, page 4.

14 Praetzelis and Praetzelis 1990b, page 4-5.

1<sup>st</sup> Street west and Sycamore Street, which is on the east edge of the proposed West End District. This neighborhood appears to have been housing for railyard workers.<sup>15</sup>

Early maps show a promontory extending into Sutter Lake from the west. There are buildings on the promontory that may have been Chinese-occupied laundries and/or fishing stations. In 1870 two bridges connected the promontory's tip with I Street to the south and the railyard shops to the north.<sup>16</sup> This passage, by which railroad employees crossed the lake, was dubbed the "Bridge of Sighs" because of the smell from the lake.<sup>17</sup>

While the most substantial buildings are located in the proposed Central Shops District, the rest of the railyard contained numerous other structures and buildings, including storage facilities, a car shop complex, and a scrap dock.<sup>18</sup> At least two industrial facilities unrelated to the railyard lay along the Sacramento River waterfront: the Sacramento Gas Works and the Pioneer/Sperry grain mill and warehouse.<sup>19</sup> Remnants of these two facilities have been identified in subsequent archaeological work.

Sutter Lake was gradually filled from the north and west; the filling was completed in the first decade of the 20th century. While Sutter Lake was still open it was used as a dump by the railyard.<sup>20</sup>

Historically, vegetation within the Initial Phase Area would have consisted of riparian woodland on the higher ground around the edges of Sutter Lake and extending to Willow Lake, in the eastern part of the Initial Phase Area, and the natural levees of the Sacramento and American rivers. The remainder of the site was probably freshwater marshland.<sup>21</sup>

There is no visible evidence of the early-19th-century topography in the Initial Phase Area today. The entire area is approximately 25 feet (ft) above mean sea level, the product of intensive filling programs in the 19th and early 20th centuries to create land for flood control, the expansion of the Railyards, and, in the case of Sutter Lake, to alleviate sanitation concerns. Between 1863 and 1910, the lake appears to have been filled to a depth of at least 10 to 15 ft on the south side (where it is contiguous to I Street); 6 to 8 ft along the east side, adjacent to 7<sup>th</sup> Street; and to an undetermined depth elsewhere.<sup>22</sup>

### Flood Control

During the 1850s and 1860s, a central concern in the development of Sacramento was flood control. The presence of the American River and Sutter Lake in the low-lying Sacramento area constituted a significant problem for the City. Sutter Lake's channels to the Sacramento and American rivers were breaches in the natural levees along the rivers' banks. Consequently it was from Sutter Lake that Sacramento would flood. The serpentine channel of the American River through the marshland was another important contributing factor in the disastrous flooding Sacramento suffered.

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15 Praetzellis and Praetzellis 1990b, page 4-5.

16 Koch, Augustus, *Bird's-Eye View of the City of Sacramento*, Britton and Rey, Sacramento.

17 Praetzellis and Praetzellis 1990a, page 7.

18 Office Division Engineer Sacramento, *Sacramento Shops Showing Buildings*, 1920.

19 Praetzellis and Praetzellis 1990b, page 7.

20 Joslyn 1948, page 50.

21 Brienes, West & Schulz, *Overview of Cultural Resources in the Central Business District, Sacramento, California*. Manuscript on file, Sacramento Archives Museum and Collection Center (SAMCC), Sacramento, 1981.

22 Praetzellis, Adrian, and Mary Praetzellis, *Southern Pacific Railyards, Existing Conditions: Archaeology, Anthropological Studies Center, Sonoma State University, Rohnert Park, California*. Submitted to ROMA Design Group, San Francisco, 1990, page 6.

Sacramento's first serious flood was in January 1850. This flood led to the construction of approximately nine miles of levees, including a temporary one along the south side of Sutter Lake along I Street, and the construction of a sluice gate at the mouth of Sutter Lake on the Sacramento riverfront. Flooding occurred again in 1852, 1853, and 1854, followed by more levee construction. The I Street levee was extended and made permanent, and by 1854 a levee was in place along 6<sup>th</sup> Street, running to Willow Lake and then northeast. I, J, and K streets were raised from 1 to 5 feet.

From December 1861 until February 1862 Sacramento was largely underwater. This series of floods led to a concerted program of municipal flood control. The American River was rechanneled to meet the Sacramento River north of the Initial Phase Area and the levees were strengthened. A decade-long effort of street-raising occurred in the roughly 4- by 10-block area south and west of Sutter Lake; some streets were raised as much as 10 feet.

In December 1862 the Sacramento Board of Supervisors granted Sutter Lake and the adjacent lowlands to the Central Pacific Railroad (CPRR), which had the resources and finances to fill and develop the land. The filling of Sutter Lake was not a single concerted effort; the CPRR filled the lake as it needed land. Not until 1910 did the CPRR completely fill Sutter Lake and the old American River channel. Sutter Lake was largely filled in response to concerns over the health risk posed by the lake, which essentially served as a large cesspool for the surrounding residences and the CPRR Railyards.

For years and years the company used Lake Sutter as a dumping place. Prior to 1899, shop sweepings, dismantled locomotives, old boilers, scrap from shearings in the boiler shop, old castings, and other pieces of metal were dumped into the lake as there was no market for scrap metal. During construction of the present station, piles driven into the lakebed hit iron debris under the sand, which ruined the piles.

Residential waste from the houses bordering the lake along I Street, 6<sup>th</sup> Street, and Slater's Addition also contributed to the lake's decline. As early as 1877, Sutter Lake was referred to as "The Plague Spot of Sacramento." A Sacramento Bee article in 1880 noted "About the waters may be seen all descriptions of decaying garbage, kitchen refuse, etc., and the stench arising from the green and slimy water is simply sickening." The site of the lake remained an open sandlot until 1925 with the construction of SPRR's new passenger station.

### Development of the Railyards

The first CPRR buildings, built in 1863, were frame buildings on the east bank of Sutter Lake, along 6<sup>th</sup> Street near H and I streets. After some filling, this area became the location of the General Foundry and associated structures. After a land dispute with the City, these buildings were moved to the current Central Shop location north of Sutter Lake. The principal function of the Sacramento Railyards' shops was the maintenance and repair of the railroad's locomotives, but there were also periods when locomotives were designed and constructed on site. The increasing scale of the CPRR/SPRR operations entailed periodic expansions of the Railyards. From its initial 20-acre site, the site owned by the railroad expanded in fits and starts, growing to 40 acres by 1878, 145 acres by 1922, and to its current approximate 237 acres by the 1930s.

The CPRR owned all but a few lots of the Slater's Addition by 1915. It owned about half of Block DE67 in 1870 and had finally acquired the entire block by 1910. The next block south, EF67, was purchased in stages by CPRR from 1900 to 1920, although there were still individual property owners along 7<sup>th</sup> Street as late as 1920. The entirety of Block FG67 and the north half of Block GH67 were acquired by the CPRR in 1924.

Dougherty<sup>23</sup> notes that, probably due to the extensive acreage the Railyards had available for expansion, it always maintained its basic 1860s layout. The old buildings were not demolished and rebuilt to accommodate new technologies or management practices. Instead, they were redesigned, or new facilities were constructed in vacant areas or on new land created through filling. Buildings that could not be readapted were, however, generally torn down. The railyard expansion tended to take a modular form, with buildings and structures serving specific aspects of the railyard operations being clustered together. These groupings of buildings often shifted in function through time as technologies changed and railyard itself changed in function.

Within the Initial Phase boundaries, there are six main areas where different railyards functions clustered. These are the Central Shops, the Brass Foundry, the Brickyard, the Passenger Depot, the General Foundry, and the Scrap Yard. Other facilities in the Initial Phase Area include a lumberyard and various storage buildings.

#### *Central Shops Area*

Beginning in 1867, the first permanent railyard buildings were constructed in the Central Shops, which formed the nucleus of the railyard operations. These buildings included the Roundhouse, Car Shop and Planing Mill, Machine Shop, Blacksmith Shop, and Paint Shop. Their location on the bank of Sutter Lake entailed substantial and deeply dug foundations. The Central Shops expanded to the south in a strip along the north side of the tracks. Other than the Roundhouse, which was demolished in the 1950s, the early Central Shops buildings still stand.

#### *Brass Foundry Area*

Between 1888 and 1892, the old Boiler Shop was moved to an area just west of the current Central Shops' Boiler Shop and was converted to a Brass Foundry and Spring Shop. Other buildings in the Brass Foundry area included associated storage houses, an icehouse, a coal bin, and other storage sheds (for rivets, iron, and pipe). A babbit foundry was added by 1902. By 1920 the Brass Foundry and Spring Shop building, located just south of the Scrap Dock, was a "Cab and Fire Pan Shop."

#### *The Brickyard Area*

West of the brass foundry buildings was a brickyard. In 1895, this complex consisted of a clay yard with an associated crusher and clay mills, a kiln, a tar-dipping trough, a locomotive brick shed, a firebrick shed, and a pipe shed. By 1915 most of these buildings had been converted to storage facilities, although the clay yard was apparently still manufacturing fire brick.

#### *The Passenger Depot*

The Passenger Depot, also known as Arcade Station, was constructed in 1879, to replace an earlier and overburdened depot that was near Front and L streets. With the filling of Sutter Lake Arcade it was replaced by the new depot in 1926, and the building was removed.

#### *The General Foundry Area*

The General Foundry area is on the west side of 6<sup>th</sup> Street on fill in the northeast part of Sutter Lake was built between 1883 and 1895. It consisted of the Wheel Foundry in the north part of the building and the Iron Foundry in the south. In addition to the foundry's ancillary constructions (coke shed, castings shed, sand house, and sand bin), the Car Pattern Shop was also located here. The General Foundry was located in the vicinity of the earliest railyard buildings, on the west side of 6<sup>th</sup> Street.

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23 Dougherty, *Draft HAER report for CPRR*, 2002.

### *The Scrap Yard Area*

The Scrap Yard Area is on land created by the filling of the old American River channel slough and surrounding marshland and was added between 1909 and 1917. Due to the difficulty of obtaining raw material on the West Coast, scrap recycling was a distinctive feature of the Sacramento Railyards operation from early on, and during World War I and World War II this operation received considerable attention. The Scrap Docks served as the main accumulation and sorting facility for the Southern Pacific line. During World War II up to 77 cars of scrap per week were deposited at the Scrap Dock.

In 1917 the Scrap Dock consisted of two platforms and a complex of small buildings, including a "Scrap Piler Shed," a "Reclamation Shed," and a "Reclaiming Plant for Steam Hose Joints." By 1920 a steel foundry had been added at the east end of the complex, along with oxyacetylene plants and additional storage buildings; the Brass Foundry, Spring House, and Frog and Switch Shop had been relocated to the south of the Scrap Dock.

### *Development of the 6<sup>th</sup> and 7<sup>th</sup> Street Corridor*

The 6<sup>th</sup> and 7<sup>th</sup> street corridor between D and H streets, like most of Sacramento in the early 1850s, was owned largely by speculators. John Sutter Jr., P.B. Reading, Jacob R. Snyder, Samuel Hensley, and Robert Merrill bought most of the lots in this four-block area, along with parcels throughout Sacramento. Some construction began in the 6<sup>th</sup> and 7<sup>th</sup> street corridor in the early 1850s, especially on FG67 and GH67. The 1854 Coast Survey map shows that approximately 10 buildings had been constructed on FG67 and 11 on GH67. Most of the buildings on FG67 were likely small houses, since all had a low valuation in 1854 (between \$100 and \$300). In 1854 at least 4 of the 9 households listed for both blocks in the 1854 city directory were owner occupied. The first industry on these blocks was the Union Brewery, located on the corner of 6<sup>th</sup> and G streets. Later known as the Ohio Brewery it remained at that location for the next 30 years. The 1851 and 1854, city directories list an "African Church" on 7<sup>th</sup> Street between F and G streets. The church was, however, located on the east side of the street, which is outside of the Initial Phase Area.

In the 1850s the 6<sup>th</sup> Street levee, which protected the city from the overflow of Lake Sutter, angled northeast from 6<sup>th</sup> Street through the FG67 and GH67 blocks and then southeast back onto 6<sup>th</sup> Street. It is probable that the levee was simply following a rise in the natural landscape. The 1854 U.S. Coast Survey map shows at least two buildings located on the west side of the protective levee.

By 1860 Block EF67 was being developed, especially the northern half. CPRR purchased its first lots on the northeast corner of the block, a prelude to the railroad tracks that would cover the blocks by the 1930s. Residents of the corridor in the 1860s appeared to have been mostly of the working class or lower middle class. Listed occupations included two coopers, a barber, a painter, and a saddler. Although the upper-class Alkali Flat neighborhood was located on the east side of 7<sup>th</sup> Street, the D67–H67 neighborhood developed a working-class character, with residents living on more modest means in smaller residences. Reasons for the area's lower valuation likely include the neighborhood's proximity to the low-lying land along Sutter Lake and, after 1863, to the neighboring CPRR tracks and shops.

The only building identified on Block DE56 was owned by a P. Hollfelder, who operated a coal yard on I Street between 6<sup>th</sup> and 7<sup>th</sup>. Hollfelder purchased the northeast corner lot of DE56 sometime before 1860 and lived there until at least 1870. No buildings are shown at this location any of the historic maps.

By 1870 blocks D67–H67 were fully developed, with the exception of the southern half of EF67, owned by R.H. McDonald. Most of the buildings were small one- or two-story houses, with the



exception of the Ohio Brewery and a three-story tenement building on the north side of E Street. Two buildings were located along the lakeshore on the west side of 6<sup>th</sup> Street at the junction of F Street. A cluster of buildings, including what appears to be a church, is also depicted along the lakeshore on the west side of 6<sup>th</sup> Street at its junction with H Street. The church-like building is the "Chinese Chapel" listed in the 1869 city directory at the corner of 6<sup>th</sup> and H streets. The 1890s bird's eye view shows three houses at this location, partially supported by stilts in the waters of Sutter Lake. These houses are again shown on the 1895 Sanborn map.

Residents through the late 1860s into the 1880s continued to be skilled as well as unskilled working-class households. Of at least 60 people listed in the 1869 city directory for D67–H67, approximately half worked as laborers, car makers, machinists, and carpenters for the railroad. Most residents were of U.S. origin, born in California and the eastern United States, or were European immigrants from Germany, Holland, Switzerland, and Ireland.

The 1895 Sanborn map shows that, as in earlier decades, most of the buildings on D67–H67 continued to be modest one- or two-story dwellings, with the exception of the Sacramento Packing and Drying Company buildings, the three-story tenement building on E Street, a house-converted saloon on the corner of E and 6<sup>th</sup> streets, and a large stable behind the saloon. The Sacramento Packing and Drying Company had purchased the Ohio Brewery property in 1886 and owned lots on the northwest corner of the block where several dwellings were located that housed Chinese employees and a small box making operation.

The 1900 census provides a snapshot of the 6<sup>th</sup> and 7<sup>th</sup> street corridor at the turn of the century. Of 72 residences, 20 were owner-occupied. Most adults were born in either California or other western states (56) and the eastern U.S. (43). Most European immigrants were from Ireland (14) and England (10), although there were a few Germans and Italians as well. Twenty Chinese immigrants lived in the dwellings on the northwest corner of FG67 and worked at the neighboring Sacramento Packing and Drying Company. Other neighborhood residents included carpenters, blacksmiths, policeman, a cigar maker, and bookbinders.

Although there were still many small residences in 1915, the character of the blocks was becoming more industrial and residences were becoming more compact including the Sacramento Packing and Drying Company, large warehouses, four duplexes, railroad platforms, and offices. The Sacramento Packing and Drying Company was incorporated by the California Fruit Cannery Association and went on to become the largest canning operation in Sacramento and used several trademarks, most notably "Del Monte." Throughout the blocks, several single-family dwellings had been replaced with apartments or duplexes, while others had been converted to flats. By 1915 CPRR owned all of Block DE67 and most of EF67.

The 1910 census shows some demographic changes in the neighborhood, the result of increasing immigration from southern Europe, Italy and Portugal, many working for the railroad. At this time, Italians accounted for the largest group of unskilled laborers working for the railroads. There was a decline in home-ownership, with only 7 homes owner-occupied.

The housing remained dominated by rental properties. Many Italian and Hispanic families lived in the neighborhood and were employed by the railroad and the cannery. The railroad took over the cannery property in 1924 and the remaining lots on Block FG67 the following year. By 1930 all of the lots in the corridor were owned by the railroad.

In 1951, railroad tracks cover Blocks FG67 and GH67. One small house on Block EF67 and three on DE67 appear to remain according to maps, although a notation states that "all buildings removed, streets vacated, and blocks full of railroad tracks."

### *Development of Slater's Addition and Potential Archaeological Resources*

When the City of Sacramento was first surveyed, its northern boundary was Sutter Lake. A promontory jutted into the lake from the northwest and was easily accessible by a short bridge across the lake's inlet to the Sacramento River. An 1850 chart of the Sacramento River shows this bridge and the notation "Child's Ferry." By October 1852 the promontory had been surveyed, divided into blocks and streets, and named Slater's Addition. The neighborhood, also called the American Fork Addition, was named after Peter Slater, a Sacramento Commissioner in 1849. Speculators Jacob R. Snyder and Pierre B. Cornwall purchased most of the lots.

The only permanent construction in 1854 was the Sacramento Gas Works building, which was at the corner of Front and Sacramento streets. A flour mill and an ice house were also operating along the riverfront during the early 1850s. The 1857 bird's-eye view of Sacramento shows scattered houses and what may be agricultural fields or gardens.

By 1860 Snyder and Cornwall had sold many lots in Slater's Addition, especially in the area closest to the riverfront, between Sycamore and Broad streets. Several of the new landowners lived on their property. Value of improvements on property ranged from \$300 to \$2,500. The residents included laborers, engineers, merchants, and a policeman. Most were from the eastern United States or Europe, although Hispanics and Chileans were also present. Women accounted for approximately one-third of the neighborhood's population. Many households were families, while many others were comprised solely of single young men.

After the establishment of the Railyards in 1863, CPRR began to purchase lots in the neighborhood. By 1870 the CPRR owned almost all of the property on the promontory. The Sycamore neighborhood is clearly depicted on the 1870 bird's-eye view, along with a scatter of small houses along the promontory. Two bridges connected I Street to the Railyards via the tip of the promontory. In later years, when pedestrians had to pass over an increasingly polluted lake, this route was referred to as the "Bridge of Sighs."

Residences and smaller commercial enterprises were located in Slater's Addition during the late 1860s and early 1870s. Some of the businesses included a grocery owned by Robert Young and the American Laundry. The American Laundry was owned by a Connecticut man named S.B. Cooley and employed both Euroamerican and Chinese men. A Chinese "Joss House" was located somewhere in Slater's Addition. Similar to the previous decade, residents originated from a variety of countries, including Ireland, Mexico, Prussia, the eastern United States, and China. Nearly half of the inhabitants were women, and nearly all households were families.

By 1880 1<sup>st</sup> Street had been renamed Jibboom Street and CPRR had filled in Sutter Lake up to 3<sup>rd</sup> Street. Second Street had been extended through the Railyards to connect the main part of Sacramento with areas to the north—like the Sycamore Street neighborhood, the last residential remnant of Slater's Addition. The two blocks bounded by First, Sycamore, and Union streets was an economically mixed neighborhood that included railyard employees, a furniture dealer, a shoemaker, and a locksmith. Many women held positions as dressmakers and "housekeepers," although it is unclear whether housekeeper referred to at-home work (the term "keeping house" was also used by the same census taker). All of the households in the Sycamore neighborhood consisted of either families or single or widowed women. Residents were mostly American-born, as well as a few Germans, Italians, and Swedes.

By the 1890s the CPRR Shops dominating the area, the inlet to Sutter Lake closed off, and the lake itself approximately half its original size. The Sycamore neighborhood is shown as a small cluster of houses on the riverfront just north of the train tracks. The 1900 census lists several fishermen,

railroad employees, and a few saloonkeepers. There were several German and Swedish immigrants, although most of the residents were from California and other U.S. states.

A few families in the area were long-term residents including the Ing, Wilson, and Daniels families. The Ing family is listed on the 1870 and 1880 census. John C. Ing, originally from Ohio, was an engineer at the Pioneer Flour Mill. The Wilson family lived in the Sycamore neighborhood from at least 1860 through at least 1880. John Wilson and his wife Ellen owned the lot at the corner of Sycamore and Front streets. Wilson, originally from Sweden, began as an upholsterer and later a furniture dealer. Ellen was from Ireland and worked as a housekeeper. James Daniels and his wife or sister, Nancy, began living in Slater's Addition by at least 1860. James, an African American from Kentucky, worked as a laborer. Nancy, born in North Carolina, continued to live in the area through the 1870s and 1880s working as a housekeeper.

By 1910 the Southern Pacific had taken over about half of the remnant Sycamore neighborhood lots. Ten households were recorded in the 1910 census that included railroad employees, fishermen, steamboat engineers, laborers, a nurse, a waitress, and a bartender. Three homes were owner-occupied. The residents were German, Spanish, Portuguese, English, and American-born.

Only 12 houses—three of them vacant—remained in 1915. Although the SPRR purchased the remaining lots five years later, the area retained a residential character. A 1920 map of the Sacramento Shops shows a small cluster of buildings in the location of the former Sycamore Street neighborhood. It is not clear whether these buildings are reused older residences or newly constructed buildings, but the map does indicate that they were used to house Chinese railroad employees. The buildings included three “Chinese Bunk Ho.,” a “Toilet & Shower for Chinese,” a “Cook Ho. for Chinese,” and a “Chinese Eating Ho.” Interestingly, only one other building located at the other end of the railyard was labeled “Bunk Ho.” It was presumably used for non-Chinese railyard workers. The remaining non-Chinese employees lived in private residences off railroad property.

During the Great Depression of the 1930s, a ramshackle settlement known as “Shooksville” occupied the area to the north of the Railyards on the bank of the American River. The residents were mostly African Americans, Hispanics, and other minorities. Shooksville was named for its “mayor,” an African American man named Samuel Shooks. Prior to the economic ruin of the 1930s, Samuel Shooks had been a carpet cleaner and rented a small, single-family, one-story house on E Street between 15<sup>th</sup> and 16<sup>th</sup> streets.

The Sacramento Riverfront portion of Slater's Addition was the site of fairly substantial commercial and light industrial development. George Wilson constructed the first flour mill in Sacramento—the Eureka Flour Mills—in the spring of 1850 at the junction of the Sacramento and American rivers. George and his son James also operated a ferry across the American River. The mill offered fresh ground flour, corn meal, ground barley, and hog feed. Seth Garfield and Aleck Dyer purchased the mill in 1855. It burned down the following year.

South of the Eureka Mills, the Boston Ice House operated along the Sacramento riverfront between Broad and Sacramento streets. In 1853 R.D. Carey remodeled the ice house into the Levee Flour Mill. Two years later the business failed and Carey sold the mills to Edward P. Figg, a New York merchant. Figg, in turn, sold the mills to Garfield and Dyer, following the destruction of their Eureka Mill. The partners renamed the Levee Mills to the Pioneer Mills, and it became one of the most successful milling operations in Sacramento. Unfortunately a fire burned the mill to the ground that October.

A new partnership was formed between Garfield and Anson Bidwill. They shipped the Sunnyside Mill from Auburn to Sacramento and erected it at the razed Pioneer Mill site. Production resumed and by the second half of the 1860s.

Ownership changed several times over the next few decades and by the early 1890s the Pioneer Mills was one of the oldest, continuously operating mills in northern California. A depressed flour market in the 1890s forced many milling operations to consolidate. Sperry Flour Company incorporated Pioneer Mills in August 1892. The hub of production was at the Pioneer Mill, where business continued until March 1936.

Other businesses that operated in Slater's Addition included the Sacramento Gas Works and the Chambers Quartz Milling Company. The gas company was located between Union, Sacramento, Sutter, and Water streets and operated at that location during the 1850s, 1860s, and 1870s. The Chambers Quartz Milling Company, owned several lots between Lake, Sutter, Broad, and Sacramento streets in 1860, although it is not certain whether they operated a business at that location.

### **Archaeologically Sensitive Areas**

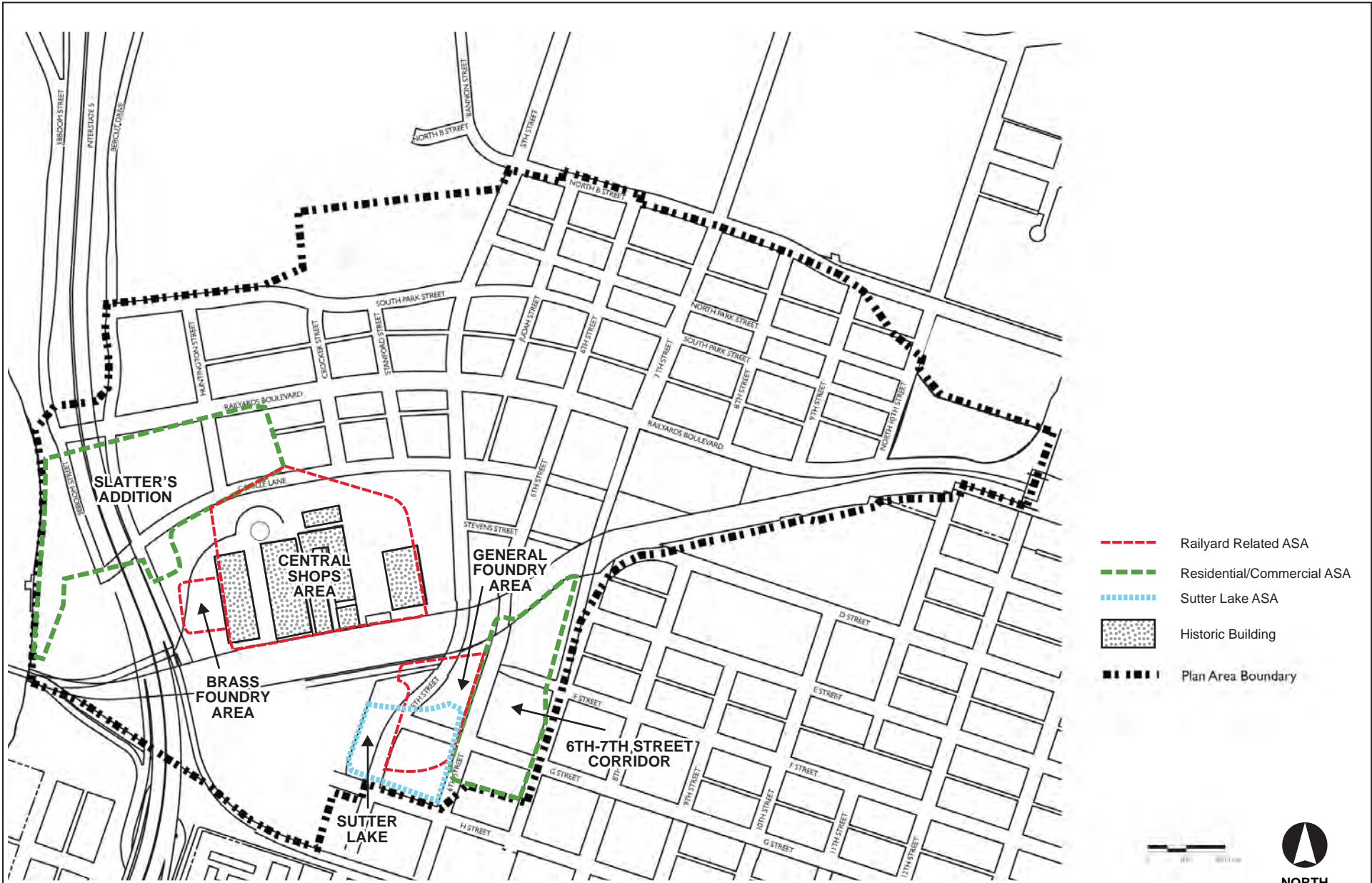
Research performed by ASC in preparation of their technical report has identified Archaeologically Sensitive Areas (ASAs) within the Initial Phase Area of the Railyards site (see Figure 6.3-1). These areas possess the potential for prehistoric and historic-era archaeological resources that are eligible to the CRHR.

- Slater's Addition
- The 6th–7th Street Corridor
- Sutter Lake
- The Central Shops Area
- The Brass Foundry Area
- The General Foundry Area

Slater's Addition and the 6th–7th Street Corridor have high potential for historic-era residential remains and pre-Railyard industrial and commercial remains, and high potential for prehistoric resources. The Central Shops, Brass Foundry, and General Foundry areas have potential for archaeological resources associated with the Railyards operations. Sutter Lake, which is overlain by the General Foundry Area, has the potential for remains associated with both the Railyards and residential use.

#### **Slater's Addition**

Slater's Addition has high sensitivity for both prehistoric and historic-era archaeological resources. Prehistoric sites, consisting of occupation sites (possibly containing human remains) or other multiconstituent resources, can be anticipated along high ground adjoining the former banks of the American River, at the northern edge of the Slater's Addition ASA. Other property types that may occur in this area include lithic sites and sparse lithic scatters and isolated artifacts or features, representing stone-tool manufacture, resource procurement, or other activities associated with this riverine setting.



Source: PBS&J/EIP, 2007.

**FIGURE 6.3-1**  
**Archaeologically Sensitive Areas (ASAs) within the Initial Phase**



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Historically, as an early-1850s-1920 working-class neighborhood, the Slater's Addition area may contain the remains of residential (Sycamore neighborhood), commercial (Young's grocery), and industrial (Gas Works) complexes, as well as deposits relating to the Chinese-occupied railroad housing of the 1920s after the last lots were purchased by the CPRR. The Sacramento riverfront likely contains structural remnants and archaeological deposits associated with the flour-milling operations that existed from the 1850s through the 1930s. Potential historical resource types include discrete, refuse-filled, domestic features; diffuse domestic deposits; domestic and religious architectural remains; industrial and commercial architectural remains; and industrial features.

Pilings for I-5, constructed in the 1960s, have probably disturbed deposits associated with the western half of the Sycamore neighborhood, although undisturbed archaeological remains may still be located beneath the elevated freeway.

#### The 6<sup>th</sup> and 7<sup>th</sup> Street Corridor

The 6<sup>th</sup> and 7<sup>th</sup> street corridor has high sensitivity for prehistoric and historic-era archaeological resources.

Prehistoric resources have been encountered at the intersection of 6<sup>th</sup> and H streets;<sup>24</sup> it is likely that this important and highly sensitive archaeological resource extends into the Initial Phase Area. Additional prehistoric sites can be anticipated in this ASA near the northeastern shores of Sutter Lake, including occupation sites (possibly with burial remains). The lake would have been a valuable resource for residential use, marshland plant procurement, and fishing and fowling.

This ASA may contain residential, commercial (6th and E street saloon), and industrial (brewery/cannery) remains dating from the early 1850s to the early 20th century. Potential historic-era resource types include discrete, refuse-filled, domestic features; diffuse domestic deposits; domestic and religious architectural remains; industrial and commercial architectural remains; and industrial features. Archaeological materials in the 6th and 7th street corridor probably remain undisturbed beneath fill and pavement.

#### Sutter Lake

This ASA has sensitivity for prehistoric resources and sensitivity for historic-era resources.

The northeastern corner of Sutter Lake extends into the Initial Phase Area on the west side of 6th Street. This area of Sutter Lake was not completely filled until the 20th century, but was likely the site of domestic refuse disposal from the 6th–7th street residences. There was residential occupation along the edge of the lake, as well as a cluster of buildings on stilts, including a Chinese temple, that extended into it. The General Foundry extended into Sutter Lake as it was partially built on fill, but is discussed separately (below). The two earliest Railyards buildings may also be located within the Sutter Lake ASA. Potential historic-era resource types include diffuse domestic deposits; domestic and religious architectural remains; industrial architectural remains; industrial features; and environmental remains. The possibility of significant isolated industrial artifacts from the Railyards in this portion of the lake is slight due to the distance from the Shops, although there may be scrap from the General Foundry or objects from the early Railyards buildings. Archaeological resources are probably intact beneath fill.

#### The Central Shops

The Central Shops ASA has high potential for historic archaeological resources. The potential for buried prehistoric sites would require field-testing before the sensitivity of this area can be assessed.

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24 Tremaine, personal communication, 2006.

Deeply buried sites (under alluvium from American River flooding) may have survived in this area, while any near-surface archaeological deposits would likely have been destroyed by CPRR Railyards construction.

The first permanent Railyards buildings were constructed here in 1867. This area formed the nucleus of Railyards operations. The main archaeological resources in this area are industrial architectural remains and industrial features associated with the Roundhouse, which was demolished in the 1950s.

### The Brass Foundry Area

The Brass Foundry area has high potential for historical industrial resources and moderate to high potential for prehistoric.

This location at the point where the northeastern arm of Sutter Lake constricts to form the inlet to the American River has excellent potential for a lithic site or isolated artifacts related to resource-procurement activities. Areas of sufficient size elevated above the marshland setting would have been good candidates for occupation sites or other multiconstituent sites. The potential for buried prehistoric sites would require testing before the sensitivity of this area can be assessed. Deeply buried sites (under alluvium from American River flooding) may have survived in this area, while any near-surface archaeological deposits would likely have been destroyed by CPRR Railyards construction.

This was the location of later 19th-century expansion of the Central Shops. Potential resources in this area consist of industrial architecture and industrial features. The Brass Foundry and other operations in this location were moved north in the early 20th century.

### The General Foundry

The General Foundry area has a low to moderate potential for prehistoric sites and a high potential for historic-era sites.

Prehistoric sites, both for occupation and resource procurement, could be anticipated on elevated land adjacent to the northern and eastern side of the lake. The far northern area, however, was likely a part of the American River floodplain; sites are unlikely to be present here.

The General Foundry was built between 1888 and 1892 along the east edge of Sutter Lake. This area has high potential for historical resources. It was probably the location of the earliest Railyard buildings before the Central Shops were built in 1867 and after. There may also have been early residences located along the lakeshore. This ASA overlaps Sutter Lake to the south as it is partially built on fill in the lake. Potential archaeological resources include discrete, refuse-filled, domestic features; diffuse domestic deposits; domestic architectural remains; industrial architectural remains; and industrial features.

## **Historic-era Archaeological Resource Types**

Historical research indicates the potential for eight resource types within the Initial Phase area.

- Discrete, refuse-filled domestic features
- Diffuse domestic deposits
- Domestic architecture
- Industrial and commercial architecture



- Industrial features
- Isolated industrial artifacts
- Flood Control and land reclamation features
- Environmental remains

These are described below, along with a listing of potential example properties in the Specific Plan Area.

#### Discrete, Domestic, Refuse-filled Features

Under this category are a variety of archaeological features that share the common characteristic of being hollow features that, before the days of organized refuse collection, were used as receptacles for the by-products of everyday living: discarded ceramics, food bones, glass containers, broken personal items, etc. These hollow features include wells, cisterns, basements, outhouse pits, and lined, reusable garbage pits, and are all sources of assemblages of historic artifacts. These kinds of features and their contents have significance stemming from their research potential; they may constitute historical resources for the purposes of CEQA.

These types of features generally occur in association with dwellings, it is anticipated that many such features would have been created by the residents of the D–H67 Street blocks and Slater's Addition. In these residential areas, such features would occur in the backyard areas of house-lots and would be relatively easy to locate. The 1920 map of the Railyards also depicts a number of small buildings labeled as "toilets" associated with various operational areas, such as the Scrap Docks. It is possible that by the 1920s these toilets were being cleaned out and would thus have little information potential. It is possible, however, that the use of outdoor privies adjacent to work areas extended back into the 19th century.

#### Diffuse Domestic Deposits

The main body of Sutter Lake and its two connecting channels were the site of ad hoc dumping from both the Railyards and residential neighborhoods, to the extent that the lake became a notorious health hazard. There was light residential occupation along the eastern edge of the lake, west of 6th Street, including a cluster of buildings that appear to have been constructed out over the lake. This occupation may have left archaeological deposits long the eastern edge of the lake. The northern boundary of Slater's Addition was the northern channel of Sutter Lake, which originally connected the lake to the old course of the American River. This channel would also have served as a convenient place for refuse disposal for Slater's Addition residents.

Previous archaeological research has documented that the process of ad hoc refuse disposal into the lake has left a residue of artifacts associated with the early development of Sacramento neighborhoods and with working-class and immigrant life in 19th- and early-20th-century Sacramento. These kinds of features and their contents may have significance stemming from their research potential. Most significantly, it is likely that the wet conditions of the lake setting would have preserved perishable items—such as cloth, leather, basketry, seeds, and wood—that only rarely survive on non-waterlogged sites. Such materials would have great interpretive and research potential, and may constitute historical resources.

#### Domestic and Religious Architecture

These are the architectural remains of religious buildings, residences, and domestic outbuildings. For substantial brick and wood buildings, the remains would take the form of footings. Many smaller

wooden buildings would leave few remains except, perhaps, for pilings that supported the building on soft ground or along the edge of the lake.

The remains of buildings whose characteristics are known from the historic record would generally not be considered important. The surviving portion of a stilt house, however, would likely qualify as a historical resource for the purposes of CEQA because of its rarity.

Two Chinese religious buildings were within the Railyards area. One was a "Joss House" in Slater's Addition and the other was recorded as a "Chinese chapel," located on the eastern edge of Sutter Lake at the northwest corner of 6th and H streets. Architectural remains from these buildings may constitute historical resources.

There is also the possibility of at least one Chinese cemetery on the margins of Sutter Lake; historical research has neither confirmed nor conclusively refuted the existence of these sites. If there are cemeteries, they may be associated with the Chinese religious buildings.

### Industrial and Commercial Architecture

This type consists of the archaeological remains of buildings and structures that housed the various industrial elements that were part of the Railyards operations; other, smaller enterprises along the riverfront, in the Slater's Addition, and in the 6th and 7th Street neighborhoods may also have left remains. Potential archaeological remains in these areas include those related to the Pioneer/Sperry grain mill and warehouse, and the Sacramento Gas Works along the riverfront; at least one grocery store in Slater's Addition; and the Sacramento Packing and Drying Company (later the California Fruit Cannery Association Factory No. 12) on Block FG67.

The bulk of the industrial architecture archaeological resources within the Railyards are obviously the remains of buildings and structures associated with the functioning of the Railyards themselves. These include manufacturing facilities, such as the General Foundry, and the earlier and later Brass Foundry and Spring Shops; support facilities, such as the Pattern Storage building; and the Scrap Dock.

The status of this type of resource hinges on the degree to which the architectural details of the buildings are a matter of record and the degree to which the archaeological remains can provide information on the processes and work that took place within the building. The operations, processes, and techniques of the Pattern Storage Building and the Scrap Dock are unlikely to have left remains that would be archaeologically informative. Operations such as the roundhouse, foundries, grain mills, or Gas Works have the potential to yield important technological information. If the remains can yield important, previously undocumented information, they may constitute historical resources.

### Industrial Features

This term refers to the remains of industrial processes themselves, as distinct from the buildings in which these processes were housed. The range of industrial processes carried out within the Railyards site has not been fully defined but was clearly considerable. Some processes, such as those within the foundries, are likely to have created archaeological features, while others, such as sorting scrap, could have been carried out for many years and yet have left little or no evidence.

The foundry buildings—such as the General Foundry along 6th Street, the Brass Foundries, and the Steel Foundry in the Scrap Dock area—are likely to have left industrial features. The Scrap Docks proper, on the other hand, would leave little in the way of significant industrial features. Outside of

the Railyards operations, the Pioneer Flour Mill, the Sacramento Packing and Drying Company, and City Gas Works properties have the potential for industrial features.

The significance of these types of deposits hinges on their potential to yield information about the processes that are represented that are not available from other sources. To the degree to which a particular process is not reliably documented, these archaeological features may be important as the only surviving source of information.

#### Isolated Industrial Artifacts

The process of filling Sutter Lake, the old American River channel slough, and the low-lying land to the north continued for over 40 years. During this period, sweepings and refuse from the Shops were dumped into both bodies of water, with Sutter Lake apparently receiving parts of old locomotives and obsolete railroad equipment.

Individual pieces of equipment may constitute historical resources if they are rare, represent undocumented forms, or can provide information on undocumented railyard processes. Some of these items may also have interpretive value.

#### Flood Control and Land Reclamation Features

The topography of the current project area is the product of land reclamation and early efforts to control flooding from Sutter Lake and the American River. Some areas of fill along the edges of Sutter Lake and the American River channel slough may be significant in that they contain industrial artifacts and diffuse domestic deposits or may seal environmental remains. However, 19th- and 20th-century fill is generally not in itself a significant archaeological resource.

Levees may constitute historical resources on two counts: they were instrumental in the establishment of the site of Sacramento and they can provide information on the engineering of flood control programs in Sacramento.

#### Environmental Remains

Sutter Lake was one of many oxbow lakes attached to the Sacramento River. Seasonally flooding lakes such as this are important sources of information about long-term vegetative change because they are sediment traps for pollen, phytoliths, and plant macrofossils. These remains are trapped in anaerobic conditions that are ideal for preservation. Sutter and Willow lakes are highly unusual contexts because of their geographic location close to a population center that was occupied from the beginning of the American period.

The environmental record in the lake sediments could be a unique source of information to expand the poorly known spectrum of pre-contact vegetation in the Great Valley. In addition, the data could help to chart the dramatic vegetation change that occurred in the mid-19th century as native species were replaced by exotics. These materials could have considerable research potential, and may constitute historical resources.

#### Prehistoric Archaeological Sensitivity

Research for this EIR shows that there is a high potential that the study area contains important prehistoric remains. Ethnographic sources reviewed by Brienens, West & Schulz<sup>25</sup> and archaeological site records consulted during the record search phase indicate that previously recorded prehistoric sites to the south of the American River in the area of downtown Sacramento are restricted to topographic rises. The discovery of a site at H and 6th streets found by Tremaine &

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25 Brienens, West & Schulz, 1981.

Associates in 2005 indicates that the adjacent portion of the Depot District has a high sensitivity for prehistoric archaeology. This is in the vicinity of the former northeastern shore of Sutter Lake, which would have been one such area of relatively high ground. In the southwestern portion of the study area, the original Slater's Addition, now comprising parts of the proposed Depot, Central Shops, Riverfront, and West End, was originally another area of elevated topography. Accordingly, sensitivity for prehistoric archaeological resources there is also high. The East End District has moderate sensitivity for prehistoric archaeological resources due to the location of Willow Lake. Therefore, there could be localized areas of prehistoric occupation.

### **Historical Archaeological Sensitivity**

Research to date indicates that the entire Railyard area has the potential to contain important historical archaeological deposits. The areas of highest archaeological sensitivity are:

- **The Depot District.** This district has high historic-period archaeological sensitivity. This was the location of residential neighborhoods around Sutter Lake, (including the Chinese neighborhood along I Street, the promontory, and 7<sup>th</sup> Street), the early levee, possible wharfs, and a large portion of Sutter Lake itself. Potential archaeological resources include the early docks and levee; deposits and features associated with the residential neighborhoods, and artifacts within Sutter Lake. The latter may contain remains associated with the Chinese neighborhood and other occupants, unique artifacts from the railyard operations, as well as historic environmental information. The west end of the Depot District may also have been the location of the 1850s flood control sluice gate.
- **The Central Shops District.** This district has high historic-period archaeological sensitivity. This was the historical core of SP's Sacramento Railyards, and may contain features and deposits associated with the early operation of the railyard. It also contains portions of Sutter Lake and the island. The location may contain unique artifacts within the lake, material from the residential occupation of the promontory, as well as historic environmental information.
- **The Riverfront District.** This district has high historic-period archaeological sensitivity. This district may include deposits and features associated with the small residential neighborhood in West End, and also with the railyard. The south end of the district may also contain remnants of the early flood control sluice gate. In addition to railyard industrial facilities, this district also contains remains associated with the Sacramento Gas Works<sup>26</sup> and the Pioneer/Sperry grain mill and warehouse.<sup>27</sup>
- **West End.** This district has high to moderate historic-period archaeological sensitivity. The western edge of this district was probably the location of a small residential neighborhood, presumably housing for railyard workers. It was also the location of railyard industrial buildings. Potential archaeological resources include deposits and features associated with the residential neighborhood, and the industrial features and deposits associated with the railyard. Other potential resources include Willow Lake, which may contain unique artifacts from the early railyard and historic environmental information. There are numerous structures and buildings associated with the functioning of the railyard throughout these areas.
- **East End.** This district has low archaeological sensitivity for historical archaeological resources. This was low-lying land and was used primarily for track after it was filled by the railroad. As with the West End, potential archaeological resources include deposits and features associated with the residential neighborhood. Other potential resources include

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26 Gross 2003.

27 Allen 2002.

Willow Lake, which may contain unique artifacts from the early railyard and historic environmental information.

## **Historic Resource Descriptions**

### Central Shops

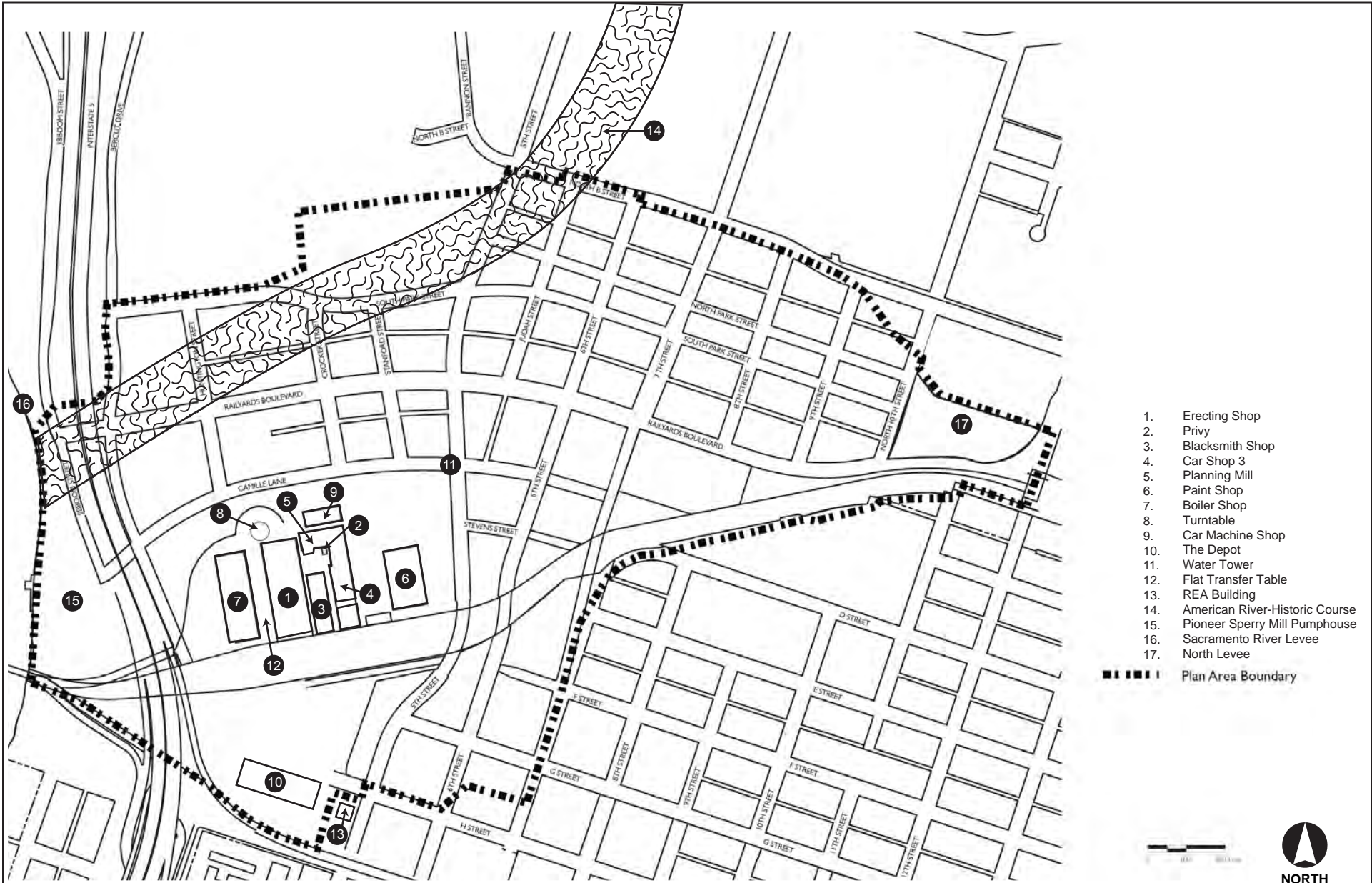
The Central Shops includes the former shop buildings and remaining railyard facilities extant in the 244-acre Railyards Plan Area. These buildings formed the nucleus of the Railyards operations and contain the first permanent buildings that were constructed here in 1867. The buildings and structures were previously inventoried and evaluated for their historical significance, and identified as an eligible Historic District. This Historic District is therefore a historical resource for the purposes of CEQA compliance. The buildings and structures in the Historic District have also been the subject of intensive recordation and assessment. These buildings and structures, and the Historic District as a whole, have been referred to in several ways. Sometimes they are named using variations of their historic reference, such as the Central Pacific Railroad and Southern Pacific Railroad Shops or the Southern Pacific Company Sacramento Shops. The buildings and structures that comprise the Historic District are also more generally referred to as the Central Shops in the Specific Plan Area. It is important to distinguish between the Railyards planning district called the Central Shops and the Historic District in the Central Shops, the boundaries of which have not previously been clearly defined. Figure 6.3-2 shows the Historic District as it is defined by the Specific Plan.

The following buildings and structures are located within this Central Shops Historic District: Paint Shop, Car Machine Shop, Planing Mill, Privy, Car Shop No. 3, Blacksmith Shop, Erecting Shop, Boiler Shop, Turntable, and Flat Transfer Table. The character defining exterior features are listed below, based on report prepared by Architectural Resources Group (ARG) in 2006:

#### *Car Machine Shop*

- Free-standing building with four principal elevations
- Gabled roof form with gabled clerestory running length of the ridge line
- Masonry wall structure, common bond brick, with articulated brick piers
- Arched door and window openings
- Brick sills
- Wood-framed, multi-lite, sash windows, operable on second story
- Wood door, hardware and strap hinges (south elevations)
- Corrugated metal roof
- Roof vents, conical caps
- Tracks
- Vent grilles
- Cast iron tie ends, anchors and anchor plates, and bolts
- Remnant cast iron hardware, pintles (upright pivot hinge), other hinges and hooks
- Attached ladder
- Gabled wood bridge connection to Planing Mill
- Planning Mill





- 1. Erecting Shop
  - 2. Privy
  - 3. Blacksmith Shop
  - 4. Car Shop 3
  - 5. Planning Mill
  - 6. Paint Shop
  - 7. Boiler Shop
  - 8. Turntable
  - 9. Car Machine Shop
  - 10. The Depot
  - 11. Water Tower
  - 12. Flat Transfer Table
  - 13. REA Building
  - 14. American River-Historic Course
  - 15. Pioneer Sperry Mill Pumphouse
  - 16. Sacramento River Levee
  - 17. North Levee
- Plan Area Boundary

Source: PBS&J/EIP, 2007.

**FIGURE 6.3-2**  
**Historic Resources**





*Free-standing building*

- Gabled roof form with gabled clerestory running length of the ridge line
- Masonry wall structure, common bond brick, with articulated brick piers
- Arched door and window openings
- Corbelled brick arches over door and window openings
- Brick sills
- Wood-framed, multi-lite, sash windows, with fixed upper sash, operable lower sash, on first story
- Wood-framed, multi-lite, sash windows, operable on second story
- Corrugated metal roof
- Roof vents, conical
- Tracks
- Vent grilles
- Cast iron tie ends, anchors and anchor plates, and bolts
- Remnant cast iron hardware, pintles (upright pivot hinge), other hinges and hooks
- Attached ladder
- Gabled wood bridge connection to Car Machine Shop

*Privy*

- Free-standing building with four symmetrical elevations
- Gabled roof form
- Boxed metal eaves
- Masonry wall structure, common bond brick, with articulated brick piers
- Stucco finish
- Corbelled brickwork at cornice
- Arched door and window openings
- Recessed door and window openings
- Projecting sills
- Wood-framed, multi-lite, sash windows, operable
- Connection to Planing Mill, wood-framed decking
- Louvered vents in gable ends
- Cast iron tie ends, bolts

*Car Shop No. 3*

- Double clerestory with low-pitched gabled roof and parapet
- Lower level masonry wall structure, common bond brick, with articulated brick piers

- Arched door and window openings
- Tower, hipped (pyramidal) roof, with corrugated sheet metal siding
- Wood “keystones” with painted numbers at each bay
- Corbelled brick arches over door openings
- Brick sills (west elevation)
- Narrow lancet windows
- Protective cast iron plates over sills
- Wood-framed, multi-lite, sash windows, two-over-two, double-hung
- Wood-framed, multi-lite, clerestory windows
- Wood sash windows, multi-lite (west elevation)
- Wood doors, large, squared openings, with diagonal construction and inset doors (west elevation)
- Concrete lintels (west elevation)
- Corrugated metal roof and wall sheathing at elevator tower
- Roof vents, conical caps
- Exterior metal wall sheathing at second floor
- Projecting fire walls, brick
- Freestanding, gabled south wall, brick, with ghosted features and infilled arched door and window openings
- Suspended, gravity-operated steel fire doors (south elevation)
- Tracks
- Attached ladder
- Cast iron tie ends, anchors and anchor plates, and bolts
- Remnant cast iron hardware, pintels (upright pivot hinge), other hinges and hooks

#### *Blacksmith Shop*

- Concrete walls with articulated piers, formwork markings
- Steel industrial sash windows, multi-lite, with horizontal pivot, operable
- Concrete sills
- Gabled roof with gabled clerestory
- Corrugated metal siding in gabled end
- Roof vents, conical
- Original door, wood, hardware and strap hinges
- Roof vents
- Attached ladder

- Remnant signage

#### *Paint Shop*

- Free-standing building with four principal elevations
- Masonry wall structure, common bond brick, with articulated brick piers
- Arched door and window openings
- Arched original door with hardware and strap hinge (west elevation, southernmost bay)
- Corbelled brick arches over door and window openings
- “Keystones” with painted numbers at each bay
- Brick sills
- Roof, multi-planed, gabled hipped and flat
- Wood-framed, multi-lite, sash windows
- Vent grilles
- Cast iron tie ends, anchors and anchor plates, and bolts
- Remnant cast iron hardware, pintles (upright pivot hinge), hinges/hooks
- Tracks

#### Sacramento Depot

The facility that now houses Sacramento’s Amtrak train station, located at 401 I Street, was listed in the NRHP as the “Southern Pacific Railroad Company’s Sacramento Depot” in 1975. The Southern Pacific Railroad completed the Sacramento Depot in 1926. The San Francisco architectural firm of Bliss and Faville designed the building, and Davison and Nichol森 of San Francisco were the general contractors. The property is significant under NRHP Criterion A for its role in the development of Sacramento and under NRHP Criterion C for its architectural design. The contributing features of the Sacramento Depot include the train station building and the Railway Express Agency (REA) Building situated on the east side of the station, determined eligible for listing in the NRHP as part of the Sacramento Depot in 1994. The REA Building is located outside the boundaries of the Specific Plan Area and would not be directly impacted by the project. However, this property, including both the station and REA Building, is listed on the National and Sacramento Register and alteration of the Depot could affect the eligibility of the REA.

The railroad station is comprised of a rectangular, 370 foot by 125 foot, three story central block with a hipped/flat tile roof, flanked on either side by shorter flat roofed wings. The building’s structural steel framework is faced with brick, trimmed with architectural terra cotta. The eclectic style building combines Mediterranean architectural influences and Renaissance Revival forms with Classical and Romanesque ornament. Tall arched openings with corbelled keystones, a projecting belt cornice above a course of stylize arched corbels, and applied pilasters decorate the central block. Flanking wings contain rectangular, multi-pane steel sash windows with keystones and brick patterned surrounds, and a parapet with balustrade inserts. An extension of the main block stands at the rear and replicates the height and roof treatment of the wings. The building has a small one story brick addition, a metal shed, and canopies. Its interior includes a mural by John A. MacQuarrie depicting the 1863 Sacramento ground-breaking for the first transcontinental railroad.

Several other structures and features are located on this property, some of which are considered eligible as contributing elements of the NRHP listed property. These include the platforms and

platform amenities located north of the station building, along with the newly completed Sacramento Regional Transit Light Rail line and station that is parallel to, and south of, older platforms. There is also a steel frame shelter structure adjacent to the west end of the station that covers the bus station at the Sacramento Depot. In addition, there are parking lots to the west and south of the station building and iron fences surrounding portions of the property.

The platform amenities include the umbrella (or butterfly) sheds, passenger subway ramps with iron railings/fences, and passenger subway connecting the platforms with the station. These structures are original to the Sacramento Depot and were determined to be contributing elements to the Sacramento Depot property as part of the Section 106 review for the Sacramento Light Rail extension project.<sup>28</sup>

There are two sets of umbrella sheds, or canopies that extend approximately 1000 feet along the train platforms. They are built mostly with single steel beam posts and tapered steel beams that cantilever out to carry the roof of the passenger waiting structures. The roofs are formed with two-part wooden slats. There are two steel beam posts with additional roof coverage near the openings from the subway ramps. Three of the four cantilevered roofs were cut-off during the mid-twentieth century. The four subway ramps sit beneath the umbrella sheds and each has an iron railing/fence at the subterranean opening. The railings sit on a concrete base and are decorated with a circular pattern in the upper balustrade and orbs on the posts. The concrete tunnel connecting the platforms with the station is approximately 25 feet wide and 118 feet long. It is lined with recessed panel walls and has contemporary florescent lighting. The underground subway was built to provide passengers' shelter from the train to the main terminal and was designed to separate incoming and outgoing pedestrian traffic. The Sacramento Depot originally had three platforms with one sitting approximately where the light rail line runs parallel to the Amtrak/UPRR trains. When JRP recorded the platform amenities in 1998 this third platform and its umbrella sheds had been removed, leaving only the railings for the subway ramps, which had been in-filled. The third set of railings were considered non-contributing elements of the Sacramento Depot property because they lacked sufficient historic integrity to convey their significance.

To summarize, the contributing features of the Sacramento Depot are the station building, the REA Building, and the platform amenities, including the platforms, umbrella sheds, subway entrance ramps with iron railings, and the subway linking the terminal with the platforms. Fencing along portions of the Sacramento Depot property, such as the fence near the I-5 onramp, is similar to the railing/fences that surround the pedestrian ramps at the platforms which are considered contributing elements of the property. Fencing that matches the railings at the pedestrian ramps found elsewhere on the property would likely also be considered to be contributing to the property, although additional research may be required to assess whether such fencing has been moved from its original location. Portions of the decorative railing were stored at the west end station property. The light rail line, bus station, parking lots, and contemporary fencing, signage, and hardscape features (including street furniture) are non-contributing features to the Sacramento Depot.

The Sacramento Intermodal Transportation Facility (SITF) would develop an intermodal facility within the approximately 15-acre Transit Use designation of the proposed Specific Plan, which includes the Sacramento Depot, but not the REA building. The SITF is not part of the project analyzed in this EIR. Following consideration of the public's input and various alternatives, the Sacramento City

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28 David Byrd, State Historian II, OHP, personal communications with Christopher McMorris, JRP, July 13, 2007. Please note, OHP's Directory of Properties in the Historic Property Files for Sacramento County (August 8, 2005) lists the platforms amenities with a NRHP status code of 6Y, determined not eligible for listing in the NRHP through consensus determination in the Section 106 process. This status code appears to be an error in the OHP California Historical Resources Information System database. The concurrence letter regarding the eligibility of the platform amenities is available at OHP.

Council concluded that “Alternative B-Sacramento Northern” should be considered the preferred alternative. The “Sacramento Northern” alternative would relocate the historic Sacramento Depot approximately 400 feet north along the axis of 4th Street and integrate it into a new terminal building. This alignment would accommodate planned rail service growth and would improve rail operations. Despite the presence of the preferred alternative, no formal proposed project has been approved and no project level designs for SITF have been developed for use in environmental analysis. Many issues related to the technical and financial feasibility of this project remain. These issues, including impacts to historical resources, would need to be examined and a more detailed plan developed before a final determination of feasibility of any one alternative can be made.

### I Street Bridge

The I Street Bridge is a double-deck steel truss swing bridge over the Sacramento River. The I Street Bridge’s east side approach is carried on three bridges, none of which are contributing features of the National Register-listed I Street Bridge. Caltrans has assigned these approaches, plus the approach on the west end of the bridge, different bridge numbers than the historic I Street Bridge (Bridge 22C0153). The I Street Bridge itself is not located within the Specific Plan Area; however the Jibboom Street Overhead is located in the western portion of the Specific Plan Area.

The structure has three steel, rigid-connected truss spans: a Swing, through truss mainspan, 167 feet long, and two Warren deck truss secondary spans with vertical supports, each 110 feet long. It is a double-deck bridge, with a vehicle roadway on the upper deck and railroad tracks on the lower deck. The evaluation for the bridge concluded that it was eligible for listing in the NRHP under Criterion C as it embodied the distinctive characteristics of a type, period, and method of construction, including its design as a double-deck vehicle and railroad structure. Built in 1911 by the American Bridge Company, a significant bridge builder, the bridge is oldest of the remaining swing bridges in California and one of the existing three constructed by this builder.

Caltrans Architectural Historian John Snyder prepared the nomination form for the I Street Bridge’s listing in the NRHP in 1982, wherein he described the structure over the Sacramento River and the approaches to the bridge. The listing indicated that the approaches are not contributing elements of the historic I Street Bridge, stating that they diminish the historic integrity of the I Street Bridge. Paula Boghosian, of Historic Environmental Consultants, prepared a DPR 523 form of the I Street Bridge for the City of Sacramento’s historic resources survey in 1998. The form did not clarify whether the approaches to the I Street Bridge were contributing or non-contributing elements to the NRHP listed structure.

Caltrans Architectural Historian Andrew Hope re-evaluated the approach structures for the I Street Bridge as part of Caltrans’ state-wide historic bridge inventory update. The I Street bridge east side approach structures are:

- The Jibboom Street Overhead (Bridge 24C0006), built in 1937, carries Jibboom Street on a steel girder viaduct structure from grade on the north, running parallel to the river, and merging with the I Street Viaduct just east of the I Street Bridge. It is not a contributing element to the NRHP listed I Street Bridge.
- The I Street Viaduct (Bridge 24C0364L), built in 1936, carries west bound I Street traffic on a steel girder structure from grade near the Sacramento Depot parking lot west to the I Street Bridge. It is not a contributing element to the NRHP listed I Street Bridge.
- The J Street Viaduct (Bridge 24C0364R), built in 1969, carries east bound traffic off the I Street Bridge on a concrete box girder structure down to J Street. This structure is completely located between the I Street Bridge and I-5. It is not a contributing element to the NRHP listed I Street Bridge.

## Other Resources

Several other built environment resources are located in the study area for the Specific Plan Area. They are the remnant portion of the Pioneer/Sperry Grain Mill adjacent to the Sacramento River, route of the first transcontinental railroad, and levees.

### *Pioneer/Sperry Grain Mill (remnant)*

A remnant portion of the former Pioneer/Sperry mill and warehouse is located west of the Jibboom Street Viaduct adjacent to the Sacramento River. The remaining building on this property was once part of a much larger building. The extant building may have housed the mill's pump house. It has also been suggested that while the building was surrounded by the Pioneer Mill that it was actually owned by Southern Pacific and supplied water to the Shop buildings.<sup>29</sup> The State of California Department of Parks and Recreation (DPR) owns this parcel, and although it is within the Specific Plan boundaries shown on some Railyards project maps and graphics as the project is currently proposed, would not affect this parcel.

The records search for this project did not provide any information on this property, and no previous surveys under which this building was inventoried and evaluated were identified.

### *First Transcontinental Railroad (route)*

California State Historic Landmark 780 celebrates the First Transcontinental Railroad, indicating where the Central Pacific Railroad began construction of the route in 1863. The landmark is located at the California State Railroad Museum in Old Sacramento, outside the Specific Plan Area boundaries. The route over the Sierra Nevada originally began by traversing the Railyards, passing in an arc to the north of where the roundhouse once stood and where the Car Machine Shop is located. It is unclear whether portions of the original structure are extant (on the surface) within the Railyards study area. Like many repair shops, Sacramento lost its Roundhouse (1959) to make way for new facilities supporting diesel repair. In 1960, Southern Pacific installed a new diesel engine disassembly and cleaning building in place of the Roundhouse.<sup>30</sup>

Various segments of the First Transcontinental Railroad route have been recorded, along with tunnels near Donner Pass in the Sierra Nevada. The records search conducted for the EIR identified several recorded points of the route of the First Transcontinental Railroad located east of the Railyards (CA-SAC-478-H), but no points in the Railyards were previously recorded. There is also a HAER recordation of the route that John Snyder (PS Preservation Services) prepared in 1997-1998 as HAER CA196, "Central Pacific Transcontinental Railroad (Southern Pacific Overland Route) (Southern Pacific Donner Pass Route)." This document focused on the recordation of route's tunnels near Donner Pass in the Sierra Nevada. Snyder noted that technological changes made to the railroad over time have left few extant remnant features along the route. He did not provide description or details of remaining elements that might be located in the Specific Plan Area.

### *Levees and Embankment*

There is a levee and an embankment in the Specific Plan Area that run along the Sacramento River and along the north edge of the project from a point east of I-5 to 12<sup>th</sup> Street. Historically, railroad track ran on top of much of this the north edge embankment. The only portion of the railroad track on the embankment is now to the east of where North 7<sup>th</sup> Street was built through the berm. It appears that neither the levee nor the embankment in the study area has been previously inventoried and evaluated as potential historical resources, although portions of the Sacramento

29 Kyle K. Wyatt, Curator of History and Technology, California State Railroad Museum, personal communication July 24, 2007.

30 Historic American Engineering Record Drawings CA-303; 2001, Sheet 4 of 22.

River levee were evaluated. The levees were not inventoried and evaluated during the 1990s surveys of the railyards property, prepared for the previous proposed development. The levee that runs along the northern boundary was also not evaluated during the project that extended 7th Street north through the eastern portion of the railyards.

JRP previously inventoried and evaluated a portion of the levee along the Sacramento River situated north of the Specific Plan Area, in the vicinity of the Sacramento Water Treatment Plant. The levee was recorded in 1998 (CA-SAC-463-H) as part of the project to construct the new intake tower for the Sacramento River Water Treatment Plant. Although levees along this portion of the Sacramento River were originally built in the 1860s, JRP identified that the levee by the water treatment plant effectively dated to the 1940s and was built as part of the US Army Corps of Engineers' (Corps) Sacramento River Flood Control Project. The Corps further upgraded the levee in 1956 as part of a levee improvement project associated with the Folsom Dam project of that period, which included improvements of levees along the Sacramento River from the junction with the American River south to the Tower Bridge. Although recognized for its potential historical association with early flood control in Sacramento, the levee did not appear to meet the criteria for listing in the NRHP because it lacked sufficient significance within its context and it did not retain historic integrity from its potential period of significance during the early twentieth century.

The levee on the western edge of the Specific Plan Area is immediately adjacent to the portion of levee that JRP evaluated in 1998. Thus, it is likely that this levee shares a similar history, particularly as it relates to the Sacramento River Flood Control Project and improvements that the Corps made to the levees in the vicinity. Therefore, for the purposes of this program-level analysis, JRP concludes that the Sacramento River levee in the Specific Plan Area is likely not a historical resource for the purposes of CEQA.

The Corps has recognized flood control project levees on the Sacramento River as eligible for listing in the NRHP in their recent emergency work to upgrade levees around the city. This conclusion was meant to facilitate the environmental process for the levee improvement projects, wherein SHPO accepts a presumed eligibility and reviews the potential effects that the project might have on the various project levees. It is understood that this presumed eligibility is only used for consideration under the emergency levee improvement projects. The Specific Plan Area, as it is currently proposed, would not impact the Sacramento River levee. Additional inventory and evaluation of this structure would be necessary if the Specific Plan Area were to potentially impact this resource.

The levee that runs along the north edge of the Specific Plan Area from I-5 to 12<sup>th</sup> Street appears to have been mostly constructed in the early twentieth century, prior to the late 1920s, although a portion of it may have its origins in the 1860s before the American River channel was moved northward. The railroad had built earlier levees on the north side of the railyards, constructed immediately north of the tracks adjacent to the roundhouse and adjacent buildings. It is likely that Southern Pacific built the berm at the north edge of the Specific Plan Area as a secondary protection measure in addition to the levees built along the American River by Reclamation District 1 in the 1910s.

## **REGULATORY SETTING**

Federal, state, and local governments have developed laws and regulations designed to protect significant cultural resources that may be affected by actions they undertake or regulate. The National Historic Preservation Act (NHPA) and CEQA are the basic federal and state laws governing the preservation of historic and archaeological resources of national, regional, state and/or local significance.

## Federal

Federal regulations for cultural resources are primarily governed by Section 106 of the NHPA of 1966, which applies to actions taken by federal agencies. The goal of the Section 106 review process is to offer a measure of protection to sites that are listed in or determined eligible for listing in the NRHP. The criteria for determining NRHP eligibility are found in 36 Code of Federal Regulations (CFR) Part 60. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and affords the federal Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. The Council's implementing regulations, "Protection of Historic Properties," are found in 36 CFR Part 800. The NRHP criteria (contained in 36 CFR 60.4) are used to evaluate resources when complying with NHPA Section 106. Those criteria state that eligible resources comprise districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

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

Archaeological site evaluation assesses the potential of each site to meet one or more of the criteria for NRHP eligibility based upon visual surface and subsurface evidence (if available) at each site location, information gathered during the literature and records searches, and the researcher's knowledge of and familiarity with the historic or prehistoric context associated with each site.

The American Indian Religious Freedom Act, Title 42 United States Code, Section 1996, protects Native American religious practices, ethnic heritage sites, and land uses.

## State

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to Public Resources Code, Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment."

"Historical resource" is a term with a defined statutory meaning (see Public Resources Code, Section 21084.1 and CEQA Guidelines Section 15064.5 (a) and (b)). The term embraces any resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest. A project is deemed to have a significant effect on the environment if it would cause a substantial adverse change in the significance of an historical resource (CEQA Section 15064.5 (b)). A substantial adverse change with regards to an historical resource is defined under CEQA as "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Section 15064.5 (b)(1)). CEQA Guidelines Section 15064.5 (b) (2) provides further detail regarding substantial adverse change.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources



inventory may be eligible for listing in the CRHR and are presumed to be “historical resources” for the purposes of CEQA unless a preponderance of evidence indicates otherwise (Public Resources Code, Section 5024.1; California Code of Regulations, Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project’s impacts on historical resources (Public Resources Code, Section 21084.1; CEQA Guidelines, Section 15064.5 (a)(3)). In general, an historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

- a) is historically or archeologically significant; or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political or cultural annals of California; and
- b) meets any of the following criteria:
  1. is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
  2. is associated with the lives of persons important in our past;
  3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
  4. has yielded, or may be likely to yield, information important in prehistory or history.

CEQA Guidelines Section 15064.5 (b) (3) indicates that a project that follows the Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995), shall mitigate impacts to a level of less than significant. Potential eligibility also rests upon the integrity of the resource. Integrity is defined as the retention of the resource’s physical identity that existed during its period of significance. Integrity is determined through considering the setting, design, workmanship, materials, location, feeling, and association of the resource.

As noted above, CEQA also requires lead agencies to consider whether projects would impact “unique archaeological resources.” Public Resources Code, Section 21083.2 (g) states that “unique archaeological resource” means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person” (Public Resources Code, Section 21083.2 (g)).

Treatment options under Section 21083.2 of the Public Resources Code include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and

curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a “unique archaeological resource”).

Advice on procedures to identify cultural resources, evaluate their importance, and estimate potential effects is given in several agency publications, such as the series produced by the Governor’s Office of Planning and Research (OPR). The technical advice series produced by OPR strongly recommends that Native American concerns and the concerns of other interested persons and corporate entities, including but not limited to, museums, historical commissions, associations and societies, be solicited as part of the process of cultural resources inventory. In addition, California law protects Native American burials, skeletal remains, and associated grave goods regardless of their antiquity and provides for the sensitive treatment and disposition of those remains.

Section 7050.5 (b) of the California Health and Safety code specifies protocol when human remains are discovered. The code states:

In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.

CEQA Guidelines Section 15064.5 (e) requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency is required to consult with the appropriate Native Americans as identified by the NAHC and directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

## Local

### City of Sacramento

#### *City of Sacramento General Plan*

The City of Sacramento General Plan contains the following goal and policy that pertains to the protection and management of archeological resources. The City of Sacramento is currently in the process of updating the 1988 General Plan.

**Goal D: Work with the County of Sacramento to identify, protect, and enhance physical features and settings that are unique to the area to the maximum extent feasible.**

#### Policy

2. Work with all interested parties to protect ancient burial grounds threatened by development activity and preserve their artifacts, either on-site or at a suitable relocation, to the extent feasible. Ancient Indian tribes used various locations within the City limits and influence area for burial grounds. These burial grounds are a unique heritage. When threatened by development, these sites should evaluate for their content and uniqueness. The sites should either be preserved or their contents removed and preserved at a new location depending upon an analysis of the site and the development factors involved.

### *Preservation Element*

The City of Sacramento adopted a Preservation Element into its General Plan on April 25, 2000. The City's overall preservation objectives are to identify, protect, and encourage preservation of Sacramento's historic and cultural resources throughout the city. The Preservation Element establishes the policy framework to guide the City's achievement of its preservation objectives. The following goal and policies of the Preservation Element apply to the proposed project:

**Goal B: To protect and preserve important historic and cultural resources that serve as significant, visible reminders of the City's social and architectural history.**

#### *Policies*

- A.6. The City shall encourage preservation of historic and cultural resources to promote sustainability of its neighborhoods.
- B.3. The City shall establish and maintain preservation areas [historic districts] to provide for the preservation and restoration of those areas that are of historic, cultural, or architectural significance.
- F.1. The City shall pursue and support the use of appropriate federal, state, local, and private grants, loans, and tax credits and relief to promote historic preservation.

### *Historic Preservation Ordinance*

The City of Sacramento's historic preservation program began in 1975 with the enactment of the City's first Historic Preservation Ordinance. The current Historic Preservation Ordinance (No. 2006-063) was enacted in October 2006. The purpose of the Historic Preservation Ordinance is to identify, protect, and encourage the preservation of significant resources; maintain an inventory and ensure the preservation of these resources; encourage maintenance and rehabilitation of the resources; encourage retention, preservation, and re-use of the resources; safeguard City resources; provide consistency with state and federal regulations; protect and enhance the City's attraction to tourists; foster civic pride in the City's resources; and encourage new development to be aesthetically compatible.

### *Preservation Commission*

The Historic Preservation Ordinance establishes a Preservation Commission. The Preservation Commission's primary responsibility is to develop and recommend to the City Council preservation policies appropriate for inclusion in the General Plan and other regulatory plans and programs of the City and to provide oversight relative to the maintenance and integrity of the Sacramento Register of Historical and Cultural Resources. The Preservation Commission reviews, nominates, and makes recommendations to the City Council on properties eligible for listing in the Sacramento Register as landmarks, Historic Districts, and contributing resources as set forth in City Code Chapter 17.134, Historic Preservation.

### *Sacramento Register*

The City Code provides for the compilation of Landmarks, Contributing Resources, and Historic Districts into the Sacramento Register of Historic and Cultural Resources (Sacramento Register). The Sacramento Register includes all listed or surveyed historic resources in the City of Sacramento. This includes a listing of all individually designated City Landmarks and all of the City designated Historic Districts. The Sacramento Register also includes listings or maps of the properties within two of the City's Special Planning Districts that have been afforded preservation protection by ordinance. Also included are all the properties within the City that are currently listed in the NRHP and the CRHR and properties listed in the State of California's Historical Properties Directory.

The following are the criteria for listing on the Sacramento Register (17.134.170(A)(1)):

- i. It is associated with events that have made a significant contribution to the broad patterns of the history of the city, region, state, or nation;
- ii. It is associated with the lives of persons significant in the city's past;
- iii. It embodies the distinctive characteristics of a type, period or method of construction;
- iv. It represents the work of an important creative individual or master;
- v. It possess high artistic values; or
- vi. It has yielded, or may be likely to yield, information important in the prehistory or history of the city, the region, the state, or the nation.

There are five additional factors to be considered during the nomination process. These factors, as stated in the Historic Preservation code (17.134.170 A.2), are:

- a) A structure removed from its original location is eligible if it is significant primarily for its architectural value or it is the most important surviving structure associated with a historic person or event.
- b) A birthplace or grave is eligible if it is that of a historical figure of outstanding importance and there is no other appropriate site or structure directly associated with his or her productive life.
- c) A reconstructed building is eligible if the reconstruction is historically accurate, if the structure is presented in a dignified manner as part of a restoration master plan; and if no other original structure survives that has the same association.
- d) Properties that are primarily commemorative in intent are eligible if design, age, tradition or symbolic value invests such properties with their own historical significance.
- e) Properties achieving significance within the past fifty (50) years are eligible if such properties are of exceptional importance.

### **Native American Consultation and SB 18 Compliance**

Native American consultation conducted for the proposed project included requests for information regarding Native American cultural resources within the study area or adjacent lands from local representatives of local tribes identified by the Native American Heritage Commission (NAHC). Native American consultation also included a request to the NAHC to search its Sacred Lands files for the presence of Native American cultural properties within or near the study area. No responses from tribal representatives have been received to date, and the Sacred Lands files search revealed no listings for the study area or vicinity.

Because the proposed project would result in a Specific Plan and amendments to the Sacramento General Plan, including amendments to the General Plan Land Use Diagram and policies, the project is required to comply with Senate Bill (SB) 18 (Government Code sections 65352.3, 65352.4) which requires that, prior to the adoption or amendment of a specific plan or general plan proposed on or after March 1, 2005, a city or county must consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects located within that jurisdiction. Accordingly, the City of Sacramento Planning Department has initiated tribal consultation in accordance with the State Of California Tribal Consultation Guidelines.<sup>31</sup>

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31 State Of California, *Tribal Consultation Guidelines: Supplement to General Plan Guidelines*, Governor's Office of Planning and Research, November 14, 2005.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

According to federal guidelines, archaeological sites in urban areas “are likely to be more or less invisible, buried under modern created land surfaces.” The identification of archaeological sites “consists of field checking predictions made on the basis of archival research”.<sup>32</sup> Because the Specific Plan Area is almost entirely covered by buildings and fill, predictions of the location, nature, and significance of archaeological resources have been made on the basis of the archival record and previous experience with similar deposits in Sacramento and other urban settings.<sup>33</sup>

ASC developed preliminary research issues for prehistoric and historic archaeological resources to aid in assessing the research potential and hence the significance of the resources. A detailed discussion of their methodology is contained in their report which is included as Appendix G of this EIR.

Historical archaeological sensitivity was assessed in three stages:

1. Prediction of potential archaeological resources based on review of previous work, primary and secondary historical sources, and modern geologic and soil maps;
2. Development of a preliminary research framework to aid in assessing the significance of the predicted archaeological resources;
3. Designation of ASAs--areas that likely contain significant archaeological resources.

The built environment in the study area has been previously inventoried and evaluated in multiple studies. PBS&J/EIP, and JRP collected information regarding historic architectural/built environment resources in the study area, including previous inventory and evaluation reports, National Register nominations, conditions assessment reports, and Historic American Engineering Record (HAER) documentation of buildings on the property. The ASC at Sonoma State University conducted records searches at the North Central Information Center of the California Historical Resources Information System and shared the results of the records searches from 1999 and 2006 with JRP, as they pertained to historic architectural resources. No additional inventory and evaluation studies were required for the Specific Plan Area.

The proposed Specific Plan has the potential to cause a substantial adverse change to historical resources through alteration of those resources and their immediate surroundings. As described in Chapter 3, the Specific Plan Area is largely conceptual, with flexibility in how the goals of the Specific Plan are executed. The analysis in this section examines the impacts the proposed Specific Plan could have on historical resources.

### **Archives Consulted**

Historical research was conducted at the Sacramento Archives and Museum Collection Center (SAMCC), the Sacramento State Library, and the Sacramento Public Library. In addition a record search was carried out by the NCIC to identify previous archaeological research within the Initial Phase Area and the surrounding vicinity. The records search consisted of an examination of NCIC base maps (USGS 7.5-minute topographic maps) to identify recorded archaeological sites and

32 National Park Service, *Guidelines for Local Surveys, National Register Bulletin No. 24*, U.S. Department of the Interior, 1985, page 36).

33 Waghorn, Annita, Jack Meyer, and Grace Ziesing, with contributions by Mary Praetzellis and Adrian Praetzellis, *Archaeological Investigation Plan for the City Hall Expansion Project, Sacramento California*, Anthropological Studies Center, Sonoma State University, Rohnert Park, California.. Prepared for the City of Sacramento, 2002.

surveys within or near the Initial Phase Area and an examination of historic-period maps (*diseños*, General Land Office maps, and 19th- and early-20th-century USGS 15- and 7.5-minute topographic maps) to identify unrecorded historic-period buildings, structures, objects, and areas of archaeological sensitivity located within or near the Initial Phase Area.

### Previous Archaeological Work

The records search at NCIC revealed that no prehistoric archaeological sites have been recorded in the immediate Initial Phase Area. A prehistoric site was discovered, however, adjacent to the Initial Phase Area on the northwest corner of H and 6th streets. During construction monitoring of a light rail trackway along H Street, Tremaine and Associates, Inc. uncovered three burials, six cremations, and one housepit.<sup>34</sup> The site likely extends beneath H and 6th streets and into the current Initial Phase Area. Another site located several blocks to the southeast, prehistoric cemetery CA-SAC-38, was identified in and adjacent to Cesar Chavez Park, bounded by 9th, 10th, H, I, and J streets.

The archaeological potential of the Sacramento Railyards was studied by ASC in 1989<sup>35</sup> and 1990.<sup>36</sup> Although the senior author of that study surveyed the property and found no evidence of archaeological remains, the report noted that “the entire SP [Southern Pacific] Railyards property has the potential to contain important historic-period archaeological deposits and materials”.<sup>37</sup> These studies were done prior to the Federal Courthouse being constructed. An architectural inventory and evaluation of the Railyards was conducted by Historic Environment Consultants in 1998 and resulted in a proposed National Register district—the Shops Historic District—encompassing the Central Shops area.<sup>38</sup>

Additional studies have been conducted within or adjacent to the Initial Phase Area, including historical research and overviews, archaeological and architectural evaluations, intensive and reconnaissance project surveys, and construction monitoring.

Several historic-period archaeological resources have been excavated in the Initial Phase Area. In 2000 an archaeological survey and historic study report were prepared for the extension of 7<sup>th</sup> Street across the Railyards property,<sup>39</sup> which determined that the 7th Street Initial Phase Area may contain important historic-period archaeological deposits and materials. Tremaine and Associates, Inc., excavated within the 7th Street Initial Phase Area and uncovered remains of the 6<sup>th</sup> Street levee; two trestle bents from the earliest years of the railroad; a historic-period community refuse deposit with materials dating from the 1860s through the 1910s; and features representing water reclamation from the 1870s through the 1910s.<sup>40</sup>

34 Carper, Mark A., Letter Report for Archaeological Work Related to the West Side of the Union Pacific Railyard Stand-Pipe System Relocation. Tremaine & Associates, Inc., Dixon, California. Submitted to Ron Perkins, Sacramento Regional Transit District, 8 February 2006; Kim Tremaine, Principal Archaeologist, Tremaine & Associates, Inc., personal communication to Mark Walker, August 9, 2006.

35 Praetzellis, Adrian, and Mary Praetzellis, *The Archaeological Potential of the Sacramento Station Site, Sacramento, California*, Anthropological Studies Center, Sonoma State University, Rohnert Park, California. Prepared for AKT Development, Sacramento, 1989.

36 Praetzellis and Praetzellis, *Southern Pacific Railyards*, 1990; Praetzellis, Adrian, and Mary Praetzellis, *Preliminary Issues and Findings: Archaeology*, 1990.

37 Praetzellis and Praetzellis, *Preliminary Issues*, 1990, page 7.

38 Historic Environment Consultants, *Central Pacific/Southern Pacific Railroad Railyards: Historic Property Inventory and Evaluation Report*. Historic Environment Consultants, Carmichael, California. Prepared for Union Pacific Railroad Company, 1998.

39 Praetzellis, Adrian, Grace Ziesing, and Michael Newland, *Archaeological Survey Report and Historic Study Report for the 7th Street Extension Project, Sacramento, California*, Anthropological Studies Center, Sonoma State University, Rohnert Park California. Prepared for EIP Associates, Sacramento, 2000.

40 Tremaine, Kim J., and Wendy J. Nelson, Final Report of Archaeological Testing and Monitoring for the City of Sacramento’s 7th Street Extension Project, Sacramento, California. Tremaine & Associates, Dixon, California. Prepared for Nadar Kamal, Department of Public Works, City of Sacramento, 2006.

Tremaine and Associates, Inc. also conducted two archaeological investigations within the Railyards that uncovered several Chinese gaming pieces in an area concluded to be the tip of the former Slater's Addition promontory.<sup>41</sup> Debris associated with the filling of Sutter Lake (wood, brick, glass, and ferrous nodules) was also observed. A single prehistoric artifact, a basalt core, was uncovered approximately nine feet below the surface and it was concluded that the area was sensitive for additional prehistoric remains.

Additional historic-period resources in the current Initial Phase Area include the remains of the 1855–1878 Sacramento Gas Works, identified during archeological monitoring for the Sacramento Railyards 2003 soil remediation,<sup>42</sup> the partial remains of two circular brick structures (CA-SAC-689H) that historically supported gas storage tanks, coal slag, and glass and ceramic artifact fragments, the remains of 518 pilings (CA-SAC-658H) that once supported the wharf of the Pioneer Flour Mill,<sup>43</sup> three wooden platforms related to the former milling operation, the former site of Sutter Lake or China Slough (State Historic Landmark No. 594), and a segment of the route of the First Transcontinental Railroad (CA-SAC-478H).<sup>44</sup>

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project could cause a substantial change in the significance of an historical resource or archaeological resource as defined in CEQA Guidelines Section 15064.5; or
- The project could disturb any human remains, including those interred outside of formal cemeteries.

### **Project Components**

The proposed Specific Plan includes the designation of the Central Shops Historic District at the local level as well as the establishment of a Transition Zone around the Central Shops to ensure that new development surrounding the District would complement the historic buildings (see Figure 6.3-3). The Specific Plan contains the following goals policies related to cultural resources:

#### COMMUNITY CHARACTER

**Goal CC-2. Reinforce urban form and character and materials through the appropriate height in building and scaled transitions to surrounding areas.**

**Goal CC-3. Provide for the retention, public use and enjoyment of historic buildings and artifacts within the Plan Area.**

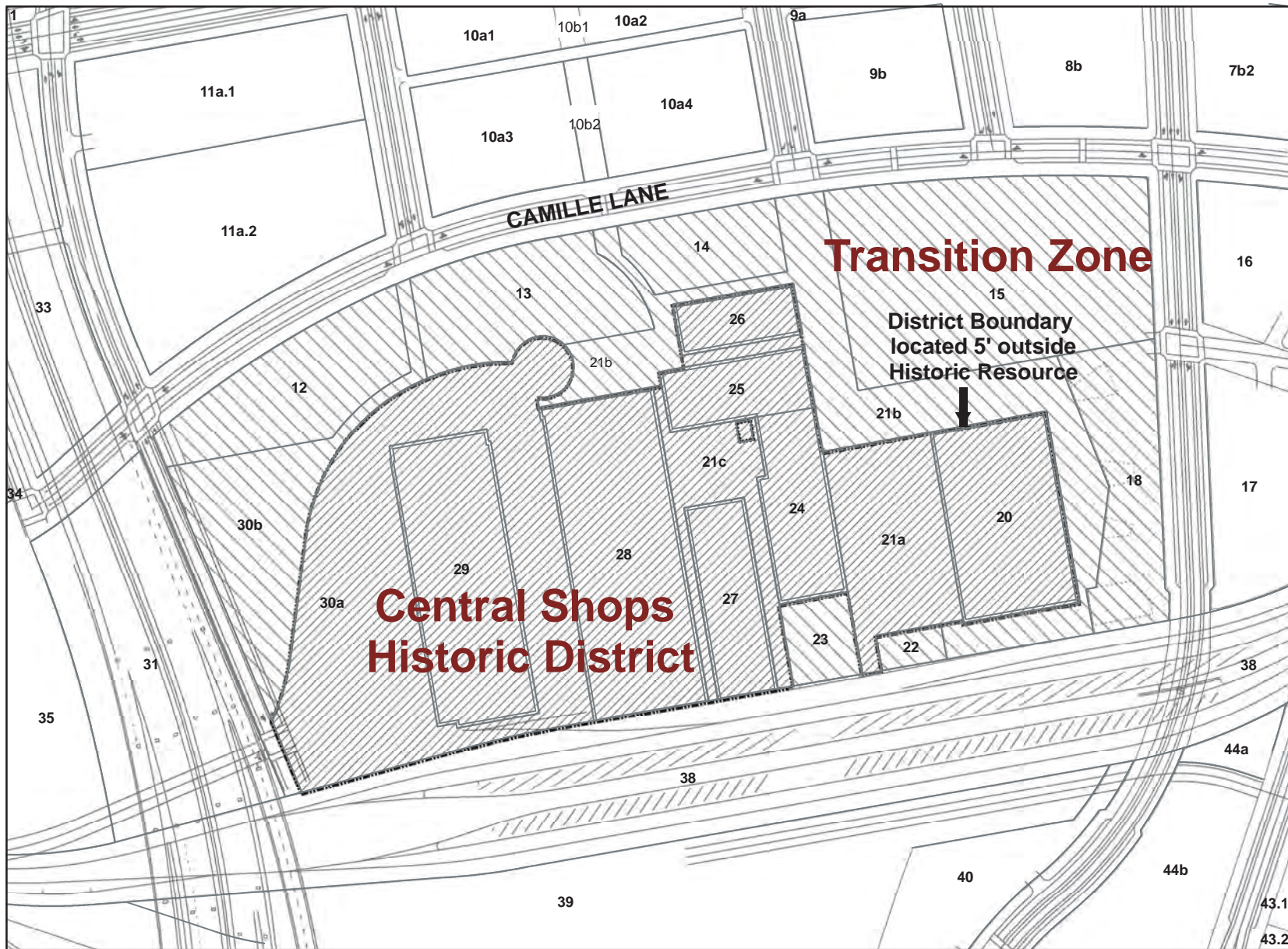
#### Policies

CC-2.1. Ensure that the form and massing of buildings contribute to the creation of a cohesive urban fabric that:

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- 41 Carper, Mark A., Letter Report for Archaeological Work Related to the West Side of the Union Pacific Railyard, Submitted to Ron Perkins, Sacramento Regional Transit District, Tremaine & Associates, Inc., Dixon California, 6 November 2005; Carper, letter report, 2006; Tremaine, personal communication, August 9, 2006.
- 42 Gross, C., *Site Record for CA-SAC-689*. On file, NCIC, Sacramento, 2003.
- 43 Allan, James M., *Site Record for CA-SAC-658H*, On file, NCIC, 2002.
- 44 Roard, Gabriel, and Maggie Craw, *Site Record for CA-SAC-478H*, On file, NCIC, 2001.







Source: Thomas Enterprises Inc.; NOLTE, 2007.



**FIGURE 6.3-3**  
**Specific Plan Historic District and Transition Zone**



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- Extends the pattern of downtown Sacramento
  - Complements the historic Central Shops and Depot complex
  - Transitions in scale to the surrounding residential areas
- CC-2.3. Ensure an appropriate scale transition to the Alkali Flat neighborhood.
- CC-2.4. Ensure that any new buildings in the Central Shops district or extensions to existing buildings in the district respect the scale, design, and character of existing historic structures.
- CC-2.5. Ensure an appropriate scale transition between the Central Shops and new districts adjacent to the Central Shops district.
- CC-3.1. Develop City regulations, within the Central Shops District, for the retention, rehabilitation, and adaptive reuse of the historic Central Shops structures and features, for the potential of future reconstruction of certain structures associated with the shops complex, in particular the roundhouse, and for appropriate design of new construction, consistent with the Historic Preservation Chapter, 17.134, of the Sacramento Municipal Code.
- CC-3.2. Allow a mixture of public-oriented, cultural, educational, entertainment and commercial-recreational uses that reinforce the Historic District as a regional and national destination, that promotes viable reuse of the historic structures, and which complements and builds upon the historic character of the complex.
- CC-3.3. Preserve and rehabilitate the Southern Pacific Sacramento Depot complex in a manner that will enhance its civic significance in the downtown and Railyards area, and in conformance with the City of Sacramento's SITF site plan, and consistent with its listing in the National, California and Sacramento Registers of Historical Resources.

#### HISTORIC RESOURCES

**Goal HR-1. Provide for the public use and enjoyment of historic buildings within the Plan Area.**

**Goal HR-2. Identify and protect archaeological resources that contribute to the understanding of the history and prehistory of the Railyards area.**

#### Policies

- HR-1.1. Allow a mixture of public-oriented, cultural and commercial-recreational uses that reinforce the Central Shops district as a regional destination, and that promote viable reuse of the historic structures.
- HR-1.2. Preserve historic structures within the historic core of the Central Shop.
- HR-1.3. Ensure that rehabilitation of buildings within the Central Shops complex conforms with standards for preservation of historic buildings set forth in Section 17.134 of the Sacramento Municipal Code.
- HR-1.4. Preserve and rehabilitate the Southern Pacific Depot complex in a manner that will enhance its civic significance in the downtown and Railyards area, and in conformance with the City of Sacramento's SITF site plan.
- HR-2.1. Develop and implement an observation and evaluation plan to identify and recover archaeological resources, if any, within areas of the site planned for excavation, grading and piling, prior to any excavation, grading or piling.
- HR-2.2. Incorporate and interpret artifacts that highlight the site's prehistory, history, and especially the historic role and significance of the Railyards.

The Railyards Design Guidelines provide a summary of the historic resources within the Specific Plan Area and guidance for their rehabilitation and adaptive reuse. All projects involving historic resources are to comply with the Secretary of Interior's Standards for the Treatment of Historic Properties and the City's Historic Preservation Chapter, 17.134, of the City Code.<sup>45</sup> The Design

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45 Design, Community & Environment, *Sacramento Railyards Design Guidelines Administrative Draft*, July 7, 2007, page 5-2.

Guidelines identify the Erecting Shop, Masonry Water Closet (i.e. Privy), Blacksmiths Shop, Car Shop 3, Planing Mill, Paint Shop, Boiler Shop, Turntable, Car Machine Shop, and the Depot as historic resources within the Specific Plan Area. Two goals in the Specific Plan concern historic resources; one deals with the adaptive reuse of historic resources and the other deals with the scale, massing, and character of new construction near historic resources. Two special districts are designated; the Central Shops Historic Preservation District and the Central Shops Historic Transition Zone (see Figure 6.3-2). A separate set of guidelines has been established for the Depot. While the REA Building is outside of the Specific Plan Area it is also discussed in terms of appropriate new development adjacent to the building that would occur within the Specific Plan Area.

The following standards for preservation<sup>46</sup> of the Central Shops are identified in the Design Guidelines:

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.
2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historical materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

In addition, the following guidelines are provided for new development in the Transition Zone. These guidelines are designed to complement the Central Shops Historic District.

- New neighboring buildings should respect the fabric of historic buildings by setting back a minimum of 20 feet.
- The height of historic buildings should be considered and respected by setting neighboring buildings height at the same level or by establishing an upper floor setback.
- The massing of neighboring buildings should be compatible with the scale of delineation of the massing of the historic buildings.
- Neighboring buildings, streetscape and plaza designs should incorporate contemporary versions of elements used on historic resources, such as window detailing, materials, building ornament, paving, furniture, signs, and lighting. New features should be distinguishable from historic structures and features and should not create a false sense of historical or architectural authenticity.

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46 Secretary of the Interior's Standards for Preservation [36 CFR 68.3(a)].

Guidelines for preservation and reuse of the Depot are:

- All work involving changes, repairs, rehabilitation, or adaptive reuse of the Sacramento Depot building and contributing structures, including relocation of the tracks and any associated activities, shall use the Standards for Rehabilitation from the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- The existing historic Depot, its character-defining features, original planting elements and surrounding public spaces shall be used for cues in designing public open spaces and plazas surrounding the building.
- New neighboring buildings should respect the character of the Depot building by setting back a minimum of 20 feet.
- New structures on parcels adjacent to the historic Depot should refer to the building for guidance on massing and composition, with allowances given for odd or irregularly shaped parcels necessitating non-conforming massing to achieve program.
- The scale, materials and details for new structures in the Depot District adjacent to the historic Depot and REA building should respect the character-defining features of those structures.

### **Impacts and Mitigation Measures**

#### **6.3-1 The proposed project could cause a substantial adverse change in the significance of an archaeological resource, including human remains.**

The Specific Plan Area—with its confluence of two major rivers (providing excellent resources as well as travel routes), an oxbow lake with associated marshland, and elevated locations suitable for habitation—has the necessary environmental attributes to have supported a wide range of prehistoric resource types, from long-term occupation sites to locations of isolated artifacts or features representing limited activity. The Specific Plan Area could contain a variety of important, prehistoric and historic-period, archaeological features whose general locations are predictable on the basis of archaeological records and historical research.<sup>47</sup> The site also has the potential to contain a wide variety of isolated historic artifacts throughout the portion of the study area that was a slough in the 19th century. Many artifacts were abandoned within the bodies of water, including Chinese fishing boats, obsolete railroad cars, and even human remains. Environmental remains such as pollen, phytoliths, and plant macrofossils, could also survive within the anaerobic conditions of the filled sloughs.

As all archaeological features within the study area are presently covered by fill or pavement, it is not possible to identify specific impacts without a detailed development plan, further archival research, and an archaeological testing program. Some archaeological resources could be so deeply buried that they would not be physically disturbed by construction. Deep filling during development could adversely affect some resources' research potential. Construction in most areas, however, can be expected to destroy all archaeological strata and features encountered.

The Railyards' landscape is largely a product of land reclamation and efforts at flood control. The Specific Plan Area includes a levee along the Sacramento River and a railroad embankment along the north edge boundary of the project from I-5 to 12<sup>th</sup> Street. The Sacramento River levee is on property that is not owned by the applicant, and the proposed Specific Plan, as it is currently proposed, would not affect this river levee. As noted, the railroad embankment along the north edge of the Railyards project has been altered. The City of Sacramento and Caltrans completed the extension of 7<sup>th</sup> Street in 2002, which removed a portion of the berm and included the installation of mechanical flood gates. Furthermore, the north edge railroad embankment could have been altered during soil remediation on the property, during 2001-2005. The proposed project would remove the

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47 Praetzellis and Praetzellis 1990a and 1990b.

railroad embankment along the north edge of the study area. Some of the incidental or ad hoc filling, such as the dumping of scrap from the Central Shops, could have resulted in significant archaeological deposits. The main archaeological feature resulting from these efforts is the 6th Street levee, one of the earliest flood control efforts in Sacramento. Deposits could have also been left behind as a result of the construction of the First Transcontinental Railroad.

### Initial Phase

A more detailed analysis was prepared for the area within the Initial Phase described in Chapter 3, Project Description. Railyard activities within the Initial Phase boundaries consisted of operations that would leave little in the way of archaeological remains. It should be noted that there were numerous railyard facilities outside the Initial Phase area, and that this discussion only treats those operations that were within the area.

The Central Shops area could contain important archaeological resources relating to the development and expansion of the Railyards' manufacturing operations that could provide information on 19th-century technological processes. Due to the presence of these resources, the Central Shops is designated as an Archaeologically Sensitive Area within the Initial Phase (see Figure 6.3-1).

The Brass Foundry area could contain important archaeological remains relating to the expansion of the Railyards' manufacturing operations that could provide information on 19th-century technological processes. Due to the presence of these resources, the Brass Foundry is designated as an Archaeologically Sensitive Area (see Figure 6.3-1).

The brickyard area could contain important archaeological remains relating to the expansion of the railyards manufacturing operations, particularly the development of subsidiary industrial facilities. This area lies within the Slater's Addition Archaeologically Sensitive Area. In addition to the resources associated with the brickyard operations, there could be archaeological deposits from earlier occupations.

The Passenger Depot Arcade Station was an important part of the railyard operations but is unlikely to yield informative archaeological remains. Any information it could yield would be more efficiently recovered through documentary research. While the Passenger Depot is itself not an important archaeological resource, it lies within the Slater's Addition Archaeologically Sensitive Area, and there could be historical resources from earlier occupations.

The General Foundry area could contain important archaeological resources relating to the earliest Railyards' operations and to 19th-century technological processes. Due to the presence of these resources, the General Foundry is designated as an Archaeologically Sensitive Area (see Figure 6.3-1).

While the Scrap Dock area was a significant part of the Railyards' operations, it would leave little in the way of informative archaeological remains. The ca. 1917 Brass Foundry and other buildings to the south were also important, but given their late date, it is unlikely that archaeology would provide information that is not available through documentary sources. Therefore, the Scrap Dock was not designated as an Archaeologically Sensitive Area.

Since the 6th-7th Street Corridor could contain important archaeological remains relating to early settlement, levee construction, and the development of working-class neighborhoods in 19th-century Sacramento, it is designated as an Archaeologically Sensitive Area (see Figure 6.3-1).

As Slater's Addition could contain important archaeological remains relating to early settlement, commercial development, and the development of working-class neighborhoods in 19th-century Sacramento, it is designated as an Archaeologically Sensitive Area (see Figure 6.3-1).

Plans that include preservation of historic buildings and open space would have less of an impact on archaeological resources than plans that emphasize high density uses.

Archaeological resources could be affected from construction activities such as excavation and grading that could affect the physical integrity of the archaeological resource or its suitability for scientific research or expose Native American human remains. It is not know how deep excavation would be to complete the proposed project or to what extent portions of the site are already disturbed due to previous activities. Such impacts include:

- activities that physically destroy the resource or portions thereof. These could include pile-driving, grading, soil remediation, subsurface construction (such as basements and underground utilities), and the alteration of conditions such that the resource's future integrity is at risk, through, for example, increased potential for erosion or looting.
- activities that do not directly destroy the resource or portions thereof, but that adversely affect those physical characteristics that convey its historical significance and justify its eligibility for inclusion in the CRHR. These consist of activities such as deep filling or the use of construction techniques that remove the potential for research by effectively rendering the resource inaccessible.

Policy H.2.1 calls for a plan for observation and evaluation of archaeological resources. However, because the policy does not address identification of potential archaeological resources in sensitive areas prior to grading or specify the steps to be taken to ensure that archaeological resources are protected, additional previously unidentified resources could be discovered, damaged or destroyed during project construction. Therefore the proposed Specific Plan could result in *potentially significant impacts* to archaeological resources.

### Mitigation Measures

Implementation of the following mitigation measures would ensure that (1) CRHR-eligible resources are identified and (2) that the important information these remains contain is recovered, as well as (3) ensuring that human remains are treated appropriately. These actions would reduce these impacts to a ***less-than-significant level***.

- 6.3-1 a) *Prior to any ground-disturbing activity in Archaeologically Sensitive Areas (ASAs), a focused Archaeological Testing Plan (ATP) shall be prepared and implemented to determine the presence/absence of archaeological resources and to assess their eligibility to the CRHR. The ATP shall be reviewed and approved by the Preservation Director prior to implementation. A programmatic ATP is provided in Appendix G of this EIR.*
- b) *If the testing program identifies CRHR-eligible archaeological resources, an Archaeological Mitigation Plan shall be prepared and implemented.*
- c) *With respect to portions of ASAs where ground-disturbing activities would take place but that are not subject to the archaeological test investigation referred to above, a Construction Monitoring Plan shall be prepared and implemented to ensure appropriate identification and treatment of unanticipated archaeological resources, if any are discovered during grading or construction activities.*

- d) *Prior the commencement of any ground disturbance in the 6th-7th Street Corridor ASA, consultation shall be initiated between the landowner or his representative and the appropriate Native American group having traditional authority over the Initial Phase Area. The goal of the consultation shall be to formulate procedures for the treatment of Native American human remains, should any be uncovered during project activities.*
- e) *Earth-moving activities within areas identified in the ATP shall be monitored by an archaeologist approved by the City of Sacramento Preservation Director. In the event that unanticipated archaeological resources or human remains are encountered, compliance with federal and state regulations and guidelines regarding the treatment of cultural resources and human remains shall be required. The following details the procedures to be followed in the event that new cultural resource sites or human remains are discovered.*
- i. *If the monitoring archaeologist believes that an archaeological resource has inadvertently been uncovered, all work adjacent to the discovery shall cease, and the appropriate steps shall be taken, as directed by the archaeologist, to protect the discovery site. The area of work stoppage will be adequate to provide for the security, protection, and integrity of the archaeological resources in accordance with Federal and State Law. At a minimum the area will be secured to a distance of 50 feet from the discovery. Vehicles, equipment, and unauthorized personnel will not be permitted to traverse the discovery site. The archaeologist will conduct a field investigation and assess the significance of the find. Impacts to cultural resources shall be mitigated to a less-than-significant level through data recovery or other methods determined adequate by the archaeologist and that are consistent with the Secretary of the Interior's Standards for Archaeological Documentation. All identified cultural resources shall be recorded on the appropriate DPR 523 (A-L) form and filed with the North Central Information Center.*
- ii. *If human remains are discovered at the project construction site during any phase of construction, all ground-disturbing activity within 50 feet of the resources shall be halted and the County Coroner shall be notified immediately, according to Section 5097.98 of the State Public Resources Code and Section 7050.5 of California's Health and Safety Code. If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) shall be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. If the remains are determined to be Chinese, or any other ethnic group, the appropriate local organization affiliated with that group shall be contacted and all reasonable effort shall be made to identify the remains and determine and contact the most likely descendant. The approved mitigation shall be implemented before the resumption of ground-disturbing activities within 50 feet of where the remains were discovered.*

*If the remains are of Native American origin, the landowner or the landowner's representative shall contact the Native American Heritage Commission to identify the Most Likely Descendant. That individual shall be asked to make a recommendation to the landowner for treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.983.*



*If the Most Likely Descendant fails to make a recommendation or the landowner or his authorized representative rejects the recommendation of the descendant, and if mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner, then the landowner or authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance.*

**6.3-2 The proposed project could cause a substantial adverse change in to the Southern Pacific Railroad Shops, a historical resource as defined in Section 15064.5 of the State CEQA Guidelines, through the potential alteration and demolition of character-defining features of contributing elements of the Historic District.**

The proposed Specific Plan identifies a Historic District that encompasses the existing Central Shops. However, the district's character-defining features have not been sufficiently defined so that the City can adequately ensure that the contributing features of the Historic District would not be materially impaired. Without this information, alterations made to the buildings and structures in the Historic District, along with the relocation of structures in and around the Central Shops and construction of new buildings and structures in the vicinity of the Central Shops, could diminish the historic integrity of the historical resource. This impact focuses on the potential for the project to cause a substantial adverse change to the Historic District through the alteration and/or demolition of character-defining features of the district and/or its contributing elements. These changes could occur during the rehabilitation of the buildings in the Central Shops and during the subsequent, portions of the project when the applicant (or others) would make tenant improvements, place signage on buildings in or around the Historic District, and create the open space and parks in and around the Historic District and its immediate surroundings. These activities would have the potential to materially impair the physical characteristics that convey their significance and justify the district's inclusion in the Sacramento Register. Impact 6.3-3 below focuses on the potential impacts that could be caused by the construction of new buildings in or around the Central Shops district.

Historic Environment Consultants (HRC) concluded in 1998 that nine buildings and structures in the former Southern Pacific railyard appeared to meet the criteria for listing in the NRHP as a Historic District, and the City of Sacramento subsequently adopted those findings for the previous Railyards Special Planning District. The Central Shops have not been designated as a Historic District under City of Sacramento Municipal Code Chapter 17.134. The Specific Plan indicates that the applicant intends to designate the Central Shops as a Historic District. The HRC 1998 evaluation did not provide a justification for the boundaries shown on the map provided with that report, nor did the report discuss the character-defining features of the Historic District and its contributors. The previous Railyards Special Planning District only defined the boundaries of the Historic District generally and did not provide the character-defining features of the Historic District and its contributors. The ARG 2006 report prepared for the applicant provides the most detailed description of character-defining features of the property to date. It is highly detailed and provides a substantial basis for defining the character-defining features of the historical resource. The ARG report does not include information on the Boiler Shop and Erecting Shop. Furthermore, the character-defining features are not officially part of the evaluation of the property.

The proposed project currently includes plans to rehabilitate the buildings in the Central Shops District (see Figure 6.3-2), as defined by the Specific Plan, to prepare them for habitation and use by tenants, including seismic retrofitting the buildings. The Specific Plan and Design Guidelines include goals, policies, and guidelines for the rehabilitation per the Secretary of Interiors Standards for the Treatment of Historic Properties of the buildings in the Central Shops, tenant improvements, signage, and the open space/parks improvements. While the plans, goals, policies, and guidelines address many of issues that are relevant for the Historic District's preservation, project planning for

historical resources is incomplete and there is insufficient information illustrating how character-defining features of the Historic District would be preserved and protected.

The Applicant had ARG prepare plans to assess how this rehabilitation could be accomplished meeting the Secretary of Interior's Standards for Rehabilitation. ARG's "core and shell" plans did not include the Boiler House, Erecting Shop, turntable, and the transfer table between the two buildings, because they prepared the plans when the Specific Plan Area did not include those buildings and feature. While the ARG report and plans provided direction regarding specific and appropriate treatment to buildings in the Historic District and the materials found on those buildings, they did not include information on methods for signage and open space/parks development that would minimize impact to the Historic District and its contributors. Furthermore, specific tenants and uses have not been identified for specific locations, so it is unclear what potential impacts the improvements made for those tenants could have on the Historic District. Therefore, the ARG Report is adequate to move forward with the hazard remediation as well as seismic, structure improvements, but it is not adequate to cover more specific tenant related improvements.

One of the proposed project's seven principles presented in the Specific Plan is to "Preserve the Historic and Cultural Resources of the Area," which includes rehabilitating the buildings and structures in the Central Shops Historic District. At least two of the goals presented in the Specific Plan relate to this principle, and these goals include policies to be used in the decision-making process. Actions taken to carry out these goals and policies would be directed by the Design Guidelines, which include specific information regarding historic preservation and adaptive reuse, as well as guidelines expressly defined for the Central Shops Historic District that focus on preservation and appropriate reuse of buildings and structures in the Historic District.

The proposed Specific Plan states that work conducted on the buildings of the Central Shops would conform to City's Historic Preservation Ordinance Chapter 17.134, of the City Code and the Secretary of Interior's Standards for the Treatment of Historic Properties. The Specific Plan provides goals and policies that call for the adaptive reuse and preservation of the Central Shops, guide the siting and orientation of new buildings to consider the historic buildings, and restrict building heights for new buildings as described in the Project Components section above. The Specific Plan also includes the proposed boundaries for the Historic District (see Figure 6.3-2). Chapter 17.134 provides protections to buildings, structures, objects, sites, and districts that are considered historical resources for the purposes of CEQA, the chapter is intended to protect city-designated landmarks/historic districts and provides the clearest legal authority to the protection of city landmarks/historic districts. Further, the Specific Plan states that the Secretary of Interior's Standards for the Treatment of Historic Properties shall be followed. While the Preservation Code and Secretary of Interior Standards include provisions for the protection of listed resources, the Historic District has yet to be listed. Further, there is insufficient definition of character-defining features for all buildings and structures in the Historic District. Consequently, alterations to the contributing features of the Historic District could be materially impairing physical characteristics of the historical resource that convey its historical significance and justify its inclusion, or eligibility for inclusion in the Sacramento Register. Therefore, the proposed Specific Plan could cause a substantial adverse change to the historical resource. For these reasons, this is considered a *potentially significant impact*.

### Mitigation Measures

The following mitigation measures, in combination with proposed Specific Plan policies and the Design Guidelines quoted above and the City Preservation Ordinance, would ensure adequate preservation of this historical resource. The information provided in the ARG Report is adequate to allow the hazard remediation of the site as well as the seismic stabilization of the shop buildings (for those buildings included in that study) prior to the completion of this EIR or any further studies.

However, the ARG Report is not adequate to account for future development of the Historic District and Central Shops buildings. The designation of the Historic District would result in a clear definition of character-defining features. This would clarify the potential impacts on the historical resource of future components of the Specific Plan Area. A Historic District Plan would ensure that the integrity of the historic shops is maintained. A Certificate of Appropriateness must be obtained prior to altering a historic resource. Implementation of these mitigation measures would reduce the impact to ***less than significant***.

- 6.3-2 a) *An Architectural Historian qualified under the Secretary of the Interior's Standards shall be retained to prepare the necessary documentation to formally list the Central Shops Historic District as a locally Adopted Historic District.*
- b) *A copy of the full Southern Pacific Company Sacramento Shops HAER document (HAER CA303) shall be acquired, including the historic narrative, architectural drawings, and photographs, and archive quality copies disseminated to the appropriate state, regional, and local repositories.*
- c) *Consistent with the City's Historic Preservation Ordinance, and in coordination and consultation with the Preservation Director, a Historic District Plan that is specifically focused on the Historic District in the Central Shops shall be prepared. The Historic District Plan shall include, at a minimum, the following components:*
1. *Statement of the goals for review of development projects within the Historic District;*
  2. *A representation of the historical development of land uses, existing land uses, and any adopted plans for future land uses;*
  3. *A statement of findings, including the following:*
    - a. *The historical or pre-historical period to which the area is significant.*
    - b. *The predominant periods or styles of the structures or features therein.*
    - c. *The significant features and characteristics of such periods or styles, as represented in the Historic District, including, but not limited to, structure height, bulk, distinctive architectural details, materials, textures, archeological and landscape features and fixtures.*
    - d. *A statement, consistent with Article IV, Sacramento Register of Historic and Cultural Resources, of this chapter, of the standards and criteria to be utilized in determining the appropriateness of any development project involving a landmark, contributing resource or noncontributing resource within the Historic District.*

**6.3-3 The proposed project could cause a substantial adverse change to the Central Shops Historic District by constructing new buildings and structures surrounding the contributing elements of the district.**

The Specific Plan Area could cause a substantial adverse change to the Historic District by construction of buildings and structures in the immediate surroundings of contributing elements of the Historic District thereby significantly altering the setting of the area. Project components that could affect the Historic District include the proposed 5th Street Overpass, which would rise to 31

feet above the realigned railroad tracks to roughly the height of the adjacent building (Paint Shop), the proposed northern extension of 5th Street, and the new construction proposed west of 5th Street and south of Camille Lane, such as the extension of Car Shop No. 3 on parcel 23, performing arts building on parcel 15, and hotel parcel 14 adjacent to the Car Machine Shop. These, and other elements of the Specific Plan Area including the design of and construction in open spaces and the relocation of the Water Tower, could materially impair the physical characteristics of the Historic District that convey its significance.

Although the Historic District's setting (i.e. the physical environment that surrounds the historical resource), has been vastly altered since the end of the District's period of significance (1937), the location, height, and massing of new construction has the potential to create a setting that diminishes Historic District's historic integrity. Integrity of setting helps convey a property's relationship with surrounding features and open space. It also illustrates the physical conditions within which the property functioned and includes the relationship between buildings and its surroundings. Overly tall or massive buildings immediately adjacent to a contributing building or structure in the Historic District could reduce the comprehension of the complex.

The Historic District in the Central Shops District is significant for its historical association with railroad development in Sacramento and as an important example of railroad building and architecture from the late nineteenth century and early twentieth century. HEC noted, among the district's important qualities, that the Historic District possesses a "unique visual quality" and that it is a "cohesive architectural and historic complex." This visual quality was further described as follows:

The character and ambience of the structures and their juxtaposition create a particularly strong visual statement as an Historic District. The pedestrian quality of the spaces between buildings is unusual for the size of the buildings involved, and creates a truly unique spatial experience. The placement of structures and their interactions is an important attribute of the district.

Historical maps and photographs of the Southern Pacific Railyards during the early twentieth century reveal that buildings on the Railyards property were closely surrounded by other buildings and structures. It is also evident that buildings that now comprise the Historic District dominated the property and were a focal point of the property.

Like the impact discussed above regarding project effects from tenant improvements and open space/parks development, at least three of the goals presented in the Specific Plan relate to the issue of the Historic District's setting. These goals include policies to be used in the decision making process (see Chapter 4) and actions taken to carry out these goals and policies would be directed by the Design Guidelines which include clear information regarding historic preservation and adaptive reuse as well as guidelines expressly defined for the Central Shops District that focuses on addition of new construction in and around the Historic District. Most specifically, the Design Guidelines includes guidance for new development in the Transition Zone (see Figure 6.3-3). The Transition Zone is located around the Historic District and is discussed in the Project Components discussion above. The guidelines for the Transition Zone include a setback of 20 feet from the historic buildings, consideration of building heights and massing, and the interaction between new and historic elements. These guidelines and compliance with the City Preservation Ordinance would ensure that any new construction in the Transition Zone is compatible with the Central Shops. Therefore, the impact would be ***less than significant***.

### Mitigation Measures

*None required.*

**6.3-4 The proposed project could cause a substantial adverse change to contributing elements of the Sacramento Depot that could be caused by the relocation of the UPRR main line tracks.**

The Specific Plan includes the relocation and realignment of the UPRR main line tracks approximately 573 feet to the north of their current location. The track realignment plan calls for the existing two mainline UPRR tracks to be relocated northward, just south of the Central Shops. A third freight track could be added. The Depot, as part of the SITF, could be moved at a later time, but that is not part of the proposed Specific Plan and would require further evaluation at that time.

The Sacramento Depot and REA Building could be affected by the relocation of the UPRR main line tracks. Moving the tracks could cause a substantial adverse change to the Sacramento Depot and REA Building because they may require the demolition of the platform amenities, which have been determined eligible as contributing elements to the NRHP-listed Depot. The proposed Specific Plan Design Guidelines require that relocation of the tracks and associated activities must comply with the Secretary of Interior's Standards with respect to the Depot. Therefore, the impact would be ***less than significant***.

Mitigation Measure

*None required.*

**6.3-5 The proposed project could cause a substantial adverse change to the I Street Bridge.**

The Specific Plan Area would alter the approach to the I Street Bridge by removing the Jibboom Street Overhead, but this would not cause a substantial adverse change to the NRHP listed I Street Bridge (Bridge 22C0153). The I Street Bridge itself is not located within the Specific Plan Area. As noted previously, the eastern approaches to the I Street Bridge over the Sacramento River are not contributing structures to the NRHP listed property. These approaches include Jibboom Street Overhead (Bridge 24C0006), built in 1937, I Street Viaduct (Bridge 24C0364L), built in 1936, and the J Street Viaduct (Bridge 24C0364R), built in 1969. The Specific Plan's principle to "Reconnect Downtown and the Central City with the Rivers" (in Chapter 4) would be accomplished through the lowering Jibboom Street to ground level. The Specific Plan's Circulation Plan shows that the Jibboom Street Overhead would be demolished and a replacement ramp would be constructed from the southern extension of Bercut Drive to the I Street Bridge. The I Street Viaduct and its west bound lanes would remain in place, and the J Street Viaduct, which carries east bound traffic off the I Street Bridge on a concrete box girder structure down to J Street, would not be affected.

The Jibboom Street Overhead is not a historical resource in its own right nor is it a contributing element to the Historic I Street Bridge. The removal of the Jibboom Street Overhead would not alter or otherwise materially impair the NRHP listed I Street Bridge and would not diminish the historic integrity of the I Street bridge resulting in a ***less-than-significant impact***.

Mitigation Measure

*None required.*

**6.3-6 The proposed project could cause a substantial adverse change in the significance of the remnant portion of the Pioneer/Sperry Grain Mill, California State Landmark 780 the First Transcontinental Railroad, and the Levees.**

As discussed in the Setting Section above, several other built environment resources are located in the Specific Plan Area. They are the remnant portion of the Pioneer/Sperry Grain Mill adjacent to

the Sacramento River, the route of the First Transcontinental Railroad, and levees. The Specific Plan Area, as it is currently proposed, would not impact these resources except the embankment/berm situated along the north edge of the project from I-5 to 12<sup>th</sup> Street and potentially the First Transcontinental Railroad if physical evidence remains on site of the original line.

The remnant portion of the Pioneer/Sperry Grain Mill is located on a parcel to the west of the Jibboom Street Viaduct on property owned by the State of California Department of Parks and Recreation. Based on the information available it appears unlikely that this building currently retains sufficient historic integrity to convey historical significance, if any. Therefore the remnant portion of the Pioneer/Sperry Mill does not appear to be a historical resource for the purposes of CEQA.

Camille Lane is proposed to be constructed in an arc-shaped footprint that generally follows the path of the First Transcontinental Railroad route as it passed through the Railyards property in Sacramento. It is not anticipated that the Specific Plan would have any impact to physical features of California State Landmark 780, the First Transcontinental Railroad, and its route, portions of which were recorded outside of the Specific Plan Area. It is unclear whether any physical structures remain (on the surface) in the Specific Plan Area, beyond what is identified as part of the Central Shops, that retain sufficient historic integrity to convey the significance of this resource. It has been noted that tracks are still located along the route through the Railyards;<sup>48</sup> however, these portions have been upgraded and it is unknown how much original track or other structures exist if any. Portions of the track along the route have been removed during soil remediation on the property.<sup>49</sup> The destruction of any remaining features of the First Transcontinental Railroad would be a **significant impact**.

As discussed in Impact 6.3-1 above, there is a levee along the Sacramento River and an embankment on the north edge boundary of the project site from I-5 to 12<sup>th</sup> Street that could contain archaeological resources. The levee on the western edge of the Railyards project is immediately adjacent to the portion of levee that JRP evaluated in 1998. Thus, it is likely that this levee shares a similar history, particularly as it relates to the Sacramento River Flood Control Project and improvements that the Corps made to the levees in the vicinity.

The Corps of Engineers has recognized flood control project levees on the Sacramento River as eligible for listing in the NRHP in their recent emergency work to upgrade levees around the city. This conclusion was meant to facilitate the environmental process for the levee improvement projects, wherein SHPO accepts a presumed eligibility and reviews the potential effects that the project might have on the various project levees. It is understood that this presumed eligibility is only used for consideration under the emergency levee improvement projects. The proposed Specific Plan Area would affect portions of the Sacramento River levee system. The embankment that runs along the north edge of the Specific Plan Area from I-5 to 12<sup>th</sup> Street appears to have been mostly constructed in the early twentieth century, prior to the late 1920s, although a portion of it may have its origins in the 1860s before the American River channel was moved northward. The railroad had built earlier embankments on the north side of the railyards, constructed immediately north of the tracks adjacent to the roundhouse and adjacent buildings. It is likely that Southern Pacific built the embankment at the north edge of the Specific Plan Area as a secondary protection measure in addition to the levees built along the American River by Reclamation District 1 in the 1910s. The integrity of this embankment has been compromised, most recently by the 7<sup>th</sup> Street Extension, and preliminary assessment of this structure indicates that it does not appear to meet the criteria for listing in the NRHP and would not be considered a historical resource for the purposes of CEQA.

48 Kyle K. Wyatt, Curator of History and Technology, California State Railroad Museum, personal communication July 24, 2007.

49 Kyle K. Wyatt, Curator of History and Technology, California State Railroad Museum, personal communication July 24, 2007.

compliance. Therefore, a less-than-significant impact would result with regard to the removal of the embankment. The archaeological resource potential of the levees and embankments has been covered in Impact 6.3-1 above.

### Mitigation Measures

The following mitigation measures require that the First Transcontinental Railroad be inventoried and evaluated by a qualified architectural historian for its potential historic significance and eligibility as a historical resource and that an archaeological monitor be present during earth moving activities (pursuant to Mitigation Measure 6.3-1(e)) on the project site. The following mitigation measures would reduce this impact to ***less than significant***.

- 6.3-6 a) *A qualified architectural historian shall be retained to inventory and record the route of the First Transcontinental Railroad through the project site to HABS/HAER standards. The HABS/HAER recordation shall be disseminated to the appropriate repositories.*
- b) *The historical information about the resource shall be integrated into the interpretation displays and signage along the route.*
- c) *Implement Mitigation Measure 6.3-1(e).*

### **6.3-7 The proposed project could cause a substantial adverse change in the significance of the Alkali Flat Historic District if it would construct development adjacent to the District's west side that would be out of context for the area.**

The Alkali Flat Historic District is adjacent to the Depot District in the Railyards Specific Plan. New development adjacent to this NRHP-listed District could disrupt the context of the neighborhood and threaten the historic integrity of this historical resource. It should be noted that two blocks within the Alkali Flat Historic District are currently in the adopted 1994 Railyards Specific Plan but have been removed from the project boundaries for the proposed Specific Plan. However, the land uses for these two blocks are intended to remain the same as those identified in the adopted 1994 Specific Plan.

According to the Specific Plan, the Depot District would “be the connecting point of the Railyards site to the downtown.” The Design Guidelines contains a chapter on the Depot District, which contains guidance for new development that specifically addresses the interface between the new development and the Alkali Flat Neighborhood. One of the goals identifies how the project would relate to the existing scale and character of the neighboring Alkali Flat Neighborhood. Other design guidelines include the following:

- Direction for new street setbacks restricting the wall heights along 7<sup>th</sup> Street to 35 feet;
- Articulated facades and avoiding blank street-walls;
- Analyzing the existing context of the surrounding city blocks as part of the design process; and
- Ensuring connections between the new development and the surrounding, existing development.

By requiring design elements that are similar to those of the Alkali Flat Neighborhood the new development would likely not be a stark contrast to the existing neighborhood. Also, as noted above, the Specific Plan Area was previously more densely developed; therefore, new development

is not enough to indicate that a negative impact on the context of the Alkali Flat neighborhood would occur. While taller wall heights will be allowed deeper into the site, the Design Guidelines would provide for a transition area between the Alkali Flat Neighborhood and would lessen the impact on the adjacent historic neighborhood. The smaller scale development that is prescribed by the Specific Plan is more in keeping with the historic neighborhood and will result in a ***less-than-significant impact*** to the Alkali Flat Historic District.

#### Mitigation Measures

*None required.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for the cultural resources analysis varies depending on the type of resource. The cumulative context for prehistoric resources, those associated with Native American peoples, would include the geographic area that was inhabited by that population. In this case it would include portions of six counties; Sacramento, Sutter, Placer, Yuba, El Dorado, and Nevada. The cumulative context for the historic resources would revolve around the railroad. The Central Shops, Sacramento Depot and Southern Pacific Railyard Historic District are part of an importance part of the development of the City of Sacramento and must be considered in the context of Historic Downtown Sacramento as well as historic resources throughout the City. The context also includes a broader geographic area since the route of the First Transcontinental Railroad ran through the Railyards. Some of the features associated with the route that have been recorded were discussed in the Setting above and include tunnels near Donner Pass in the Sierra Nevada.

#### **6.3-8 The proposed project could contribute to the cumulative degradation or loss of archaeological resources, including human remains.**

Based upon previous cultural resource surveys and research, the area that comprises the City of Sacramento, and surrounding area has been inhabited by prehistoric peoples for thousands of years. The proposed project, in combination with other development in the City of Sacramento could contribute to the loss of significant archaeological resources. Because all significant archaeological resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The boundaries of an archaeologically important site extend beyond the site boundaries. As a result, a meaningful approach to preserving and managing cultural resources must focus on the likely distribution of cultural resources, rather than on project or parcel boundaries. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Proper planning and appropriate mitigation can help to capture and preserve knowledge of such resources and can provide opportunities for increasing our understanding of the past environmental conditions and cultures by recording data about sites discovered and preserving artifacts found. Federal, state, and local laws are also in place, as discussed above, that protect these resources in most instances. Even so, it is not always feasible to protect these resources, particularly when preservation in place would frustrate implementation of projects, and for this reason the cumulative effects of the proposed project and other projects in the City of Sacramento would be significant. Moreover, because the proposed project has the potential to adversely affect significant archaeological resources that are unique and non-renewable members of finite classes, the project's incremental contribution to these cumulative effects would itself be potentially cumulatively considerable; therefore, this is a *potentially significant cumulative impact*.



### Mitigation Measures

Implementation of the following mitigation measure would reduce the project's contribution to this cumulative impact to a less than considerable level and this cumulative impact would be ***less than significant***.

6.3-8 *Implement Mitigation Measures 6.3-1(a) through 6.3-1(e).*

### **6.3-9 The proposed project could contribute to the cumulative loss or alteration of historical resources.**

The proposed project has the potential to affect several historic resources in the Specific Plan Area including the Southern Pacific Railroad Shops, the Southern Pacific Railyard Historic District, and the Sacramento Depot either through the alteration of the resource itself or the surrounding environment/setting. Because all historical resources are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. Federal, state, and local laws protect historical resources in most instances. Even so, it is not always feasible to protect historical resources, particularly when preservation in place would frustrate implementation of projects. For this reason, the cumulative effects of development in the City of Sacramento are considered significant. The proposed project includes the alteration of existing buildings on the project site that could cause a substantial adverse change in the significance of an historical resource. Because the proposed project includes establishment of the Central Shops Historic District and Transition Zone, plan policies and design guidelines to protect the Central Shops and must comply with the City Preservation Ordinance and Secretary of Interior's Standards, this would be a ***less-than-significant contribution to the cumulative impact***.

### Mitigation Measure

*None required.*

### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility Overlay is approved and a sports and entertainment facility is developed in place of mixed use development, development of the facility would not disturb any existing cultural resources, and ground disturbing activities that could result in impacts on previously undiscovered cultural resources would be the same as they would be under the Specific Plan without the overlay. Therefore, there would be no additional impacts related to cultural resources if the Sports and Entertainment Facility Overlay is approved, and no additional mitigation measures would be required than those prescribed for the Specific Plan. Consequently, approval of the Sports and Entertainment Facility would have a less-than-significant impact regarding cultural resources after implementation of the aforementioned mitigation measures.



## **6.4 SEISMICITY, SOILS, AND GEOLOGY**

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## 6.4 SEISMICITY, SOILS, AND GEOLOGY

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### INTRODUCTION

This section describes the regional geologic, soils, seismic and mineral resource characteristics influencing the area of the proposed Specific Plan and addresses the effects of geologic hazards, soil constraints, and the existence of mineral resources on development in the Specific Plan Area. Regulatory and physical settings are described, followed by an analysis of the potential for soil, geologic, seismic, and mineral resources impacts based on specified impact-significance criteria. Geologic hazards evaluated include seismic conditions such as fault movement and liquefaction. Soil constraints evaluated include erosion, shrink-swell potential, depth to hardpan, and permeability.

Unless otherwise noted, the information in this section is based on the 1992 Draft EIR for the Railyards Specific Plan and Richards Boulevard Area Plan.<sup>1</sup> Sources used to update the 1992 EIR information include observations in the Specific Plan Area and studies published by federal, state, or local agencies (such as the United States Geological Survey, the California Geological Survey, the Sacramento General Plan) and are cited in the references for this section of the EIR. Erosion and sedimentation issues are outlined briefly in this section of the EIR and are addressed more fully in Section 6.6, Hydrology and Water Quality.

No comments associated with seismicity, soils, or geology were received during the Notice of Preparation review period.

### ENVIRONMENTAL SETTING

#### Regional Geology

The Sacramento area is in the Great Valley geomorphic province, a relatively flat alluvial plain composed of a deep sequence of sediments in a bedrock trough. The Great Valley is bounded on the west by the California Coast Ranges and on the east by the Sierra Nevada Mountains. Erosion of the Coast Ranges and the Sierras has produced the sediments deposited in the Great Valley. Deposition in the Valley mainly was marine until the beginning of the Pliocene epoch (approximately 5.3 million years ago) when the Valley's seas were drained through the Carquinez Strait and were replaced by freshwater rivers and lakes. Today, the Valley is drained by the Sacramento River from the north and the San Joaquin River from the south. Geographically and topographically the Valley has been shaped by the Sacramento River and its tributaries (including the American River). The Sacramento and San Joaquin Rivers meet approximately 35 miles south of Sacramento and discharge through the Sacramento – San Joaquin Delta into San Francisco Bay and the Pacific Ocean.

#### **General Stratigraphy**

The basement rock underlying the Great Valley, including the Specific Plan Area, is a complex of metamorphosed Paleozoic (at least 245 million years old) and Mesozoic (at least 66 million years old) sediments, volcanics, and granites extending west from the Sierra Nevada Mountains. Overlying the basement rock is a sequence of siltstone, claystone, and sandstone about 60,000 feet thick and predominantly of marine origin. Overlying the sedimentary rock layer is approximately 3,000 feet of fluvial-deposited sediments eroded from the mountains to the north and east. In the

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<sup>1</sup> City of Sacramento, 1992, *Draft Environmental Impact Report, Volume 1, Railyards Specific Plan, Richards Boulevard Area Plan*, Chapter 4.11, Geology and Soils.

City of Sacramento, the two uppermost sequences of these fluvial sediments are named the Victor and Laguna formations.<sup>2</sup>

The Victor formation forms the natural ground surface and consists of channel sands and gravels, and overbank deposits of silt and clay extending as much as 100 feet below the ground surface. The Victor formation overlies the Laguna formation, which is about 200 to 300 feet thick and consists of silt, clay, and sand with lenses (layers) of gravel. The gravel lenses slope and thicken toward the west. The mixture of particle size in both formations varies widely.<sup>3</sup>

### Seismic Conditions

California is in the circum-Pacific earthquake zone, which is the result of the process of plate tectonics, and is the most seismically active area in the United States. The theory of plate tectonics describes the earth's crust as at least a dozen large and small rigid slabs of solid rock that move relative to each other atop the hotter, more mobile rock of the earth's mantle. The San Andreas Fault System is an elongated zone of fracturing about 40 miles wide at the junction of two such plates. The Pacific Plate, west of the zone, is moving north relative to the North American Plate, east of the zone. One of the results of this movement is the regional rock deformation that creates the general northwest-southeast trend of valleys and ridges in the Coast Ranges, as well as the shape of the Great Valley. Another result is the earthquake activity that is common through California.

No known active faults occur in or adjacent to the City of Sacramento. During the past 150 years, there has been no documented movement on faults mapped in Sacramento County. Nonetheless, the region has experienced numerous instances of groundshaking originating from faults in the San Andreas Fault Zone, west of the County, and the Foothills Fault System, east of the County.<sup>4</sup>

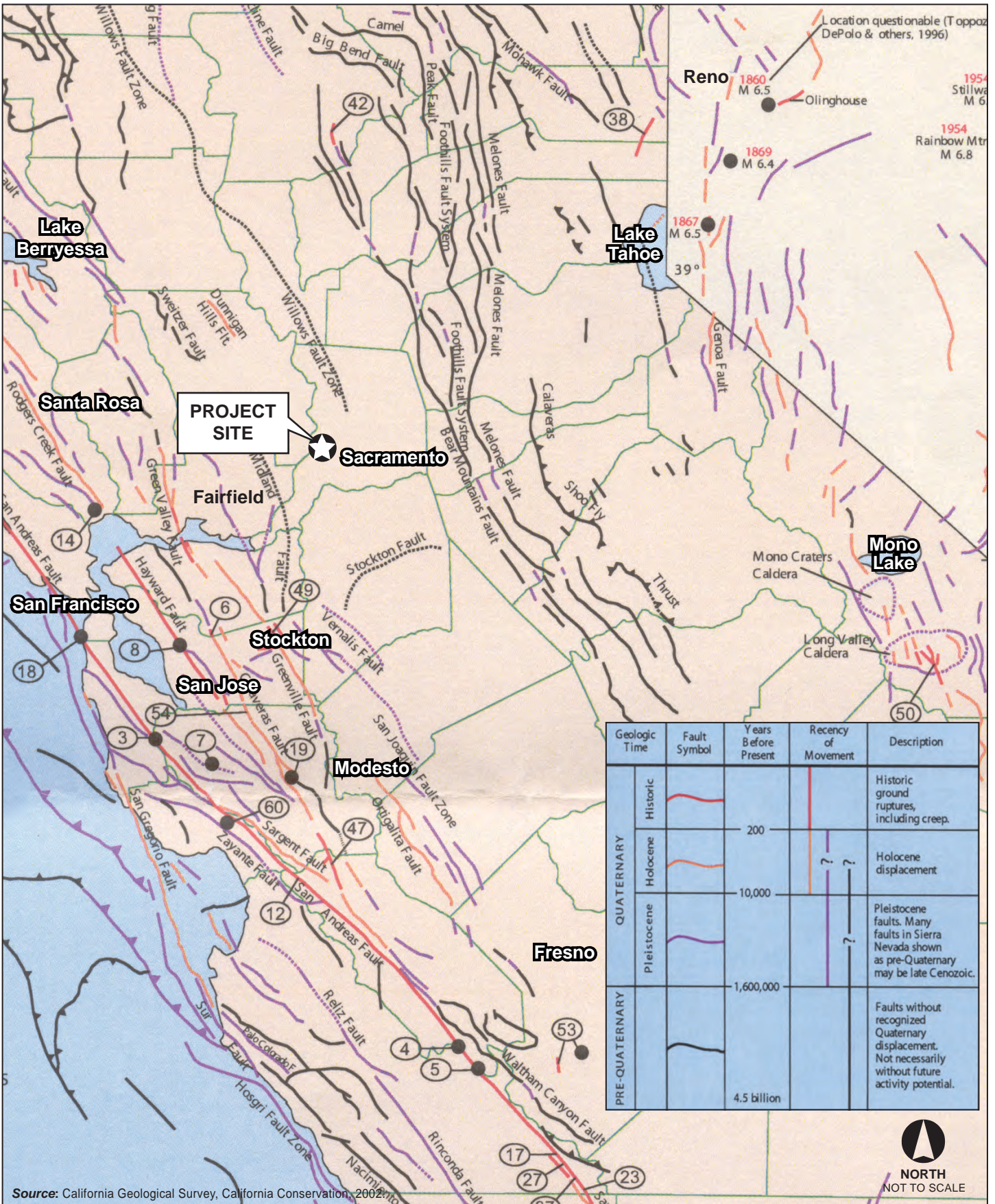
The closest known potentially active fault mapped by the California Geological Survey (CGS) is the Dunnigan Hills fault (possible Holocene activity, which is within the last 11,000 years), about 19 miles northwest of Sacramento (see Figure 6.4-1). The closest branches of the seismically active San Andreas Fault System (historic activity, which is within the last 200 years) is the Green Valley-Concord faults (45 miles southwest). The main trace of the San Andreas fault is approximately 80 miles to the southwest. As shown on Table 6.4-1, other major active faults within 100 miles of the City include the Hayward and Calaveras faults, approximately 66 miles to the southwest; the Healdsburg-Rogers Creek fault (56 miles west); the Bear Mountain fault (22 miles east); and the New Melones fault (40 miles east). The Stockton and Greenville faults are approximately 47 and 43 miles to the south. The Midland fault (22 miles west of Sacramento) and the Antioch (42 miles southwest) are considered pre-Quaternary (i.e., not active within the last 1.6 million years).

According to the *Probabilistic Seismic Hazard Assessment Maps* (2002) prepared by the CGS, Sacramento is in an area of relatively low severity, characterized by peak ground accelerations between 10 and 20 percent of the acceleration of gravity (g). The maximum earthquake intensity expected from this amount of groundshaking would be between VII and VIII on the Modified Mercalli

2 California Geological Survey, 1966, *Geology of Northern California*, Bulletin 190, pages 217 through 219.

3 Harding Lawson Associates, *Draft Preliminary Geotechnical Evaluation Richards Boulevard Redevelopment Area Sacramento, California*, HLA Job No. 20169,00.04, San Francisco, California, October 17, 1990, pages 4 and 5.

4 City of Sacramento, 2005, *General Plan Update Technical Background Report Chapter 7, Public Health and Safety*, pages 7.1-1 through 7.1-6.



Source: California Geological Survey, California Conservation, 2002



**FIGURE 6.4-1**  
**Regional Fault Maps**



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Railyards Specific Plan EIR

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Name	Distance From Sacramento (Miles)	Characteristic Earthquake (Moment Magnitude) <sup>1</sup>
<b>WEST VALLEY FAULTS</b>		
Dunnigan Hills	19	6.6 <sup>2</sup>
Midland	22	Pre-Quaternary: no longer considered active <sup>3</sup>
<b>CENTRAL VALLEY FAULTS</b>		
Willow Fault Zone	5	Pre-Quaternary: no longer considered active <sup>3</sup>
<b>FOOTHILL FAULT SYSTEM<sup>3</sup></b>		
Bear Mountain	22	6.0
New Melones	40	6.0
Stockton	47	5.0 <sup>4</sup>
<b>SAN ANDREAS FAULT SYSTEM</b>		
Vaca –Kirby Hill	28	6.1 <sup>2</sup>
Antioch	42	Pre-Quaternary: no longer considered active <sup>5</sup>
Greenville	43	6.6
Concord	45	6.2
Green Valley	42	6.2
Healdsburg/Rogers Creek	56	7.1
Hayward	66	6.9 - 7.1
Calaveras	66	7.5
San Andreas	80	7.9
Notes:		
1. Wesnouski, S.G., 1986, <i>Earthquakes, Quaternary Faults, and Seismic Hazard in California</i> , Journal of Geophysical Research, Vol. 91, No. B12, Table A1.		
2. California Geological Survey, 1994, <i>Fault Activity Map of California</i> , pages 27 and 30.		
3. AGS, Inc., 2005, <i>Preliminary Geotechnical Study, Delta Water Supply Project</i> , Table 2.		
4. California Geological Survey, 1991, <i>Fault Evaluation Report FER-228, The Antioch fault, Contra Costa County, California</i> , pages 1, 18, and 19.		
Source: PBS&J/EIP, July 2007.		

Intensity Scale (MMI - see Table 6.4-2).<sup>5</sup> A characteristic earthquake<sup>6</sup> on the entire San Andreas Fault ( $M_w$  7.9 - Moment Magnitude<sup>7</sup>) probably is the largest that would be felt in the Specific Plan Area. Because of the distance between the San Andreas Fault and the Specific Plan Area, the felt intensity would be about MMI VII. A similar intensity would be caused by a characteristic earthquake on the Dunnigan Hills fault ( $M_w$  6.6) because it is much closer to the Specific Plan Area. The approximate relationships among earthquake magnitude (Moment Magnitude Scale), intensity (Modified Mercalli Intensity Scale), and peak ground acceleration (percent of gravity) are shown in Table 6.4-3.

## Liquefaction

Liquefaction is the loss of soil strength caused by seismic forces acting on water-saturated, granular soil, leading to a "quicksand" condition generating various types of ground failure. Estimating the potential for liquefaction must account for soil types, soil density, and groundwater table, and the

- 5 A 12-point scale of earthquake intensity based on local effects experienced by people, structures, and earth materials. Each succeeding step on the scale describes a progressively greater amount of damage at a given point of observation. Effects range from those that are detectable only by seismicity recording instruments (I) to total destruction (XII). See Table 6.4-2 for a description of the intensity levels.
- 6 Characteristic earthquakes are repeat earthquakes that have the same faulting mechanism, magnitude, rupture length, location, and, in some cases, the same epicenter and direction of rupture propagation as earlier shocks.
- 7 A logarithmic scale used by modern seismologists to measure the total amount of energy released by an earthquake. The formula used for the Moment Magnitude ( $M_w$ ) scale incorporates parameters associated with the rock types at the seismic source and the area of the fault surface involved in the earthquake to provide a more accurate measure of energy release than the Richter Magnitude Scale.

Scale	Effects
I	Earthquake shaking not felt.
II	Shaking felt by those at rest.
III	Felt by most people indoors; some can estimate duration of shaking.
IV	Felt by most people indoors. Objects swing, windows and doors rattle, wooden walls and frames creak.
V	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle, and glasses clink. Doors close, open, or swing.
VI	Felt by everyone indoors and most people outdoors. Many now estimate not only the duration of the shaking, but also its direction and have no doubt as to its cause. Sleepers awoken. Liquids disturbed, some spilled. Small unstable objects displaced. Weak plaster and weak materials crack.
VII	Many are frightened and run outdoors. People walk unsteadily. Pictures thrown off walls, books off shelves. Dishes or glasses broken. Weak chimneys break at roofline. Plaster, loose bricks, unbraced parapets fall. Concrete irrigation ditches damaged.
VIII	Difficult to stand. Shaking noticed by auto drivers, waves on ponds. Small slides and cave-ins along sand or gravel banks. Stucco and some masonry walls fall. Chimneys, factory stacks, towers, elevated tanks twist or fall.
IX	General fright. People thrown to the ground. Steering of autos affected. Branches broken from trees. General damage to foundations and frame structures. Reservoirs seriously damaged. Underground pipes broken.
X	General panic. Conspicuous cracks in ground. Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges are destroyed. Serious damage to dams, dikes, and embankments. Railroads bent slightly.
XI	General panic. Large landslides. Water thrown out of banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flatland. General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.
XII	General panic. Damage nearly total, the ultimate catastrophe. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.
Source: California Division of Mines and Geology (now the California Geological Survey), 1973.	

Moment Magnitude	Maximum Expected Modified Mercalli Intensity	Peak Ground acceleration (Percent of Gravity)
1.0 - 1.9	I	< 0.015
2.0 - 2.9	II	< 0.015
3.0 - 3.9	III	< 0.015
4.0 - 4.9	IV - V	0.015-0.02 / 0.03-0.05
5.0 - 5.9	VI - VII	0.06-0.09 / 0.1-0.19
6.0 - 6.9	VII - VIII	0.1-0.19 / 0.2-0.3
7.0 - 7.9	IX - X	0.3-0.5 / 0.6-0.9
> 8.0	XI - XII	> 1.0
Source: Dr. Steve Bergman, University of Texas at Dallas, 2005. <a href="http://www.utdallas.edu/~aiken/shake/BergmanSpr05_ISNS4359LectureNotes/S05_4359_L06.doc">http://www.utdallas.edu/~aiken/shake/BergmanSpr05_ISNS4359LectureNotes/S05_4359_L06.doc</a> .		

duration and intensity of groundshaking. Liquefaction is most likely to occur within 50 feet below the ground surface in saturated uniformly fine-grained poorly consolidated sediments. The Specific Plan Area is underlain with natural levee and channel deposits (alluvium) containing silt and sand on which fill of a variety of materials has been placed. The water table fluctuates with the seasons, but can be less than five feet below the ground surface. Under such conditions, some of the natural and artificial deposits could be subject to liquefaction during seismic events.

## Settlement

Seismic settlement is the compaction of soil materials caused by groundshaking or the extraction of underground fluids (water, oil, gas). Settlement can be caused by liquefaction or densification of silts and loose sands (such as those that underlie the Specific Plan Area, especially in the old China Lake and Willow Lake portions) as a result of seismic loading. Such settlement may range from a few inches to several feet, and be controlled in part by bedrock surfaces (which prevent settlement) and old lake, slough, swamp, or stream beds which settle readily. Static settlement can occur through increased loading of the surface or subsurface materials, such as that imposed by foundations for structures. Dewatering for excavation and foundation construction can cause settlement of the drying subsurface materials if the water formed part of the support for the surface soils. Landfill areas undergo settlement primarily through decomposition of organic landfill material that occurs over a long period of time without additional loads. In general, settlement of organic landfill is an order of magnitude greater than settlement of most natural soil.

## Lateral Spreading

Lateral spreading is the horizontal movement of soil toward an open face such as a stream bank, the open side of a fill embankment, the side of a levee, or the wall of an excavation. It can be caused by seismic vibration, runoff or irrigation saturation, or by the removal of side-support such as occurs in deep excavations. Artificial fill areas that have not been properly engineered or that have steep, unstable banks, or unsupported walls are the most likely to be affected. Lateral spreading is likely to occur in areas of high groundwater.<sup>8</sup>

## Site Geology

### Topography

The Specific Plan site is located on alluvial deposits of the Sacramento and American Rivers, within a mile of the rivers' confluence. Ground surface elevations in the Specific Plan Area are between about 20 feet and 40 feet above mean sea level (+20 to +40 feet msl). Most of the Specific Plan Area is relatively flat at about +28 to 30 feet msl, and is about 30 percent covered with paving and structures, as well as numerous stockpiles of soil materials up to 20 feet high.<sup>9</sup>

### Surface and Subsurface Materials

The dominant geomorphic feature at the site of the railyards was China Lake (also known as Sutter Slough, Sutter Lake, and China Slough), which was filled in 1910. The site contained another lake (Willow Lake) on the north end of the property. The two lakes and associated marshland covered a portion of the Railyards Area. Dredging and filling of the site continued until 1913 when the entire area was filled. Fill material consists of river sand, coarse gravel, cobbles and granite brought from Rocklin, California, as well as discarded railroad equipment such as broilers and odd pieces of iron. Near the surface and to a depth of 30 to 50 feet are deposits of silt and sand (commonly referred to as the upper sand unit), including fill placed over the area in the past 130 years. Underlying the upper sand unit is a layer of sandy gravel. The top of the gravel unit is between 60 and 80 feet below the ground surface.

### Groundwater

Both the sand and gravel units are water-bearing. Previous investigations of the Specific Plan Area have identified three water-bearing zones within less than 100 feet below the ground surface: the Silty Sand and Clay zone, the Sand zone, and the Gravel zone. Well-logs do not indicate the

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8 City of Sacramento, 2005, *General Plan Update Technical Background Report Chapter 7, Public Health and Safety*, pages 7.1-5 through 7.1-7.

9 Site observation by PBS&J California-registered geologist G.J. Burwasser, PG 7151, June 1, 2006.

presence of aquicludes (soil or rock layers through which water cannot flow) or aquitards (layers through which water flow is extremely slow, but not prevented completely) between the zones: therefore, the zones probably are connected hydrologically (water flows between them under certain conditions). A fourth water-bearing zone, the Interbedded zone, underlies the Gravel zone and is separated from it by clay layer. The shallow zones are connected hydraulically with the Sacramento River. Groundwater flow in the shallow zones generally is east-southeast, but is controlled by the river. As the surface water elevation of the Sacramento and American Rivers rise and fall, groundwater levels near the banks fluctuate. When the Sacramento River is high, it recharges the groundwater and creates an easterly gradient under the Specific Plan Area. When the water stage levels are lower, the river is recharged by groundwater, creating a westerly gradient. Groundwater has been reported at depths ranging from approximately 14 to 33 feet below the ground surface.<sup>10</sup>

### Soil Types

The US Department of Agriculture Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) remapped Sacramento County's soils most recently in 1993.<sup>11</sup> The soil behavior characteristics identified by the NRCS include permeability, available water capacity, runoff, erosion, and shrink-swell potential.

- **Permeability** - the ability of a soil to transmit water or air. Permeability is considered in the design and construction of soil drainage systems, where the rate of water movement under saturated conditions affects behavior.
- **Available water capacity** - the quantity of water that the soil is capable of storing for use by plants.
- **Runoff** - the amount of water that runs off the surface of the land.
- **Erosion** - the susceptibility of a soil to water and/or wind erosion.
- **Shrink-swell potential** - the potential for volume change in a soil with a loss or gain in moisture. If the shrink-swell potential is rated moderate to high, damage to buildings, roads, and other structures can occur.

Soil characteristics affect suitability for accommodating uses such as shallow excavations, dwellings with basements, small buildings, roads and streets, and lawns and landscaping. Soil limitations can include slow or very slow permeability, limited ability to support a load, high shrink-swell potential, moderate depth to hardpan, low depth to rock, and frequent flooding. The level of limitation is classified as slight, moderate, or severe.

- **Slight** if soil properties and site features generally are favorable for the indicated use and limitations are minor and easily overcome.
- **Moderate** if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or reduce the limitations.
- **Severe** if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are necessary.

10 Cunningham Engineering Corporation, Phase I Environmental Assessment, 2727 Capitol Avenue, Sacramento, CA 95816, July 30, 1999.

11 United States Department of Agriculture Natural Resources Conservation Service, *Soil Survey of Sacramento County California*, Washington DC, April 1993, pages 83, 84, & 109, Sheets 5 & 6.

The NRCS mapped two soil units in the Specific Plan Area: Orthents-Urban Land Complex, 0 to 2 percent slopes; and Urban Land.

- **Orthents-Urban Land Complex, 0 to 2 percent slopes** is a soil unit on low flood plains filled to raise the land surface and reduce the flood hazard. It underlies about 90 percent of the Specific Plan Area. The unit is 50 percent Orthents and 35 percent Urban land (see below) with the remaining 15 percent consisting of small areas of soil types not associated with fill (unspecified, discontinuous exposures of the underlying alluvial soils). Orthents soil is very deep, poorly to well-drained and altered from its original characteristics. It is fill material derived from nearby soil and sediments of mixed origin. The texture, color, and thickness of the layers of fill in this soil vary from one area to another. Permeability is moderately slow to moderately rapid, depending on the grain size and cementation of the material. Available water capacity varies from low to high, also dependant on grain size and cementation. Runoff is slow, and the hazard of water erosion is slight. Urban land consists of areas covered by impervious surfaces such as roads, driveways, sidewalks, buildings, and parking lots. Soil material characteristics under the impervious surfaces are similar to those of Orthents soil. Primary development limitations include depth to a seasonally high water table limiting shallow excavations (such as utility trenches and below-grade parking or storage levels) and the hazards associated with compression from loading. Other limitations include inadequate drainage for deep rooted trees and shrubs. In summer, irrigation is needed to maintain landscaping.
- **Urban Land**, the remaining 10 percent of the Specific Plan Area, underlies the proposed Depot District. This unit consists of areas covered up to 90 percent by impervious surfaces. The soil material under these impervious surfaces may have been altered during construction, and generally are similar to nearby soil units. In this case, the characteristics probably would be similar to those associated with the adjacent Orthents (see above).

## REGULATORY SETTING

Regulations and standards related to geology, soils, and seismicity in the City of Sacramento are included in state regulations, city ordinances, and plans adopted to protect public health and safety. The following is a brief summary of the regulatory context under which geology, soils, and seismic hazards are managed. Agencies with responsibility for protecting people and property in the Specific Plan Area from damage associated with soil conditions and geologic hazards are described below.

### Federal Regulations

There are no federal regulations directly applicable to geotechnical conditions in the Specific Plan Area. Nonetheless, installation of underground utility lines must comply with industry standards specific to the type of utility (e.g., National Clay Pipe Institute for sewers; American Water Works Association for water lines) and the discharge of contaminants must be controlled through the National Pollutant Discharge Elimination System (NPDES) permitting program for management of construction and municipal stormwater runoff. These standards contain specifications for installation, design, and maintenance to reflect site-specific geologic and soils conditions.

### State

#### Building Construction

The State of California provides minimum standards for structural design and site development through the California Building Standards Code (California Code of Regulations (CCR), Title 24). The California Building Code (CBC) is based on the Uniform Building Code, which is used widely

throughout United States, and adopted on a state-by-state or district-by-district basis, and has been modified for California conditions with numerous more detailed and/or more stringent regulations.

Chapter 16 of the CBC reduces impacts associated with exposure of people and structures to seismic hazards, and ensures structures intended for human occupancy built on expansive soils are subject to less-than-significant heaving/settling effects by requiring such development to meet specific minimum seismic safety and structural design standards. Chapter 18 reduces such impacts by requiring that all development intended for human occupancy adhere to standards for excavation of foundations and retaining walls. Chapter 33 specifies the requirements to be fulfilled for site work, demolition, and construction, including the protection of adjacent properties from damage caused by such work. The appendix to Chapter 33 reduces such impacts by requiring that all development intended for human occupancy adhere to regulations pertaining to grading activities, including drainage and erosion control, and construction on expansive soils. The State Earthquake Protection Law (California Health and Safety Code 19100 et seq.) requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC requires a site-specific geotechnical study to address seismic issues and identifies seismic factors that must be considered in structural design.

### Roads

The State of California has established construction standards and design criteria for roadways to safeguard life and property. Construction standards and seismic design criteria are contained in such regulatory codes as Caltrans' *Seismic Design Criteria Version 1.2* (December 2001), *Highway Design Manual*, Sections 110.6, *Earthquake Consideration* (November 2001), and 113, *Geotechnical Design Report* (November 2001), or similar codes adopted by a city for roadway corridor protection. These criteria deal with pavement and subsurface utility design (flexible joints and couplings, overpass construction, etc.), slope stability (especially slumping, settling, and liquefaction in fills), alignment modification to reduce exposure to fault rupture or intense groundshaking, and ground failures such as liquefaction. Prior to construction, geotechnical studies are required to be undertaken: recommended seismic-protection measures are required to be accommodated in the project design. The recommendations provide the required protection from the anticipated effects of seismic groundshaking. Adherence to these standards of protection are mandatory and would reduce the risk of injury or death from earthquakes to the maximum extent technically practicable.

### Bridges

The State regulations guidelines protecting bridges and overpasses from geo-seismic hazards are contained in *Caltrans' Bridge Design Specifications*, *Bridge Memos to Designers*, *Bridge Design Practices Manual*, and *Bridge Design Aids Manual*. These manuals provide state-of-the art information to address geo-seismic issues that affect the design of transportation infrastructure. Bridge design is required to be based on the "Load Factor Design methodology with HS20-44 live loading (a procedure to incorporate the estimated weight of the vehicles and/or pedestrians on the bridge with the weight of the bridge for loading calculations)." Seismic resistant design is required to conform to the *Bridge Design Specifications*, and Section 20 of *Bridge Memos to Designers*, as well as the *Caltrans Seismic Design Criteria*. The seismic provisions contained in these design guidelines, or similarly accepted ones, would be applied to the construction of the rail overcrossings proposed for the Specific Plan Area.

### Fault Lines

The State legislation protecting the population of California from the effects of fault-line ground-surface rupture is the Alquist-Priolo Earthquake Fault Zoning Act. In 1972, the State of California

began delineating Earthquake Fault Zones (called Special Studies Zones prior to 1994) around active and potentially active faults to reduce fault rupture risks to structures for human occupancy. The Act provides for special seismic design considerations if developments are planned in areas adjacent to active or potentially active faults. The Specific Plan site is not crossed by any Alquist-Priolo Earthquake Fault Zone. Because the Specific Plan Area is not in an Alquist-Priolo Earthquake Fault Zone, no associated provisions of the Alquist-Priolo Earthquake Fault Zoning Act related to fault rupture would apply.

### Erosion

State regulations pertaining to the management of erosion/sedimentation as they relate to water quality are described in Section 6.6, Hydrology and Water Quality, of this EIR. Such regulations include, but are not limited to, the NPDES program for management of construction and municipal stormwater runoff, which is part of the federal Clean Water Act and is implemented at the state and local level through permits and preparation of site-specific pollution protection plans. The primary purpose of these regulations and standards is to protect surface waters from the effects of land development. Among other measures included in such regulations and standards are the requirements to reduce the potential for sedimentation caused by erosion.

### **Local**

The Sacramento General Plan contains policies regarding seismic and geological issues as they relate to public health and safety and natural resources. The City's Building Division of the Development Services Department regulates construction at the local level.

### General Plan Goals and Policies

The City of Sacramento General Plan contains a Goal and Policies to protect people and structures from geologic, soils, and seismic hazards that would apply to the Specific Plan Area as indicated below.

### Goals and Policies for Seismic Safety

**Goal A      Protect lives and property from unacceptable risk of hazards due to seismic and geologic activity to the maximum extent feasible.**

Policy

1              Prohibit construction of structures for permanent occupancy across faults, should any be designated.

Development in the Planning Area would not occur across any currently identified fault.

2              Continue to require soils reports and geological investigations for determining liquefaction, expansive soils and subsidence problems on sites for new subdivision and/or multiple-story buildings in the City of Sacramento.

A geotechnical evaluation to identify liquefaction, expansive soils, subsidence, and other potential geologic hazards is required to be performed prior to the initiation of construction in the Planning Area.

3              Continue to implement the Uniform Building Code requirements that recognize State and Federal earthquake protection standards in the construction or repair of buildings.

The standards of the California Building Code as adopted by the City of Sacramento are required to be implemented in structures proposed in the Planning Area.

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### Department of Public Works

The City of Sacramento Building Division of the Development Services Department and the Department of Utilities maintain policies and guidelines regarding grading, erosion control, stormwater drainage design, inspection, and permitting with responsibility for several types of permits, including:

- Grading permits
- Construction permits
- U.S. Army Corps of Engineers Nationwide Permit 12 for utility line backfill and bedding
- California State Water Resources Control Board general Construction Activity Discharge of Stormwater Permits (NPDES)

### Site-Specific Geotechnical Investigation

Prior to the commencement of any earthwork at a construction site in the Specific Plan Area, a complete geotechnical investigation must be prepared for that site. The geotechnical investigation must include soil borings to collect samples and laboratory testing to determine the appropriate design parameters for use for structural fill, roadbed fill, and landscaping fill, along with the fill placement requirements. The various soils may be tested for corrosivity to allow for proper infrastructure and foundation design. Information from previously completed investigation reports of other portions of the Specific Plan Area may be included as appropriate.

The geotechnical evaluation must provide grading and design recommendations to address slope, channel-wall, and foundation instability; groundwater level and need for dewatering; erosion control; expansive soils; and differential settlement. The investigation must evaluate the soil types, test for shrink-swell potential, and determine preliminary load-bearing and strength characteristics. The geotechnical evaluation must be provided to the City as part of the City's building permit process. The City must review the geotechnical report along with project design to confirm that the recommendations in the geotechnical report are reflected in project design.

The City requires design of engineered fills to be addressed in the geotechnical investigation by assessing the structural properties of any soils in the Specific Plan Area proposed for use as backfill. Such investigations would address specific portions of the Specific Plan Area to be developed. The designs would be required to account for various structures and roadway proposals. In addition to evaluation for engineered fills, specific geotechnical evaluation of engineered slopes (for foundation drainage, landscaping, channel walls, etc.) must be included in the geotechnical evaluation. All proposed cut and/or fill slopes, including temporary slopes and excavations, must be evaluated for proper design to reduce the hazard of over-steeping and/or removal of lateral support, both of which could lead to slope instability, soil creep, and/or structural failure. If necessary, slopes must be designed with additional lateral support, such as buttressing or shoring, and fill slopes must be keyed properly into competent formation-support materials. Slopes along the proposed channel must be designed with proper protection to prevent soil erosion and channel-bank undercutting. Excavation, grading, and fill placement must be monitored and compaction testing performed to ensure proper placement of all fill types (structural, non-structural, and roadbed). Soils with low strength and/or high shrink-swell potential must be controlled using such techniques as over-excavation and replacement, wet compaction, or by covering with a sufficient amount of granular soils (as determined by the geotechnical investigation). Untreated expansive soils must not be used for structural fill.

The City requires that applicants for new development in the Specific Plan Area submit a geotechnical engineering report produced by a California Registered Civil Engineer (Geotechnical)



or Engineering Geologist to the Development Services Department for review prior to any improvement plan approval. The report must address and make recommendations on the following topics, as previously described:

- Road, pavement, and parking area design
- Structural foundations, including retaining wall design (if applicable)
- Grading practices
- Erosion control
- Special problems discovered on-site, (i.e., shallow groundwater, expansive/unstable soils, corrosive characteristics, etc.)
- Slope stability, including excavation walls

A grading permit must be prepared prior to grading activities. The applicant must submit, for review and approval, Improvement and/or Grading Plans along with a site-specific erosion and sedimentation control plan.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The geotechnical characteristics of a Specific Plan Area determine its potential for structural and safety hazards that could occur during construction and/or operation of a proposed project. Numerous site assessment studies were undertaken in the Specific Plan Area and its vicinity to characterize the extent and nature of hazardous materials contamination, as described in the Site Investigation and Cleanup Bibliography found in Appendix G of this DEIR. These reports, in conjunction with available USGS and CGS topographical and seismic maps, NRCS reports, and other studies that included relevant geologic data, were reviewed and used to determine whether geological impacts would occur from the proposed development in the Specific Plan Area.

The following evaluation illustrates that the design-controllable aspects of building foundation support, protection from seismic ground motion, and soil or slope instability are governed by existing regulations of the State of California and the City of Sacramento. These regulations require that project designs reduce potential adverse soils, geology, and seismicity effects to less than significant levels. Compliance with these regulations is required, not optional. Compliance must be demonstrated by the project applicant to have been incorporated into the project's design before permits for project construction would be issued.

### **Standards of Significance**

For the purposes of this EIR, impacts on geologic and soils resources or from geologic, soils, or seismic conditions would be considered significant if the proposed project would create circumstances exceeding one or more of the following thresholds. Adverse impacts in these categories would be considered unavoidable significant effects of the project if they could not be (a) reduced to a level of risk consistent with the standards established by the City of Sacramento Building Code, (b) eliminated, or (c) avoided by using existing techniques accepted as applicable and feasible by the City's geotechnical consultant. A significant impact is identified if the proposed project could:

- Expose people or structures to potential adverse effects beyond those for which structures are required to be designed by the Sacramento Building Code, including the risk of loss, injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zones Map issued by the State Geologist for the Sacramento area or based on documented evidence of a known fault provided by the geologic/geotechnical investigations required by the Sacramento Building Code;
  - Strong seismic ground shaking (Modified Mercalli Intensity equal to, or greater than, MMI VII);
  - Seismic-related ground failure, including liquefaction; or
  - Landslides.
- Result in soil erosion or the loss of topsoil exceeding the standards established by the National Pollutant Discharge Elimination System permitting process for projects in the Sacramento area and/or the City of Sacramento Building Code.
  - Be underlain by a geologic or soil unit that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site lateral spreading, subsidence, settlement, or collapse, as documented in the geotechnical investigations required by the City of Sacramento Building Code, or similarly applicable design guidelines.
  - Be underlain by expansive soil, as defined in Table 18-1-A of the California Building Code (2001), as adopted by the City of Sacramento, creating life or property hazards.

### **Project Components**

The Specific Plan does not include any specific policies or actions that guide excavation, grading, or management of other geotechnical issues on the project site.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.4-1 The proposed project could expose people or structures to rupture of an earthquake fault.**

A comparison of the location of the Specific Plan Area with the fault-location information outlined in the Setting portion of this section of the EIR shows the Holocene-period Dunnigan Hills fault, about 19 miles northwest, as the closest known fault. The Late Quaternary Vaca fault, about 28 miles southwest, is the next closest known fault. The buried pre-Quaternary Midland fault and Willows fault zone could pass about 22 miles west and 5 miles east of the Specific Plan Area, respectively, but their existence and locations are uncertain. The Green Valley fault, about 42 miles southwest, is the closest fault in an Alquist-Priolo Earthquake Fault Zone. Because none of these faults cross or trend toward the Specific Plan Area, fault-line surface rupture is not considered a hazard. Consequently, the proposed project would have **no impact** regarding exposing people or structures to rupture of a known earthquake fault.

#### **Mitigation Measure**

*None required.*

#### **6.4-2 The proposed project could expose people and structures to moderate or strong seismic groundshaking (MMI VI to MMI VII).**

From a review of regional and local geo-seismic conditions, it is apparent that the City of Sacramento could be subjected to at least one major earthquake during the life of uses proposed in

the Specific Plan.<sup>12</sup> The highest intensity of groundshaking experienced in the Specific Plan Area (MMI VI to VII) would be caused by a  $M_w$  7.9 earthquake on the San Andreas Fault or a  $M_w$  6.6 earthquake on the Dunnigan Hills fault, which is the closest fault to the Specific Plan Area. The resulting vibration could cause damage to buildings, roads, and infrastructure (primary effects), and could cause ground failures such as liquefaction or settlement in loose alluvium and/or poorly compacted fill (secondary effects).

The proposed buildings and structures in the Specific Plan Area would be underlain by artificial fill and alluvial deposits that, in their present states, could respond poorly to loading during seismic ground motion. To reduce the primary and secondary risks associated with seismically induced groundshaking, it is necessary to take the location and type of subsurface materials into consideration when designing foundations and structures in the Specific Plan Area. In Sacramento, commercial, institutional, and large residential buildings and all associated infrastructure are required to reduce the exposure to potentially damaging seismic vibrations through seismic resistant design, in conformance with Chapter 16, *Structural Design Requirements*, Division IV, *Earthquake Design*, of the California Building Code.

Adherence to the Building Code, as required by state and City law, would ensure maximum practicable protection available for users of buildings and associated infrastructure. Adherence would include:

- The use of CBC Seismic Zone 3 Standards as the minimum seismic-resistant design for all proposed facilities (Ch. 16 Div. IV §1630);
- Seismic-resistant earthwork and construction design criteria, based on the site-specific recommendations of a California Certified Engineering Geologist in cooperation with the project's California-registered geotechnical and structural engineers (Ch. Div. I §1610);
- An engineering analyses that demonstrates satisfactory performance of alluvium or fill where either forms part or all of the support, especially where the possible occurrence of liquefiable soils exists (Ch. 18 §1809); and
- An analysis of soil expansion potential and appropriate remediation (compaction, removal/replacement, etc.) prior to using any expansive soils for foundation support (Ch. 18 §1803).

Similarly, the design of the roads and bridges (vehicular and pedestrian overcrossings) would be required to comply with the Caltrans design Criteria listed previously, and/or other accepted non-building structure standards to reduce the primary and secondary risks associated with seismically induced groundshaking.

Based on an existing regulatory framework that addresses earthquake safety issues and requires adherence to the requirements of the Building Code and various design standards, seismically induced groundshaking would not be a substantial hazard in the Specific Plan Area. In view of the above, the proposed project would have a ***less-than-significant impact*** regarding exposing people or structures to damage resulting from strong seismic groundshaking.

#### Mitigation Measure

*None required.*

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12 Working Group on California Earthquake Probabilities, 2003. The United States Geological Survey projected a 27 percent chance of at least one earthquake equal to or greater than MW 6.7 on the Hayward fault and a 21 percent chance on the San Andreas fault between 2003 and 2032.

### 6.4-3 The proposed project could expose people and structures to seismic-related ground failure, including liquefaction.

The Specific Plan Area contains soils that are prone to liquefaction, as previously discussed. The unknown nature of the fill adds to the liquefaction hazard, which is exacerbated by the high water table and the known alluvial deposits. Potentially unstable soils discovered by the geotechnical investigation and/or revealed during excavation are required by provisions of the Building Code to be removed and replaced, or otherwise treated to provide appropriate foundation support and to protect foundations from failure through liquefaction (see also information below under Impact 6.4-7). Adherence to the Seismic Zone 3 soil and foundation support parameters in Chapters 16 and 18 of the Building Code and the grading requirements in Chapters 18, 33, and the appendix to Chapter 33 of the Building Code, as required by City and state law, ensures the maximum practicable protection available from soil failures under static or dynamic conditions for structures and their associated infrastructure, trenches, temporary slopes, and foundations. Similarly, transportation infrastructure would be required to comply with the Caltrans design Criteria listed previously, or other accepted non-building structure standards to reduce the risks associated with seismically induced ground failures. In view of the above, the proposed project would have a ***less-than-significant impact*** regarding exposing people or structures to damage resulting from seismic-related ground failure.

#### Mitigation Measure

*None required.*

### 6.4-4 The proposed project could result in damage to the historic Central Shops.

Excavation and trenching would need to be performed around the existing historic buildings to install utility lines, roadways, or hardscaping. These excavations would be vertical and would be in unconsolidated sediments or artificial fill. Slumping of material in the excavation walls and/or trenches could endanger workers and undercut ground support for the foundations of the historic structures. Dewatering to install utilities or permanent dewatering could also be required due to shallow groundwater depth. Dewatering could cause settlement, which could crack the foundations, walls, or floor slabs of the existing buildings. In addition, two new buildings are proposed to be constructed adjacent to the existing historic structures. Construction of these buildings could result in temporary instability in the soil surrounding the existing historic buildings, which could affect the existing buildings as described above. Also, the weight of the new buildings could result in settlement that could extend into soils around the existing buildings. As with dewatering, settlement could adversely affect the integrity of the existing buildings, and when the existing buildings are occupied, could present a physical hazard to occupants. This is considered a ***potentially significant impact***.

Installation of infrastructure improvements around the existing buildings and the construction of new buildings would be required to comply with the UBC and City building requirements summarized in the Regulatory Setting. Shoring or excavations and trenches would be required to comply with OSHA regulations. The City of Sacramento also imposes dewatering requirements on projects. Prior to occupancy, existing buildings would also be retrofitted, as appropriate, to meet current State and local code requirements, which would be necessary to protect future occupants. However, the installation of infrastructure and construction of other buildings could precede occupancy of the historic buildings. The potential risk of damage to the historic buildings is considered a ***significant impact***.

### Mitigation Measure

Implementation of the following mitigation measure would reduce this impact to a **less-than-significant level** by ensuring that the historic buildings are stabilized prior to surrounding construction work:

- 6.4-4 a) *To the extent feasible, the historic buildings shall be stabilized and reinforced prior to trenching or other construction activities adjacent to the buildings.*
- b) *The project applicant shall take reasonable precautions to protect historic structures from damage, such as settlement, caused by excavation, trenching, dewatering, or other construction activities adjacent to the buildings that could affect the integrity of the buildings or expose workers to physical hazards.*
- c) *Measures shall be taken to reduce or eliminate potential ground settlement of the areas surrounding the historic buildings due dewatering, excavation, or adjacent construction. A pre-excavation settlement-damage survey shall be prepared that shall include, at a minimum, visual inspection of existing vulnerable structures for cracks and other settlement defects, and establishment of horizontal and vertical control points on the buildings. A monitoring program of surveying horizontal and vertical control points on structures and shoring shall be followed to determine the effects of dewatering, excavation, and construction on the particular building site. If it is determined by the engineer that the existing buildings could be subject to damage, work shall cease until appropriate remedies to prevent damage are identified.*

### **6.4-5 The proposed project could expose people or structures to landslides.**

The topographic conditions outlined in the Setting portion of this section of the EIR show that the Specific Plan Area is nearly flat; therefore, landslides would not be a hazard. In view of this situation, the proposed project would have **no impact** regarding exposing people or structures to hazardous landslide conditions.

### Mitigation Measure

*None required.*

### **6.4-6 The proposed project could cause erosion or the loss of topsoil during construction or operation.**

The regulations governing erosion and sedimentation issues are addressed more fully in Section 6.6, Hydrology and Water Quality, of this EIR.

Because one of the major effects of erosion is sedimentation in receiving waters, erosion control standards are set by the Regional Water Quality Control Board (RWQCB) through administration of the NPDES permit process for storm drainage discharge. The NPDES permit requires implementation of nonpoint source control of stormwater runoff through the application of a number of Best Management Practices (BMPs). These BMPs are meant to reduce the amount of constituents, including eroded sediment, that enter streams and other water bodies. A Storm Water Pollution Prevention Plan (SWPPP), as required by the RWQCB, is required to describe the stormwater BMPs (structural and operational measures) that would control the quality (and quantity) of stormwater runoff.

As part of the SWPPP, an Erosion and Sediment Transport Control Plan is required to be prepared for the project prior to the commencement of grading. An erosion control professional, or landscape architect or civil engineer specializing in erosion control, must design the Erosion and Sediment Transport Control Plan and be on the project site during the installation of erosion and sediment transport control structures, and to supervise the implementation of the designs and maintenance of such facilities throughout the site clearing, grading and construction periods. Thus, erosion during the construction and operational periods would be controlled.

Other than the sedimentation effects, the loss of topsoil through erosion from project sites in developed areas increases the amount of soil needed to be imported for landscaping purposes. In the case of the Railyards, such topsoil as exists would be subject to inspection and possibly clean-up activities (see Section 6.5, Hazardous Materials, of this EIR) prior to reuse. Because most of the exposed ground surface is fill, it is reasonable to expect little if any topsoil would be available onsite, and that its loss would be prevented by the previously described erosion control measures. Consequently, the proposed project would have a ***less-than-significant impact*** regarding soil erosion and loss of topsoil.

#### Mitigation Measure

*None required.*

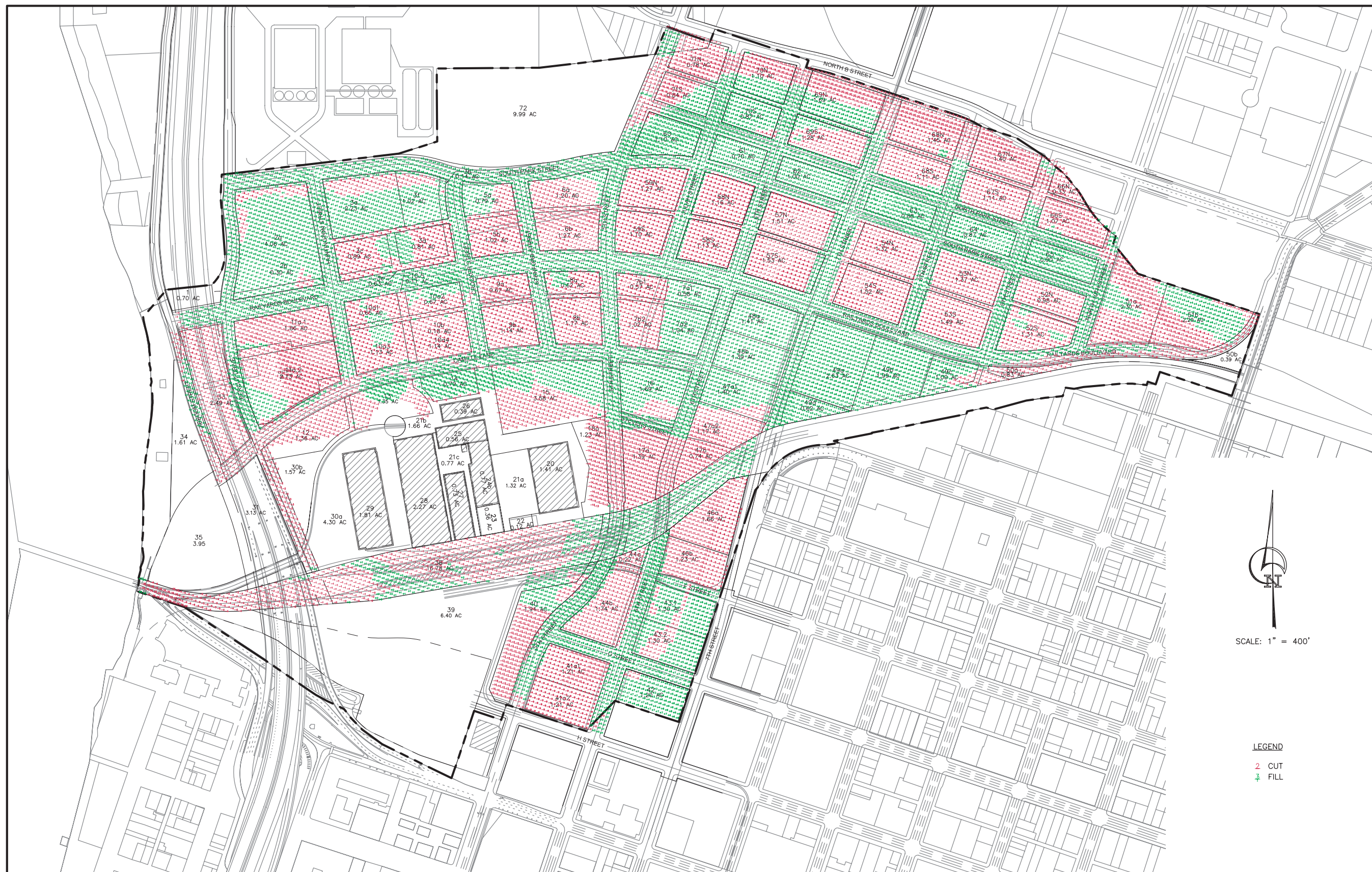
#### **6.4-7 The proposed project could cause on- or off-site lateral spreading, subsidence, settlement, or collapse because the Specific Plan Area contains unstable geologic and soil units.**

Figure 6.4-2 shows the areas where fill will be placed to construct the final topography of the site and generally make the site suitable for the proposed mixed-use development.<sup>13</sup> The goal of the proposed grading plan shown in Figure 6.4-2 is to balance the amount of cut and fill on-site, and minor fill would be imported only if necessary. At many locations, clean fill and/or impervious surfaces such as buildings and structures, parking lots, and roadways would be placed on top of soil that has been allowed to remain in place according to DTSC-approved RAPs and RDIPs.

Because soils from the site would be re-used elsewhere on-site as fill and cuts would be made, it would necessary to ensure the materials used for foundation support are sound. Using unsuitable materials (e.g., fill that has not been compacted properly) would have the potential to create heaving, subsidence, or collapse problems leading to excavation wall failure, building or bridge settlement, and/or utility line and pavement disruption. The risk of soils collapse and settlement would be highest in areas of the filled China Lake and Willow Lake lakebed. Lateral spreading could occur along the Sacramento and American River levees. Lateral spreading and collapse could occur in unsupported walls of pits excavated in the existing fill or loose alluvium.

To eliminate any adverse effects of weak materials in the cut-and-fill locations on buildings or non-building structures for human occupancy, the buildings and structures would need foundations that do not depend on weak soils for support. This can be accomplished by such methods as removing the existing fill and replacing it with select fill (non-expansive, non-organic, appropriately sized mix of materials); covering the existing fill with select fill; extending the foundations below the existing fill using cast-in-place piers, piles, or similar deep-foundation design. It is relatively common to re-engineer weak soils specifically for stability prior to use. This can be done for the support of surface

13 Parcel 72 (in the northwest corner of the project site [the "Vista" open space area]) would be filled and covered with an engineered cap, as described in greater detail in Section 6.5, Hazards and Hazardous Substances.



Source: NOLTE, 2007.

**FIGURE 6.4-2**  
**Railyards Preliminary Grading Plan Cut and Fill Locations**

NORTH  
 SCALE: 1" = 400'

LEGEND  
 2 CUT  
 3 FILL

NORTH  
 SCALE: 1" = 400'

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Railyards Specific Plan EIR





parking areas and light structures. An acceptable degree of soil stability can be achieved for expansive material by the required incorporation of soil treatment programs (e.g., replacement, grouting, compaction, drainage control) in the grading and construction plans to address site-specific soil conditions. A site-specific evaluation of soil conditions is required by the City and must contain recommendations for ground preparation and earthwork specific to the site, and incorporated into the construction design.

It should be noted that before any on-site fill materials to be placed or re-engineered to support the intended uses are required to be remediated to DTSC Target Cleanup Levels, as described in Impact 6.5-2 in Section 6.5, Hazardous Materials.

Because of the shallow water table, dewatering would likely be necessary at many excavation sites in the Specific Plan Area. Often, the groundwater provides partial support for the near-surface soil materials and, when withdrawn, allows the soils to slough into the excavation. If the dewatering system draws down the water table adjacent to the excavation, there is the possibility of undermining foundations on the adjacent site, causing cracking or collapse. To avoid these conditions, dewatering system design and excavation-wall support need to be appropriate to the soil conditions. The required site-specific evaluation of soil conditions must contain recommendations for these systems specific to the site, and be incorporated into the construction design. The dewatering system must also comply with City requirements for water quality protection, as described in Impact 6.6-3 in Section 6.6, Hydrology and Water Quality.

As part of the construction permitting process, the City requires completed reports of soil conditions at the specific construction sites to identify potentially unsuitable soil conditions including liquefaction, settlement, subsidence, lateral spreading, and collapse. The evaluations must be conducted by registered soil professionals, and measures to eliminate inappropriate soil conditions must be applied, depending on the soil conditions. The design of foundation and excavation-wall support must conform to the analysis and implementation criteria described in the City's Building Code, Chapters 16, 18, 33, and the appendix to Chapter 33. Adherence to the City's codes and policies would ensure the maximum practicable protection available for users of buildings and infrastructure and their associated trenches, slopes, and foundations. Thus, the proposed project would have a **less-than-significant impact** regarding exposing people or property to the hazards of unstable geologic units or soils.

#### Mitigation Measure

*None required.*

#### **6.4-8 The proposed project could be located on expansive soil, as defined in Table 18-1-A of the California Building Code (2001), as adopted by the City of Sacramento, creating life or property hazards.**

The existence of undocumented fill in the Specific Plan Area, as explained for Impact 6.4-7, or re-use of existing fill materials on-site increases the possibility of expansive soils occurring randomly and causing foundation-stability issues for dwellings, roads, bridges, and utilities. The preceding discussions of soil and seismic issues indicate that the Building Code requires a site-specific foundation investigation and report for each construction site that (a) identifies potentially unsuitable soil conditions and (b) contains appropriate recommendations for foundation type and design criteria that conform to the analysis and implementation criteria described in the City's Building Code, Chapters 16, 18, 33, and the appendix to Chapter 33. As indicated, a regulatory framework exists to address weak soils issues, including the risk of soil expansion. In view of these requirements, the proposed project would have a **less-than-significant impact** regarding exposing people or property to the hazards of expansive soils.

Mitigation Measure

*None required.*

**Cumulative Impacts and Mitigation Measures**

The geographic context for the analysis of impacts resulting from geologic hazards generally is site-specific, rather than cumulative in nature, because each development site has unique geologic and soils characteristics that would be subject to uniform site development and construction standards imposed by the City of Sacramento. Restrictions on development would be applied in the event that geologic or soil conditions posed a risk to safety exceeding the standards required by the Building Code or similarly applicable guidelines.

**6.4-9 The proposed project would contribute to increases in the number of people exposed to seismic and geologic risks.**

The proposed project would be exposed to potential geologic hazards related to soil and subsurface conditions at individual building sites, and to groundshaking from earthquakes along known and unknown faults in the Coast Ranges and the Sierra Nevada. Although these effects vary in intensity and are common throughout California, their effects would be site-specific. Buildings and facilities for human occupancy in Sacramento are required to be sited and designed in accordance with appropriate geotechnical and seismic guidelines and recommendations consistent with the Sacramento Building Code. Because adherence to relevant plans, codes, and regulations with respect to project design and construction would provide the prescribed levels of safety for the geotechnical and soils conditions at the site, the project would not make a considerable contribution to cumulative impacts, as defined in the CEQA Guidelines, §15065(a)(3). Consequently, project-related cumulative impacts regarding geologic hazards would be *less than significant*.

Mitigation Measure

*None required.*

**6.4-10 The proposed project would contribute to cumulative increases in erosion within the American River watershed.**

Potential impacts from erosion and the loss of topsoil caused by site development and operation can be cumulative in effect within a watershed. The American River Watershed forms the geographic context of cumulative erosion impacts. The analysis accounts for all anticipated cumulative growth in this geographic area, as represented by full build-out of the Sacramento General Plan and the General plans of upstream communities. Such development is subject to federal, state, and/or local runoff and erosion prevention requirements, including the applicable provisions of the general construction permit, BMPs, and Phases I and II of the NPDES permitting process as administered by the Regional Water Quality Control Board, as well as implementation of fugitive dust control measures of Air Quality Management District Rule 403. Applicable measures are required by the Water Board and the Air District to be implemented as conditions of approval of all project development and are subject to continuing enforcement.

Implementation of the proposed project would cause the modification of site conditions to accommodate development and to provide a stable and safe environment. During the construction phase, this modification could expose soil to erosion by wind or water. Development of other cumulative projects in the vicinity of the project site could expose soil surfaces, and further alter soil conditions, subjecting soils to erosional processes during construction periods. To reduce the potential for cumulative erosion impacts, all projects in the watershed are required to be developed in conformance with the provisions of applicable federal, state, county, and/or city laws and

ordinances as noted previously. Project sites more than one acre in size would be required to comply with the provisions of the NPDES permitting process and local implementation strategies, which would reduce the potential for erosion during construction and operation of the facilities to the extent feasible. Compliance with this permit process, in addition to the legal requirements related to erosion-control practices, would reduce the potential effects of erosion to a less-than-significant level. As a result, it is anticipated that the individual contribution of the proposed project to cumulative erosion impacts in the watershed would not be considerable and that the effect from cumulative development activity would be less than significant. Consequently, project-related cumulative impacts regarding erosion and loss of topsoil would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **Sports and Entertainment Facility Overlay**

The evaluation of impacts for the Sports and Entertainment Facility Overlay is the same as that for the proposed Specific Plan as a whole. Each of the corresponding impacts is addressed by the same set of legal requirements. No mitigation measures beyond 6.4-4 (stabilization of historic shops) are needed because the adverse conditions involved are required to be reduced to less-than-significant levels by the Building Code or similar design guidelines prior to permit issuance. Consequently, the Sports and Entertainment Facility Overlay would have less-than-significant impacts regarding exposure of people or property to geologic, soils, or seismic hazards.



## **6.5 HAZARDS AND HAZARDOUS SUBSTANCES**



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## 6.5 HAZARDS AND HAZARDOUS SUBSTANCES

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### INTRODUCTION

The focus of this section of the EIR is the evaluation of potential environmental impacts arising from construction and operation of the proposed project as they relate to soil or groundwater contamination that has been identified in the Specific Plan Area. Several buildings in the Specific Plan Area would be renovated and/or restored as part of the project (see Chapter 3, Project Description). The evaluation also addresses potential hazards associated with hazardous building materials (e.g., asbestos) that could be disturbed by project activities. This section of the EIR includes an overview of laws and regulations applicable to the cleanup of contaminated sites and summarizes the current status of site characterization and cleanup efforts.

In addition to the issues summarized above, this section also evaluates the extent to which routine hazardous substances use and transport in the Specific Plan Area could affect people during construction and occupancy of the proposed project.

Numerous technical reports have been prepared that document the results of extensive soil and groundwater investigation and cleanup efforts at the Specific Plan Area. The 1994 Railyards Specific Plan/Richards Boulevard Area Plan EIR also evaluated, at a programmatic level, the potential human health effects of development of the Railyards with respect to known and potential soil and groundwater contamination associated with historic uses. Since certification of the RSP/RBAP EIR, extensive investigation and cleanup activities have been performed at the Specific Plan Area, which are summarized in the “Environmental Setting,” below. The aforementioned documents are listed in Appendix I (Site Investigation and Cleanup Bibliography) in this EIR and are available for review at the City of Sacramento. The primary documents from which information was compiled for this analysis include: site investigation and remediation documents, which are listed in Appendix I, and the draft Specific Plan (June 2007). The City of Sacramento, the California Department of Toxic Substances Control (the agency with oversight authority for cleanup of the Railyards contamination), and the project applicant are finalizing a Tri-Party Memorandum of Understanding (MOU) which would identify the respective roles and responsibilities of the vested parties .

This section also addresses relevant comments received in response to the Notice of Preparation (Appendix A). Comment letters are included in Appendix B. A letter from DTSC, which is the agency providing lead regulatory oversight for cleanup of contaminated soil and groundwater at the site, noted that:

...significant cleanup and characterization activity is occurring on portions of the Plan Area at this time, and more are planned.... Remedial Action Plans (RAPs) have been completed and approved [by DTSC] for the Northern Shops, Central Corridor, Car Shop Nine, Sacramento Station, and the Lagoon Study Area. DTSC, UP, the Regional Water Quality Control Board, and the City of Sacramento are coordinating on a modification of the approved RAP for the Northwest Corner of the Lagoon Study Area. Also, we are reviewing the major documents leading to RAP approval for the Central Shops/South Plume Groundwater Area, the Lagoon Groundwater Study Area, and former Manufactured Gas Plant on the west side of the site.

DTSC staff requested that the EIR address “specific issues related to remediation of contamination at the site.” The analysis presented in this section assumes that potential environmental impacts associated with implementation of approved remediation plans have been evaluated independently by DTSC in determining whether to approve the plans (a discretionary action subject to CEQA). The City has no discretionary authority over the selection of the remediation approach for any portion of

the Specific Plan Area, including those remedial actions that would be performed by the project applicant. However, the City must consider whether any of the potential approaches that could be implemented prior to, during, or after construction, as identified in the DTSC-approved RAPs and subsequent implementation plans, would affect its land use decisions regarding the proposed project.

A letter from the City of Sacramento Department of Parks and Recreation expressed concern about the level of soil contamination in any of the park site locations and that the EIR examine potential human health effects associated with such use.

Other comments related to hazardous air emissions (e.g., diesel particulate matter or other toxic air contaminants) are addressed in Section 6.1, Air Quality.

## **ENVIRONMENTAL SETTING**

### **Soil and Groundwater Contamination**

#### **Specific Plan Area**

The 244-acre Specific Plan Area served as the Southern Pacific Railroad (later Union Pacific Railroad [UPRR]) principal locomotive and maintenance rebuilding facility, among other functions, since 1863. Many different industrial operations occurred at the Specific Plan Area over its history. Primary operations at the site included assembly and building of locomotives and railroad cars and repairing or refurbishing of the cars and locomotives. Activities associated with these operations included steel fabrication, brick production, boiler-making, copper and tinsmithing, blacksmithing, machine work, carpentry, metal plating, upholstering, washing, welding and cutting, paint removal and application and sand blasting. At one time, the Specific Plan Area also produced rails, steam engine and ferry parts and cable cars. Many of these activities are associated with lead and other heavy metal waste. Many different industrial processes were also associated with specific buildings on the site, and some processes were performed in numerous structures over time. Additional operations may have existed that were not recorded or did not occur in one location long enough to warrant mention by historians. These factors contribute to difficulties in obtaining accurate chemical use, storage, and disposal information. Many types of chemicals were used for Railyards operations. Fuels, caustic solutions, paints, solvents, and metal alloys appear to constitute the majority of chemicals used at the site. Over the history of the Railyards, numerous underground storage tanks (USTs) were installed to store chemicals associated with operations.<sup>1</sup> Additional information regarding site history can be found in Section 6.3, Cultural Resources.

Industrial activities are no longer performed on the site. However, these historic activities involved on-site disposals, spills, and other releases of hazardous chemical products and items containing hazardous substances that resulted in soil and groundwater contamination. Due to releases of industrial chemicals to soil and groundwater, the Railyards is now listed as a state superfund site. In addition, the Railyards is included on the state Hazardous Waste and Substances List ("Cortese List") compiled pursuant to Government Code 65962.5 and referenced at Public Resources Code 21092.6.

Soil within the Specific Plan Area contains metals (primarily lead), petroleum hydrocarbons, volatile organic compounds, and asbestos. The metals, petroleum hydrocarbons, and volatile organic compounds ultimately led to degradation of shallow groundwater underlying the site. Additional information on the types and extent of contamination is summarized below.

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1 Railyards Specific Plan/Richards Boulevard Area Plan Draft EIR, Section 4.13, 1994.



UPRR (formerly Southern Pacific Transportation Company [SPTCo]) and DTSC entered into an Enforceable Agreement in 1988 regarding the investigation and remediation of hazardous substances at the Railyards. The purpose of the Enforceable Agreement is to ensure that releases or threatened releases of hazardous substances from the Specific Plan Area are adequately investigated and that appropriate remedial actions are taken. The Enforceable Agreement also specifies the documentation that must be produced and submitted to DTSC for review and approval for each study area as part of the remediation process. The site cleanup process for the Specific Plan Area consists of the following:

- A Remedial Investigation (RI) Report, which summarizes the nature and extent of contamination at the site, as determined by investigation overseen by DTSC;
- A Feasibility Study (FS), which identifies remedial objectives, evaluates the feasibility of various remedial technologies, and develops remedial alternatives to address the remedial objectives identified for the site;
- A Final RAP,<sup>2</sup> which describes in detail the remedial actions that will be undertaken to remedy contamination at the site, and which incorporates public comment arising from review of the Draft RAP;
- A Remedial Design document (Remedial Design Implementation Plan, or RDIP), which provides detailed technical plans and engineering designs for implementation of the remedial alternative selected in the RAP. This document also identifies the environmental controls that will be used to ensure that contaminants are not inadvertently released to the environment during remediation where they could pose a human health hazard;
- A Closure Report, which provides documentation of successful remediation efforts and implementation of the RAP; and
- Certification which provides written approval from DTSC that the RAP has been implemented.

A key element of the soil and groundwater RI reports is to provide the data requirements for completion of the baseline risk assessment (RA) and development of the Remedial Action Objectives (RAOs) for selected land use options. However, consistent with applicable regulations and standards, the RI reports do not provide recommendations for future land use but, rather, provided the data for development of RAOs with the objective of limiting human-health and ecological-health hazards based on the selected land use. Determining risk levels is a subsequent step in the process.

The primary objective of a Baseline Risk Assessment (RA) is to characterize the potential for chemicals to result in adverse health effects in potentially exposed human populations and ecological species as the Specific Plan Area site currently exists. That is, it evaluates the actual and potential risks in the absence of any remediation. In addition, as mandated by DTSC guidance, the RA also evaluates the potential risks to future residential populations at the project site. This provides an upper-bound estimate of potential health risks using the most health-protective scenario. Each Baseline RA prepared for the Railyards cleanup included four steps: hazard identification or data evaluation of constituents of concern (COCs); exposure assessment; toxicity assessment; and risk characterization.

The process outlined above has been completed for a majority of the Specific Plan Area and has been subject to a separate CEQA review process conducted by DTSC as part of the RAP approval process and the City in its review of earlier development plans for the Railyards. Appendix I (Site

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2 Environmental review pursuant to CEQA must be undertaken by DTSC in conjunction with RAP approval.

Investigation and Cleanup Bibliography) includes a bibliography of the technical reports that have been prepared to document the results of the site investigations and work plans for site cleanup. Each of the site investigation and remediation reports listed in the bibliography in Appendix I have been reviewed by DTSC and in some cases the CVRWQCB to ensure compliance with applicable laws and regulations pertaining to the cleanup of hazardous substances contamination. The results of these studies are summarized in this section.

### Status of Soil and Groundwater Remediation

For purposes of the site investigations, DTSC approved separating the Railyards Specific Plan Area into six different soil study areas: Lagoon Study Area (LSA), Car Shop Nine Study Area (CSN), Northern Shops Study Area (NSA), Central Shops Study Area (CSA), Central Corridor Study Area (CCA), and Sacramento Station Study Area (Sacramento Station). The locations of these study areas are illustrated in Figure 6.5-1. The Car Shop Nine, Central Shops, and Central Corridor study areas were comprehensively evaluated in a combined RI/FS and RAP. The groundwater investigation consists of the Lagoon Groundwater Study Area, Manufactured Gas Plant (MGP) Study Area, and the South Plume Groundwater Study Area. The groundwater remediation activities are being conducted under these two units, while remediation activities for soil are conducted under separate RI/FS/RAP processes. The results of these investigations and subsequent FS, RA, and RAP reports, which are summarized below, have been extensively and comprehensively documented (see Appendix I, Site Investigation and Cleanup Bibliography). In addition to these study areas, four other areas (the Sand Piles site, Battery Shop Yard, Pond and Ditch/Former API Separator, and Drum Storage Area) were identified as hazardous waste units under the Resource Conservation and Recovery Act (RCRA).

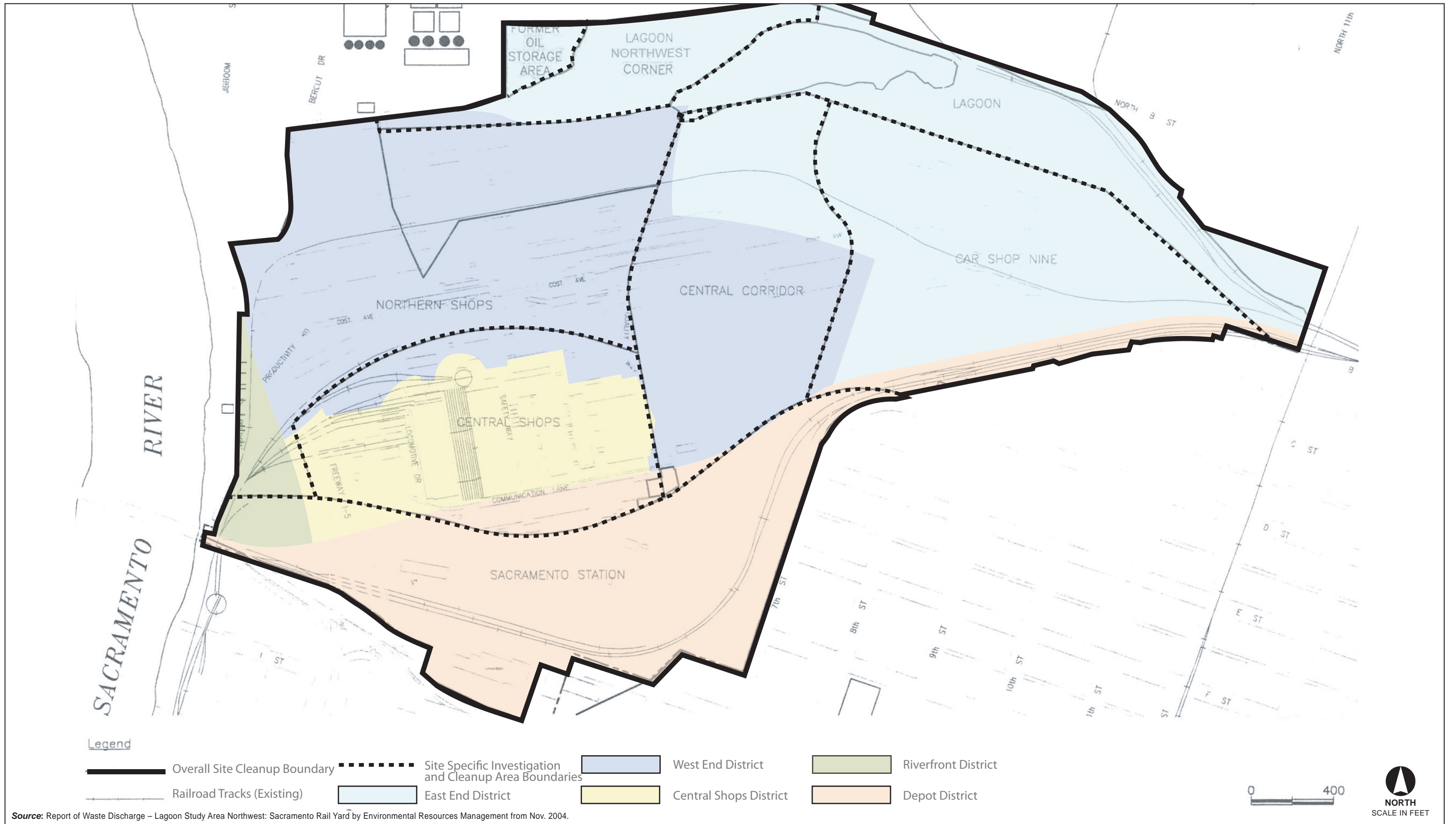
Since the 1994 Specific Plan, UPRR has completed the investigation of most parts of the Railyards, and has completed the RI/FS/RAP process for all soil study areas except the Central Shops study area. The types and extent of chemical impact to soil is, therefore, well known and has been well documented through the RI/FS process. This information, as well as the selected remedies, have been reviewed by the public and approved by DTSC through the RAP process.

As previously mentioned, the chemicals present in Specific Plan Area soil fall into five categories:

- Asbestos
- Metals
- Volatile Organic Compounds (VOCs)
- Petroleum Hydrocarbons; and
- Semivolatile Organic Compounds (SVOCs)

Although there is some overlap among these categories, typically each category possesses characteristics that influence where the chemicals are likely to be found given their mobility in the environment.

The following discussion describes the sources, distribution, and potential remediation methods of these five types of chemicals on the Specific Plan Area. As noted above, the remedial investigations have been completed for the majority of the Specific Plan Area's soil study areas. These investigations have demonstrated that lead (and to a lesser degree other heavy metals) is fairly pervasive throughout the site, while chemicals within the other categories are present at elevated levels only in localized areas.



Source: Report of Waste Discharge – Lagoon Study Area Northwest: Sacramento Rail Yard by Environmental Resources Management from Nov. 2004.



### *Asbestos*

Many of the historic buildings and structures within the Specific Plan Area contain materials and coating with asbestos. The construction, demolition, and renovation activities have the potential to disturb asbestos and generate emissions of asbestos fibers. Asbestos is regulated as a hazardous air pollutant under the Clean Air Act and is also regulated as a potential worker safety hazard under the authority of the OSHA.

**Potential Remediation Methods.** There are currently federal laws and regulations in place that regulate the use, removal and disposal of asbestos-containing materials (ACM). Such laws and regulations include:

- The Toxic Substance Control Act (15 U.S.C. § 2601 et seq.),
- Clean Air Act (42 U.S.C. § 7401 et seq.), and
- Title 40 CFR Part 763 and 61. The reader is referred to Section 6.1,

### *Metals*

Many of the historic rail yards activities on the site, such as foundry work, blacksmithing, battery reconditioning, and parts fabrication, involved extensive use of metals. Locomotive and railroad car maintenance applied lead-based paint and used sandblasting to remove weathered paint. Lead was also used in journal boxes and soldering.

Extent of Contamination. Heavy metals, primarily lead, are found on much of the site in the surface soils. Within these soils, lead is generally restricted to approximately the top four feet. Other metals found on the site at elevated concentrations are much more localized, but are nearly always accompanied by lead. These metals include copper, zinc, nickel, antimony, and mercury. In general, metals concentrations decrease with depth.

Heavy metals soil cleanup for a majority of the Railyards has been completed. Remediation activities in areas where elevated levels of heavy metals exist are underway.

Lead's relative immobility means that it generally remains where it was deposited in the soil. Thus, concentrations of lead on the site tend to be highest at the surface, where sandblasting and other industrial activities occurred. Concentrations generally decrease with depth, with exceptions where cleaner fill was placed on top of contaminated soils, or where contaminated material was buried.

Lead, which is the primary heavy metal of concern, is not mobile in soils under most conditions because it exists in or forms insoluble compounds. Monitoring results from the Railyards indicate that lead has not degraded groundwater quality.

Potential Remediation Methods. Because of its relative immobility, cleanup of lead in the soil is less problematic than cleanup of chemicals that easily migrate into groundwater. Soil cleanup for lead usually involves one or more of the following approaches:

- removing the impacted soil from the site by excavation followed by disposal or treatment of the excavated soil;
- encapsulation, by creating a barrier to prevent human contact by construction of a barrier or cap; or
- rendering the lead immobile or inert by in-situ stabilization to prevent migration and leaching into groundwater.

### *Volatile Organic Compounds*

Volatile organic compounds (VOCs) comprise the solvents, degreasers, paint thinners, and strippers formerly used in the Railyards to clean the locomotives, railroad cars, and machine parts. Unlike metals, VOCs are highly mobile and volatile. They are found in surface soils at significantly lower concentrations because they volatilize into the atmosphere. Although these compounds volatilize rapidly when spilled, they can also move quickly through soils into the groundwater. Since most of these compounds are at least somewhat soluble in water, groundwater contamination frequently occurs. Over time, many VOCs are biodegraded into other compounds by naturally occurring microorganisms in the soil and groundwater.

Because of their mobility, VOCs readily migrate through the soil column and into groundwater. The movement of contaminated groundwater can contaminate clean soil.

Extent of Contamination. Soil cleanup for VOCs has been substantially completed in some areas, and is under way in other parts of the Railyards, including the MGP and the Central Shops.

Remaining elevated levels of VOCs on the Railyards are found primarily in soils located in the MGP and Central Shops, as well as the MGP, Central Shops/South Plume and Industrial Wastewater Lagoon groundwater plumes.

Potential Remediation Methods. Historically, a common method of soil remediation for VOCs was excavation and removal to a hazardous waste facility. This method has become cost prohibitive for many reasons, including regulations regarding landfill disposal of hazardous wastes. At the Railyards, certain excavations could affect the feasibility of retaining important historic structures in the Central Shops by impairing the structural integrity of the buildings.

A commonly used alternative to excavation involves circulating air through the soil to extract the VOCs in vapor form (soil vapor extraction). The extracted vapors are then treated to remove the VOCs and the purified air is vented to the atmosphere under a regulated process. This approach is currently being implemented at the Central Shops. Other methods such as in-situ chemical oxidation and biodegradation are often successfully utilized.

Present plans for cleanup of groundwater at the Specific Plan Area site will most likely involve extraction and treatment, natural attenuation; and/or in-situ treatment. These various alternatives are evaluated in the respective groundwater feasibility studies for the Railyards study area.

### *Petroleum Hydrocarbons*

Hydrocarbons in soil and groundwater at the Railyards consist of petroleum products such as diesel, fuel oil, and lubricating oils. The presence of these compounds in soil and groundwater is due primarily to leaks from storage tanks, spills onto the ground during locomotive maintenance, or discharges with wastewater to the Pond and Ditch or Lagoon areas.

Extent of Contamination. Soils containing hydrocarbons have been removed from the former Drum Storage Area, the Pond and Ditch, Lagoon, Sacramento Station Area, and other locations. Remaining elevated levels of hydrocarbons are found primarily within the Northern Shops and the MGP.

Hydrocarbons have also been detected in groundwater near the western portion of the Central Shops, the MGP, and within the former Drum Storage Area.

Potential Remediation Methods. Cleanup of hydrocarbons in soil can be accomplished through a variety of means, including:

- Excavation and recycling for road surfacing material, roadbed material or
- Engineered foundations (possibly requiring prior treatment);
- Soil vapor extraction (SVE);
- Encapsulation onsite within or below a barrier or cap;
- Bioremediation (which involves the use of hydrocarbon-eating microorganisms); or
- In-situ chemical oxidation and other similar methodologies.

A variety of methodologies are being considered for the Specific Plan Area, including excavation, bioremediation and recycling of roadbed and/or road surfacing material. Hydrocarbons in groundwater, if any are found, can be removed through extraction and treatment, in-situ treatment, or natural biodegradation.

#### *Semivolatile Organic Compounds*

Most semivolatile organic compounds (SVOCs) are only slightly volatile under normal conditions and are strongly adsorbed to soils, meaning they tend to adhere to the surface of the soil, rather than entering into its deeper structure. Thus, they are relatively immobile in the environment and stay close to the point where they were initially discharged. Some SVOCs, such as phenols and naphthalenes, are more volatile than others, are not as strongly adsorbed, are somewhat soluble in water, and thus are more mobile in the environment.

Extent of Contamination. SVOCs of both the more and less volatile types of SVOCs are found at the Railyards, although contamination by SVOCs generally is not widespread and occurs in only a few limited areas.

The SVOCs most commonly detected at elevated levels at the site are polynuclear aromatic hydrocarbons (PAHs), which are ordinarily formed as incomplete products of combustion of organic materials such as coal or oil. Phenols have also been detected in the groundwater beneath the Central Shops.

Potential Remediation Methods. High molecular weight PAHs are relatively immobile and typically are found in the top few feet of soil. The methods used to clean up lead can also be applied to these chemicals. Applicable methods include:

- Removing the impacted soil from the site by excavation and disposal or treatment of the excavated soil;
- Encapsulation, by creating a barrier to prevent human contact by construction of a barrier or cap (provided groundwater is adequately protected and direct access is not possible); or,
- In-situ treatment (chemical fixation/stabilization) or biodegradation.

The low molecular weight PAHs which have been detected in groundwater at the Railyards can be remediated using the same methods used to remove VOCs from groundwater.

### Remediation Project Status

As noted above, UPRR has made substantial progress through the regulatory process and has conducted extensive soil remediation at the Railyards. Ongoing groundwater remediation in various forms has also been conducted. As of July 2007, cleanup status is as follows:

#### *Soil*

- Sand Piles: Closure certified. Five-year review underway.
- Battery Shop: Closure certified. Five-year review underway.
- Pond and Ditch/Former API separator: Soil closure certified, deed restriction recorded. Five-year review underway.
- Drum Storage Area: RI/FS/RAP completed. Five year review underway.
- Industrial Wastewater Lagoon: Remediation complete.
- Sacramento Station: Soil closure certified, deed restriction recorded.
- Lagoon Study Area: RI/FS/RAP completed though subject to revision; soil remediation completion expected in 2008.
- Northern Shops Study Area: RI/FS/RAP completed; soil remediation completion expected in 2008.
- Central Corridor Study Area: RI/FS/RAP completed; soil remediation completion expected in 2008.
- Car Shop Nine Study Area: RI/FS/RAP completed; soil remediation completion expected in 2008.
- 7<sup>th</sup> Street Right-of-Way: Remediation complete.
- Central Shops Study Area: RI completed, draft FS completed in 2006. RAP expected completion in 2008. Interim soil and groundwater remediation systems installed. Soil remediation expected completion in 2008.
- Manufactured Gas Plant ("MGP"): RI stage in progress, soil remediation completion in 2010.

#### *Groundwater*

- MGP Groundwater Plume: RI stage in progress, expected RAP certification in 2010.
- Central Shops/South Plume: FS stage in progress, expected RAP certification in 2009.
- Lagoon Groundwater Study Area: FS process to start in 2007, expected RAP certification in 2010.

The reader is referred to Section 6.6, Hydrology and Water Quality, for additional information on groundwater quality. Additional remediation beyond that described above, is subject to a separate and independent CEQA process with DTSC as lead agency. The reader is referred to the "Regulatory Setting" discussion for additional information on the DTSC CEQA process.

### Status of Contaminated Soil Cleanup

The RI/FS reports and RAPs for the Lagoon Study Area and Central Corridor/Car Shop Nine/Northern Shops (1998, 2000, and 2003, see Appendix I, Site Investigation and Cleanup



Bibliography) concluded that soil at the Railyards contains metals (primarily lead), total petroleum hydrocarbons (TPH), volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), and asbestos. In portions of the Railyards, one or more of these constituents of concern (COCs) are present at concentrations that pose a potential threat to human health and the environment and would require remediation.

As identified in the RDIP for the Central Corridor/Car Shop Nine/Northern Shops study areas at the Railyards (April 2004),<sup>3</sup> project-specific remedial goals were developed to satisfy the following soil remedial action objectives (RAOs) for the site:

- Prevent exposure (i.e., incidental ingestion, dermal contact, inhalation of fugitive dust, and inhalation of VOCs) to soil having noncarcinogenic constituent concentrations in excess of the health risk-based levels developed for proposed land use.
- Prevent exposure (i.e., incidental ingestion, dermal contact, inhalation of fugitive dust, and inhalation of VOCs) to soil having carcinogenic constituent concentrations in excess of the health risk-based levels developed for proposed land use.
- Prevent migration of constituents in soil that would result in groundwater contamination in excess of maximum contaminant levels or other applicable water quality goals.

Remedial goals for soil were developed for the protection of human health and for the protection of groundwater. For each COC, the more stringent of the health risk-based goal and protection of groundwater goal was selected as the remedial goal.

Remediation of site soils in the Central Corridor/Car Shop Nine/Northern Shops study areas began in 2000 in accordance with the DTSC-approved RAPs for the site and is scheduled to continue through 2008. A subsequent RAP amendment was approved by DTSC in May 2003. Remediation activities have included soil excavation and disposal, bioremediation, soil vapor extraction, and ongoing monitoring in the various study areas. The current soil remediation work plan is being implemented for the Northern Shops, Central Corridor, Car Shop Nine, and Lagoon Study areas to complete remediation in areas with levels that exceed remedial goal. Stockpiles of Railyards soils have been placed beneath the planned soil cap in the northwest corner of the LSA (i.e., the "Vista").

For the Central Shops, the RI/draft FS and HRA have been completed. The draft FS was submitted to the DTSC for review in September 2006. The Final RAP is expected to be completed in 2008. Interim soil and groundwater remediation systems were installed in the Central Shops in the mid 1990s to control the migration of contaminated groundwater. These interim removal actions included the removal of contaminated soils and the installation of groundwater treatment systems, which are still in operation and will remain in operation and monitored for many years. In addition, a Remedial Action Workplan (RAW) has been prepared for the northern part of the Intermodal Facility portion of the Specific Plan. This portion of the planning area is within the Central Shops study area directly south of the existing buildings. Only foundations from former buildings and some asphalt remain. The RAW is a separate action within the Central Shops study area designed to facilitate relocation of the freight tracks by removing contaminated soil that would present a health risk in that area. It is anticipated that the remainder of soil remediation for the Central Shops will be completed in 2009.

#### *Northwest Corner (Lagoon Study Area) Soil Cap (Proposed "Vista Park")*

The Northwest Corner of the Lagoon Study Area contains levels of metals and hydrocarbons that required remediation. Approximately 56,000 cubic yards of soil have been affected. In 2000, the DTSC approved an amended RAP for the Lagoon Study Area, which included excavation and off-site disposal for soils within the LSA. The remedy was modified for the Northwest Corner of the LSA

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3 ERM West, *Remedial Design and Implementation Plan Former Southern Pacific Transportation Company Sacramento Rail Yard Sacramento, California, (Draft)* April 2004, Section 1.2.

based on site remediation activities that showed that portion of the LSA consisted of a considerable amount of large, inorganic rubble fill that could not be practicably excavated and disposed of off-site. The RAP was modified again in 2003 to include grading and capping the northwest corner in place with an engineered cover overlain by asphalt-concrete on the top deck and vegetative soil on the side slopes. Subsequent to that amendment, remedial actions at the Railyards have progressed and future land uses evolved such that additional modifications to the amended RAP were warranted. These modifications included modifying the engineered cap to include a geosynthetic barrier overlain by vegetative soil for the entire area and extending the limits of the cap to include the former oil storage area (FOSA). Figure 6.5-1 shows the location of the planned cap, which would occupy approximately 10.3 acres.

As currently approved by DTSC, the Vista will ultimately contain up to 230,000 cubic yards of inert soil below an engineered cap. A specific soil placement hierarchy has been determined based on results of contaminant testing, and the characteristics of "suitable inert fill material" for placement under the cap have been approved by DTSC. These inert soils may contain low levels of contaminants (either asbestos or metals) that will be encapsulated. One of the main goals of the soil hierarchy is to ensure the soils that may contact groundwater (i.e., the lowest foundation layer) contain asbestos only and do not contain metals above the remedial goals. Currently, 100,000 cubic yards of "cap-eligible soil" (i.e., meets the soil hierarchy category) have been placed. All soils will be placed as engineered fill material in lifts not exceeding 8-inch thickness across the full width of any given embankment, and each lift will be compacted to not less than 90 percent relative compaction. After the initial placement of the 100,000 cubic yards, low spots will be filled following the soil placement hierarchy. The additional material to complete the cap will be generated from excavations planned in 2007 and 2008. These soils will also be tested in accordance with a DTSC-approved protocol and will be placed according to the DTSC-approved soil placement hierarchy.<sup>4</sup>

Above the foundation, the proposed cap will be designed with an impermeable geomembrane covered by 2 feet of clean soil. DTSC believes that this cap will be adequately protective of human health and the environment for the intended park land use. The design also includes placement of a soil barrier, drainage, irrigation control, or soil layering. To maintain the cap system, activities that could compromise the integrity of the membrane (e.g., planting deep-rooted trees, trenching) will be restricted through deed restrictions and an O&M plan. This will limit the possibility that future construction activities will damage the barrier layer of the cap, and will ensure the long-term integrity of the cap system.

In response to concerns raised by the City of Sacramento and DTSC, the Vista Park cap design was changed in 2006, in part to facilitate the alignment of an extension of 6<sup>th</sup> Street through the Specific Plan Area. DTSC approved the modified design through an Explanation of Significant Differences in 2006, as previously noted. Although placement of inert fill and a placement hierarchy have been approved by DTSC, further details of the design, including updates of the drainage and stability analysis for the changes described above, will be developed in a Remedial Design and Implementation Plan (RDIP) which was completed in March 2007. Certification of the Vista Park cap design is scheduled for 2008.

### *Sacramento Station*

Soils in the Sacramento Station portion of the Specific Plan Area were contaminated with lead and TPH as a result of former rail yards activities in that area. As noted above, the Sacramento Station portion of the Specific Plan has been remediated. Cleanup actions included excavation and exploratory trench sampling, excavation of contaminated soils, confirmation sampling, and site

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4 ERM, "Final Implementation Plan Northwest Corner Soil Placement, The Railyards, Sacramento, California," letter to Fernando Amador, Department of Toxic Substances Control, March 8, 2007.

restoration. No post-closure operation and maintenance or monitoring of soils were deemed necessary. A deed restriction was established as part of the closure process that identifies acceptable lead and TPH levels in soils for future development scenarios. It also requires notification to DTSC if construction or future development plans would disturb the integrity of clean fill material overlying the site. A closure report (*Closure Report for Sacramento Station Hydrocarbon Area Soils*) was submitted to DTSC in May 1994. DTSC certified the regulatory closure of the site on May 27, 1994, and a deed restriction has been recorded. No further investigation or remediation is necessary in this portion of the Specific Plan Area.

A portion of the Sacramento Station, known as Area A (the pedestrian tunnel area) and Area B (the loading ramp area), described in "Exhibit B" of the Sacramento Station Deed Restriction, still contain soil contaminated with petroleum hydrocarbons, lead, and possibly other compounds. Additionally, the groundwater under the "Exhibit B areas" contains contaminants. As part of the Sacramento Station Deed Restriction, recorded in 1994, remediation of these areas will occur prior to excavation or initiation of any redevelopment activities in those areas. This includes soil remediation and installation of groundwater remediation systems.

### **Riverfront District Area (West Jibboom Street Property)**

A Phase 1 ESA was prepared for the westernmost portion of the proposed Riverfront District. This area, which is located between Jibboom Street and the east bank of the Sacramento River, would remain as open space under the Specific Plan.<sup>5</sup> The site (APN 002-0010-023), currently owned by the California Department of Parks and Recreation, included the Sacramento Gas Company from 1854 to the late 1800s, and later housed the Pioneer Mill, warehouses, and blacksmithing shop from the late 1800s through the mid-1900s. Presently on the site is the shell of a warehouse built in 1918; the site is otherwise vacant and is used as a bicycle path.

No chemicals or storage tanks (above or below ground) were found on the site, but several metal conduits were visible, as were broken concrete slabs and soil mounds. Considering the former industrial uses that occurred on the site, the Phase 1 ESA preparers (3Phase, Inc.) recommended that a Phase 2 ESA be conducted to analyze soil and groundwater conditions beneath the site. The Phase 1 ESA preparers also noted that lead-based materials could be present due as a result of gasoline being used and lead-based and/or asbestos-based structures being demolished on site, and PCBs could be left over from electrical transformers that were present. Therefore, the Phase 1 ESA also recommended that a geophysical survey be conducted to assess the presence of buried storage containers that would not have been seen during the Phase 2 visual inspection.<sup>6</sup>

## **Hazardous Materials Use**

### **Current On-Site Conditions**

Although hazardous substances are no longer used significantly at the site they may be transported via freight through the Railyards. Small quantities of household-type products (e.g., cleaning agents, pesticides, paints) are used at the station building for maintenance. Small quantities of various chemicals are also used at the California Railroad Museum shop for railcar rehabilitation and restoration.

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5 The remaining portion of the proposed Riverfront District (i.e., property between Jibboom Street and I-5) was investigated as part of the overall Plan Area investigation and cleanup process, specifically in the Northern Shops, Central Shops, and Sacramento Station study areas. See Figure 6.5-1.

6 3Phase, Inc., *Phase 1 Environmental Site Assessment*, West Jibboom Street Property, April 20, 2005.

## Hazardous Materials Transportation Through the Railyards

### Rail

The UPRR main line tracks run through the Specific Plan Area. The tracks carry both passenger (Amtrak) and freight trains. Currently, the maximum allowable speed for freight trains through the Specific Plan Area is 10 miles per hour. According to UPRR, there are 12 to 14 freight trains daily. The trains generally consist of approximately 80 to 100 cars. Rail companies such as UPRR are public carriers (regulated by the Public Utilities Commission), and the federal government – through railroads' common carrier obligation – requires railroads to transport hazardous substances whether the rail company wants to or not. Any shipper that chooses to use rail to transport hazardous materials may do so, provided the shipper and rail car(s) transporting the materials meet all federal rail safety rail transportation requirements for hazardous materials. According to a UPRR representative, the number of cars carrying hazardous materials through the Railyards at any one time varies from train-to-train, as do the types and amounts of hazardous materials transported between origins and destinations. While the shippers and the railroads maintain comprehensive records where a rail car (including pressurized tanks carrying hazardous materials) is at any time, this information is not published or readily available to the general public.<sup>7</sup> In the event of an emergency involving an accidental or threatened release of hazardous substances, however, this information is immediately available to response personnel via a coordinated national, state, and local emergency response system (see "Regulatory Setting").

Unlike large switching yards (e.g., Roseville) where freight trains may idle for long periods of time or remain overnight, freight trains do not stop in the Specific Plan Area for any planned purpose. However, because passenger trains have priority over freight,<sup>8</sup> if there is a delay in the system, there is the potential that a freight train would be stopped in the Specific Plan Area for a short amount of time. Such occurrences would be completely random and unscheduled. Further, the number of cars carrying hazardous materials would be similarly unpredictable.<sup>9</sup>

### Roadways

There is currently only one through-road that passes through the Specific Plan: 7<sup>th</sup> Street, which connects Downtown to the Richards area. Richards Boulevard borders the site on the north. Local truck traffic transporting products containing hazardous substances may legally use these roadways. I-5 is a major highway on which hazardous substances are routinely transported.

## Central Shops Buildings

Due to the age of the existing buildings in the Central Shops area, they are presumed to contain building components that contain asbestos, lead-based paint, and possibly several other items that may be considered hazardous substances. The focus of the site investigation efforts to date have been on soil and groundwater. Comprehensive evaluations of the Central Shops buildings that would be renovated and/or restored to determine the presence of these materials have not been performed. Regulatory processes have been established by the state that the applicant must follow to identify the types of hazardous substances that could be present and their removal and ultimate disposal. The applicant would be required to comply with these requirements, which would be part of the building permit process. The reader is referred to "Regulatory Setting," below, for additional information about these requirements.

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7 Jerry Wilmoth, UPRR, personal communication, July 2, 2007.

8 Jerry Wilmoth, UPRR, personal communication, July 2, 2007.

9 Jerry Wilmoth, UPRR, personal communication, July 2, 2007.

## **Adjacent Properties**

Surrounding land uses where hazardous substances could be present (e.g., transported, used, or stored) include a former PG&E transformer station in a narrow parkway between the Sacramento River and the Railyards to the west of the site, and the Sims Metals leased property east of the site. A largely industrial and commercial area is north and northeast. There are municipal facilities in this area, including the City's water treatment plant and the State Printing Plant. The entire area has been zoned for heavy industry and for some multi-family housing. Commercial facilities include gasoline service stations, freight and trucking facilities, and motels. Areas east of the Railyards are zoned for light industry can include fabricating (with the exception of processing of raw materials). The downtown business district, consisting primarily of residential and office development and some retail, is south of the project site.

## **REGULATORY SETTING**

### **Overview**

A number of federal, State and local laws have been enacted to regulate the management of hazardous substances and wastes. Implementation of these laws and the management of hazardous substances is regulated independently of the CEQA process through programs administered by various agencies at the federal, State, and local levels. Investigation and remediation activities that would involve potential disturbance or release of hazardous substances must comply with applicable federal, State, and local hazardous substances laws and regulations. At any time during construction or occupancy, the project developer and contractors are responsible for knowledge of and complying with applicable hazardous substances management regulations.

### **Federal**

Several federal agencies regulate hazardous substances. These include the U.S. Environmental Protection Agency (U.S. EPA), the Occupational Safety and Health Administration (OSHA), and the Department of Transportation (DOT). Applicable federal regulations and guidelines are contained primarily in Titles 10, 29, 40, and 49 of the Code of Federal Regulations (CFR), and lead exposure guidelines provided by the U.S. Department of Housing and Urban Development.

Federal EPA laws governing the use, storage, and disposal of hazardous substances at the proposed project include the following:

- Resources Conservation and Recovery Act (RCRA) - hazardous waste management;
- Hazardous and Solid Waste Amendments Act (HSWA) - hazardous waste management;
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - cleanup of contamination;
- Superfund Amendments and Reauthorization Act (SARA) - cleanup of contamination;
- Emergency Planning and Community Right-to-Know (SARA Title III) – business inventories and emergency response planning;
- Toxic Substances Control Act (TSCA) – tracks and screens industrial chemicals; and
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) – controls pesticide distribution, sale, and use.

Specific requirements for implementation of these statutes are codified in Title 40 of the Code of Federal Regulations (CFR).

The U.S. EPA has authorized the DTSC to enforce hazardous waste laws and regulations in California. Requirements place “cradle-to-grave” responsibility for hazardous waste disposal on the shoulders of hazardous waste generators. Generators must ensure that their wastes are disposed of properly, and legal requirements dictate the disposal requirements for many waste streams (e.g., banning many types of hazardous wastes from landfills).

Title 29, Part 1910 of the CFR describes the Hazard Communication Standard, which requires that workers be informed of the hazards associated with the materials they handle. Training in chemical work practices must include methods in the safe handling of hazardous substances, use of emergency response equipment, and an explanation of the building emergency response plan and procedures. Material Safety Data Sheets (MSDS) must be available in the workplace, and containers must be appropriately labeled.

The U.S. DOT has developed regulations in Titles 10 and 49 of the CFR pertaining to the transport of hazardous substances and hazardous wastes by all modes of transportation. The U.S. Postal Service (USPS) has developed additional regulations for the transport of hazardous substances by mail. DOT regulations specify packaging requirements for different types of materials. The U.S. EPA has also promulgated regulations for the transport of hazardous wastes. These more stringent requirements include tracking shipments with manifests to ensure that wastes are delivered to their intended destinations.

In a typical year, 1.7 to 1.8 million rail freight carloads of hazardous substances are transported by rail throughout the U.S.<sup>10</sup> In June 2007, in his address to the 2007 Chemical Sector Security Summit, Homeland Security Secretary Michael Chertoff noted that the federal DOT's hazardous materials transportation safety program “provides for a high degree of safety with respect to incidents involving unintentional releases of hazardous materials occurring during transportation.” He went on to note that “intentional misuse of hazardous materials was rarely considered when the regulations were developed. Since 9/11, [the government agencies] have come to realize that hazardous materials safety and securities are inseparable. Many, if not most, of the requirements designed to enhance hazardous materials transportation safety, such as strong containers and clear hazard communication, enhance the security of hazardous materials shipments as well. Congress recognized this synergy and legislated its intent that hazmat safety [was] to include hazmat security when it enacted the Homeland Security Act of 2002 authorizing the Secretary of Transportation to prescribe regulations for the safe transportation, including security, of hazardous material in intrastate, interstate, and foreign commerce.” Secretary Chertoff further acknowledged the federal government's heightened concern about the safety, security, and vulnerability of rail transport of hazardous substances – particularly toxic inhalation hazard (TIH) materials such as chlorine gas – in highly urbanized areas. Secretary Chertoff noted his agency had completed a comprehensive risk evaluation process and determined “the greatest vulnerability is in those areas where [there is a] chemical sitting still in a rail yard or in some particular location of track, or in an area where there is a handoff between one entity controlling the chemical car and another one...”

CFR 49, Parts 106 through 189, regulate the transport of such materials as well as all other hazardous substances on rail lines. Additionally, the rail industry, through the Association of American Railroads (AAR), has developed a detailed protocol on recommended railroad operating practices for the transportation of hazardous materials. The AAR issued the most recent version of this document, known as Circular OT-55-I, on August 26, 2005. The Circular details railroad operating practices for designating trains as “key trains” certain types and amounts of hazardous substances, designating operating speed and equipment restrictions for key trains, designating “key routes” for key trains, and setting standards for track inspection and wayside defect detectors, assisting communities with emergency response training and information, and shipper notification

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10 Association of American Railroad, “Hazmat Transport by Rail,” February 2007.

procedures among others. These recommended practices were originally implemented by all of the Class 1 rail carriers operating in the United States; the most recent version of the circular also includes short-line railroads as signatories. Overall, while there have been a few serious accidents involving hazardous substances (“hazmat”) releases in the last few years,<sup>11</sup> the rail safety record has been extremely good. In 2005, 99.997 percent of rail hazardous substances shipments reached their final destination without a release caused by an accident. In fact, railroads have reduced hazmat accident rates by 86 percent from 1980 through 2005.<sup>12</sup>

Additionally, the Freight Rail Security Program is an innovative public-private partnership dedicated to assessing policies and technologies for enhancing security throughout the freight rail industry. One product of this partnership is the development of the Rail Corridor Risk Management Tool (RCRMT). The RCRMT will leverage existing technologies and accepted risk management practices where feasible, and incorporate new technologies and elements as appropriate. A second project of the Freight Rail Security Program is the Rail Corridor Hazmat Response and Recovery Tool (RCHRRT), which will integrate geographical information and risk modeling. The RCHRRT is being developed through a grant to the Railroad Research Foundation and will include participation from the rail industry. When fully developed, these tools will provide a formal methodology to assist the rail carriers in complying with the enhanced safety and security planning requirements

Several federal laws and regulations have been created to control the use, removal and disposal of asbestos-containing materials (ACM). Such laws and regulations include the Toxic Substance Control Act (15 U.S.C. § 2601 et seq.), Clean Air Act (42 U.S.C. § 7401 et seq.), and Title 40 CFR Part 763 and 61. The reader is referred to Section 6.1, Air Quality, for additional information regarding toxic air contaminant (TAC) emissions.

### **State**

The California Environmental Protection Agency (Cal-EPA) has overall authority governing the use of hazardous substances in the State. Within Cal-EPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous substances under the authority of the Hazardous Waste Control Law.

State regulations applicable to hazardous substances are contained in the California Code of Regulations (CCR). Title 22 and 26 of the CCR pertain to hazardous substances and the management of hazardous substances. Title 8 contains Construction Safety Orders pertaining to asbestos and lead.

### **Soil and Groundwater Contamination Investigation and Remediation**

The Railyards is included on the State Hazardous Waste and Substances List (“Cortese List”) compiled pursuant to Government Code section 65962.5 and referenced in Public Resources Code 21092.6. The oversight of hazardous substances release sites often involves several different agencies that may have overlapping authority and jurisdiction. The DTSC and RWQCB are the two primary State agencies responsible for issues pertaining to hazardous substances release sites.

In 1981, the California Legislature enacted legislation to establish a regulatory process to address the release of hazardous substances that may be harmful to public health and the environment. This process, which is consistent with federal regulations, requires responsible parties to clean up contamination. The regulatory guidelines, standards, and methods established as part of that

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11 San Antonio, Texas in 2004 (three fatalities) and Graniteville, South Carolina in 2005 (nine fatalities), from Paul Orum (Center for American Progress), *Toxic Trains and the Terrorist Threat*, April 2007, page 5.

12 Association of American Railroad, “Hazmat Transport by Rail,” February 2007.

process to evaluate potential risks and identify the need for remedial action at contaminated sites are relevant and were used to support the conclusions regarding existing and potential future risks to human health and the environment in the Railyards.

On March 29, 2007, Cal-EPA's Site Designation Committee designated DTSC as the Administering Agency for the Railyards pursuant to California Health & Safety Code section 25260 et seq. As such, DTSC is responsible for administering all state and local laws ordinances, regulations, and standards that are applicable to, and govern the investigation and remediation of the Railyards.

### Hazardous Materials Management

State and federal laws require detailed planning to ensure that hazardous substances are properly handled, used, stored, and disposed of, and, in the event that such materials are accidentally released, to prevent or to mitigate injury to health or the environment. California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous substances and to facilitate an appropriate response to possible hazardous substances emergencies. The law (Section 25503.3(c) of the California Health and Safety Code) requires businesses that use hazardous substances to provide annual inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely.

In January 1996, Cal-EPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, underground storage tanks, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous substances management plans and inventories. The program is implemented at the local level by a local agency – the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. The Sacramento County Environmental Management Department (SCEMD) is the CUPA for Sacramento County.

Trucking on highways and local streets is the most common method of transporting hazardous substances and hazardous waste in the City of Sacramento. I-5, I-80, Capitol City Freeway (Business 80), and major arterial and collector streets through and adjacent to downtown Sacramento are widely used. Rail lines carrying freight trains pass through the City of Sacramento in three locations: north/south past California State University at Sacramento, north/south through downtown Sacramento along 20<sup>th</sup> Street, and east/west through the Railyards.<sup>13</sup>

The California Highway Patrol (CHP) and Caltrans are the enforcement agencies for hazardous substances transportation regulations in and around the City. Transporters of hazardous substances and waste are responsible for complying with all applicable packaging, labeling, and shipping regulations. The State Office of Emergency Services (OES) provide hazardous substances incident response services. The California Public Utilities Commission (PUC) General Order 161 requires rules to assure coordination between federal, state, and local agencies and railroads in the area of emergency response during a hazardous substances incident during rail transport.

### Asbestos-Containing Materials and Lead-Based Paint

Asbestos is regulated as a hazardous air pollutant under the Clean Air Act and is also regulated as a potential worker safety hazard under the authority of the OSHA. Several regulations and guidelines

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13 City of Sacramento, General Plan Technical Background Report, June 2005, page 7.4-3.



pertain to abatement of and protection from exposure to asbestos-containing materials (ACM) and lead-based paint. These include Construction Safety Orders 1529 (pertaining to ACM) and 1532.1 (pertaining to lead-based paint) from Title 8 of the CCR, Part 61, Subpart M of the CFR (pertaining to ACM), and lead-based paint exposure guidelines provided by HUD. These rules and regulations prohibit emissions of asbestos from asbestos-related demolition or construction activities, require medical examinations and monitoring of employees engaged in activities that could disturb asbestos, specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers, and require notice to federal and local government agencies prior to beginning renovation or demolition that could disturb asbestos.

In California, ACBM and lead-based paint abatement must be performed and monitored by contractors with appropriate certification from the California Department of Health Services.

### School Siting

#### *Contaminated Sites*

The California Education Code (Section 17210 et seq.) outlines the requirements of siting school facilities near or on known or suspected hazardous substances sites, or near facilities that emit hazardous air emissions, handle hazardous or acutely hazardous materials, substances, or waste. The code requires that, prior to commencing the acquisition of property for a new school site, an environmental site investigation be completed to determine the health and safety risks (if any) associated with a site. All proposed school sites that will receive state funding for acquisition and/or construction must go through a comprehensive investigation and cleanup process under DTSC oversight. DTSC is required to be involved in the environmental review process to ensure that selected properties are free of contamination, or if the property is contaminated, that it is cleaned up to a level that is protective of students and faculty who will occupy the new school. All proposed school sites must be suitable for residential land use, which is DTSC's most protective standard for children.

Prior to acquiring a school site or engaging in a construction project, school districts must contract for the preparation of a Phase I ESA, which must be reviewed by DTSC according to established timelines. If the Phase I concludes, or DTSC determines, that a "Preliminary Endangerment Assessment" (PEA) be conducted, the school district can either proceed with the PEA or drop the school site from further consideration. If the district chooses to proceed with a PEA, it will be required to enter into an Environmental Oversight Agreement with DTSC to oversee preparation of the PEA, which must be submitted to DTSC for review and approval. If the approved PEA concludes the property would not pose a threat, DTSC will issue a "No Further Action" determination and will not require additional investigation or cleanup. If the PEA concludes the property is contaminated, the district must clean up the site, or it can choose not to proceed with development of the school project. When all necessary cleanup activities are completed according to DTSC-approved plans, DTSC will certify the site cleanup is complete.

#### *Location Relative to Source of Hazardous Emissions*

In addition to an evaluation of potential site contamination issues, Public Resources Code Sections 21151.4, 21151.8, and 21151.2 require that no EIR be approved for a project involving the construction or alteration of a facility that might reasonably be anticipated to result in hazardous air emissions within one-quarter mile of a school unless the lead agency has consulted with the school district having jurisdiction regarding the potential impact of the project on the school, or the school has been given written notification of the project not less than 30 days prior to approval of the EIR. Section 6.1, Air Quality, includes additional information about hazardous emissions.

## Regional

### Sacramento Metropolitan Air Quality Management District (SMAQMD)

The SMAQMD works with local, state and federal government agencies, the business community, and private citizens to achieve and maintain healthy air quality for Sacramento County. SMAQMD regulates both criteria air pollutants and toxic air contaminants under the provisions of various federal and State air laws and regulations. Volatiles and any toxic air contaminants generated by excavation or remediation of contaminated soil are subject to applicable SMAQMD rules, regulations, and permitting requirements. Particulate matter emissions from construction activities are also regulated by the SMAQMD (see Section 6.1, Air Quality).

SMAQMD has rules that pertain to the abatement of asbestos and related fees:

- Rule 902 implements the U.S. EPA's National Emission Standard for Hazardous Air Pollutants for Asbestos (40 C.F.R. § 61.140 et seq.), which is intended to limit the emission of asbestos to the atmosphere.
- Rule 304 charges a fee to emission sources to cover the estimated reasonable costs of evaluation plans required by law, rule or regulation. A fee schedule is listed within this rule specifically for asbestos renovation and demolition projects that are subject to rule 902.

### Sacramento County Regional Sanitation District (SCRSD)

The Sacramento County Regional Sanitation District (SCRSD), which operates the Regional Wastewater Treatment Plant (WTP), has been permitted to discharge treated water into the Sacramento River. Any sewer discharge of contaminated groundwater removed as part of the proposed project would require approval from the SCRSD. Please see Section 6.6, Hydrology and Water Quality, for additional information regarding discharges of contaminated groundwater.

## Local

### City of Sacramento General Plan

The following are relevant City of Sacramento General Plan goals and policies related to hazardous substances.

**Goal A**      **Provide for the health and safety of the citizens of Sacramento and for the protection of the environment by reducing exposure to hazardous materials and waste.**

#### Policies

1.            Work with the County, State, and federal agencies and responsible parties to identify, contain and cleanup sites that contain hazardous materials.
8.            Ensure that areas where hazardous materials have been found are remediated, before development of new areas, to the extent necessary to protect the health and safety of all possible users and adjacent properties, consistent with applicable laws and regulations.

The proposed project is consistent with these policies. As described throughout the analysis in this section, redevelopment of the Specific Plan Area has been and continues to be comprehensively investigated and remediated under the oversight of DTSC.

### Sacramento Central City Community Plan

There are no hazardous materials or public safety measures applicable to the proposed project.

### Sacramento City Code

The City of Sacramento has adopted the following implementation measure that pertains to hazards and hazardous substances within the City:

The City has adopted a hazardous materials disclosure code requiring handlers of hazardous materials file a disclosure form within fifteen (15) days of a significant change to the handling, use, and/ or location of hazardous materials. (Sacramento City Code 8.64.040)

### Railyards Soil and Groundwater Investigation and Cleanup Programs

#### *Tri-Party Memorandum of Understanding*

In December 1994, a Memorandum of Understanding (“Tri-Party MOU”) was established between DTSC, the City, and SPTCo concerning post remediation development (Resolution No. 94-737, adopted by the Sacramento City Council, December 13, 1994). The 1994 agreement is being replaced by a new tri-party MOU between the City, DTSC, and the project applicant. The new Tri-Party MOU would release the City of Sacramento from oversight responsibility. Instead, DTSC will provide environmental oversight. As stated in the Specific Plan (Chapter 10), the Tri-Party MOU will address key roles of the parties, including future property owners, both during and after completion of remediation; and address responsibilities for ongoing oversight as construction occurs in the Railyards. In addition, the revised MOU will also establish that the City is responsible for administering the land use and development-related portion of DTSC deed restrictions, and provides for on-going communication between DTSC and the City to keep applicable city permitting officials up-to-date on changes in standards for contaminants on the site. Finally, the MOU will provide for the possibility of developer-requested and –funded additional positions or retaining consultants to enhance DTSC’s capabilities to review and approve simultaneously DTSC priority remediation and developer-driven remediation.<sup>14</sup>

### Sacramento City Fire Department

The SFD provides fire suppression, emergency medical services, fire prevention, and special operations services within the City of Sacramento. The SFD has a *Hazardous Materials Program (HazMat)*, which provides a daily capability for emergency hazardous materials response. Currently, this program includes a minimum of 108 firefighters trained to the Hazardous Materials Specialist level. Serving in dual roles as a first responding fire company, there are three Hazardous Materials Response Teams (HMRTs) and one Decontamination Team (Decon). Each team is staffed with four specialists.

Within the SFD is the *Domestic Preparedness Program (DPP)*, which was designed in 1996 to provide specialized equipment and training to enhance domestic preparedness to nuclear, biological or chemical (NBC) terrorism. This equipment provided NBC detection and personal protection against weapons of mass destruction. The training program was designed in conjunction with existing laws, regulations and standards already practiced by SFD personnel. Firefighters and HMRT members must complete one or more of the following NBC Domestic Preparedness courses: Responder Awareness, Responder Operational, Incident Commander, Technician-HazMat, or Technician-EMS.

The DPP has daily interaction and works in precise coordination with the federal, State, and local law enforcement. Specifically, the DPP works closely with the Public Health Office to ensure the highest level of personnel and public safety. This DPP participates in numerous domestic preparedness task forces, committees, and workgroups.

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14 Specific Plan, Chapter 10.

The City's Office of Emergency Services (OES) is responsible for disaster planning. This office provides intra/inter-agency coordination for disaster planning, presentations on disaster preparedness to public service organizations, coordination in the preparation and execution of disaster exercises. In 2003, terrorism and weapons of mass destruction were still the focus of OES's planning efforts. Committees worked State wide, as well as locally, to prepare for potential and actual events. Locally, a City/County task force was formed to deal with issues as they affect both agencies.

In addition, training for residents within the City continues through the Community Emergency Response Team (CERT) program. CERT training promotes a partnering effort between emergency services and the people that they serve. The goal is for emergency personnel to train members of neighborhoods, community organizations, or workplaces in basic response skills. CERT members are then integrated into the emergency response capability for their area. The continued development of the community's disaster preparedness efforts will aid the residents of Sacramento in an area-wide disaster.<sup>15</sup>

The City of Sacramento also has a Multi-Hazard Emergency Plan (MHEP) that addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and nuclear defense operations for areas within the City's jurisdictional boundaries. Hazardous materials incidents and transportation accidents are among the emergency situations addressed by the MHEP. Some emergencies can be preceded by a build-up period which would allow for increased readiness and advance warning to affected areas. Other emergencies will occur with little or no advance warning and require immediate mobilization of City resources. Some emergencies can cause destruction, and others can create an exposure hazard. The MHEP provides operational concepts related to various emergency situations, identifies components of the local emergency management organization, and describes the City's overall responsibilities for protecting life and property during an emergency. The plan also identifies possible sources of outside support (through mutual aid and specific statutory authorities) from other jurisdictions, and the private sector. The County of Sacramento also has a Multi-Hazard Mitigation Plan, which is a multi-jurisdictional plan that aims to reduce or eliminate long-term risk to people or property from natural disasters and their effects that is applicable to the City and areas outside of the City but within the Policy Area. Both plans provide an overview of operational concepts, identify components of the County's and City's Emergency Management Organization within the Standardized Emergency Management System, and describe the overall responsibilities of the federal, State, and local agencies for protecting life and property and assuring the overall well-being of the population.<sup>16</sup>

#### Sacramento County Environmental Management Department (SCEMD)

The SCEMD is responsible for promoting a safe and healthy environment in the County. As the CUPA, the SCEMD monitors the proper use, storage and clean up of hazardous substances, monitoring wells, removal of leaky underground storage tanks, and permits for the collection, transport, use or disposal of refuse.

#### *Hazardous Materials Management Plan (HMP)*

Hazardous waste laws and regulations are enforced locally by SCEMD. SCEMD requires that businesses that store, handle and use reportable quantities of hazardous substances, generate any amount of hazardous waste, or have an UST, complete a HMP ("Business Plan") and relevant permits. HMPs are normally updated when there is a substantial change in operations.

15 City of Sacramento, General Plan Update Technical Background Report, Section 5.2, Fire Protection, June 2005.

16 City of Sacramento, General Plan Update Technical Background Report, Section 7.6, Emergency Response, June 2005.

### *Area Plan for Emergency Response to Hazardous Materials Incidents in Sacramento County*

The Area Plan for Emergency Response to Hazardous Materials Incidents (Area Plan), developed by SCEMD, provides information for agencies involved in hazardous material response within Sacramento County. The local agencies that may be called upon during an emergency are SCEMD, Sacramento County Sheriff's Department, and the Sacramento City Fire Department. Other agencies, such as the State OES, Sacramento County Health Department, Public Works, and the CHP, may be called upon if additional resources are necessary to respond to a hazardous materials incident.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

Redevelopment of the Specific Plan Area would increase the potential for exposure of individuals and/or a number of people simultaneously to hazardous substances contamination or use. The land uses evaluated in this EIR would result in a relatively substantial increase in the daytime and/or nighttime population of the Planning Area. Exposure of the projected population was assumed to occur for this analysis under the following circumstances: (1) due to the mixed-use nature of the land uses, people would move freely throughout the area; (2) demolition and construction activities could involve exposure to hazardous substances; and (3) over time, site uses may change. Hence, increased levels of development activities in the Specific Plan Area would require steps to ensure protection for construction workers, future workers, residents, and visitors from unacceptable exposures to hazardous substances.

This section presents a qualitative analysis of potential hazardous substances impacts as they relate to development of a known contaminated site. The analysis is based on a review of published information contained in existing technical reports that pertain to the site, agency correspondence, and applicable regulatory requirements.

For purposes of the analysis, it is conservatively assumed that remediation of the Specific Plan Area and confirmation sampling would not occur prior to certification of this EIR and project approval. However, once remediation has been completed, potential exposure routes would be through the discovery of previously undetected wastes on those parcels or by the inadvertent uncovering of capped waste that has been left in place.

### **Specific Plan Assumptions for Site Remediation**

The Specific Plan (Section 10) contains goals and policies designed to ensure the protection of public health and safety during and after redevelopment of the Railyards and to ensure that the redevelopment project is not adversely affected due to environmental conditions. The goals and policies, along with numerous implementation strategies, establish a relationship between DTSC and the City for providing environmental oversight, ongoing coordination during development, and ensuring that neither the cleanup nor development project are unduly delayed.

The following analysis assumes implementation of these goals and policies would be achieved through two primary means:<sup>17</sup>

- Adoption of City regulations, such as the Railyards Special Planning District Ordinance, which describes the implementing procedures to be administered by city staff; and
- The new Memorandum of Understanding ("Tri-Party MOU").

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17 Specific Plan, Chapter 10, page 124.

### **Standards of Significance**

For the purposes of this EIR, impacts on hazardous substances are considered significant if the proposed project would:

- Substantially increase the risk of exposure of construction workers to contaminated soils during site development;
- Substantially increase the risk of exposure of future occupants to contaminated soils;
- Interfere with ongoing soil and groundwater remediation efforts for the Railyards cleanup by precluding access to groundwater remediation and monitoring systems at the site during construction or occupancy, or conflict with the cleanup MOU, orders, and adopted RAPs for cleanup;
- Expose occupants to a substantial, unmitigated risk of exposure to contaminated soil or groundwater due to phased development of the specific plan and/or ongoing remediation efforts;
- Expose construction workers, occupants, and/or site visitors to unmitigated hazards associated with the presence of hazardous substances (e.g., asbestos, lead, PCBs, etc.) in buildings that would be renovated and/or restored;
- Substantially increase the risk of exposure of site occupants to inadvertent or accidental releases of hazardous substances to the environment from non-residential uses during project occupancy; or
- Substantially increase the risk of exposure of site occupants to inadvertent or accidental releases of hazardous substances transported on adjacent roadways and rail lines within the Specific Plan Area.

### **Project Components**

The Specific Plan contains the following policies related to hazardous substances:

#### HAZARDOUS SUBSTANCES

##### Policies

- HAZ-1.1. Ensure that that city land use approvals are compatible with cleanup levels achieved and do not conflict with land use restrictions, and that development-related excavation and dewatering are carried out in a manner which meets DTSC requirements.
- HAZ-2.1. If either reuse of land or a change of use in the Plan Area is proposed that would conflict with the remedial action plan restrictions, DTSC-approval and remediation reflecting currently applicable exposure standards shall be implemented.
- HAZ-2.2. In the event that State cleanup standards are revised to be more protective of human health, the City shall work with DTSC and property owners to determine if additional remediation should be imposed for future developments.
- HAZ-3.1. Ensure that development is implemented in accordance with remedial action plans.
- HAZ-4.1. Fully protect human health and the environment through the implementation of DTSC approved remediation action plans.
- HAZ-5.1. Establish an ongoing process for coordination during remediation activities that coincide with development.

#### OPEN SPACE

##### Policy

- OS-5.6. Encourage the adaptive reuse of some remediated areas as open space.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.5-1 Development of the proposed Specific Plan would occur on property that is known to contain contaminated soil, which could present a hazard to construction workers if not properly managed.**

As previously discussed, contaminants in the Specific Plan Area can be classified in four basic categories: metals, hydrocarbons, VOCs, and SVOCs, each with its own characteristics in terms of where it is likely to be found in the soil column and its mobility in the environment. Exposure to substances that adsorb to the soil, such as heavy metals and semi-volatile organic compounds, could occur through inhalation or ingestion of affected soils. Exposure to more mobile chemicals, such as VOCs, could result from inhalation of gases or skin contact. Exposure to hydrocarbons could result by any of the above-mentioned exposure routes. Unmitigated releases of hazardous substances in excess of risk-based standards could result in adverse short-term or long-term human health or environmental effects.

The human health risk assessments conducted to date indicate that, with the exception of parks and open spaces, the construction worker faces the greatest exposure risk to hazardous substances in soils (the Maximally Exposed Individual or MEI) at the Railyards, based on the extent and nature of contact with soil that is not clean fill (e.g., beneath streets and under buildings). Construction activities that move soil, such as grading, trenching and excavation, could expose construction workers to chemicals not only near the surface, but also deeper in the soil column if levels of contaminants were not remediated to health-protective levels. This is considered a *potentially significant impact*.

#### **Mitigation Measures**

The levels of residual contaminants that DTSC will allow to remain on-site in soils were established to ensure that construction workers would not be at risk of an unacceptable level of exposure. More importantly, no construction (i.e., earth-disturbing activities) would occur in areas of the Railyards until DTSC-approved Target Cleanup Levels are achieved. Implementation of the following mitigation measures, which would apply to all construction activity on the Specific Plan Area site to ensure that construction workers are protected from unacceptable exposure to residual levels of hazardous substances during site development, would reduce this impact to a ***less-than-significant level***.

#### **6.5-1 *The City shall enforce the following requirements for construction on the Specific Plan Area:***

- a) *The City recognizes that DTSC has ultimate authority regarding approval of health risk assessments. However, through a new Tri-Party MOU, the City may provide input to DTSC if any assumptions employed appear to be inaccurate or differ from those previously prepared.*
- b) *Each developer's general contractor shall prepare a site-specific construction worker health and safety plan containing construction worker health and safety requirements based on the levels of remediation already performed in each project area.*
- c) *Contractors shall be given a worker health and safety guidance document at the time of grading or building permit application to assist them in preparing site-specific worker health and safety plans. Pursuant to the requirements of state and federal law, the site-specific health and safety plan may require the use of personal protective equipment, onsite continuous air quality monitoring during construction, and other precautions.*

- d) *During construction, except in imported clean fill areas, all excavation, soil handling, and dewatering activities shall be observed for signs of apparent contamination by the developer under DTSC oversight.*
- e) *In addition to these steps, DTSC, through the new Tri-Party MOU, shall provide for environmental oversight, including site inspection during construction and procedures for detecting previously undiscovered contamination during site excavation as well as contingency plans for investigation, remediation and disposal of such contamination.*

**6.5-2 Development of the proposed Specific Plan would occur on property that is known to contain contaminated soil and groundwater, which could present a hazard to people during occupancy of the proposed project if not properly managed.**

The following analysis describes the types of hazardous substances exposure impacts associated with soil and groundwater contamination that could occur during development and use of the proposed project by land use type, the process for determining appropriate cleanup levels and site controls, and how the proposed mitigation measures identified in the Specific Plan would reduce the risk of exposure of future site occupants and visitors to hazards associated with contaminated soils.

Potential Contamination Exposure Hazards by Land Use Type

Proposed grading for the Specific Plan, along with the consolidation of contaminated soil under an engineered cap in the northern part of the Specific Plan Area designated for open space use (please refer to the description of the Northwest Corner Lagoon Study Area in the “Environmental Setting”), is a key feature of reducing the risk of human exposure to contaminated soil. According to the proposed grading plan prepared by Nolte (August 2007), the grades that exist at the project site currently are not the same grades that will exist after development begins. Currently, there are mounds of soil and small excavations at the site that are part of the remediation process (see Viewpoints 7 and 8 in Figure 6.13-5 in Section 6.13, Urban Design and Visual Resources). As site preparation takes place, some of the existing excavations would be filled and new excavations would be created. The goal of the proposed grading plan is to balance the amount of cut and fill on-site. No cuts would be made in areas that have not yet been remediated. At other locations, clean fill and/or impervious surfaces such as buildings and structures, parking lots, and roadways would be placed on top of soil that has been allowed to remain in place according to DTSC-approved RAPs and RDIPs. Figure 6.4-2 in Section 6.4, Seismicity, Soils, and Geology shows the areas where fill will be placed to construct the final topography of the site and generally make the site suitable for the proposed mixed-use development (exclusive of the engineered cap in the “Vista” area in the northern part of the site [see “Vista Park” below]). The placement of clean fill material and/or impervious surfaces in the remaining portions of the Railyards would substantially reduce the risk of exposure to contaminated soils by future occupants, including the most sensitive population (children).

*Open Space and Parks*

Open spaces and parks at the Railyards would include amenities that by their nature do not encourage uses that involve ongoing, direct exposures to soils (e.g., bicycle trails, walking trails, and parking lots). However, open spaces and parks could be subject to intensive use by all sectors of the population, especially children who generally are most susceptible to health risks resulting from exposure to hazardous substances such as lead that has been detected in soil at the Railyards.

Although groundskeepers could also be exposed to site soils, the Specific Plan Area remediation program will ensure that all areas of soil in which groundskeepers will work are areas in which a DTSC-approved RAP has been implemented.



### *Housing Sites*

The proposed multi-family housing prototypes would, by design, preclude casual exposure to contaminated soil by residents. Therefore, protection of construction workers, who would be the individuals most exposed to Railyards soil, will dictate the subsurface cleanup for housing parcels. To this end, it is required that project housing sites be remediated to Target Cleanup levels as embodied in the applicable RAP for the housing sites.

### *Utility Corridors and Easements*

City streets and utility easements would be subject to frequent disturbance to install new utility lines and to repair or replace existing lines. Through repeated excavation, soil would be brought to the surface. Utility workers would be the potentially exposed individuals in streets and utility rights-of-way. Site soil would have been remediated to DTSC approved levels for construction workers.

Infrastructure utility lines will be placed above anticipated groundwater levels, hence preventing the possible migration of groundwater into utility trenches.

### *School Sites*

The Specific Plan indicates that potential schools would not be at ground level and would most likely use indoor play areas. Given these circumstances, there would be a lower potential for exposure to contaminated soil than if the sites were developed at existing grade. Additionally, as noted in the "Regulatory Setting," the California Education Code requires site-specific information for school site development, including approval from DTSC that proposed school site(s) are free of contaminants that would pose a risk to students and faculty. Although all the steps in the DTSC assessment process and Education Code requirements for school siting cannot be completed until a specific site is selected, the district would be required under the California Education Code to complete the necessary assessments to insure development of proposed school site(s) would not expose children and teachers to risks associated with contaminated sites.

### *Office and Commercial Sites*

Substantially lesser exposure potential exists in office or retail land uses, where property occupants or users have little to no contact with soil because the areas would be covered with impervious surfaces.

### *Vista Park*

The property owner has proposed to encapsulate soils under a DTSC-approved permit in the new "Vista Park" located on the northern perimeter of the property (Northwest Corner Lagoon Study Area, see Figure 6.5-1). This approach to cleanup could reduce air emissions by limiting truck traffic and also result in efficient use of financial resources over its most likely alternative, which is to excavate and transport this contaminated soil off-site to a hazardous waste landfill. Further, it is consistent with Policy OS-5.6, which encourages the adaptive reuse of a remediated area as open space.

Up to 230,000 cubic yards of soil would be used to create the foundation for the Vista cap. The proposed cap would be designed with an impermeable membrane covered by 2 feet of clean soil. DTSC believes that this cap will be adequately protective of human health and the environment for the intended park land use. To maintain the cap system, activities that could compromise the integrity of the membrane (e.g., planting deep-rooted trees, trenching) would be restricted through deed restrictions and an O&M plan would be implemented to ensure the long-term integrity of the cap system.

### *Central Shops*

An RI and draft FS have been completed for the Central Shops area, but the area has not been completely remediated. The HRA and FS for the Central Shops portion of the Specific Plan indicate that buildings in their current condition do not pose an unacceptable risk to site workers. As discussed above, groundwater treatment systems are in place to reduce the levels of hazardous constituents in groundwater, which involved the excavation and removal of contaminants, to the extent feasible, in soils near the buildings. However, in the future when the buildings are restored, there is still a potential risk to workers and visitors. The greatest risk to future museum workers/visitors is through inhalation of vapors released into the indoor spaces from contaminated soil and/or groundwater. Remediation beneath these buildings would be a difficult and costly task. Therefore, during restoration activities, it would be necessary to install vapor barriers in the buildings to protect workers and visitors from indoor air exposure. Ongoing monitoring would be needed to verify the effectiveness of this type of control. A deed restriction would also need to be recorded, similar to other areas in the Railyards.

### Risk-Based Cleanup Approach

The process that has been used at the Railyards to determine potential hazards to future occupants is a "risk-based" approach, based on a detailed evaluation of hazard and exposure potential at a particular site. This process uses a risk-based approach to remediate at levels that are protective of the population with the greatest potential for exposure to site soils.

The calculation of the potential risk associated with soil and groundwater exposure is primarily based on possible land uses. Typically, the greatest soil and groundwater exposure potential is found in single-family residential development. This land use assumes that the resident family grows and eats produce from the property and children routinely play in and ingest soil. Under this land use, children are the population with the greatest potential for exposure. Remediation standards that are protective of the single-family occupants are considered residential or unrestricted use standards.

Substantially lesser exposure potential exists in commercial or industrial land uses, where property occupants or users have little to no contact with soil. Under commercial or industrial land uses, the residents or occupants are considered the population with the greatest potential for exposure to soil. Remediation standards that are protective of commercial or industrial uses are considered restricted use standards.

With the exception of parks and open spaces, anticipated land uses in the Specific Plan Area will be mixed commercial, residential and office uses. Currently, there are no plans for ground-floor or single-family residential development.

Risk assessments conducted to date indicate that, with the exception of parks and open spaces, the construction worker is the population with the greatest exposure potential in the Specific Plan Area. The health risk assessments take into account such factors as the length of time a construction worker will have direct contact with soil and the number of years a construction worker is likely to work on the site. The City, DTSC, and UPRR agreed to a set of health risk assessment assumptions that are intended to reflect realistic construction conditions during redevelopment of the Specific Plan Area. UPRR used these assumptions in preparing health risk assessments for site worker exposure to the extent that future risk evaluations will be needed, and Thomas Enterprises (or future owners) will apply these assumptions to future risk assessments in the Specific Plan Area as well, if needed. Any additional risk assessments or remediation that is needed in the Specific Plan Area will be reviewed by DTSC under its authority as Lead Agency for the remediation of the Railyards. Further, CEQA review of future remedial plans/actions in the Specific Plan Area will be

overseen by DTSC in its capacity as a responsible agency. For more information, the reader is referred to the “Regulatory Setting” discussion above.

Because of extensive excavation, foundation, and utility installation, the construction worker has a greater risk of soil exposure potential than the typical commercial or industrial occupant, even though it is a substantially lesser level of exposure than juvenile occupants of a single-family dwelling. Because no single-family residences are currently proposed in the Specific Plan Area, the baseline level of shallow soil remediation for RAPs covering the majority of the Railyards is to levels that are protective of the construction worker. The ultimate goal is that cleanup either (1) reduces concentrations of residual chemicals in soil such that they do not exceed specific risk-based thresholds (remediation goals), or (2) implement mitigation measures (e.g., barriers or caps) such that the potential for direct exposures to chemicals in soils are minimized based on future land uses.

When remediation is completed to the construction worker (restricted use) DTSC Target Cleanup Level standards, DTSC would issue certifications of completion and record a deed restriction for the property. The deed restriction limits uses of the property to those activities that are consistent with the implemented level of remediation.

Deed restriction components include the following:

1. Groundwater cannot be extracted without DTSC approval.
2. Industrial and commercial land uses, including construction and maintenance of utility corridors and street rights-of-way, are allowed under an appropriate management plan.
3. Landscaping is allowed, provided clean soil to appropriate depths is placed in areas where direct soil contact can occur.
4. Post-certification excavation or soil removal is not permitted without prior DTSC approval.

Although remediation to construction worker standards, among others, is planned, and deed restrictions are expected, the Specific Plan indicates the property owner, at its discretion, may remediate specific areas of the project site to accommodate more restrictive use standards, thereby eliminating the need for a deed restriction.

#### Discussion of Measures Proposed in the Specific Plan

Large-scale, mixed-use redevelopment in the Specific Plan Area will require careful planning to ensure that remediation and site design take into account the possible exposures of all potentially affected people to hazardous substances. In the Specific Plan Area, broad land use categories such as “residential” or “commercial” applied under the two-tiered approach are not appropriate because of the mixed-use nature of the proposed project, where different types of uses may be located adjacent to one another or may coexist in the same block or building. Furthermore, DTSC’s residential cleanup level assumes single-family residences with backyards, a land use that is currently not planned for the Specific Plan Area. A more effective and efficient approach is to establish cleanup approaches tailored to address actual exposure possibilities for each land use, where applicable.

Pursuant to the Railyards’ risk-based cleanup remediation process, which includes the remediation measures required in the 1988 Enforceable Agreement, all cleanup approaches for the site will be, at a minimum, protective of the most sensitive receptors, in this case construction workers. The Specific Plan Area remediation process:

- Ensures that remediation takes into account the mixed-use nature of the project;

- Ensures that the health and safety of those most likely to come in contact with remediated soil, aside from construction workers, is protected; and
- Ensures that the Railyards is remediated to Target Cleanup Levels.

Because the development of the proposed Specific Plan would be consistent with the remediation action plans and deed restrictions, the proposed project would not substantially increase the risk of exposure of construction workers or future occupants to hazardous substances contamination in soil or groundwater at the project site. However, porous utility lines could be infiltrated by contaminated groundwater. This is considered a *significant impact*.

#### Mitigation Measure

Implementation of the following measure would reduce this impact to a ***less-than-significant level***.

6.5-2 *In areas where the groundwater contamination has the potential to reach water, sewer or storm drainage pipelines due to fluctuations in the elevation of the groundwater table, measures will be used to prevent infiltration in accordance with DTSC requirements.*

**6.5-3 Soil remediation activities will occur concurrently with development of the proposed Specific Plan, which could expose project occupants or visitors to adverse health effects associated hazardous substances.**

Development of the Specific Plan Area would be carried out in many phases. Under the current schedule for remediation, the majority of soil cleanup activities are expected to be completed by the year 2008. Portions of the Specific Plan Area would be constructed in advance of or during remediation of contaminated soils and groundwater. As these portions are developed, an increasingly greater number of people would be present in the project site. Through the free movement of residents, visitors, and routine transport of goods and services through the project site, individuals could be exposed to potential risks associated with chemicals in soil that could be encountered at the point in time when the remaining cleanup activities are implemented.

Unmitigated releases of hazardous substances in excess of risk-based standards could result in adverse short-term or long-term human health or environmental effects. This would be considered a *potentially significant impact*. However, it should be noted that, generally, the greatest risk of exposure would occur during waste removal and soil consolidation activities.

#### Mitigation Measures

Implementation of the following mitigation measure would reduce this impact to a ***less-than-significant level***.

- 6.5-3 a) *With the exception of the Central Shops, development of any parcel site shall only be permitted if relevant soil remediation for an entire block and the full right-of-way of all surrounding streets has been completed. Thus, occupancy of a portion of a block will be prohibited unless the entire block and the area immediately surrounding the block are remediated accordingly.*
- b) *Fencing shall prevent access to surface soil in unremediated areas of the site.*
- c) *Dust control for active cleanup sites shall be implemented.*
- d) *Construction site air monitoring, if required by site-specific conditions, shall be conducted.*

- e) *Compliance with building design requirements, to be included in the building code ordinance, for preventing the buildup of soil vapors in enclosed spaces where applicable, shall be required if determined by DTSC to be necessary.*
- f) *Prior to approval of any grading permit, developers shall demonstrate access to a nearby secure holding area for interim storage of contaminated soil that could be uncovered during construction, and provide a plan for transport of soil to the holding area.*
- g) *Developers shall be required to employ construction dewatering techniques, should they become necessary, that minimize potential for pulling groundwater contaminants to the surface. Contingency plans for pretreatment of contaminated groundwater, if necessary, shall be in place prior to the start of construction in the event that extracted water cannot be sent to the regional wastewater treatment plant.*
- h) *Prior to issuance of a grading permit, the developer shall demonstrate compliance with all applicable protective measures. If the level of protection is inadequate, implementation of additional protective measures is required; the City may review this Specific Plan to determine if amendments are required to protect human health and the environment.*

**6.5-4 Construction of site features such as infrastructure and buildings could interfere with remediation efforts.**

As discussed in Impact 6.5-3, development of portions of the Specific Plan would occur simultaneously with implementation of the site cleanup activities that are being implemented through DTSC-approved cleanup plans. Development activities such as site preparation, grading, installation of underground utility lines, and foundation excavation, to name a few, are examples of the types of earthwork that could encounter site remediation systems. Unless planned and coordinated with site remediation activities, there could be an increased risk of damaging or interfering with remediation site controls such as soil containment areas, or groundwater remediation facilities such as extraction and monitoring wells, pumps, or pipelines. Such incidents could interfere with remediation efforts, resulting in delays. They could also compromise the effectiveness of measures intended to control inadvertent releases of contaminants to the environment, which could result in an increased risk of exposure to adverse human health or ecological effects. This is considered a *potentially significant impact*.

Mitigation Measures

Implementation of the following measures would reduce this impact to a ***less-than-significant level*** by ensuring project developers and their contractors are aware of the timing, locations, and types of remediation activities so that construction activities do not inadvertently or adversely affect cleanup activities, and that remediation contractors are aware of planned construction activities. Such efforts would ensure that contaminated substances would not be inadvertently encountered (e.g., infrastructure improvements involving trenching through the project site) and that soils or contaminated substances are not inappropriately moved or used within the site.

- 6.5-4 a) *Project developers and their contractors shall coordinate with the City of Sacramento, DTSC, and other involved agencies, as appropriate, to assure that project construction shall not interfere with any adjacent and/or on-site remediation activities or unduly delay any or site remediation activities.*

- b) *The project developers and their contractors shall comply with all applicable site controls established for site remediation activities through the approved RAPs and RDIP and shall ensure that project construction does not prevent such compliance.*
- c) *Implement Mitigation Measure 6.5-3.*

**6.5-5 Throughout the life of the project, currently proposed land uses may be changed and new construction may occur, exposing construction workers and site occupants to unacceptable levels of contaminated soil and/or groundwater in the Specific Plan Area. Cleanup standards affecting soil could also be revised downward in light of new scientific information, indicating that planned cleanup levels may not be as protective of human health as originally assumed.**

#### Changes in Land Use

The proposed project will be developed over several years. Development plans for large portions of the site may change significantly over that period. Even uses that occur generally as planned may involve completely different site design than originally envisioned. Land will be reused. Standards for acceptable levels of environmental protection could change over time as more is known about the impact of contamination on the environment and human health. The number of constituents of concern may also change in the future. In addition, cleanup methods may change. For example, in the past, for a given site, a preferred method of remediation was commonly excavation and removal of contaminated substances from the site. More recently, the costs and environmental problems associated with transporting hazardous substances and waste and disposal at other sites, combined with improved technologies for containing or treating contamination onsite, has prompted a change in regulatory policy instead favoring on-site capping, encapsulation or treatment. Thus, as land is developed differently than anticipated or redeveloped for different uses, or as cleanup standards affecting exposed soil areas change, remediation requirements may change.

Pursuant to current regulatory practice, once a site is remediated and construction occurs, state and federal agencies do not ordinarily require additional remediation. This practice occurs because: (1) the public is usually protected from contact with soil by the structure itself; (2) the regulatory agencies have redirected their efforts to undeveloped sites that have never undergone remediation; (3) there is implicit recognition that the cost and dislocation of destroying a structure and rebuilding it for the sole purpose of improved soil remediation is not acceptable from a policy perspective (4) hazardous substances laws have simply not been enacted and enforced for a sufficient period of time for this problem to routinely occur; and (5) principles of equity and regulatory finality.

Any future reuse of the site, subject to a deed restriction, should accordingly trigger a review of prior remediation in light of the most recent scientific information and applicable standards to determine if additional remediation would be required. The conditions that could trigger the need for additional remediation include, but may not be limited to, the following:

- Rezoning or other changes in planned land use following remediation;
- Removal of structures, thereby exposing bare soil to casual contact;
- Introducing especially sensitive populations to an area (e.g., removal of a commercial use to develop a school);
- New construction in areas previously covered with asphalt, concrete, or clean fill material;
- Construction of land uses not previously considered in a health risk assessment and approved RAP, such as single-family residential; and

- Changing cleanup standards.

#### Changes in Cleanup Levels

Once a site is remediated and construction has occurred, environmental regulatory agencies do not ordinarily require additional remediation. Assuming the DTSC-approved remediation approaches are implemented, changing standards would not be a concern for exposed soil areas such as parks and planting strips, because these areas will be remediated to DTSC Target Cleanup Levels. Nevertheless, changing standards may be of concern in areas such as utility corridors, where repeated human exposure to soil is expected. Therefore, this is considered a *potentially significant impact*.

#### Mitigation Measures

Implementation of the following mitigation measures would reduce this impact to a ***less-than-significant level***. This measure would also require consistency with the proposed Tri-Party MOU, which will provide for ongoing communication between DTSC and the City in order to keep applicable city permitting officials up to date on changes in land use(s) and cleanup standards for contaminants on the site.

6.5-5 *Hazardous substances review at the development permitting stage shall involve consulting with DTSC to determine if changing standards will trigger the need for additional remediation under the following circumstances:*

- *Sites that currently expose the general public to bare soil or landscaped soil shall be reevaluated if a significant change of standards has occurred since the last such evaluation.*
- *In utility corridors, existing cleanup levels shall be reevaluated to ensure that construction worker health and safety is adequately protected if a significant change in standards occurs.*
- *On development parcels where remediation standards are revised significantly downward following remediation but before site development, cleanup levels shall be reevaluated for consistency with proposed land use.*

**6.5-6 Central Shops buildings that will be renovated and/or restored are likely to contain asbestos, lead-based paint, or other hazardous substances, which could be released to the environment if not properly identified, removed, contained, and transported for disposal at approved sites.**

Asbestos, a naturally-occurring fibrous material, was used as a fireproofing and insulating agent in building construction before such uses were terminated due to liability concerns in the late 1970s. Because it was widely used prior to the discovery of its health effects, asbestos may be found in a variety of building materials and components such as insulation, walls and ceilings, floor tiles, and pipe insulation. Friable (easily crumbled) materials are particularly hazardous because inhalation of airborne fibers is the primary mode of asbestos entry into the body. Nonfriable asbestos is generally bound to other materials such that it does not become airborne under normal conditions. Non-friable asbestos and encapsulated friable asbestos do not pose substantial health risks.

Asbestos exposure is a human respiratory hazard. Asbestos-related health problems include lung cancer and asbestosis. The California Occupational Safety and Health Administration (OSHA) considers asbestos-containing building material a hazardous substance when a bulk sample contains more than 0.1 percent asbestos by weight. Cal OSHA requires that a qualified contractor licensed to handle asbestos materials handle any material containing more than 0.1 percent

asbestos by weight. Any activity that involves cutting, grinding, or drilling during building renovation or demolition or relocation of underground utilities could release friable asbestos fibers unless proper precautions are taken. Inhalation of airborne fibers is the primary mode of asbestos entry into the body, making friable materials the greatest potential health risk.

Among its numerous uses and sources, lead can be found in paint, water pipes, solder in plumbing systems, and in soils around buildings and structures painted with lead-based paint. In 1978, the federal government required the reduction of lead in house paint to less than 0.06 percent (600 parts per million (ppm)). However, some paints manufactured after 1978 for industrial or marine uses legally contain more than 0.06 percent lead. Excessive exposure to lead (even low levels of lead) can result in the accumulation of lead in the blood, soft tissues, and bones. Children are particularly susceptible to potential lead-related health problems because it is easily absorbed into developing systems and organs.

Old light tubes, thermostats, and other electrical equipment typically contain heavy metals such as mercury. Elemental mercury can also be found in many electrical switches. Due to accidental spills and historic disposal practices before the adoption of more stringent disposal regulations, it is possible elemental mercury may be present in non-structural features of the Central Shops buildings. Mercury liquid evaporates slowly if exposed to air, and, at certain levels of exposure, mercury vapors are toxic and can cause kidney and liver damage.

Polychlorinated biphenyl (PCB) is an organic chemical, usually in the form of an oil that was historically used in electrical equipment. PCBs are most commonly associated with pole-mounted electrical transformers, but they were also used in insulators and capacitors in building electrical equipment. PCBs are highly persistent in the environment, and exposure to PCBs can cause serious liver, dermal, and reproductive system damage. PCBs are also a suspected human carcinogen.

Although there is a regulatory framework in place that governs the removal and disposal of these hazardous items once identified, the Central Shops buildings have not been thoroughly investigated to determine the types, amounts, and locations of hazardous substances that could be present in building materials. Therefore, implementation of the proposed project expose construction workers, occupants, and/or site visitors to unmitigated hazards associated with the presence of hazardous substances (e.g., asbestos, lead, PCBs, etc.) in buildings that would be renovated and/or restored. This is a *potentially significant impact*.

#### Mitigation Measure

Implementation of the following mitigation measure would reduce this impact to a ***less-than-significant level***.

6.5-6 *Prior to renovation and/or restoration of the Central Shops buildings, the project applicant shall provide written documentation to the City that asbestos-containing materials (ACM) and lead-based paint has been abated and any remaining hazardous substances and/or waste have been removed in compliance with applicable state and local laws and regulations.*

#### **6.5-7 Implementation of the proposed project would increase the use of hazardous substances during construction and occupancy of the proposed project.**

This impact analysis addresses the routine use, transport, storage, and disposal of hazardous substances that would occur with construction and occupancy of the proposed project. For an analysis of potential exposure of project occupants to the transportation of hazardous materials within and adjacent to the project site that are *not* related to the project, please see Impact 6.5-8.



Hazardous substances would be used in varying amounts during construction and occupancy of the Specific Plan. The types and quantities of hazardous substances that would be present during occupancy of the residential, office, and commercial land uses in the are expected to include, for example, household-type and maintenance products (e.g., cleaning products, paints, solvents, pesticides/herbicides).

Hazardous substances would be handled and stored routinely by households and most businesses in the Specific Plan. Typical household hazardous substances would include oils (e.g., motor oil and hydraulic oil), fuels (gasoline and diesel), paints (both latex and oil-based), solvents (e.g., degreasers, paint thinners, and aerosol propellants), acids and bases (e.g., automobile battery fluids, swimming pool chemicals, and many cleaners), disinfectants, metals (e.g., mercury in thermometers, batteries, and photography chemicals), and pesticides and herbicides.

Businesses would use materials similar to households and some (e.g., gas stations, dry cleaners, and photoprocessors) would use hazardous substances in larger quantities specifically related to their business activities. For example, supermarkets and gas stations stock hazardous substances for sale to consumers; service stations handle fuel, motor oil, antifreeze, and other fluids; and supermarkets handle automotive fluids, cleaners, pesticides, and batteries. In addition, dry cleaners handle perchloroethylene and photoprocessors handle fixer and developer chemicals.

Although individual households and many businesses use relatively small volumes of hazardous substances, the total volume of the hazardous substances managed by all of the households and businesses in the Specific Plan Area would increase the opportunities for accidents and improper use, transportation, storage, and disposal. However, because many hazardous substances are consumed through their use (e.g., fuel, paint, aerosols), the quantity of hazardous substances handled is generally believed to be substantially greater than the volume of hazardous waste generated. In any case, the SCEMD has a household hazardous waste collection program that safely collects, transports, and disposes of residual hazardous wastes.

Commercial products are labeled to inform users of potential risks and to instruct users in appropriate handling procedures. Although households are relatively less regulated than businesses, the risks posed by hazardous substances use at project-related residences would be similar to those in similar residential areas already developed in the City of Sacramento. The home use of common household hazardous substances is typically considered to pose an acceptable level of risk.

As indicated above, the types and amounts of hazardous substances would vary according to the nature of the activity. However, specific businesses or commercial activities have not been identified in the Specific Plan. Therefore, the actual hazardous substances and amounts that would be on site or within a specific location in the Specific Plan Area cannot be determined at this time. In some cases, it is the type of hazardous material that is potentially hazardous; in others, it is the amount of hazardous material that would present a hazard.

Exposure of construction workers or site occupants to hazardous substances would occur in the following manner: improper handling or use of hazardous substances or hazardous wastes during construction or operation of the project, particularly by untrained personnel; transportation accident; environmentally unsound disposal methods; or fire, explosion or other emergencies. Construction workers and future site residents would be exposed to hazards associated with accidental releases of hazardous substances, which would result in adverse health effects.

Hazardous materials regulations, which are codified in Titles 8, 22, and 26 of the CCR, and their enabling legislation set forth in Chapter 6.95 of the California Health and Safety Code, were established at the state level to ensure compliance with federal regulations to reduce the risk to

human health and the environment from the routine use of hazardous substances. These regulations must be implemented by employers/businesses, as appropriate, and are monitored by the State (e.g., OSHA in the workplace or DTSC for hazardous waste) and/or local jurisdictions (e.g., the Sacramento Fire Department).

By ensuring that businesses in or adjacent to the Specific Plan Area (which are within the City and, therefore, subject to City regulations) comply with the Unified Program, the City would reduce impacts associated with the potential for accidental release of hazardous substances during occupancy of the project. This would be accomplished by ensuring that regulated activities (e.g., businesses) within the Specific Plan are managed in accordance with applicable regulations such as Hazardous Materials Release Response Plans and Inventories (Business Plans), and the California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements. Compliance with Title 26, Division 6, of the CCR, which would be monitored by the City, would reduce impacts associated with potential for accidental release during construction or occupancy of the project. Compliance with this regulation would ensure that businesses where hazardous substances are used or stored adhere to regulations designed to prevent leakage and spills of material in transit and provide detailed information to clean-up crews in the event of an accident.

Workplace regulations addressing the use, storage, and disposal of hazardous substances in Title 8 of the CCR would apply to businesses and public facilities in and adjacent to the Specific Plan. Compliance with these regulations would be monitored, in part, by the Sacramento Fire Department when it performs hazardous materials inspections. Other mechanisms in place to enforce the Title 8 regulations include compliance audits and reporting to local and State agencies. Implementation of the workplace regulations would further reduce the potential for hazardous materials releases.

The proposed project includes infill development of new commercial uses and some public services that would use and transport hazardous substances through the Specific Plan Area on existing and proposed interior roadways. The number of hazardous substances incidents along existing and proposed roadways could increase depending on the type of commercial and industrial uses, and the number of persons exposed would increase due to the proposed plans. Proposed uses requiring the use of hazardous substances could generate hazardous waste, and could increase the transportation of such materials through the Specific Plan Area, thereby increasing the risk of exposure to new residents to transportation-related hazardous substances incidents. As discussed in the "Regulatory Setting," CFR 49 and Title 26 regulate the transportation of hazardous substances by trucks and other vehicles. These requirements would apply to any transporters delivering or removing hazardous substances or wastes from the proposed project.

Compliance with applicable federal and State laws and regulations that are administered and enforced by the CUPA (SCEMD) and Sacramento Fire Department standards (the local agency that implements applicable hazardous substances-related sections of the Uniform Fire Code and Uniform Building Code), and federal and state transportation regulations would reduce impacts associated with the routine use, storage, and transportation of hazardous substances in the Specific Plan Area to a ***less-than-significant level***.

#### Mitigation Measure

*None required.*

#### **6.5-8 Development of the proposed project would bring new residents in proximity to existing non-project-related hazardous substances transportation routes, such as I-5 and the UPRR rail lines.**

Hazardous substances that are not related to project construction or occupancy can be legally transported through the Specific Plan Area via rail or in trucks and other vehicles (on 7<sup>th</sup> Street, for example), or on adjacent roadways such as Richards Boulevard and I-5. The exact types and amounts of non-project-related hazardous substances that could be transported via rail within the Planning Area or adjacent to the Planning Area on roadways would vary from day-to-day, as would occur on roadways and rail elsewhere throughout the Sacramento metropolitan region. As noted in the Regulatory Setting, above, many federal and industry programs are already in place, and more are being developed, to help improve transport of hazardous substances.

A primary safety and security concern related to the rail transportation of hazardous materials is the catastrophic release or explosion in proximity to densely populated areas, including urban areas and events or venues with large numbers of people in attendance. Also of major concern is the release or explosion of a rail car in proximity to iconic buildings, landmarks, or environmentally significant areas. Such a catastrophic event could be the result of an accident, or a deliberate act of terrorism. The consequences of an intentional release of hazardous material by a criminal or terrorist action are likely to be more severe than the consequences of an unintentional release because an intentional action is designed to inflict the most damage possible.<sup>18</sup>

The causes of intentional and unintentional releases of hazardous material are very different; however, in either case the potential consequences of such releases could be substantial. Using chlorine gas as a worst-case example,<sup>19</sup> compressed chlorine released from a pressurized tank expands rapidly as a gas cloud that remains at ground level. Exposure to chlorine gas can severely burn the eyes, skin, and lungs, and can be fatal.<sup>20</sup> Generally, the concentration would be highest at the source of the release, and the concentration would diminish at various distances from the release.<sup>21</sup> The Chlorine Institute estimates that levels (concentrations) “immediately dangerous to life or health” could occur 0.6 miles downwind in the event of a release from a 150-pound gas cylinder, 2.2 miles downwind for a 1-ton container, and 14 to 25 miles downwind for a 90-ton tank car rupture, depending on meteorological conditions and other factors.<sup>22</sup> The federal government has developed numerous scenarios to estimate the human health effects of a catastrophic release, and the Department of Homeland Security estimates that a major chlorine railcar spill could kill 17,500 people. Under a scenario involving large gatherings or holiday crowds, 100,000 serious injuries or deaths could occur.<sup>23</sup>

As noted in the Environmental Setting, freight trains do not stop in the Specific Plan Area (or any other locations in the downtown Sacramento area) for any planned purpose. But if there is a delay in the system, there is the potential that a freight train carrying hazardous substances would be stopped in the Specific Plan Area for a short amount of time. Such occurrences would be completely random and unscheduled, however, and the number of cars carrying hazardous materials and their contents would be similarly unpredictable. The risk of an accident involving a rail

18 *Federal Register*, Proposed Rules- Hazardous Materials: Enhancing Rail Transportation Safety and Security for Hazardous Materials Shipments, December 21, 2006 [Volume 71, Number 245, page 76836].

19 Toxic inhalation materials (TIH) materials, such as chlorine or anhydrous ammonia gases, account for only about 0.3 percent of all rail carloads, and accidents involving highly hazardous materials are exceedingly rare. [Statement of Edward R. Hamberger President & CEO, Association of American Railroads, Before the U.S. House of Representatives Committee on Transportation and Infrastructure Subcommittee on Railroads Hearing on Current Issues in the Rail Transportation of Hazardous Materials, June 13, 2006.]

20 To receive a lethal exposure, an individual would have to remain near the release source, within a chlorine cloud, and without respiratory protection. [The Chlorine Institute, *Chlorine: Effects on Health and the Environment*, 3rd edition, November 1999.]

21 The Chlorine Institute, *Chlorine: Effects on Health and the Environment*, 3rd edition, November 1999.

22 The Chlorine Institute Pamphlet 74, “Estimating the Area Affected by a Chlorine Release,” April 1998, as cited in “Rail Transportation Security,” Statement of David Shuman before the U.S. House of Representatives Committee on Homeland Security, March 6, 2007.

23 Paul Orum (Center for American Progress), *Toxic Trains and the Terrorist Threat*, April 2007, page 5.

car carrying hazardous substances traveling through the Railyards would be similarly unpredictable. (As noted in the Regulatory Setting, incidents are rare throughout the U.S.).

In the unlikely event of a worst-case scenario release of a hazardous substance in the Railyards, the City of Sacramento has an extensive emergency response network in place to provide first response, which is described in the "Regulatory Setting." As described in greater detail in Impact 6.10-3 in Section 6.10, Public Services, the SFD has also requested that a new fire station be built within the project site. In the event of a real or potential chlorine release, CHLOREP<sup>24</sup> teams are available 24/7 to respond, along with CHEMTREC<sup>25</sup> teams.

New residential uses are proposed to be developed in close proximity to the relocated main line, which would continue to be used to transport freight through the Specific Plan Area. During the day, a large number of office workers would also be present in the Specific Plan Area. While development of the proposed project would increase the number of people within the Planning Area who could be exposed to a risk of hazardous substances exposure from an unintentional release, the proposed project in and of itself would not alter the types of rail shipments through the Specific Plan Area. Further, it is likely that many of the future occupants (residences and businesses) will simply be those that move from an existing location in the Sacramento metropolitan area (or other highly urbanized area) where there is already a risk from a catastrophic release of an acutely hazardous substance. Moreover, an accidental or intentional release of an acutely hazardous substance would not be limited to the Specific Plan Area, but could have severe consequences downtown and even greater distances. An unintentional or intentional release of hazardous substances within the Specific Plan Area could occur, regardless of whether the proposed project is developed or not.

For the reasons outlined above, the proposed project not substantially increase the risk of exposure of West Jibboom Street site occupants to inadvertent or accidental releases of hazardous substances transported on adjacent roadways and rail lines within the Specific Plan Area, as compared to existing conditions. Therefore, the impact is considered ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.5-9 Development of the West Jibboom Street Property in the Riverfront District (APN 002-0010-023) could expose construction workers to hazardous substances that could be present in soil or groundwater.**

According to a Phase 1 ESA, no chemicals or storage tanks (above or below ground) were found on the West Jibboom Street site, but several metal conduits were visible, as were broken concrete slabs and soil mounds. Lead-based building materials may be present due as a result of gasoline being used and lead-based and/or asbestos-based structures being demolished on site, and PCBs could be left over from electrical transformers that were present. Nearby historic sites, such as the Railyards and the PG&E Manufactured Gas Plant, have been documented to contain contaminated soil and groundwater. Therefore, the Phase 1 ESA preparer also recommended that a geophysical survey be conducted to assess the presence of buried storage containers that would not have been seen during the Phase 2 visual inspection.

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24 CHLOREP (Chlorine Emergency Plan) is an industry-wide program established by the Chlorine Institute in 1972 to improve the speed and effectiveness of response to chlorine emergencies in the U.S. and Canada.

25 CHEMTREC (Chemical Transportation Emergency Center) was established in 1971 by the American Chemistry Council to facilitate immediate emergency response information for transportation-related hazardous materials incidents.

Because unidentified hazards could still be present at the proposed West Jibboom Street Property (APN 002-0010-023), construction activities at the site could expose workers to contaminated soil, groundwater, or other hazardous substances or debris that may be present, if such hazards are not properly identified and managed prior to site work. This is considered a *potentially significant impact*.

#### Mitigation Measure

Implementation of the following mitigation measure would reduce this impact to a ***less-than-significant level***.

- 6.5-9 *Prior to development of the West Jibboom Street Property site, the results of a Phase 2 ESA and subsurface geophysical investigation shall be submitted to DTSC. If the Phase 2 ESA concludes that site remediation would be necessary to protect human health and the environment (if the site is developed as envisioned in the Specific Plan), the site shall not be developed until the site is remediated to levels that would be protective of the most sensitive population for the planned use.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for the analysis of potential hazardous substances effects of the proposed project, in combination with other similar projects, is the City of Sacramento.

- 6.5-10 Development of the proposed Specific Plan, in combination with development of other projects in the City of Sacramento that are on property that are known to contain, or could contain contaminated soil or groundwater, could present a hazard to construction workers if not properly managed.**

For any projects in the City of Sacramento that would involve redevelopment of an existing site historically used for industrial or some commercial/retail uses in which soil or groundwater contamination could have occurred, the potential exists for release of hazardous substances during construction and/or remediation of those sites, similar to the effects evaluated in Impacts 6.5-1 through 6.5-5 and 6.5-9 for the proposed project. For individuals not involved in construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through dust either from soil remediation activities or from soil-disturbing activities during construction where previously unidentified contamination may exist. (Other potential pathways, such as direct contact with contaminated soils or groundwater would not pose as great a risk to the public because such exposure scenarios would typically be confined to the construction zones.)

To the extent that construction of the proposed project could result in an incremental increase in risk from contaminant-related air emissions, the project, in combination with other remediation projects in the City of Sacramento, would not result in any cumulative significant effects. This assumption is based on implementation of site-specific risk management controls and compliance with applicable laws and regulations pertaining to hazardous materials management at the other locations. Implementation of Mitigation Measures 6.5-1, 6.5-3, 6.5-4, 6.5-5, and 6.5-9 would reduce potential project impacts related to redevelopment of the Specific Plan Area to a less-than-significant level. Moreover, it is extremely unlikely that any one individual outside of any particular project site construction zone would be exposed to maximum levels of construction-generated contaminated air emissions (if any) for the entire development period, even if controls were not in place. Due to atmospheric dispersion, chemical concentrations decrease as the distance from the source increases. Thus, the incremental contribution of each additional source that could increase emissions at a specific location would differ relative to the location of a given person; an individual who is directly outside the construction zone of one source would be unlikely to be exposed to

maximum levels from another source. Additional risks that could be posed by other construction or remediation projects where contaminants could be disturbed would not significantly increase the risks to individuals. Consequently, the actual risks that might be realized by any one individual exposed to potential impacts from construction of the project site, in combination with other construction or remediation projects in which contaminated soils are present, would be minimal. The project would not result in a considerable contribution to a significant adverse hazard. Therefore, project construction- or remediation-related effects due to soil or groundwater contamination would be **less-than-cumulatively significant**, assuming implementation of appropriate controls at redevelopment projects.

#### Mitigation Measure

6.5-10 *Implement Mitigation Measures 6.5-1, 6.5-3, 6.5-4, 6.5-5, and 6.5-9.*

**6.5-11 The renovation and/or restoration of Central Shops buildings likely to contain asbestos, lead-based paint, or other hazardous substances, in combination with similar activities at existing buildings in the City of Sacramento, could result in a release of hazardous substances to the environment if not properly identified, removed, contained, and transported for disposal at approved sites.**

For any projects in the City of Sacramento that would develop or redevelop an existing site where non-structural hazardous building components such as ACM, lead-based paint, or other hazards are present, the potential exists for release of hazardous substances during demolition/renovation of those sites. Previously unidentified buried items containing hazardous substances (e.g., USTs) could also be encountered during excavation and other site preparation activities. For individuals not involved in demolition or renovation activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through construction-generated dust from demolition or renovation. Other potential pathways, such as direct contact with contaminated materials would not pose as great a risk to the public because such exposure scenarios would typically be confined to the work site. This assumption is based on implementation of site-specific risk management controls and compliance with applicable laws and regulations pertaining to established hazardous materials management at locations in the areas surrounding the project site. Moreover, an individual who is directly outside zone of one source of hazardous substances would be unlikely to be exposed to maximum levels from another source. Such exposure would typically be site-specific and would involve accidental or inadvertent exposure to hazardous building substances. Associated health and safety risks would generally be limited to those individuals working with the hazardous building materials or to persons in the project site. While such impacts would only be temporary and intermittent, the proposed project would trigger a considerable contribution, resulting in a *potentially significant cumulative impact*.

#### Mitigation Measure

Implementation of Mitigation Measure 6.5-6 would reduce the project's contribution this cumulative effect to the extent required by existing laws and regulations. Therefore, the cumulative effect would not be considerable, and impacts would be **less than significant**.

6.5-11 *Implement Mitigation Measure 6.5-6.*

**6.5-12 Implementation of the proposed project would contribute to cumulative increases in the use of hazardous substances during construction and occupancy of the projects.**

The construction and operation of current and future projects within the City of Sacramento would continue to involve the use of hazardous substances. Projects that use, store, transport, or dispose of hazardous substances would be required to comply with federal, State and local regulations to ensure the safe handling of these materials. Due to strict regulation, the risk of release or exposure to hazardous substances within Sacramento would be minimized. Associated health and safety risks would generally be limited to those individuals using the substances or to persons in the immediate vicinity of the substances. Although the risk of accident or inadvertent releases cannot be completely avoided, hazardous substances incidents would typically be site-specific, generally one-time occurrences that would not combine with similar effects elsewhere. Implementation of applicable hazardous materials management laws and regulations adopted at the federal, State, and local level, which are monitored by the City of Sacramento, SCEMD, and the CHP would ensure cumulative impacts related to hazardous substances use remain less than significant.

Hazardous substances use at the project site would increase, as compared to existing conditions; however, the types of uses would be limited to non-industrial facilities such as residences and businesses in which both the amounts and kinds of hazardous substances would be minimal. The project would incrementally increase hazardous substances transportation within and adjacent to the project site. The proposed project's net contribution to this cumulative impact would be a small increment, and would be less than cumulatively considerable and, thus, ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.5-13 Implementation of the proposed project would contribute to cumulative increases in the number of people who could be exposed to accidental or intentional release hazardous substances on rail lines and roadways.**

The release of a hazardous material to the environment as a result of a transportation accident could cause a multitude of problems to the environment, property, or human health, the significance of which would dependent on the type, location, and quantity of the material released. Although hazardous material incidents can happen almost anywhere, urban areas such as Sacramento are at higher risk.

The City of Sacramento is a developed urban area, and faces the multiple risks of potential hazardous material emergencies that are typically associated with an urban environment. The City also contains major transportation arteries, such as State Route 99 and U.S. Highway 50; I-5, Interstate 80 (I-80), and Business Loop 80 (Capitol City Freeway); State Routes 16 and 160; and Sacramento International and Mather Field Airports. In addition to the Railyards Planning Area, rail lines carrying freight trains pass through the City of Sacramento in two other locations: generally north/south past California State University at Sacramento (approximately 17 trains per day) and north/south through downtown Sacramento (approximately 20 trains per day).<sup>26</sup> Each mode would involve the transportation of hazardous substances through and into the City each year. Additionally, the Port of Sacramento, even though it is located in Yolo County, could be involved in hazardous substances shipments. Considerations must be made also for the numerous agriculturally related business located area. Therefore, the Sacramento urban area is already at risk of the effects of a major catastrophic hazardous materials emergency due to the proximity of the transportation routes to densely populated areas, and as the City's population grows, more people could be at risk of exposure to a catastrophic incident.

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26 City of Sacramento, General Plan Technical Background Report, June 2005, page 7.4-3.

When a hazardous material emergency occurs, multiple resources are available, with the SFD leading the response activities. The response to an incident may be in the territory of the City of Sacramento, County of Sacramento, and on mutual aid calls. Resources available in such an emergency are described in the Regulatory Setting.

The proposed project in and of itself would not result in any changes in the regional transportation of hazardous substances via roadway, rail, air, or water. If a hazardous materials incident were to occur within the Railyards or anywhere else in Sacramento, it would be unpredictable -- and the effects site-specific, such that there would not be a combined effect. Therefore, the proposed project would not result in a cumulatively considerable contribution, and the cumulative impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **Sports and Entertainment Facility Overlay**

The evaluation of soil and groundwater contamination impacts for the Sports and Entertainment Facility Overlay is the same as that for the Specific Plan (Impacts 6.5-1 through 6.5-5). Development of an arena in the Railyards Planning Area would not occur until the site is remediated to DTSC Target Cleanup Levels, identical to any other area in the Railyards. Each of the concerns associated with development of a contaminated site within the cumulative context would be addressed by the same set of legal requirements listed in the Regulatory Setting. Mitigation Measures 6.5-1, 6.5-3, 6.5-4, and 6.5-5 would still apply, and no additional mitigation measures are needed.

The Sports and Entertainment Facility Overlay would not involve the demolition or reconstruction of buildings or structures that could contain hazardous substances other than those identified above in the Planning Area.

Development of the Sports and Entertainment Facility Overlay would not substantially alter the impact analysis regarding hazardous substances use (Impact 6.5-7). Routine operation and maintenance of an arena would involve limited use of products such as cleaning agents, paints and solvents, and herbicides and pesticides. However, the quantities would not be large, and similar products would be used elsewhere throughout the Specific Plan Area during the normal course of business and occupancy. Therefore, similar impacts would be expected to result with development of the Sports and Entertainment Facility Overlay.

With the Sports and Entertainment Facility Overlay, more people could be in the Planning Area than under normal conditions. However, it is not any more or less likely that an unpredictable non-project-related roadway, rail, air, or water transportation mode involving the catastrophic unintentional or intentional release of hazardous substances that could substantially expose people to adverse health effects would occur as a direct result of arena operations.



## **6.6 HYDROLOGY AND WATER QUALITY**

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## 6.6 HYDROLOGY AND WATER QUALITY

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### INTRODUCTION

This section addresses potential effects to hydrologic resources in the Specific Plan Area, including drainage, flooding, groundwater resources, and water quality that could be caused by implementation of the proposed Railyards Specific Plan. Site characteristics such as regional and local drainage, flooding conditions, and water quality are described based on information developed in the Specific Plan, the City of Sacramento's Downtown Railyards Drainage Report, and other published technical information/reports, as indicated in the footnoted references. The primary sources of information referenced for this section regarding drainage and flooding conditions are listed below:

- 7<sup>th</sup> Street Extension Environmental Impact Report
- 7<sup>th</sup> Street Extension Environmental Assessment
- Report of Waste Discharge Lagoon Study Area Northwest Corner- Sacramento Railyard
- Sutter Medical Center, Sacramento (SMCS) Project and the Trinity Cathedral Project Environmental Impact Reports
- Report on Downtown Railyards Drainage

Issues related to the generation of wastewater and urban storm drainage, and the capacity of the City's Combined Sewer and Stormwater system (CSS) and the Sacramento Regional Waste Water Treatment Plant (SRWTP) to handle flows generated by the proposed project, are addressed in Section 6.11, Public Utilities.

For the purposes of this analysis there would be no environmental effects related to seiche, tsunami, or mudflow. The Specific Plan Area is located far from the Pacific Ocean and other large water bodies and historically has not been affected by tsunamis. In addition, the topography is flat, and mudflows are an unlikely scenario. A seiche in the Sacramento River is theoretically possible. However, the risk of this event is considered very low because the river channel is not completely enclosed. Therefore, these issues are not discussed further in this EIR.

Information reviewed to prepare this section included, consultation with the project engineer and architect, various technical documents, information from City of Sacramento staff, and regulatory agency information, which are cited in the footnotes.

Comment letters in response to the Notice of Preparation (NOP) for the proposed project were received and are included in Appendix B. One comment was received which expressed concern with flood control related to road crossings in the railroad embankments on the northern boundary of the Specific Plan Area. The railroad embankment on the northern boundary of the Specific Plan Area is not certified as a flood control levee and has not been used for purposes of flood hazard planning. Therefore, any construction activities in the embankment would not impact flood control and is not further addressed in this section. No other comments were received related to hydrology and water quality.

## ENVIRONMENTAL SETTING

### Regional Surface Water Hydrology

The City of Sacramento is located at the confluence of two major rivers, the Sacramento River and American River. The Specific Plan Area lies very close to the confluence, with the Sacramento River located just west of the site, while the American River parallels the northern boundary. The total length of the Sacramento River is approximately 327 miles. Its drainage area encompasses 27,200 square miles, and is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, the Cascade Range and Trinity Mountains to the north, and the Delta-Central Sierra area to the south. The Sacramento River is the principal stream in the basin. Its major tributaries are the Pit and McCloud Rivers, which join the Sacramento River from the north, and the Feather and American Rivers, which are tributaries from the east. Numerous tributary creeks flow from the east and west.

The average runoff from the basin is estimated to be 21.3 million acre-feet per year. The melting snow pack in the Sierra Nevada Mountains maintains stream flow during most of the summer.

The Sacramento River system experiences variations in water levels during different parts of the year and during different parts of the month. Two factors affecting the water level are the amount of runoff entering the system from the rivers' watersheds and the amount of water being released from dams upriver. The system is also subject to tidal action from the Sacramento-San Joaquin Delta (Delta). Finally, the river channel is confined by a levee system on each bank of the river. During periods of high flows, primarily in the winter, a system of bypass channels allows water to leave the river channel and bypass the urbanized areas of the valley, thus reducing potential flood hazard. Chief of these in the project vicinity is the Yolo Bypass, which is located north and west of the confluence with the American River.

The Sacramento River, beginning at the "I" Street Bridge and including all portions downstream, is considered part of the Sacramento-San Joaquin Delta.<sup>1</sup> Flooding has historically been a problem for Sacramento, prompting the City to build levees beginning in the 1860's. The Specific Plan Area is immediately upstream of the I Street Bridge, on the east side, left bank of the river.

The American River drains the central portion of the Sierra Nevada from the crest near Lake Tahoe to the reservoir at Folsom Lake, and the secondary reservoir below it at Nimbus Dam. The American River basin drains an area of roughly 1,875 square miles. An average of 2.7 million acre-feet drains from the basin annually. The Lower American River comprises the 24-mile stretch of river below Nimbus Dam to the confluence. Flows in the Lower American River are controlled by releases from Folsom Dam and Nimbus Dam.

### **Specific Plan Area**

The Specific Plan Area once contained natural water features. The northern water body was known as Willow Lake, and the southern as Sutter Lake, Sutter Slough, or China Lake. These lakes and adjacent marshland covered the entire Specific Plan Area. Both lakes were connected with the Sacramento River through a narrow channel. Over time, to accommodate development, the lakes and marshes were filled. No natural water features remain within the Specific Plan Area.

### **Flooding**

The Specific Plan Area is protected from the 500-year flood event based on existing topographic elevations in the project site. Historical flooding in the project vicinity generally occurred along the

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1 California Water Code Section 12220.

Sacramento and American rivers. Recent improvements to the levees along these rivers have reduced the risk of flooding in the City. As a result, in February 2005 the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the City of Sacramento was revised. As shown in Figure 6.6-1, a majority of the Specific Plan Area is classified as Zone X, or “areas determined to be outside the 500-year flood floodplain. A small portion of the Specific Plan Area is in a Shaded Zone X, which is defined as “areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.”

In addition to levees along the Sacramento and American Rivers, flood protection is provided by coordinated operation of upstream reservoirs and dams, including Shasta Dam and Folsom Dam, respectively. The Specific Plan Area is mapped within the dam inundation zone in the event of failure at Folsom Dam.

A railroad embankment built on the northern boundary of the Specific Plan Area, along North B Street, was once considered a flood prevention facility, but was never certified or constructed under federal standards to serve as a legitimate flood protection levee. However, FEMA has credited this structure with providing added protection from flooding for areas south of North B Street and the City has determined that this structure provides additional time for evacuation in the event of a major flood in the western portion of the City.

### **Drainage and Storm Water Runoff**

Although the Specific Plan Area contains buildings, parking lots, and other impervious surfaces, it is dominated by unpaved and relatively flat ground surfaces on which rainwater percolates into the ground and is predominately self-contained. Runoff from approximately 29 acres of existing developed uses in the Specific Plan Area currently drains to drop-inlets, which discharge to the City’s CSS, and is ultimately conveyed to wastewater treatment plants for treatment prior to discharge into the Sacramento River.

All piping, drains, basins, and pumps connected to the CSS are maintained by the City. As discussed in Section 6.11, the CSS transports up to 60 million gallons per day (mgd) of wastewater to the Sacramento Regional County Sanitation District’s (SRCSD) SRWTP that treats stormwater and sanitary sewage prior to discharge into the Sacramento River. When flows in the CSS exceed 60 mgd, flows are routed to Pioneer Reservoir, a 238-million-gallon storage facility. When the capacity of Pioneer Reservoir is met, the additional volume receives primary treatment with disinfection. The primary treatment plant cleans up to 250 mgd while discharging into the Sacramento River.

The City also operates its Combined Wastewater Treatment Plant (CWTP), where an additional 130 mgd of combined wastewater receives primary treatment with disinfection prior to discharging to the Sacramento River. The system may also store water in the CWTP basins. Under extreme high flow conditions, discharge of untreated wastewater from the CSS may occur.<sup>2</sup> A National Pollution Discharge Elimination System (NPDES) Permit regulates waste discharge requirements from the CSS (NPDES No. CA0079111).

Wet weather flows have been known to exceed system capacity during heavy storm events. When the capacities of the pipeline system and treatment plant are surpassed, excess untreated flows flood local streets in the downtown area through manholes and catch basins. The CSS is

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2 CVRWQCB, Waste Discharge Requirements for City of Sacramento Combined Wastewater Collection and Treatment System, Sacramento County, ORDER NO. 5-01-258, NPDES NO. CA0079111.





A division of **PBS&**

**FIGURE 6.6-1**  
**Flood Insurance Rate Map**

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considered an impacted system that requires all additional inflow into the system be mitigated.<sup>3</sup> Please see Section 6.11, Public Utilities, and Water for more information on the CSS capacity and current flows.

### Existing Drainage Shed

The Specific Plan Area consists of approximately 244 acres (see Figure 3-3), most of which are in a drainage shed defined by an historic levee and North B Street along the north boundary, the existing main line railroad track embankment near the southerly and easterly boundary, and the I-5 freeway embankment and the Sacramento River levee on the west.

Historically, the Specific Plan Area drained by a combination of surface runoff into natural drainages, percolation into the soil, and collection in stormwater drainage pipes that discharged to both the 3<sup>rd</sup> and 7<sup>th</sup> streets CSS pipelines. This system serves the entire Specific Plan Area drainage shed (except for about 12 acres on the fringes), including the Amtrak station and platform, and the main line track area. These pipelines were designed to lower runoff standards that are used today, and heavy storms have resulted in ponding in parts of the Specific Plan Area. Current flows in the drainage shed that are conveyed in the existing pipeline network are estimated at approximately 10 cubic feet per second.

### Groundwater

The City of Sacramento is located within the South American Groundwater Sub-basin, part of the larger Sacramento Valley Groundwater Basin. Various geologic formations comprise the water-bearing deposits in the basin. Groundwater occurs in unconfined to semi-confined states throughout the sub-basins. The degree of confinement typically increases with depth below the ground surface. Groundwater in the upper aquifer formations is typically unconfined. In general, groundwater levels in the vicinity of the City of Sacramento have been reported to be stable, fluctuating less than 10 feet since the 1970s.<sup>4</sup>

Groundwater within the Specific Plan Area has been recorded at fairly shallow depths. Groundwater has been reported at depths ranging from approximately 14 to 33 feet below the ground surface.<sup>5</sup> Groundwater in the Specific Plan Area is currently not in use; however, the current Central Valley Regional Water Quality Control Board (CVRWQCB) Basin Plan identifies potential uses for this groundwater, including future municipal and domestic supplies, agricultural supply, industrial service supply, and industrial process supply, in the event that surface water supplies are compromised.

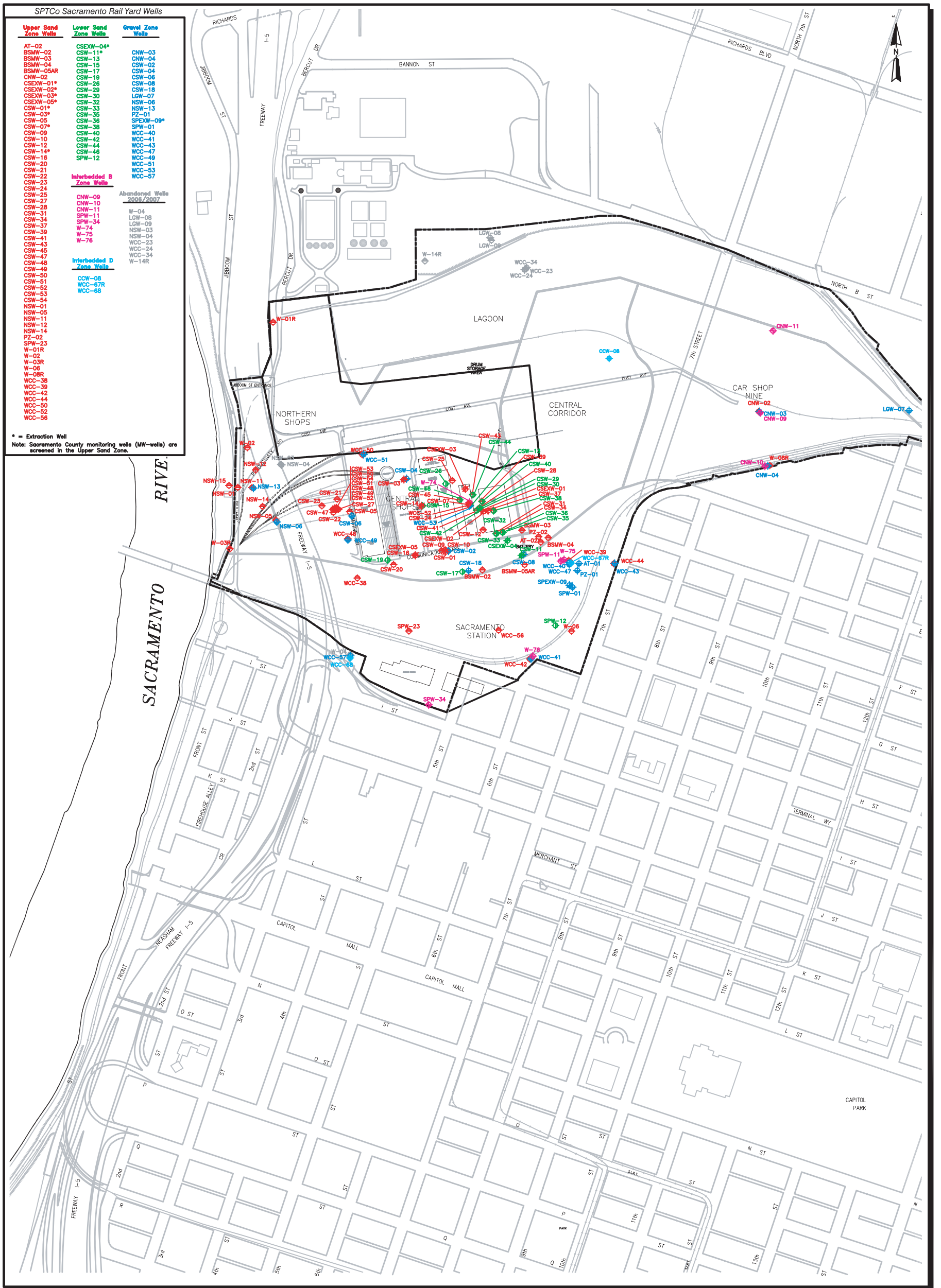
A considerable number of groundwater monitoring wells and extraction wells have been installed in the Specific Plan Area. The locations of the wells are shown in Figure 6.6-2. Numerous wells have been abandoned at the Specific Plan Area, specifically, 70 of the 113 wells installed in the Specific Plan Area have been abandoned, with the majority of abandonments occurring in 2000 and 2001 to accommodate soil remediation activities (see Figure 6.6-2). A list of groundwater contaminants likely to occur in the Specific Plan Area, which was derived from *Sacramento Railyards Ground Water Monitoring Program Report, 2004* is shown in Table 6.6-1. This list represents those contaminants identified in the review as having the highest likelihood to occur within the Specific Plan Area. Further discussion of remediation efforts and soil and groundwater contamination is presented in Section 6.5, Hazardous Materials.

3 City of Sacramento, 2007 – 2012 *City of Sacramento Proposed Capital Improvements Program*, May 2007.

4 California Department of Water Resources, *California's Groundwater Bulletin 118, Sacramento Valley Groundwater Basin, South American Subbasin*, February 27, 2004.

5 Cunningham Engineering Corporation, Phase I Environmental Assessment, 2727 Capitol Avenue, Sacramento, CA 95816, July 30, 1999.





SPTCo Sacramento Rail Yard Wells

Upper Sand Zone Wells	Lower Sand Zone Wells	Gravel Zone Wells
AT-02	CSEXW-04*	CNW-03
BSMW-02	CSW-11*	CNW-04
BSMW-03	CSW-13	CSW-02
BSMW-04	CSW-15	CSW-04
BSMW-05AR	CSW-17	CSW-06
CNW-02	CSW-19	CSW-08
CSEXW-01*	CSW-26	CSW-08
CSEXW-02*	CSW-29	CSW-18
CSEXW-03*	CSW-30	CSW-10
CSEXW-05*	CSW-32	NSW-06
CSW-01*	CSW-33	NSW-13
CSW-03*	CSW-35	PZ-01
CSW-05	CSW-36	SPEXW-09*
CSW-07*	CSW-38	SPW-01
CSW-09	CSW-40	WCC-40
CSW-10	CSW-42	WCC-41
CSW-12	CSW-44	WCC-43
CSW-14*	CSW-46	WCC-47
CSW-16	SPW-12	WCC-49
CSW-20		WCC-51
CSW-21		WCC-53
CSW-22		WCC-57
CSW-23		
CSW-24		
CSW-25		
CSW-27		
CSW-28		
CSW-31		
CSW-34		
CSW-37		
CSW-39		
CSW-41		
CSW-43		
CSW-45		
CSW-47		
CSW-48		
CSW-49		
CSW-50		
CSW-51		
CSW-52		
CSW-53		
CSW-54		
NSW-01		
NSW-05		
NSW-11		
NSW-12		
NSW-14		
PZ-02		
SPW-23		
W-01R		
W-02		
W-03R		
W-06		
W-08R		
WCC-38		
WCC-39		
WCC-42		
WCC-44		
WCC-50		
WCC-52		
WCC-56		

**Interbedded B Zone Wells**

CNW-09
CNW-10
CNW-11
SPW-11
SPW-34
W-74
W-75
W-76

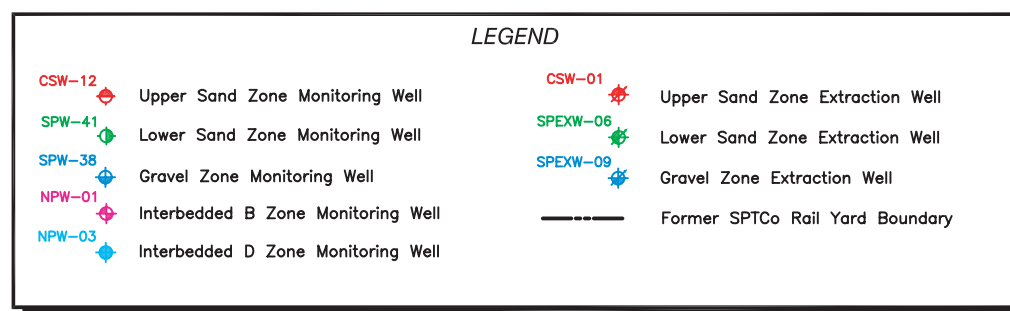
**Interbedded D Zone Wells**

CSW-08
WCC-87R
WCC-88

**Abandoned Wells (2008/2007)**

W-04
LOW-08
LOW-09
NSW-03
NSW-04
WCC-23
WCC-24
WCC-34
W-14R

\* = Extraction Well  
 Note: Sacramento County monitoring wells (MW-wells) are screened in the Upper Sand Zone.



Source: Thomas Enterprises Inc., 2007.

**FIGURE 6.6-2 Sacramento Railyards Groundwater Monitoring and Extraction Well Locations**



TABLE 6.6-1

## SAMPLE ANALYSIS OF GROUND WATER MONITORING WELLS IN THE SPECIFIC PLAN

Constituents	EPA Analytical Method <sup>1</sup>	Maximum Practical Quantitation Limit <sup>2</sup> (µg/l)
Depth to Groundwater	---	---
Volatile Organic Compounds	8021 or 8260B	0.5
Total Petroleum Hydrocarbons	8015M	50
Semi Volatile Organics	8270	0.5-10
1,4-Dioxane	8270C	0.5
Total Lead	7421	1
Total Arsenic	7060	1
Total Cadmium	6010	0.2
Total Nickel	6010	1

## Notes:

1 Or an equivalent method

2 Estimated concentration between the Method Detection Limit and the Practical Quantitation Limit shall be reported and flagged with a "J" qualifier.

Source: Revised Groundwater Monitoring and Reporting Program for the Sacramento Railyard – 2004 Annual Groundwater Monitoring Report; Central Valley Regional Water Quality Control Board.

## WATER QUALITY

### Surface Water Quality

The Sacramento River has been classified by the CVRWQCB as having numerous beneficial uses, including providing a municipal, agricultural, and recreational water supply. Other beneficial uses include freshwater habitat, spawning grounds, wildlife habitat, and navigation on the Sacramento River.<sup>6</sup> Ambient water quality in the Sacramento River is influenced by agricultural drainage, mine drainage, urban runoff, and industrial, municipal and construction discharges.

Reaches of the Sacramento River flow through the Sacramento urban area that are considered impaired and listed on the Clean Water Act (CWA) Section 303(d) list of impaired and threatened waters for California. Section 303(d) establishes the total maximum daily load (TMDL) process to assist in guiding the application of state water quality standards, requiring the states to identify streams in which water quality is impaired (affected by the presence of pollutants or contaminants) and to establish the TMDL or the maximum quantity of a particular contaminant that a water body can assimilate without experiencing adverse effects. The 303(d) list breaks up the Sacramento River into four sections, Keswick Dam to Cottonwood Creek, Cottonwood Creek to Red Bluff, Red Bluff to Knights Landing, and Knights Landing to the Delta, with the Specific Plan Area being located in the final section. All sections of the Sacramento River are listed on the 303(d) list for unknown toxicity, and Red Bluff to the Delta is also listed for mercury. Mercury is primarily a legacy of gold mining.

### Urban Runoff Water Quality

Constituents found in urban runoff vary as a result of differences in rainfall intensity and occurrence, geographic features, the land use of a Specific Plan Area, as well as vehicle traffic and percent of impervious surface. In the Sacramento area, there is a natural weather pattern of a long dry period from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills, and atmospheric fallout accumulates within the urban watershed. Precipitation during the early portion of the wet season (November to April) washes these pollutants into the stormwater runoff, which can result in elevated pollutant

6 California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan for the Sacramento and San Joaquin River Basin* (Basin Plan), Fourth Edition – 1998, revised 2007.

concentrations in the initial wet weather runoff. This initial runoff with peak pollutant levels is referred to as the "first flush" of a storm event or events.

Stormwater discharge monitoring data have been collected from the Sacramento urban area monitoring stations since 1990. From this monitoring, the following six pollutants have been identified as "target pollutants:" mercury, diazinon, chlorpyrifos, lead, copper, and fecal coliform.<sup>7</sup> These pollutants were determined based on their toxicity, potential of exceeding water quality criteria, ability to accumulate in humans and animals, or if listed as a pollutant impairing water bodies by the State Water Resources Control Board.

### **Groundwater Quality**

The Solano sub-basin covers approximately 425,000 acres (644 square miles) and lies within the southernmost extent of the Sacramento Valley Basin, extending into northern portions of the Sacramento-San Joaquin Delta. Groundwater quality in the regional sub-basin is generally within the secondary drinking water standards for municipal use, including levels of iron, manganese, arsenic, chromium, and nitrates. The groundwater is characterized as having calcium magnesium bicarbonate, with minor fractions of sodium magnesium bicarbonate. The water quality in the upper aquifer system is regarded as superior to that of the lower aquifer system. Water from the upper aquifer generally does not require treatment (other than disinfection). The lower aquifer system also has higher concentrations of total dissolved solids (TDS, a measure of salinity) than the upper aquifer, although it typically meets standards as a potable water supply.<sup>8,9</sup>

Groundwater quality within the Specific Plan Area has been affected by the disposal of wastes to groundwater by burial and pre-treatment in two unlined ponds, with discharge of the effluent to the SCRSD sewer line via an unlined ditch. This led to the pollution of groundwater beneath and down gradient from the existing Depot. Primary pollutants in the groundwater include solvents such as trichloroethylene (TCE) and tetrachloroethylene (PCE); the solvent stabilizer 1,4 Dioxane; semi-volatile organics such as acenaphthene, dibenzofuran, flourene, 2-methylbnaphthalene, and naphthalene; total petroleum hydrocarbons (TPH); and metals including nickel, arsenic, and lead. This pollution impaired the beneficial uses of this water resource. Several areas within the Specific Plan Area have been remediated, and Draft RAPs for the remaining areas have been completed or are nearing completion. Remediated areas are considered suitable for development. Even though remediation has been completed in some areas and will occur in the near-term for others, it is possible that residual chemicals could remain in site soils or groundwater where they could be encountered during construction.

### **REGULATORY SETTING**

The following federal, State, and local regulations associated with hydrology and water quality are applicable to the proposed project.

#### **Federal**

##### **Clean Water Act and Associated Environmental Compliance**

Several sections of the CWA pertain to regulating impacts on waters of the United States. The discharge of dredged or fill material into waters of the United States is subject to permitting specified under Title IV (Permits and Licenses) of the CWA and specifically under Section 404 (Discharges of

7 City of Sacramento, City of Sacramento Stormwater Quality Improvement Plan, July 1, 2004.

8 California Department of Water Resources, *California's Groundwater Bulletin 118, Sacramento Valley Groundwater Basin, North American Subbasin*, February 27, 2004.

9 California Department of Water Resources, *California's Groundwater Bulletin 118, Sacramento Valley Groundwater Basin, South American Subbasin*, February 27, 2004.

Dredge or Fill Material) of the act. Section 401 (Certification) specifies additional requirements for permit review, particularly at the state level.

### *Section 303*

The State of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne). Section 303(d) of the CWA established the TMDL process to guide the application of state water quality standards (see discussion of state water quality standards below). To identify candidate water bodies for TMDL analysis, a list of water quality-limited streams was generated. These streams are impaired by the presence of pollutants, including sediment, and are more sensitive to disturbance. Section 303(d) listing associated with water bodies in the Specific Plan Area has been described in the environmental setting above.

### *Section 401*

Section 401 of the CWA requires that an applicant pursuing a federal permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States obtain a water quality certification (or waiver). Water quality certifications are issued by RWQCBs in California. Under the CWA, the state RWQCB must issue or waive Section 401 water quality certification for the project to be permitted under Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials into waters of the United States and imposes project-specific conditions on development. A Section 401 waiver establishes conditions that apply to any project that qualifies for a waiver.

### *Section 402*

The 1972 amendments to the Federal Water Pollution Control Act established the NPDES permit program to control discharges of pollutants from point sources (Section 402). The 1987 amendments to the CWA created a new section of the CWA devoted to stormwater permitting (Section 402[p]). EPA has granted the State of California (the State Water Board and RWQCBs) primacy in administering and enforcing the provisions of CWA and NPDES. NPDES is the primary federal program that regulates point-source and non-point-source discharges to waters of the United States.

The State Water Board issues both general and individual permits for discharges to surface waters, including for both point-source and non-point-source discharges. In response to the 1987 amendments, the EPA developed the Phase I NPDES Storm Water Program for cities with populations larger than 100,000, and Phase II for smaller cities. In California, the State Water Board has drafted the General Permit for Discharges of Storm Water from Municipal Separate Storm Sewer Systems (MS4 General Permit). The City of Sacramento has coverage under the MS4 General Permit, which is discussed in more detail below.

### *Section 404*

Dredging and placement of fill materials into the waters of the United States is regulated by Section 404 of CWA, which is administered by the Corps.

### *Section 408*

Section 408 regulates the use of or alteration to levees or other improvements along rivers, unless otherwise permitted by the Corps through state or local agencies.

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### Rivers and Harbors Act and Associated Environmental Compliance

The Rivers and Harbors Act regulates placement of fill and structures in navigable waterways. The permit program, regulated under Section 10 of the Act, is administered by the Corps. In practice, permitting is combined with CWA Section 404 permitting. A Section 404/10 permit would be required for construction of the proposed marina.

### Floodplain Development

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations and floodplain boundaries based on hydrologic and hydraulic studies. FEMA is also responsible for distributing the Flood Insurance Rate Maps (FIRMS), which are used in the National Flood Insurance Program (NFIP). These maps identify the locations of special flood hazard areas, including the 100-year floodplain.

FEMA allows development in the floodplain; however, construction activities are restricted within the floodplain depending on the potential for flooding within each area. Federal regulations governing development in a floodplain are set forth in Title 44, Part 60 of the Code of Federal Regulations (CFR) – *FEMA Levee Standards (44CFR65.10) TITLE 44 – Emergency Management and Assistance*.

### **State**

Discharges from the Specific Plan Area are subject to State water quality laws and regulations. The Central Valley RWQCB is responsible for preparing a water quality control plan (basin plan) that identifies beneficial uses of the Sacramento River and its tributaries and also for preparing water quality objectives for the protection of beneficial uses. Numerical and narrative criteria are contained in the basin plan for key water quality constituents, including: dissolved oxygen (DO), water temperature, trace metals, turbidity, suspended material, pesticides, salinity, radioactivity, and other related constituents.

### Porter-Cologne Water Quality Control Act Overview

Porter-Cologne, passed in 1969, articulates with the federal CWA (see “Clean Water Act” above). It established the State Water Board and divided the state into nine regions, each overseen by an RWQCB. The State Water Board is the primary state agency responsible for protecting the quality of the state’s surface and groundwater supplies, but much of its daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Sections 402, and 303(d). In general, the State Water Board manages both water rights and statewide regulation of water quality, while the RWQCBs focus exclusively on water quality in their regions. The Sacramento River basin is under the jurisdiction of the CVRWQCB. Construction activities are regulated under the NPDES General Permit for Discharges of Storm Water Runoff associated with Construction Activity (General Construction Permit), provided that the total amount of ground disturbance during construction is one acre or more. The CVRWQCB enforces the General Construction Permit within the City of Sacramento. Coverage under a General Construction Permit requires the preparation and implementation of a stormwater pollution prevention plan (SWPPP) and notice of intent (NOI). The SWPPP includes pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills), demonstration of compliance with all applicable local and regional erosion and sediment control standards, identification of responsible parties, a detailed construction timeline, and a best management practices (BMPs) monitoring and maintenance schedule. The NOI includes site-specific information and the certification of compliance with the terms of the General Construction Permit.



### *Industrial Activities*

Various types of industrial activities are covered under the NPDES General Permit for Discharges of Storm Water Runoff associated with Industrial Activity (General Industrial Permit). These activities include manufacturing operations, transportation facilities where vehicles are maintained (maintenance includes fueling and washing), landfills, hazardous waste sites, and other similar operations. The General Permit requires that each facility file an NOI with the RWQCB prepare and implement a SWPPP and monitor to determine the amount of pollutants leaving the site. The SWPPP does not have to be submitted to the RWQCB but must be available at each facility.

### *Dewatering Activities*

While small amounts of construction-related dewatering are covered under the General Construction Permit, the CVRWQCB has also adopted a General Order for Dewatering and Other Low Threat Discharges to Surface Waters (General Dewatering Permit) (Order No. 5-00-175) under NPDES Permit No. CAG995001. This permit applies to various categories of dewatering activities and would likely apply to aspects of the proposed project if construction required dewatering in greater quantities than what is allowed by the General Construction Permit and discharges the effluent to surface waters. The General Dewatering Permit contains waste discharge limitations and prohibitions similar to those in the General Construction Permit. To obtain coverage, the applicant must submit an NOI and pollution prevention, monitoring, and reporting program (PPMRP). The PPMRP must include a description of the discharge location, discharge characteristics, primary pollutants, receiving water, treatment systems, spill prevention plans, and other measures necessary to comply with discharge limits. A representative sampling and analysis program must be prepared as part of the PPMRP and implemented by the permittee, along with recordkeeping and quarterly reporting requirements during dewatering activities.

For dewatering activities that are not covered by the General Dewatering Permit, an individual NPDES permit and waste discharge requirements (WDRs) must be obtained from the CVRWQCB. The General Dewatering Permit may be applicable to the City and its contractors where excavation activities may explore the water table. This section is intended to provide guidelines to ensure that the developer/contractor take all reasonable steps necessary to avoid adverse impacts on existing property caused by dewatering. A temporary permit must also be obtained from the City to discharge into the storm drain system or combined sewer/stormwater system.

### *Stormwater Discharges*

The CWA mandates permits for municipal stormwater discharges. The City of Sacramento has coverage under a MS4 General Permit. This permit requires that controls be implemented to reduce the discharge of pollutants in stormwater discharges to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and other measures as appropriate. As part of permit compliance, the City has prepared a Stormwater Quality Improvement Plan (SQIP), which outlines the requirements for municipal operations, industrial and commercial businesses, illegal discharges, construction sites, planning and land development, public education and outreach, and watershed stewardship. These requirements include multiple measures to control pollutants in stormwater discharge. New development under the proposed project would be required to follow the guidance contained in the SQIP.

Water quality objectives for the Sacramento River are specified in the Water Quality Control Plan for the Sacramento River Basin and San Joaquin River Basin (Basin Plan) prepared by the CVRWQCB in compliance with the federal CWA and the California Water Code (section 13240).<sup>10</sup> The Basin

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10 California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan for the Sacramento and San Joaquin River Basin* (Basin Plan), Fourth Edition – 1998, revised 2007.

Plan contains water quality numerical and narrative standards and objectives for rivers and their tributaries within its jurisdiction. In cases where the Basin Plan does not contain a standard for a particular pollutant, other criteria, such as EPA water quality criteria developed under Section 304(a) of the CWA, apply.

### California Department of Water Resources

On February 24, 2006, Governor Arnold Schwarzenegger declared a state of emergency for California's levee system. Soon after, he signed Executive Order S-01-06 directing the California Department of Water Resources (DWR), with the assistance of the Corps, to develop a State Levees Team that would identify and repair eroded levee sites on the state-federal project levee system to prevent catastrophic flooding and loss of life. A total of 33 critical erosion sites were identified on the levee systems in the northern Central Valley. The 29 identified critical erosion sites are located in six counties: Colusa, Sacramento, Solano, Sutter, Yolo, and Yuba. These critical erosion sites were repaired in 2007. As part of its mission, DWR has responded to requests from various local agencies to survey and document erosion damage at a number of additional proposed sites. DWR has committed to assisting local agencies in determining the best way to accomplish any needed repairs, the funding mechanisms available, and the responsible agency to take the lead.

### **Local**

#### Combined System Development Fee

The City of Sacramento revised its sewer ordinance to include a development fee amendment to replace the Mitigation Agreement previously required for developers of projects within the CSS service boundary.<sup>11</sup> The ordinance was adopted March 15, 2005. The CSS development fee is discussed further in Section 6.11 – Public Utilities.

#### Stormwater Quality/Urban Runoff Management

The County of Sacramento and the Cities of Sacramento, Folsom, Citrus Heights, Elk Grove, Rancho Cordova, and Galt have a joint NPDES permit (No. CAS082597) that was granted in December 2002. The permittees listed under the joint permit have the authority to develop, administer, implement, and enforce storm water management programs within their own jurisdiction. The permit is intended to implement the Basin Plan through the effective implementation of BMPs to reduce pollutants in stormwater discharges to the maximum extent practicable (MEP).

Urban storm water runoff is defined in the permit as including stormwater and dry weather flows from a drainage area that reaches a receiving water body or subsurface. The permit regulates the discharge of all wet and dry weather urban storm water runoff within the City of Sacramento and requires the City to implement a stormwater management program to reduce pollutants in stormwater to the MEP. The City of Sacramento created the Stormwater Quality Improvement Plan (SQIP) to reduce the pollution carried by stormwater into local creeks and rivers to the MEP. The comprehensive plan includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations. The program also includes an extensive public education effort, target pollutant reduction strategy and monitoring program. The SQIP outlines the priorities, key elements, strategies, and evaluation methods of the City's SQIP program for 2003-2008.

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11 City of Sacramento, Department of Utilities, Memorandum subject: Combined Sewer System Development Fee. March 1, 2004.

### Dewatering

All new groundwater discharges to the CSS or separated sewer system are regulated and monitored by the City's Utilities Department pursuant to Department of Utilities Engineering Services Policy No. 0001, adopted as Resolution No. 92-439 by the Sacramento City Council. Groundwater discharges to the City's sewer system are defined as construction dewatering discharges, foundation or basement dewatering discharges, treated or untreated contaminated groundwater cleanup, discharges, and uncontaminated groundwater discharges.

The City requires that any short-term discharge be permitted, or an approved Memorandum of Understanding (MOU) for long-term discharges be established, between the discharger and the City. Short-term limited discharges of seven days duration or less must be approved through the City Department of Utilities by acceptance letter. Long-term discharges of greater duration than seven days must be approved through the City Department of Utilities and the Director of the Department of Utilities through a MOU process. The MOU must specify the type of groundwater discharge, flow rates, discharge system design, a City-approved contaminant assessment of the proposed groundwater discharge indicating tested levels of constituents, and a City-approved effluent monitoring plan to ensure contaminant levels remain in compliance with State standards or SRCSD- and CVRWQCB- approved levels. All groundwater discharges to the sewer must be granted a SRCSD discharge permit. If the discharge is part of a groundwater cleanup or contains excessive contaminants, CVRWQCB approval is also required.

### Wastewater Discharges

Section 13.080.020 of the Sacramento City Code prohibits the discharge of any substances, materials, waters, or waste if the discharge would violate any sewer use ordinance enacted by the SRCSD. Section 13.08.030 of the Sacramento City Code identifies specific waters, wastes, and substances that may not be discharged to the sewer.

Any discharge into the CSS must have a Sewer Use Questionnaire on file with the SRCSD, which would apply to the Specific Plan project. The SRCSD has adopted a Sewer Use Ordinance that regulates the use of public sewers connected to the SRWTP. The wastewater discharged from the SRWTP to Sacramento River is regulated under a NPDES permit issued by the RWQCB. Discharge limitations are specified in the permit to limit water quality impacts in the Sacramento River. Categorical Pretreatment Standards have also been established for the pretreatment of certain classes of industrial wastes discharged to publicly owned treatment works, such as the SRWTP. The purpose of these standards is to protect the SRWTP and the environment by regulating potentially harmful discharges to the sewer from industrial and commercial businesses.

### City of Sacramento General Plan

The City of Sacramento General Plan adopted the following goals and policy measures that pertain to the impacts evaluated in this section (urban runoff water quality, construction dewatering, and wastewater discharges).

#### DRAINAGE

**Goal A:** Provide adequate drainage facilities and services to accommodate desired growth levels.

#### Policy

1. Ensure that all drainage facilities are adequately sized and constructed to accommodate the projected increase in stormwater runoff from urbanization.

### Sacramento Central City Community Plan

The Central City Community Plan does not contain any policies applicable to the provision of hydrology and water quality.

### Sacramento Flood Control Agency

The Sacramento Area Flood Control Agency (SAFCA) was formed to address the Sacramento area's vulnerability to catastrophic flooding. This vulnerability was exposed during the record flood of 1986 when Folsom Dam exceeded its normal flood control storage capacity and several area levees nearly collapsed under the strain of the storm. In response, the City of Sacramento, the County of Sacramento, the County of Sutter, the American River Flood Control District and Reclamation District 1000 created SAFCA through a Joint Exercise of Powers Agreement to provide the Sacramento region with increased flood protection along the American and Sacramento Rivers. SAFCA's mission is to provide the region with at least a 100-year level of flood protection as quickly as possible while seeking a 200-year or greater level of protection over time. Under the Sacramento Area Flood Control Agency Act of 1990, the California Legislature has given SAFCA broad authority to finance flood control projects and has directed the Agency to carry out its flood control responsibilities in ways that provide optimum protection to the natural environment.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

Analysis of potential hydrology and water quality impacts is based on review of the Specific Plan Area design and intended uses and information developed by the applicant's engineer to establish existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section.

Impacts on surface and groundwater quality were analyzed by reviewing existing groundwater and surface water quality literature that pertains to the Specific Plan Area, identifying existing onsite ground and surface waters, including the depth to groundwater, and evaluating existing and potential sources of water quality pollutants based on the types of land uses and operational activities in the Specific Plan Area. Additionally, the applicability of federal and state regulations, ordinances, and/or standards to surface and groundwater quality of the Specific Plan Area and subsequent receiving waters were assessed. Potential impacts from implementation of the Specific Plan Area were determined by evaluating whether development of the proposed project land uses would exceed the thresholds of significance outlined below.

Impacts on water quality are assessed as a function of potential pollutant types, concentrations, and load (effect of flow quantity changes). These are evaluated qualitatively because specific design characteristics and land uses could affect the amount, type, and susceptibility to runoff of potential pollutants. The methodology for determining wastewater flows to the CSS is described in Section 6.11 – Public Utilities.

For significant impacts, mitigation measures are presented that would reduce the impacts to less-than-significant levels wherever possible. Where mitigation measures are unavailable to reduce the magnitude of impacts to a less-than-significant level, mitigation measures are presented that would substantially lessen the impacts.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project substantially degrades water quality and violates any water quality objectives set by the SWRCB, due to increases in sediments and other contaminants generated by consumptions and/or operational activities.

In addition to the City of Sacramento standards of significance and consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if the proposed project would:

- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Expose people or property to flood hazards; or
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

### **Project Components**

The proposed Specific Plan includes a cistern to capture the first flush of stormwater runoff and attenuate peak flows. The cistern is described in more detail below.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.6-1 Construction of the proposed project could degrade the quality of receiving water bodies.**

Construction activities associated with the proposed project would result in land-disturbing activities such as grading, excavation, and trenching for utility and infrastructure installation. When portions of the Specific Plan Area are excavated or otherwise disturbed by construction activities, the potential for soil erosion and sedimentation in runoff discharging from the site would substantially increase during a rainstorm. In addition, construction equipment would have the potential to leak polluting materials, including oil and gasoline. Improper use of fuels, oils, and other construction-related hazardous materials such as pipe sealant may also pose a threat to surface or groundwater quality. Through stormwater runoff, these sediments and contaminants may be transported to the Sacramento River and its downstream drainages and water bodies.

Although earth-disturbing activities associated with construction at the Specific Plan Area would be temporary, on- or offsite soil erosion, siltation, discharges of construction-related hazardous materials could degrade downstream surface waters. The following regulatory mechanisms would regulate construction activities and minimize, to the MEP, the degradation of water quality.

### **Compliance with NPDES Requirements**

To reduce or eliminate construction-related water quality effects, the City of Sacramento would require future contractors to comply with the requirements of the City's SQIP. In addition, before onset of any construction activities, where the disturbed area is one acre or more in size, the City of Sacramento would require contractors to obtain coverage under the NPDES General Construction Permit and include erosion and sediment control plans. As a performance standard, the SQIP and General Construction Permit require controls of pollutant discharges that use best available technology (BAT) that is economically achievable, best conventional pollutant control technology (BCT) to reduce pollutants, and any more stringent controls necessary to meet water quality standards. Issues related to groundwater or soil contamination are covered in Section 6.5, Hazards and Hazardous Substances. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater and other non-point source runoff.

Measures range from source controls, such as reduced surface disturbance, to treatment of polluted runoff, such as detention or retention basins. BMPs to be implemented as part of the SQIP and General Construction Permit may include, but are not limited to, the following measures:

- Temporary erosion and sediment control measures (such as straw mulch and tackifier, silt fences, staked wattles, silt/sediment basins and traps, check dams, geofabric, and temporary revegetation or other ground cover) will be employed to control erosion and sedimentation from disturbed areas.
- Drainage facilities in downstream offsite areas will be protected from sediment using BMPs.
- Grass or other vegetative cover or other approved erosion control measures will be established on the construction site as soon as possible after disturbance. No disturbed surfaces will be left without erosion control measures in place.

Prior to issuance of a construction permit, the City would require contractors to provide an erosion and sediment control plan. The City would verify that an NOI has been filed with the CVRWQCB and a SWPPP has been developed before allowing construction to begin. The City would perform inspections of the construction area, to verify that the BMPs specified in the erosion and sediment control plan are properly implemented and maintained. The City would notify contractors immediately if there is a noncompliance issue and would require compliance.

Control of erosion and sediment transport during the construction phase would effectively mitigate potential sediment impairment of receiving waters.

### **Implementation of a Spill Prevention and Control Program (SPCP)**

The City would also require contractors' erosion and sediment control plans to include BMPs to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during construction activities for all contractors. Implementation of this measure would comply with state and federal water quality regulations and reduce the impact to a less-than-significant level. The City would routinely inspect the construction area to verify that the measures specified in the erosion and sediment control plan are properly implemented and maintained. The City would notify contractors immediately if there is a noncompliance issue and would require compliance.

The federal reportable spill quantity for petroleum products, as defined in 40 CFR 110, is any oil spill that:

- Violates applicable water quality standards;
- Causes a film or sheen on, or discoloration of, the water surface or adjoining shoreline; or
- Causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

If a spill occurs, the contractor's superintendent would notify the City, and the contractor would take action to contact the appropriate safety and clean-up crews to ensure that the SPCP is followed. A written description of reportable releases would be submitted to the CVRWQCB and the Department of Toxic Substances Control (DTSC) by the contractor or owner. This submittal would be required to contain a description of the release, including the type of material and an estimate of the amount spilled, the date of the release, an explanation of why the spill occurred, and a description of the steps taken to prevent and control future releases. The releases would be documented on a spill report form. If an appreciable spill occurs and results determine that project activities have adversely affected surface water or groundwater quality, a detailed analysis would be performed to the specifications of DTSC to identify the likely cause of contamination. This analysis would include

recommendations for reducing or eliminating the source or mechanisms of contamination. Based on this analysis, contractors would select and implement measures to control contamination, with a performance standard that surface and/or groundwater quality must be returned to baseline conditions. These measures would be subject to approval by the City and/or the RWQCB.

Adherence to the RWQCB's General Construction Permit requirements (as described above), and development and implementation of a SPCP as required by City standards would reduce erosion and sedimentation impacts to ***less-than-significant levels***.

#### Mitigation Measure

*None required.*

#### **6.6-2 Operation of the proposed project would generate new sources of polluted runoff that could violate water quality standards or waste discharge requirements for receiving waters.**

The proposed project would result in an increase in impervious surfaces across the entire Specific Plan Area. As such, operation of the proposed project would increase stormwater and non-stormwater runoff entering the Sacramento River and the CSS compared to existing conditions. To provide the necessary drainage capacity, the drainage concept plan is based on the use of a gravity system of pipelines and inlets, which would drain to an underground detention basin, referred to as a cistern. Details regarding the capacity and operation of the drainage system are analyzed in Section 6.11 – Public Utilities. The cistern would serve as a means of providing additional detention capacity and as a stormwater quality-management facility. The cistern would be able to store approximately 27 acre-feet, which would be sufficient to capture the “first flush” of a storm event for water quality purposes. The cistern would be designed to perform as a water quality detention facility to meet the water quality residence and depth factors published in the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*. The cistern would have two compartments: the first would capture the most polluted stormwater runoff from the first flush. Up to one-third of the entire water quality volume (approximately five acre-feet) would be pumped at about five cubic feet per second rate into the CSS. The residual two-thirds of the water quality volume (approximately 10 acre-feet) would discharge to the Sacramento River over the course of 24 to 48 hours. The actual design water quality treatment number would be determined from the 48-hour curve (Figure E-3) in the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions* or as approved by the City. Drainage flows that exceed the first-flush storage capacity would be collected in the second chamber and then pumped to the Sacramento River.

Finally, proposed belowground structures would, depending on depth and weather conditions, be in direct contact with the shallow groundwater in the Specific Plan Area, providing a direct mechanism for contaminants to enter the groundwater aquifer.

The post-project runoff would contain varying types and amounts of chemical constituents typical of urban runoff, which are ultimately conveyed to the Sacramento River. Pollutants likely to occur in stormwater from the site include the target pollutants identified by the City of Sacramento's SQIP such as pesticides, metals, and fecal coliform, among other urban pollutants.

Operational activities of the proposed Specific Plan would be required to meet NPDES and SQIP requirements. Meeting these requirements would include implementation of BMPs (structural and non-structural) that are best suited to maximize reduction of the pollutants of concern.

Although the proposed project would construct a cistern designed to meet the City's water quality criteria, the proposed cistern design has not been completed and the CVRWQCB has not approved

of the discharge from the cistern. Therefore, the proposed project could degrade Sacramento River water quality when stormwater flows exceed the storage capacity of the second chamber and discharges are pumped directly in the river. Consequently, operation of the proposed project could violate water quality standards, exceed wastewater discharge requirements, and/or otherwise degrade water quality; this would be a *significant impact*.

#### Mitigation Measure

Implementation of Mitigation Measure 6.6-2 would ensure that water quality standards are met. With mitigation, the impact would be reduced to ***less-than-significant levels***.

6.6-2 *The proposed Specific Plan shall limit discharges to the Sacramento River from the cistern that do not meet the water quality standards set by the City and the CVRWQCB. If the cistern cannot meet the required water quality standards, then the proposed Specific Plan shall incorporate BMPs using the best available technology as provided in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Manual) (May 2007) to reduce urban pollutant discharges to the Sacramento River.*

**6.6-3 Implementation of the proposed project could adversely affect groundwater quality, the rate and direction of groundwater flow, or interfere with groundwater recharge.**

#### Dewatering

Because of the presence of shallow groundwater in the Specific Plan Area, trenching and excavation associated with the project development could reach a depth that can expose the water table, in which case a direct path to the groundwater basin could become available for contaminants to enter groundwater. This is particularly the case for the construction of basements, the cistern, or any other structures located below ground.

Before discharging any dewatered effluent to surface water, the applicant and contractor would be required to conform to the City's Standard Specifications for Dewatering and obtain a NPDES permit and WDRs from the RWQCB. The reader is referred to Section 6.5, Hazards and Hazardous Substances, for analysis of contaminated groundwater remediation and associated dewatering. Depending on the volume and characteristics of the discharge, coverage under the RWQCB's General Construction Permit or General Dewatering Permit is permissible. As part of the permit, the permittee will design and implement measures as necessary so that the discharge limits identified in the relevant permit are met. As a performance standard, these measures will be selected to control pollutant discharges using BAT and BCT to reduce pollutants, and any more stringent controls necessary to meet water quality standards.

Issues related to risks to adjacent building foundations and structures due to dewatering or open excavation are covered by the City of Sacramento Building Code, Chapter 16, thereby ensuring that any associated risks are less than significant. A detailed discussion of related impacts and mitigations are addressed in Chapter 6.4, Geology and Soils, specifically Impact Statement 6.4-4. Additionally, issues related to the potential interference with contaminated groundwater, and interference with remediation activities are addressed in Chapter 6.5, Hazardous Materials.

Primary contaminants that could reach groundwater would include oil and grease, and construction-related hazardous materials. In addition, discharge of project-related dewatering effluent could result in the release of contaminants to surface water. These impacts are considered potentially significant, but implementation of the NPDES General Construction Permit, described above, along with conformance with the provisions for dewatering, described below, would ensure that these impacts would be *less than significant*.



### Groundwater Recharge

The proposed project is not anticipated to use groundwater as a supply. However, the proposed project would substantially increase the amount of impervious surfaces and hence would reduce the ability for precipitation to percolate to the aquifer, thereby reducing groundwater recharge. This reduction is not considered a substantial concern for reasons listed below:

- Aquifer recharge in this area is driven primarily by deep percolation from local waterways, such as the Sacramento River.
- This Specific Plan Area is not identified as a primary groundwater recharge area.
- The presence of shallow groundwater results in the reduced ability for use of groundwater for potable uses.

For these reasons, impacts on groundwater supplies are considered *less than significant*.

### Mitigation Measure

*None required.*

#### **6.6-4 The proposed project could expose people or structures to an increased risk from flooding.**

As described above, the Specific Plan Area is protected from the 500-year flood event due to its topographic elevation, and as a result, the Specific Plan Area is not within the FEMA-designated 100-year floodplain. Because the proposed project includes development along the Sacramento River levee, it is vital that they are properly maintained at the level prescribed by the Corps, FEMA, SAFCA, and DWR. These levee systems would require regular maintenance to ensure continued operation for flood protection.

Current studies being undertaken by regulatory agencies such as DWR, SAFCA, and the Corps are examining levee stability along the Sacramento and American Rivers and looking at enhancing flood protection against a 200-year level flood event. Many of these studies include levee stability studies and geotechnical and geomorphic seepage studies, all of which are conducted in collaboration with the Corps, the State Lands Commission, DWR, and SAFCA to ensure adequate coverage of all potential issues of concern. Because the railroad embankment on the northern boundary of the Specific Plan Area is not a certified levee or flood control structure it is not considered in current studies for flood damage reduction in the City by DWR, FEMA, or the Corps. Therefore, any construction on or through this embankment is not considered as an impact on the flood damage reduction provided by the levees along the Sacramento and American Rivers.

Except for construction through or removal of the railroad embankment discussed above, construction of project-related structures or improvements on or near the levees, including construction of a new stormwater outfall through the Sacramento River levee, and construction of a hotel, roads, and open space and/or recreational features on or near the Sacramento River levee, could adversely affect levee integrity and may reduce protection for the area. Structures such as the outfall and associated work along the levee would be required to comply with the Rivers and Harbors Act, Clean Water Act (33 U.S.C. 408), and federal regulations governing development in floodplains (Title 44, Part 60 of the Code of Federal Regulations), DWR and Corps regulations on levee stability, safety, and maintenance criteria which would reduce impacts through adherence to design requirements of these regulations that are specifically designed to reduce and/or mitigate potential flooding impacts. Because federal, state, and local regulations on levee integrity, safety and

maintenance would require numerous permit reviews, inspections, and conditions prior to, during, and after construction.

The proposed project would increase impervious surfaces in the Specific Plan Area, leading to an increase in stormwater flows. The proposed cistern would prevent increases in on- or off-site flooding by providing enough storage volume to detain the 10- and 100-year 6-hour stormwater runoff volumes, as required by the Department of Utilities' Procedures Manual. Detained stormwater in the cistern would be release after the peak flow in the Sacramento River and would not result in measurable increases in water surface elevation in the river. For the above reasons, impacts would be considered *less than significant*.

#### Mitigation Measure

*None required.*

### **Cumulative Impacts**

#### **Methodology**

Potential impacts on hydrology and water quality can be contributed to by development not only within the City limits in the CSS service area, but also in the watershed area that exists outside of the City limits. For this analysis, buildout of the City's General Plan is assumed, and the Sacramento Area Council of Governments (SACOG) regional buildout is anticipated. The context for the evaluation of potential cumulative impacts on hydrology and water quality is described within each cumulative impact analysis.

### **Cumulative Impacts and Mitigation Measures**

#### **6.6-5 Stormwater and operational runoff from the project would contribute to cumulative increases in discharge of urban pollutants to the Sacramento River, which could affect water quality.**

Cumulative development in the City of Sacramento could include development of currently undeveloped land, thereby increasing the amount of impervious surfaces and would result in an associated increase in runoff. Runoff could carry increased levels of sediment (as a result of construction activities) and urban contaminants (post-construction) that could affect receiving water quality in the Sacramento River Basin. This is considered a *significant cumulative impact*.

The City of Sacramento implements the SQIP, which is designed to reduce stormwater pollution to the MEP and eliminate prohibited non-stormwater discharges through a NPDES municipal stormwater discharge permit. The City of Sacramento also provides direction on post-construction BMPs in the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*.

Although the proposed project would construct a cistern designed to meet the City's water quality criteria, the proposed project could degrade Sacramento River water quality when stormwater flows exceed the capacity of the second chamber of the cistern and discharges are pumped directly in the river. Consequently, operation of the proposed project could violate water quality standards, exceed wastewater discharge requirements, and/or otherwise degrade water quality resulting in a *considerable contribution* to cumulative water quality problems in the Sacramento – San Joaquin Delta.

#### Mitigation Measure

In addition to implementing NPDES and SQIP requirements which would mandate that all potential discharges meet the Basin Plan discharge requirements, implementation of Mitigation

Measures 6.6-2 would reduce impacts associated with increased urban runoff constituents through the implementation of avoidance BMPs or via management plans targeted for specific pollutant reduction. Because the proposed project would include implementation of BMPs and mitigation measures to manage water quality, and would be compelled to comply with the City's MS4 Permit requirements, cumulative contribution to the regional degradation of water quality would be reduced the project contribution to a ***less-than-considerable level*** and, thus, the cumulative impact is less than significant.

6.6-5 *Implement Mitigation Measures 6.6-2.*

**6.6-6 The proposed project would contribute to cumulative increases in discharges of groundwater from dewatering during construction or operation to the CSS or separate drainage system, and adversely affect water quality.**

Excavations requiring dewatering and subsurface features of new buildings in the downtown/midtown Sacramento area served by the CSS and separated stormwater system are expected to require some level of dewatering during construction and/or operation because of shallow groundwater conditions. It is possible that dewatering could occur simultaneously at more than one site during construction and/or operation. The volume of water removed and the rate and frequency that would be discharged to the sewer would be site-specific. If controls such as the City's permit process for dewatering were not in place, the combined effect of simultaneous and/or consecutive discharges could adversely affect water quality in the system. It could also cause localized shifts in groundwater patterns that could cause areas of degraded groundwater quality to shift. The reader is referred to Section 6.5, Hazards and Hazardous Materials, for analysis of cumulative groundwater contamination and the project's contribution to cumulative conditions.

The dewatering protocol established by the City and enforced at the City level would apply to the proposed project and other development where dewatering is needed in the City. City staff review of permit applications for dewatering would allow the City to determine the volumes and frequencies of discharges that would be allowed to the CSS or separated stormwater system from each project to ensure capacity is not exceeded and water quality violations do not occur. This would ensure the project's contribution would be less than cumulatively considerable, and cumulative impacts would be ***less than significant***.

Mitigation Measure

*None required.*

**6.6-7 The proposed project would contribute to cumulative increases in the number of people and structures that could be exposed to flood hazards.**

Development of new structures and dwelling units in the City would increase the population and property exposed to potential flood hazards. Although the City is designated by FEMA to be protected from the 100-year flood, risks related to levee instability and potential for future flooding are still a concern. Because the levees along the Sacramento and American Rivers protect the City from flooding, it is vital that they are properly maintained at the level prescribed by the Corps, FEMA, and DWR. These levee systems require regular maintenance to ensure continued operation for flood protection.

Agencies such as SAFCA and the Corps are examining levee stability and looking at enhancing flood protection against a 200-year level flood event. Many of these studies include levee stability studies and geotechnical and geomorphic seepage studies, all of which are conducted in collaboration with the Corps, the State Lands Commission, and SAFCA to ensure adequate

coverage of all potential issues of concern. However, cumulative increases in population and structures located behind these structures increases the level of risk associated with potential loss from flood hazards. This is considered a *significant cumulative impact*.

The proposed project's construction of structures on or near the levees, including construction of a new stormwater outfall through the Sacramento River levee, and construction of a hotel, roads, and open space and/or recreational features on or near the Sacramento River levee, could adversely affect levee integrity and reduce protection for the area. Because project work near or along the levee would be required to comply with the Rivers and Harbors Act, Clean Water Act (33 U.S.C. 408), and federal regulations governing development in floodplains (Title 44, Part 60 of the Code of Federal Regulations), and DWR and Corps regulations on levee stability, safety, and maintenance criteria, the project's contribution to cumulative impacts would be less than considerable and cumulative impacts would be considered ***less than significant***.

#### Mitigation Measure

*None required.*

#### **Sports and Entertainment Facility Overlay**

The evaluation of impacts for the Sports and Entertainment Facility Overlay is the same as that for the Specific Plan. Each of the concerns associated with development of the Specific Plan Area analyzed above would be addressed by the same set of legal requirements listed in the Regulatory Setting and include the same set of project components to serve Specific Plan Area's hydrology and water quality concerns. No additional mitigation measures would be required.

## **6.7 LAND USE**

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### INTRODUCTION

This section of the EIR provides an overview of the land use compatibility effects that may result from development of the Specific Plan.

This section describes existing and planned land uses in and adjacent to the Specific Plan Area, and considers the compatibility of the project components with current and planned land uses. Potential inconsistencies between the proposed project and the City of Sacramento General Plan, the Central City Community Plan, and the City's Comprehensive Zoning Ordinance are evaluated in Chapter 4, Plans and Policies Consistency Analysis, of this EIR. Information for this section was obtained from adopted City plans and project plans.

A number of land use comments were received in response to the Notice of Preparation (NOP). Some of these comments addressed the merits of the proposed plan and did not raise environmental issues. The following comments were considered during preparation of this section: compatibility of land uses between the Railyards and adjacent areas, specifically the Richards area and the Alkali Flat neighborhood; transit-oriented development around proposed light rail stations; and circulation impacts on existing and proposed land uses. Caltrans currently accesses land underneath I-5 via an easement with Union Pacific (UP) through the Specific Plan Area, which should be maintained after implementation of the proposed project.

Additional existing land use information is presented in Chapter 4.0 Plans and Policies Consistency Analysis.

### ENVIRONMENTAL SETTING

#### Existing Land Uses

The Specific Plan Area has been used by various railroad companies for the last 150 years. At one time, the Specific Plan Area was the largest railroad facility west of the Mississippi, producing rail equipment for the transcontinental railroad and serving as the western terminus of the transcontinental railroad. The Specific Plan Area was used as a railroad production and maintenance facility for the majority of its tenure and evidence of its historical role remains on the site today. Currently, the Specific Plan Area includes the UP main lines for freight and passenger transport and the existing passenger depot, the Sacramento Valley Station. The Central Shops, previously used for producing and maintaining rail equipment, are now primarily vacant. Two of the Central Shops buildings are leased by the California State Railroad Museum to repair and maintain its historic train stock. In recent years, environmental remediation has been the other major activity on the Specific Plan Area. I-5 spans the western portion of the Specific Plan Area. Figure 3-3 shows existing land uses on the Specific Plan Area.

#### Surrounding Land Uses

The Richards Boulevard Area, directly north of the Specific Plan Area, is generally characterized by a mix of low-intensity warehousing, distribution, commercial, and light industrial uses. A number of community service facilities are located in the River District, including Loaves and Fishes and the Salvation Army. The Sacramento River Water Treatment Plant (SRWTP) and industrial and commercial uses border the Specific Plan Area to the north.

The Specific Plan Area is bordered by the Sacramento River on the west, with the City of West Sacramento on the opposite bank of the river. The portion of West Sacramento adjacent to the Sacramento River and north of I Street Bridge is characterized primarily by residential and park uses, although office and mixed-use buildings are increasing along the riverfront area.

The Central Business District and Old Sacramento border the Specific Plan Area to the south and southwest, respectively. The Central Business District consists primarily of office uses, with supporting commercial and some residential use. Government offices are adjacent to the Specific Plan Area, including the courthouse and City/County facilities. Old Sacramento is an adopted historic district; visitor-serving commercial is its primary land use.

The Alkali Flat residential neighborhood is south and east of the Specific Plan Area, generally north of F Street and east of 7<sup>th</sup> Street. Alkali Flat is also an adopted historic district, characterized by its late 19<sup>th</sup>/early 20<sup>th</sup> century Victorian homes. The portion of the Alkali Flat neighborhood adjacent to the Specific Plan Area includes vacant lots, office buildings, and Victorian residences (some of which have been divided into apartments). Additional multi-family apartment buildings are in the area southeast of the Specific Plan Area. Industrial uses are south of the eastern edge of the Specific Plan Area, primarily north of D Street and east of 7<sup>th</sup> Street. The Crystal Creamery, planned for closure in the near future, is at 10<sup>th</sup> and D Streets.

### **Planned Land Uses**

The City of Sacramento General Plan designates the Specific Plan Area as Special Planning District (SPD). The Central City Community Plan (CCCP) guides development in the Central City, including the Specific Plan Area. The CCCP designates the Specific Plan Area as Parks/Open Space, Riverfront Commercial Recreational, Central Shops Historical District, Residential Mixed Use, Downtown Commercial Mixed Use, Transit Oriented Commercial Mixed Use, Public Utilities, and Transportation/Rail Intermodal. Figure 4-1 and Figure 4-2, in Chapter 4, show the current General Plan and CCCP designations for the Specific Plan Area and surrounding area.

The Specific Plan Area is identified as the Railyards Special Planning District in the zoning code, and is zoned Heavy Industrial (M-2-T-SPD, M-2-SPD(C), and M-2-SPD (W)), Transportation Corridor (TC-SPD), Central Business District (C-3-SPD), and Office (OB-SPD). In addition, the following overlay zones apply to the Specific Plan Area: Residential Mixed Use (RMUD), Downtown Commercial Mixed Use (CMUD-1), Transit-oriented Commercial Mixed Use (CMUD-2), Central Shops (CSD), Riverfront Commercial Recreational (RCRD), Corridor/Rail Intermodal Terminal (TR), Parks and Open Space (OS), and Public Utilities (PU). Figures 4-2 and 4-3, in Chapter 4, show the CCCP and zoning designations, respectively, for the Specific Plan Area and surrounding area.

### **Surrounding Land Uses**

The areas adjacent to the Specific Plan Area to the south and east are relatively developed with office, commercial, residential, and industrial uses, as described above. Under the CCCP, these areas remain designated for industrial, residential, office, and multi-use. The CCCP designates the Central Business District as a multi-use area. Future uses in this area may include additional high-density residential and supporting commercial uses, in addition to the existing offices.

Similar to the Specific Plan Area, the General Plan designates the Richards Boulevard Area as a Special Planning District. The CCCP identifies primarily office uses adjacent to the Specific Plan Area, complemented by public utility and highway commercial near I-5 and service commercial uses near North 12<sup>th</sup> Street. The public utility area is for the existing Sacramento River Water Treatment Plant. The Richards Boulevard area is subject to the Richards Boulevard Area Plan (1994), which designates the area for office, residential, commercial, and industrial uses. The Richards Boulevard



Area Plan's primary objective was to create a mixed-use residential, office, and commercial district oriented to transit. The Richards Boulevard Area Plan's land use plan designates uses similar to those identified in the CCCP.

## **REGULATORY SETTING**

### **Federal**

There are no applicable federal agencies, plans, or policies that oversee local planning issues.

### **State**

There are no applicable State agencies, plans, or policies that oversee local planning issues.

### **Local**

The local policies and regulations applicable to the proposed project are provided in Chapter 4. Applicable plans and regulations include the City of Sacramento General Plan, the Central City Community Plan, the City of Sacramento Zoning Ordinance, and the Sacramento Riverfront Master Plan.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The proposed project is evaluated for compatibility with existing and planned land uses adjacent to the Specific Plan Area. The evaluation considers the type and intensity of uses in the project vicinity. The analysis evaluates the project against the existing environment and determines if the proposed project would be compatible with those existing and planned uses surrounding the Specific Plan Area. As stated above, the respective environmental sections are referred to for discussion of any potential physical/environmental impacts that are identified and potential incompatibilities may be considered in the determination of physical environmental impacts identified in the technical sections of this document.

Long-term incompatibilities arise when adjacent land uses result in activities that could conflict with each other. For example, land uses that produce excessive noise, light, dust, odors, traffic, or hazardous emissions may be undesirable when they intrude on places where people sleep and recreate (residences and parks). Therefore, some industrial or agricultural uses (which can produce noise, odor, and so on) would not be considered compatible with residential uses, unless buffers, landscaping or screening can be used to protect residents from health hazards or nuisances.

### **Standards of Significance**

For the purposes of this EIR, land use impacts are considered significant if the proposed project would:

- Physically divide an established community; or
- Result in short or long-term land use conflicts due to the placement of incompatible uses in proximity to each other.

### **Project Components**

The land use compatibility analysis is based on the Railyards Specific Plan Analysis Scenario as shown in Appendix C.

**Goal CC-1 Create a mixed-use urban environment that will become an integral part of the Central City.**

Policies

CC-1.3. Require active and public-oriented ground level uses that contribute to the pedestrian environment.

CC-1.4. Provide a pattern of open spaces and pedestrian ways that creates strong linkages with surrounding areas, contributes to a distinct sense of place, and results in a rich sequence of spatial experiences.

**Goal CC-2 Reinforce urban form and character through the appropriate height of buildings and scale transitions to surrounding areas.**

Policy

CC-2.3. Ensure an appropriate scale transition to the Alkali Flat neighborhood.

**Goal C-5 Create and reinforce safe and efficient pedestrian connections within the Plan Area and in relation to surrounding districts.**

Policies

C-5.1. Extend pedestrian connections from the downtown area into the Plan Area, as well as Old Sacramento, the Riverfront and the Richards Boulevard area.

C-5.2. Enhance pedestrian pathways using landscaping, trees and art in public places.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.7-1 The proposed project would not physically divide an established community.**

The Specific Plan Area is adjacent to a number of established communities, including the Richards Boulevard Area, Alkali Flat residential neighborhood, the Central Business District, and Old Sacramento. As shown in Figure 3-2 (Local Vicinity Map), the Specific Plan Area does not intersect any of these established communities. No direct physical change would occur in any of the established communities around the Specific Plan Area. In fact, the circulation infrastructure provided in the project would serve to provide new connections between downtown, the Specific Plan Area and the Richards Boulevard Area to the north, improving the physical connectivity between these communities that have been historically divided by the Railyards and the railroad tracks. Therefore, the project would not divide an established community. There would be ***no impact***.

#### **Mitigation Measure**

*None required.*

#### **6.7-2 The proposed project could result in short or long-term land use conflicts due to the adjacency or proximity of incompatible uses.**

Development of the Specific Plan Area would introduce a mix of uses, including residential, retail, office, hotel, parks and open space, cultural/entertainment, and public uses throughout the 244-acre site. Construction activities associated with the Specific Plan would occur over an extended period of time, based on market conditions. During construction periods, sensitive receptors in and around the Specific Plan Area could experience short-term, temporary impacts from noise, dust, and construction traffic. The primary sensitive receptors to construction activities include residents of the Alkali Flat neighborhood and future residents of the Specific Plan Area. Construction impacts are described in Sections 6.1 Air Quality, 6.8 Noise and Vibration, and 6.12 Transportation and Circulation, and are considered significant, but temporary. Applicable best management practices (BMPs) would be incorporated in order to reduce land use compatibility issues. See Section 6.5 Hazards and Hazardous Substances for a discussion of hazardous material issues.

Subsequent to development of the proposed project, the southern area of the Specific Plan Area, adjacent to the Central Business District, would primarily include transportation uses (including the future SITF) and an office/residential mixed-use area. The transit area and office/residential uses would be compatible with the existing and proposed uses in the Central Business District, which primarily include similar office, public administration, and mixed-use areas.

An office/residential area would be west of 7<sup>th</sup> Street, adjacent to the existing and planned residential uses in Alkali Flat. Although the office/residential district would be more dense and intense development than the adjacent residences on the east side of 7<sup>th</sup> Street, office and residential uses are generally compatible with residential uses. In addition, the proposed Specific Plan contains policies requiring appropriate scaling adjacent to the Alkali Flat community.

Adjacent to the existing and planned industrial uses north of C Street, the project proposes primarily residential use, as part of the East End District. Industrial uses can generate noise and odors that may affect residents of the Specific Plan Area. The proposed alignment of the railroad would provide some separation between the proposed residential areas and the existing industrial users.

Similarly, the northern edge of the East End District is adjacent to existing industrial uses in the Richards area. As described above, industrial uses can generate noise and odors that may affect residents of the Specific Plan Area. However, the Richards Boulevard Area Plan calls for these industrial uses to transition to office and mixed-use areas, which would be compatible with residential uses. Adjacent to the existing SRWTP, the Specific Plan proposes a large open space area and a retail/residential mixed-use area. These uses would not be sensitive to activities occurring at the water treatment plant.

Interstate 5 crosses the western corner of the Specific Plan Area. Uses proposed adjacent to I-5 include parking, open space, hotel, transportation, and retail/residential uses. Parking and transportation uses would not be sensitive to noise or air effects from the freeway. Future residents of the residential/retail mixed use district, however, may experience elevated levels of noise and air pollutants depending on the location and orientation of residential buildings. The freeway may limit the type of uses acceptable within the proposed open spaces.

Generally, the Specific Plan Area is adjacent to urban, developed areas. Depending on the specific location of certain uses, potential incompatibilities could occur. However, the types of uses proposed by the Specific Plan are generally compatible with a developed urban environment. Details regarding building design would be analyzed at a project-specific level to determine if a land use incompatibility would occur. Generally, the proposed project would not produce excessive noise, light, odors, or traffic that could result in a land use incompatibility. The Specific Plan would result in a ***less-than-significant*** land use compatibility impact.

#### Mitigation Measure

*None required.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for the evaluation of land use compatibility includes development and buildout of the entire Specific Plan Area and the surrounding Central City and Richards Boulevard Area. The following residential, retail, and office projects have been incorporated into the cumulative land use compatibility buildout assumptions:

- Stanford lofts
- Westfield Mall Reconfiguration

- 500 Capitol Mall (P05-108)
- Capitol West Side
- 10th & J (The Metropolitan)
- 11th & J (Cathedral Square)
- The Library Lofts (8th & I)
- Epic Tower (P05-138)
- Sutter Medical
- Township 9
- 301 Capitol Mall
- 601 Capitol Mall
- Crocker Expansion
- 500 Capitol Mall
- 831 L St (9th & L)
- Continental Plaza Planned Unit Development
- Discovery Center Planned Unit Development
- Jibboom Street Development

The Specific Plan Area is primarily vacant and adjacent to a number of established communities, including the Richards Boulevard Area, Alkali Flat residential neighborhood, the Central Business District, and Old Sacramento. Therefore, the development of the proposed project would serve as a primary point of connectivity for communities that are currently separated by the vacant Specific Plan footprint. The proposed project vehicular, bicycle, and pedestrian access points, as well as the proposed SITF will improve overall connectivity for the City's established communities.

**6.7-3 The proposed project in combination with cumulative development could result in short or long-term land use conflicts due to the adjacency or proximity of incompatible uses.**

Development of the proposed project in combination with construction and operation of the above listed projects would introduce a mix of high-density uses, including residential, retail, office, transportation, and hotel within a close proximity of each other and existing lower density building types. Existing industrial uses that are present north of the proposed project and within proximity of cumulative development could generate noise and odors that may affect surrounding residents. However, the proposed project and the majority of the cumulatively listed projects have incorporated design measures that provide buffers and separation between the proposed residential areas and the existing industrial users including the proposed track alignment, parking structures, and circulatory roads. The proposed project and the majority of the cumulatively listed projects are consistent with the City's General Plan Policy A.6, which prohibits the intrusion of incompatible uses into residential areas due to these setbacks, as well as the projects' transitional scale design along property edges. The project's transition to office and mixed-use residential and retail areas along perimeter edges is consistent with existing land use policy.

Generally, the proposed cumulative development is located within an urban context and provides compatible land uses. The types of uses proposed adjacent to the existing industrial land uses are primarily mixed-use and are generally compatible within a developed urban environment. The cumulative projects would not include traditional single-family units in close proximity of incompatible uses. Details regarding specific building design would be evaluated at a project-specific level to determine if a land use incompatibility would occur. Therefore cumulative development would result in a ***less than significant land use compatibility impact***.

Mitigation Measure

*None required.*

**Sports and Entertainment Facility Overlay**

Development of the Sports and Entertainment Facility Overlay would not alter the impact analysis above. As described above, the Specific Plan Area, which includes the Sports and Entertainment Facility Overlay, is adjacent to a number of established communities but does not intersect any of these established communities. Therefore, the Sports and Entertainment Facility Overlay would not divide any of the established communities. The sports and entertainment facility would not introduce new sensitive receptors to the area. A sports and entertainment facility would be considered generally compatible with the high-density retail/residential mixed use area in which it would be constructed. The Specific Plan Area is designed to introduce a mix of uses and there are currently no provisions in the General Plan that would result in a land use conflict between the surrounding anticipated land uses (RCMU, RMU, and TU) and a planned sports and entertainment facility. Therefore, the land use impacts, as identified in the proposed project analysis, would be generated as a result of development of the Sports and Entertainment Facility Overlay.



## **6.8 NOISE AND VIBRATION**

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## 6.8 NOISE AND VIBRATION

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### INTRODUCTION

This section describes the existing noise environment in the area of the proposed Specific Plan Area and the potential of the proposed project to significantly increase noise levels due to project construction and operation. The noise effects of traffic and rail noise were considered. The analysis included in this section was developed based on a field investigation to measure existing noise levels, noise standards in the City of Sacramento General Plan and the Sacramento Municipal Code, the Federal Highway Administration (FHWA) Highway Traffic Noise Model (TNM), and the Federal Transit Administration's *Transit Noise and Impact Assessment* document. Traffic inputs for the noise prediction model were provided by the transportation consultant. The potential effects of vibration due to construction and rail operation are also addressed.

The Specific Plan Area is not located within an airport land use Specific Plan Area or within two miles of an airport or private airstrip; therefore, development of the Specific Plan Area would not expose people to excessive airport noise levels. This issue is not discussed further in the EIR.

No comments pertaining to noise were received during circulation of the NOP.

### ENVIRONMENTAL SETTING

#### Fundamentals of Environmental Sound and Noise

Sound can be described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the intensity of the pressure vibrations that make up a sound. The pitch of the sound is correlated to the frequency of the sound's pressure vibration. Because humans are not equally sensitive to a given sound level at all frequencies, a special scale has been devised that specifically relates noise to human sensitivity. The A-weighted decibel scale (dBA) does this by placing more importance on frequencies that are more noticeable to the human ear.

The term 'noise' is typically used to denote unwanted sound. Typically, noise in any environment consists of a base of steady "background" noise made up of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These sources can vary from an occasional aircraft or train passing by to virtually continuous noise from traffic on a major highway. Table 6.8-1 lists the A-weighted average sound levels commonly encountered in various environmental situations.

Several rating scales have been developed to analyze the adverse effect of noise on people. Since environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the volume of the noise, as well as the time of day when the noise occurs. Those that are applicable to this analysis are as follows:

$L_{eq}$ , the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the  $L_{eq}$  of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

$L_{dn}$ , the Day Night Average Level is a 24-hour average  $L_{eq}$  with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. to account for noise sensitivity in the nighttime.

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	—110—	Rock Band
Jet Fly-over at 100 feet	—105—	
	—100—	
Gas Lawnmower at 3 feet	—95—	
	—90—	
	—85—	Food Blender at 3 feet
Diesel Truck going 50 mph at 50 feet	—80—	Garbage Disposal at 3 feet
Noisy Urban Area during Daytime	—75—	
Gas Lawnmower at 100 feet	—70—	Vacuum Cleaner at 10 feet
Commercial Area	—65—	Normal Speech at 3 feet
Heavy Traffic at 300 feet	—60—	
	—55—	Large Business Office
Quiet Urban Area during Daytime	—50—	Dishwasher in Next Room
	—45—	
Quiet Urban Area during Nighttime	—40—	Theater, Large Conference Room (background)
Quiet Suburban Area during Nighttime	—35—	
	—30—	Library
Quiet Rural Area during Nighttime	—25—	Bedroom at Night, Concert Hall (background)
	—20—	
	—15—	Broadcast/Recording Studio
	—10—	
	—5—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

Source: California Department of Transportation, *Technical Noise Supplement*, October 1998.

The Community Noise Equivalent Level, is an  $L_{dn}$  with an additional 5 dBA “penalty” added for the evening hours between 7:00 p.m. and 10:00 p.m.

The Single Event Noise Level, is the constant noise level that would deliver the same acoustic energy to the ear of a listener during a one-second exposure as the real and variable noise would deliver over its entire time of occurrence.

Community noise exposures from continuous sources such as motor vehicle traffic, trains, etc. are usually represented by 24-hour descriptors, such as  $L_{dn}$  or CNEL. One-hour and shorter-period  $L_{eq}$  are useful to characterize noise generated by short term activities, such as the operation of construction equipment. SEL is commonly used to quantify the impacts of repetitive, reasonably discrete noise events, such as train passbys and aircraft flyovers. In outdoor environments where the dominant noise sources are transportation-related (i.e., on-road motor vehicles, aircraft, etc.), there are fairly strong relationships among the first three of the above-mentioned descriptors:  $L_{dn}$  is about 2 dBA less than peak-daytime hourly  $L_{eq}$ ,<sup>1</sup> while  $L_{dn}$  and CNEL typically vary by less than 1 dB and are often used interchangeably.<sup>2</sup>

### **Fundamentals of Ground-borne Noise and Vibration**

Ground-borne vibration is sound radiated through the ground and is measured in the U.S. as vibration decibels (VdB). In contrast to air-borne noise, ground-borne vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans, which is around 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of

1 Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, April 1995, Appendix D.

2 Charles M. Salter Associates, Acoustics, 1998.

mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. Common vibration sources and the human and structural response to ground-borne vibration are illustrated in Table 6.8-2. The range of interest is from approximately 50 VdB to 100 VdB. Background vibration is usually well below the threshold of human perception and is of concern only when the vibration affects very sensitive manufacturing or research equipment, such as electron microscopes and high resolution photo lithography equipment.<sup>3</sup>

Human/Structural Response	Velocity Level	Typical Sources (50 feet from Source)
Threshold, minor cosmetic damage fragile buildings	—100—	Blasting from construction projects
	—95—	Bulldozers and other heavy tracked construction equipment
Difficulty with tasks such as reading a VDT screen	—90—	
	—85—	High Speed Rail, upper range
Residential annoyance infrequent events (e.g. commuter rail)	—80—	Rapid transit, upper range
	—75—	High Speed Rail, typical
Residential annoyance frequent events (e.g. rapid transit)		Bus or truck over bump
	—70—	
Limit for vibration sensitive equipment. Approx. threshold for human perception of vibration	—65—	Bus or truck, typical
	—60—	
	—55—	
	—50—	Typical background vibration

Source: U.S. Department of Transportation Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. October 2005. pp. 6-6.

Accurate estimates of ground-borne vibration are complicated due to the many factors that influence vibration levels at potential receivers. The main factors that have significant effects on levels of ground-borne vibration are:

**Guideway and Operational Factors:** The type and condition of the rails, the type of guideway, the rail support system, the mass and stiffness of the guideway structure, and all of the parameters that relate to the vehicle and operation of the trains can all influence the level of ground-borne vibration. For instance, worn rail and wheel impacts at special trackwork can substantially increase ground-borne vibration.

**Geology:** Soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock. Experience has shown that vibration propagation is more efficient in clay soils as well as areas with shallow bedrock. The latter condition seems to channel or concentrate the vibration energy close to the surface, resulting in ground-borne vibration problems at large distances from the source. Factors such as layering of the soil and depth to water table can also have significant effects on the propagation of ground-borne vibration.

3 U.S. Department of Transportation Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. October 2005, pages 6-5.

**Receiving Building:** Ground-borne vibration problems occur almost exclusively inside buildings. Therefore, the characteristics of the receiving building are a key component in the evaluation of ground-borne vibration. Vibration may be perceptible to people who are outdoors, but it is very rare for outdoor vibration to cause complaints. The vibration levels inside a building depend on the vibration energy that reaches the building foundation, the coupling of the building foundation to the soil, and the propagation of the vibration through the building structure. The general guideline is that the more massive a building is, the lower its response to incident vibration energy in the ground.<sup>4</sup>

The human response to different levels of ground-borne noise and vibration is described in Table 6.8-3. The first column lists vibration velocity levels, and the subsequent two columns list the corresponding noise levels assuming that the vibration spectrum peaks at either 30 hertz or 60 hertz. A hertz (Hz) is a measurement for the frequency of any periodic (repeating) event meaning “one per second.” For instance, the ticking of a clock could be expressed as 1 Hz or one tick per second. Similarly, the human heart might be said to beat at 1.2 Hz or 1.2 beats per second. Generally, the A-weighted noise level will be approximately 40 dB less than the vibration velocity level if the spectrum peak is around 30 Hz, and 25 dB lower if the spectrum peak is around 60 Hz. Achieving either the acceptable vibration or acceptable noise levels does not guarantee that the other will be acceptable. For example, the noise caused by vibrating structural components may be very annoying even though the vibration cannot be felt.<sup>5</sup>

Vibration Level	Noise Level		Human Response
	Low-Frequency <sup>1</sup>	Mid-Frequency <sup>2</sup>	
65 VdB	25 dBA	40 dBA	Approximate threshold of perception for many humans. Low-frequency sound usually inaudible, mid-frequency sound excessive for quiet sleeping areas.
75 VdB	35 dBA	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find vibration at this level unacceptable. Low-frequency noise acceptable for sleeping areas, mid-frequency noise annoying in most quiet occupied areas.
85 VdB	45 dBA	60 dBA	Vibration acceptable only if there are an infrequent number of events per day. Low-frequency noise unacceptable for sleeping areas, mid-frequency noise unacceptable even for infrequent events with institutional land uses such as schools and churches.

Notes:  
 1. Approximate noise level when vibration spectrum peak is near 30 Hz.  
 2. Approximate noise level when vibration spectrum peak is near 60 Hz.  
 Source: Department of Transportation Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, October 2005, page 6-8.

## **Physiological Effects**

### **Hearing Impairment/Loss**

Prolonged exposure to high levels of noise can cause hearing impairment, though most cases of hearing impairment tend to be related to occupational, rather than environmental, noise exposure. Outside of occupational noise exposure, deterioration of the hearing capability is caused by diseases, head trauma, hereditary factors, and aging.

4 U.S. Department of Transportation Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. October 2005. page 6-7.

5 U.S. Department of Transportation Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment*. October 2005. page 6-8.

## Sleep Disturbance

It is estimated that only 10 to 20 percent of the reported cases of sleep disturbance are for reasons relating to transportation noise. Most studies focus on investigating possible secondary effects of sleep disturbance, including reduced perceived sleep quality, increased fatigue, depressed mood or well being, and decreased performance.<sup>6,7,8,9</sup> Although no specific long-term health effects have been clearly linked with sleep disturbance, sleep disturbance is recognized as intrinsically undesirable and, thus, is considered an adverse noise impact in and of itself. Sleep disturbance studies have developed predictive models of awakenings caused by transportation noise sources. Predicted awakening percentages as a function of indoor SEL levels are shown in Table 6.8-4.

Indoor SEL	Average Percent Awakened <sup>1</sup>
45 dBA	0.8%
50 dBA	1.0%
55 dBA	1.2%
60 dBA	1.5%
65 dBA	1.8%
70 dBA	2.2%
75 dBA	2.8%
80 dBA	3.4%
85 dBA	4.2%

Notes:  
 1. Finegold and Bartholomew, *A Predictive Model of Noise Induced Awakenings from Transportation Noise Sources*, Noise Control Engineering Journal, 2001;  
 Average Percent Awakened =  $0.58 + (4.30 * 10^{-8}) * SEL^{4.11}$   
 Source: PBS&J/EIP, 2006.

## Existing Conditions

### Existing Noise Receptors

Some land uses are more sensitive to noise than others. These sensitive uses are commonly referred to as sensitive receptors and normally include residences, hospitals, churches, libraries, schools, and retirement homes. Noise sensitive land uses are typically given special attention because activities at these uses require relatively quiet environments.

The proposed project would be developed on land historically used as a major train station and locomotive works. The Specific Plan Area is surrounded by urban uses. Office buildings, retail, commercial, industrial, and residential uses predominate in the vicinity of the site. Residential uses exist to the south and southeast of the project border, with the Alkali Flats residential neighborhood abutting the southeastern portion of the Specific Plan Area. There are also limited residential uses, as well as industrial, office, commercial, and a number of social service enterprises north of the Specific Plan Area within the Richards Boulevard Area.

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- 6 N.L. Carter, *Transportation Noise, Sleep, and Possible After-Effects*, Environmental International 22, 1996, pages 105-116.
- 7 INRETS - Institut National de Recherche sur les Transports et leur Securite. Research on Noise and Sleep Since 1988: Present State. Noise as a Public Health Problem, Vol. 3, pages 331-338, Arcueil, France. 1993.
- 8 W. Passchier-Vermeer. Noise and Health. Publication No. A93/02E, Leiden, Netherlands: Health Council of the Netherlands, TNO Institute of Preventative Health Care, 1993.
- 9 K.S. Pearsons, Barber, D.S., Tabachnick, B.G., Fidell, S. *Predicting Noise-Induced Sleep Disturbance*, Journal of the Acoustical Society of America 97, pages 331-338, 1995.

### Existing Ambient Daytime Noise Levels

The scientific instrument used to measure noise is a sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Noise levels were measured using a Larson-Davis Model 720 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Ambient daytime noise levels were measured in and around the Specific Plan Area. Two 24-hour measurements were taken inside the Specific Plan Area on March 28 to March 29, 2007, and April 3 to April 4, 2007. Six 15-minute measurements were taken on May 3, 2007. Measurement locations are identified in Figure 6.8-1. The average noise levels for the 24-hour measurements are shown in Table 6.8-5. Average noise levels, distance to centerline, and sources of noise measured at each location are summarized in Table 6.8-6. Detailed results of noise monitoring are included in Appendix J.

Noise Measurement Location (See Figure 6.8-1)	Primary Noise Sources	Noise Level Statistics (dBA)			
		24-hour Average L <sub>eq</sub>	Calculated L <sub>dn</sub>	L <sub>min</sub>	L <sub>max</sub>
#1 – 500 feet from I-5 within Specific Plan Area	Roadway noise from I-5	67.4	72.4	49.0	88.7
#2 – 150 feet from UPRR alignment within Specific Plan Area	Freight train and commuter rail passbys	63.7	71.8	46.4	100.1

Source: PBS&J/EIP, 2007.

Noise Measurement Location (See Figure 6.8-1)	Distance from Centerline (feet)	Primary Noise Sources	Measured Noise Levels
			15-minute L <sub>eq</sub> (dBA)
#3 – In front of 517 7 <sup>th</sup> Street	42	Roadway noise from 7 <sup>th</sup> Street.	63.4
#4 – In front of 619 12 <sup>th</sup> Street	38	Roadway noise from 12th Street, light rail along 12 <sup>th</sup> Street.	68.1
#5 – In front of Econo Lodge (along 16 <sup>th</sup> Street)	45	Roadway noise from 16 <sup>th</sup> Street.	69.5
#6 – In front of 1239 Richards Boulevard	96	Roadway noise from Richards Boulevard.	63.7
#7 – In front of residential units at B Street and Bannon Street	23	Roadway noise from Bannon Street.	60.6
#8 – Along 7 <sup>th</sup> Street near inactive railroad spur within the Specific Plan Area	28	Roadway noise from 7 <sup>th</sup> Street.	67.4

Notes: Noise levels measure on May 3, 2007 during mid-day hours (between about 10:30 a.m. and 3:00 pm).  
Source: PBS&J/EIP, 2007.

### Existing Roadway and Heavy Rail Noise

The I-5 freeway, the Union Pacific Railroad (UPRR) rail line, and local streets that surround and, in the case of 7<sup>th</sup> Street, cross the project site are heavily used. While motor vehicle traffic on local streets has the largest effect throughout the Specific Plan Area, noise from traffic on I-5 and URRP trains has strongest influence on the project site.



**LEGEND**

- - - Railyards Specific Plan Area Boundary
- Richards Redevelopment Area Boundary
- # Long-Term Measurements
- # Short-Term Measurements



Source: City of Sacramento, Basemap; PBS&J/EIP, 2007.

**FIGURE 6.8-1**  
**Noise Monitoring Locations**

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## Existing Ground-borne Vibration

The most common sources of ground-borne vibration in urban environments are trains, buses and trucks driving on rough roads, and construction activities, such as blasting, pile driving, and operation of heavy earth-moving equipment. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. While bus and truck traffic exists on roads outside of the Specific Plan Area, the two major sources of onsite vibration are traffic on I-5 and heavy rail traffic along the Union Pacific lines.

## REGULATORY SETTING

### Federal

#### Noise Control Act

In 1972, the Noise Control Act was established to address the concerns of noise as a growing danger to the health and welfare of the Nation's population, particularly in urban areas. In 1974, in response to the Noise Control Act, the Environmental Protection Agency (EPA) published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. Table 6.8-7 summarizes EPA findings for residential land uses.

	Measure of Exposure	Indoor			Outdoor		
		Activity Interference	Hearing Loss	To Protect Against Both Effects	Activity Interference	Hearing Loss	To Protect Against Both Effects
Residential with Outside Space	Ldn	45	70	45	55	70	55
Residential with No Outside Space	Ldn	45	70	45	-	-	-

Notes:  
 1. Yearly average equivalent sound levels in decibels; the exposure period which results in hearing loss at the identified level is a period of forty years.  
 Source: Environmental Protection Agency, Information of Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an adequate Margin of Safety, 1974.

### Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) aims to ensure worker safety and health in the United States by working with employers and employees to create better working environments. With regard to noise exposure and workers, OSHA regulations set forth accepted criteria to protect the hearing of workers exposed to occupational noise. Noise exposure regulations are listed in 29 CFR Section 1910.95. Most applicable to this project, 1910.95(c)(1) states that an employer shall administer a hearing conservation program whenever noise exposure levels equal or exceed an 8-hour time-weighted average sound level of 85 dB measured on the A scale.

### State

#### Title 24

Title 24 of the California Code of Regulations codifies Sound Transmission Control requirements, which establishes uniform minimum noise insulation performance standards for new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings. Specifically, Title 24 states that interior noise levels attributable to exterior sources shall not exceed 45 dBA CNEL in any habitable room of new dwellings. Title 24, Part 2 requires an acoustical report

that demonstrates the achievements of the required 45 dBA CNEL. Dwellings are designed so that interior noise levels will meet this standard for at least ten years from the time of building permit application.

### Department of Industrial Relations

The Division of Occupational Safety and Health (DOSH) protects workers and the public from safety hazards through its CAL/OSHA program. The Cal/OSHA Program is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. DOSH enforces noise standards in the workplace in conjunction with OSHA through the CAL/OSHA program.

## **Local**

### City of Sacramento General Plan

The California Government Code requires that a noise element be included in the general plan of each county and city in the state. The purpose of the noise element is to ensure that noise issues are incorporated into the planning process. The noise element can help city planners achieve and maintain consistent noise levels for existing and proposed land uses.

The City is preparing a new General Plan, but the existing General Plan contains goals, policies, and information related to noise that are included in the Health and Safety element of the General Plan. This element establishes maximum acceptable exterior noise level criteria for new development. These City standards are shown in Figure 6.8-2.

The General Plan identifies goals concerning noise in its Health and Safety element. Each goal is implemented by a number of corresponding policies:

**Goal A**      **Future development should be compatible with the projected year 2016 noise environment.**

Policies

1.            Require an acoustical report for any project which would be exposed to noise levels in excess of those shown as normally acceptable in Figure 3 (see DEIR Figure 6.8-2). The contents of the acoustical report shall be as described in the Noise Assessment Report Guidelines. No acoustical report shall be required where City staff has an existing acoustical report on file which is applicable.
  
2.            Require mitigation measures to reduce noise exposure to the "Normally Acceptable Levels" Figure 3 (see DEIR Figure 6.8-2) except where such measures are not feasible.  
  
It is recognized that there are many areas within the City for which it is not feasible to provide further noise mitigation. It is also recognized that some projects, because of their location, design, or size may not be able to incorporate mitigation measures that are feasible for larger projects or for projects in different locations. Specifically, around McClellan Air Force Base, there are areas where the noise contours indicate that it may be clearly infeasible to achieve the "Normally acceptable" noise level. Projects in these areas may be allowed to exceed the maximum acceptable noise level. However, each project shall be subject to mitigation measures to the maximum extent feasible.  
  
Action a): Prepare a manual to assist project applicants in complying with the noise element and to identify areas and circumstances under which additional noise mitigation is not feasible.
  
3.            Land uses proposed where the exterior noise level would be below the "normally acceptable" limit may be approved without any requirement for interior or exterior mitigation measures.  
  
Where the exterior noise is below the "normally acceptable" limit, it is assumed that any buildings involved are of normal conventional construction without any special interior noise provisions. This will, under normal circumstances, provide an acceptable interior noise level.

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE $L_{dn}$ OR CNEL db					
	55	60	65	70	75	80
Residential	////					
		////		))))))		+++++
Transient Lodging – Motels, Hotels	////					
		////			))))))	+++++
Schools, Libraries, Churches, Hospitals, Nursing Homes	////					
		////		))))))		+++++
Auditoriums, Concert Halls, amphitheatres	////					
					+++++	
Sports Arena, Outdoor Spectator Sports	////					
						+++++
Playgrounds, Neighborhood Parks	////					
				))))))		+++++
Golf Courses, Riding Stables, Water Recreation, Cemeteries	////					
				))))))		+++++
Office Buildings, business Commercial and Professional	////					
			////			))))))
Industrial Manufacturing, Utilities Agriculture	////					
				////		))))))

**INTERPRETATION**

////	<b>NORMALLY ACCEPTABLE</b>	))))))	<b>NORMALLY UNACCEPTABLE</b>
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise requirements		New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.	
////	<b>CONDITIONALLY ACCEPTABLE</b>	+++++	<b>CLEARLY UNACCEPTABLE</b>
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.		New construction or development clearly should not be undertaken.	

Source: Sacramento General Plan, 1998.



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**FIGURE 6.8-2**  
**Land Use Compatibility for Community Noise Environments**

D51234.00



"Maximum acceptable" interior noise levels have not been established for land use categories in Figure 3 (see DEIR Figure 6.8-2). The types of interior use in these categories vary substantially. As a general rule, acceptable noise mitigation will be that which provides for interior noise levels comparable to the noise levels that would exist in buildings where the exterior noise is below the "normally acceptable" standard.

**Goal C Eliminate or minimize the noise impacts of future development on existing land uses in Sacramento.**

Policies

1. Review projects that may have noise generation potential to determine what impact they may have on existing uses. Additional acoustical analysis may be necessary to mitigate identified impacts.

There are areas of the City which are considered relatively quiet (ambient levels below "normally acceptable" noise levels). While new development in these areas might not cause the "normally acceptable" noise level for existing development to be exceeded, it is recognized that such new development might cause an increase in ambient noise considered significant in terms of impacts on existing uses.

Enforce the Sacramento Noise Ordinance as the method to control noise from sources other than transportation sources.

**Goal D Reduce noise levels in areas where noise exposure presently exceeds the standards established in Figure 3 (see DEIR Figure 6.8-2).**

Policies

1. Continue to enforce the provisions of sections 27-150 and 27-151 of the State Motor Vehicle Code. These sections require that all vehicles be equipped with a properly maintained muffler and that exhaust systems not be modified.
2. Encourage the incorporation of the latest noise control technologies in all projects.

**Sacramento Central City Community Plan**

In addition to the General Plan, the City of Sacramento has also developed plans that are more specific to the various communities in the City. The City's CCCP contains the following sub goal under its environmental goal:

Sub-goal

- o Provide an environment which is free of annoying noise and continue to reduce air pollution.

**Sacramento Municipal Code**

The Sacramento Municipal Code also contains regulations concerning noise. These noise regulations are found in Title 8 – Health and Safety, Chapter 8.68 – Noise Control. Of the regulations in Chapter 8.68, not all are applicable to the proposed project. Of the applicable regulations, Section 8.68.060 sets standards for cumulative exterior noise levels at residential and agricultural properties. Section 8.68.190 generally prohibits any person from making "any loud, unnecessary or unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area." Section 8.68.080 exempts certain activities from Chapter 8.68, including "noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure" as long as these activities are limited to between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday, and between the hours of 9:00 a.m. and 6:00 p.m. on Sunday. Section 8.68.080 also requires the use of exhaust and intake silencers for internal combustion engines, and provides for construction work to occur outside of the designated hours if the work is of urgent necessity and in the interest of public health and welfare for a period not to exceed three days.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

#### **Noise Impact Assessment Methodology**

The analyses of existing and future noise environments were based on noise level monitoring and noise prediction modeling. Traffic noise levels were modeled using the Federal Highway Administration's (FHWA's) Traffic Noise Model (TNM) Version 2.5. Noise modeling focuses on the noise resulting from traffic on nearby roadways. Noise level estimates from light rail, passenger rail, and heavy rail operations were based on measured reference noise levels taken near the existing rail alignments. Traffic volumes used as data inputs in the TNM model were provided by the project traffic engineer. Noise modeling results are included as Appendix J.

#### **Construction Noise and Vibration Impact Methodology**

Construction noise impacts were evaluated using U.S. EPA reference noise levels for various construction equipment and activities. Construction noise levels were then calculated using equations defined by the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (May 2006). Construction vibration impacts were evaluated similarly using FTA methods.

#### **Operational Vibration Impact Assessment Methodology**

Wilson, Ihrig and Associates Inc., (WIA) acoustical and vibration consultants, performed the vibration analysis for the proposed project (included as Appendix K) using FTA methods of vibration impact assessment and impact significance criteria. The criteria for acceptable ground-borne vibration are expressed in terms vibration decibels (VdB) relative to one micro-inch per second (i.e., the threshold of human perception). The FTA guidance manual provides for three levels of assessment: Screening, General, and Detailed. WIA did a Screening assessment for the proposed project. The Screening assessment applies predetermined zones of potential vibration impact, based on FTA data, to major road and rail alignments on/near the project site; receptors outside these zones would not be affected.

The FTA classifies land uses into three categories, as follows:

Category 1 - High Sensitivity: Buildings where vibration would interfere with operations within the building, even though such levels may be well below the threshold of human annoyance. This would include buildings where vibration-sensitive research and manufacturing occurs, hospitals with vibration-sensitive equipment, and university research operations.

Category 2 – Residential: All residential land uses and any buildings where people sleep; this would include hotels and hospitals.

Category 3 – Institutional: Schools, churches, other similar institutions and quiet offices that have the potential for activity interference. Although it is generally appropriate to include office buildings in this category, it may not be appropriate to include all buildings that have any office space.

Screening distances depend not only on land use but also on the source of vibration. Table 6.8-8 presents the screening distances associated with five different sources of transportation-related vibration in areas with "normal" soil propagation characteristics.

<b>Type of Project</b>	<b>Category 1</b>	<b>Category 2</b>	<b>Category 3</b>
Conventional Commuter Railroad	600	200	120
Rail Rapid Transit	600	200	120
Light Rail Transit	450	150	100
Intermediate Capacity Transit	200	100	50
Bus Projects	100	50	---

Source: FTA, *Transit Noise and Vibration Impact Assessment*. May 2006. p. 9-4.

The WIA vibration analysis identified the proposed project's land uses that would be within these screening distances and, therefore, significantly impacted based on FTA criteria<sup>10</sup>

### **Standards of Significance**

#### **Noise**

Thresholds of significance are established by the Title 24 standards and by the City's General Plan Noise Element and the City Noise Ordinance. For the purposes of this EIR, noise impacts are considered significant if the proposed project would result in:

- Exterior noise levels at the proposed project that are above the upper value of the normally acceptable category for various land uses, according to the City General Plan, caused by noise level increases due to the project;
- Residential interior noise levels of 45 L<sub>dn</sub> or greater; or
- Construction noise levels not in compliance with the City of Sacramento Noise Ordinance.

#### **Vibration**

For the purposes of this EIR, vibration impacts are considered significant if the proposed project would, cause vibration-sensitive receptors to experience substantial annoyance or disruption of normal activity typical of the particular land use affected, or if there would be substantial probability of structural damage to buildings affected by project vibration sources or by the project's placement of buildings near strong existing vibration sources.

### **Project Components**

There are no goals or policies in the Specific Plan that relate to noise or vibration.

### **Specific Plan Impacts and Mitigation Measures**

#### **Noise Analysis**

##### **6.8-1 Construction of projects under the proposed Specific Plan could temporarily produce loud noise.**

During construction of projects developed under the Specific Plan, noise levels would be produced by the operation of heavy-duty equipment and various other construction activities. Similar to other projects in the area, pile driving could be used in conjunction with drilling for foundations of the buildings. Construction noise levels were estimated using FTA methodology, which provides a formula for calculating noise levels from multiple pieces of equipment operating at multiple locations

10 Transit Noise and Vibration Impact Assessment, FTA, May 2006; Chapter 9, Vibration Screening Procedure.

using reference noise levels for individual pieces of equipment.<sup>11</sup> The noise levels associated with equipment to be used during the various project construction phases are shown in Table 6.8-9.

Construction Equipment	8-hour $L_{eq}$		
	25 feet	50 feet	75 feet
<b>Demolition</b>			
Track Hoe	96	90	86.5
Crane	94	88	84.5
Excavator / Loader	91	85	81.5
Water Truck	94	88	84.5
<b>Site Work</b>			
Crawler Tractor	91	85	81.5
Grader	91	85	81.5
Loader	91	85	81.5
Compactor	88	82	78.5
Water Truck	94	88	84.5
Pile Driver	107	101	97.5
<b>Foundation</b>			
Backhoe	86	80	76.5
Loader	91	85	81.5
Forklift	85	79	75.5
Water Truck	94	88	84.5
<b>Utilities</b>			
Back Hoe	86	80	76.5
Water Truck	94	88	84.5
Forklift	85	79	75.5
<b>Slab on Grade</b>			
Skip Loader	88	82	78.5
Bobcat Tractor	90	84	80.5
Forklift	85	79	75.5
<b>Steel Erection</b>			
Crane	94	88	84.5
Air Compressor	87	81	75.5
Generator	87	81	77.5
Forklift	85	79	77.5
<b>Decking/Slabs</b>			
Generator	87	81	77.5
Forklift	85	79	75.5
Concrete Pump	88	82	78.5
<b>Completion</b>			
Forklift	85	79	75.5
Notes: Noise levels calculated from equations defined by the Federal Transit Administration's <i>Transit Noise and Vibration Impact Assessment</i> document, May 2006, pages 12-2 to 12-7. Source: PBS&J/EIP, 2007.			

As discussed in the environmental setting, there are sensitive uses surrounding the Specific Plan Area, specifically residential uses to the north, south, and southeast. Construction noise would affect surrounding uses to varying degrees throughout the period of construction under the Specific Plan, including site grading, excavation for infrastructure and building foundations, pile driving, building construction, and paving and landscaping installation. The Sacramento Municipal Code, Title 8 - Health and Safety, Chapter 8.68 – Noise Control, limits construction activity to the period between the hours of 7:00 a.m. and 6:00 p.m. Monday through Saturday. Construction is also

11 FTA, Transit Noise and Vibration Impact Assessment (May 2006), Chapter 12, page 12-3.



limited to the hours between 9:00 a.m. and 6:00 p.m. on Sunday. Since typical sleeping hours fall outside of the time during which construction must occur, construction noise would not be expected to disturb the sleep of nearby residents. Office and commercial uses in the vicinity of the Specific Plan Area would be open during the day when construction would occur. The noise from construction could disturb people working in these buildings, making it difficult to concentrate. Older California building standards (pre-1970) generally provide a reduction of exterior-to-interior noise levels up to about 20 dB with closed windows; newer buildings generally provide a reduction up to about 30 dB. Therefore, the noise levels produced by the equipment (shown in Table 6.8-9) would be higher than what would actually be experienced within residential and commercial structures in the vicinity of the project.

Pile driving noise (which typically can be as high as 101 dBA at 50 feet from the hammer, according to EPA data shown in Table 6.8-9) could be audible within buildings in and near the Specific Plan Area. While it is anticipated that most occupants of the closest residential units would be at work during the day, occupants of commercial offices would be at work during the day and could be affected by pile driving activities.

In addition to existing receptors in the vicinity of the Specific Plan Area, the proposed project would be developed in phases. Residents introduced into the Specific Plan Area after each phase would be exposed to construction noise from subsequent phases since they would be close to construction activities.

Project construction activities would be limited to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, and the hours of 9:00 a.m. to 6:00 p.m. on Sunday and so the noise produced from these activities would be exempt from the exterior noise limits at residential properties set by the Sacramento Municipal Code. However, pile driving and other construction activities could expose occupants of nearby buildings to high levels of noise during the day. Consequently, the impact would be considered *significant*.

#### Mitigation Measures

Implementation of the following mitigation measures would reduce exposure of occupants on and off the site to the maximum extent feasible; however, due to the potential for the use of pile driving and other noisy construction activities, this impact would remain ***significant and unavoidable***.

6.8-1 *The contractor shall ensure that the following measures are implemented during all phases of project construction:*

- a) *Whenever construction occurs adjacent to occupied residences (on or offsite), temporary barriers shall be constructed around the construction sites to shield the ground floor of the noise-sensitive uses. These barriers shall be of ¾-inch Medium Density Overlay (MDO) plywood sheeting, or other material of equivalent utility and appearance, and shall achieve a Sound Transmission Class of STC-30, or greater, based on certified sound transmission loss data taken according to ASTM Test Method E90 or as approved by the City of Sacramento Building Official.*
- b) *Construction activities shall comply with the City of Sacramento Noise Ordinance, which limits such activity to the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday, the hours of 9:00 a.m. to 6:00 p.m. on Sunday, prohibits nighttime construction, and requires the use of exhaust and intake silencers for construction equipment engines. Exceptions to these regulations may be granted by the building inspector, consistent with the Noise Ordinance.*

- c) *Construction equipment staging areas shall be located as far as feasible from residential areas while still serving the needs of construction contractors.*
- d) *Quieter “sonic” pile-drivers shall be used, unless engineering studies are submitted to the City that show this is not feasible and cost-effective, based on geotechnical considerations; and*
- e) *Activities that generate high noise levels, such as pile driving and the use of jackhammers, drills, and impact wrenches, shall be restricted to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, unless it can be proved to the satisfaction of the City that the allowance of Saturday work on certain onsite parcels (i.e., those as far from noise-sensitive uses as possible) would not have an adverse noise impact.*

Implementation of Mitigation Measures 6.8-1(a) through (e) would ensure maximum feasible reduction of noise impacts on receptors near the construction sites by shielding construction activities and staging construction equipment away from residential uses, limiting construction hours to daytime hours, and using exhaust and intake silencers on construction equipment. The actual reduction in noise levels would depend on a number of factors, such as distance between receptor and source (per Mitigation Measure 6.8-1(c)), ability to block line-of-sight (per Mitigation Measure 6.8-1(a) and so on. These measures would reduce exposure of occupants on and off the site to the maximum extent feasible. However, due to pile driving and other noisy construction activities that cannot be substantially reduced, this impact would remain **significant and unavoidable**.

#### **6.8-2 The proposed Specific Plan could permanently expose sensitive receptors to traffic and rail noise levels on an ongoing basis.**

The proposed Specific Plan could result in impacts related to exposure of onsite receptors to existing and future noise levels from traffic noise levels (local and interstate traffic noise sources) and rail noise associated with freight, passenger rail, and light rail services. The proposed Specific Plan would also contribute to traffic volumes along area roadways, which would result in increases in traffic noise levels at existing off-site receptors.

#### **Traffic and Rail Noise Levels in the Specific Plan Area**

The City of Sacramento General Plan’s exterior noise standard for common outdoor areas at residential (dwellings other than detached single-family uses is 60 dB  $L_{dn}$ . As shown in Table 6.8-5 (existing 24 hour noise levels), existing onsite noise levels were measured at 72.4 dBA  $L_{dn}$  approximately 500 feet from I-5 and 71.8 dBA  $L_{dn}$  approximately 150 feet from the UPRR alignment. Single-event noise levels (SELs) due to train operations were also measured near the UPRR rail alignment; 13 SEL events associated with train pass-bys exceed 95 dBA at 150 feet from the tracks during the 24 hour monitoring period, 9 of which occurred during the hours of 10 pm to 7 am. Short-term noise measurements taken near 7<sup>th</sup> Street in the Specific Plan Area indicated a daytime noise level of 67.4 dBA  $L_{eq}$  under existing conditions. These existing noise levels are above the City’s 60 dBA standard for residential uses. Noise levels along the UPRR rail alignment would potentially increase in the future with increased Amtrak passenger train activity due to an increased demand for services in the area. Noise levels along the UPRR alignment would also increase if the planned future high speed rail project was implemented. Along 7<sup>th</sup> Street noise levels would be expected to increase with addition of the proposed DNA light rail line. High SELs within the Specific Plan Area would be associated with train passbys of passenger, freight, and light rail trains. Studies have noted the strong correlation of high SEL events with sleep disturbance and other disruptive effects.

Proposed uses under the Specific Plan include Residential/Commercial Mixed Use (RCMU), Office/Residential Mixed Use (ORMU), Residential Mixed Use (RMU), and Open Space (OS) land use designations on parcels located adjacent to both I-5 and the UPRR alignments (see Figure 3-4 in Project Description). The RCMU, ORMU, and RMU land use designations would allow residential uses at these locations, which are subject to noise levels above 60 dBA  $L_{dn}$ .

Noise level impacts at proposed uses in each of the five districts are estimated below using noise attenuation factors and measured noise levels from I-5 and UPRR activities.

#### The Depot District

The Depot District includes the UPRR alignment and associated transit uses south of the alignment. The proposed DNA light rail would be included in this district as the alignment from 7<sup>th</sup> Street would run along F and H streets to connect with the proposed Sacramento Intermodal Transportation Facility (SITF) that is included in the proposed project. The district also includes ORMU land uses adjacent to the UPRR alignment that could potentially be affected by rail noise levels in excess of the City standards. Parcels 41 and 42 are identified in the Specific Plan to potentially include residential uses. These parcels would potentially experience high noise levels because they are adjacent to the proposed light rail alignment. It should be noted that these parcels would not be directly adjacent to the UPRR alignment, but until later phases noise levels on these parcels would be affected by the UPRR rail activities. In later phases of the project, noise levels at these parcels would be reduced when intervening structures would be constructed on the adjacent parcels closer to the UPRR alignment. Parcels 40, 43, 44, and 46 would be designated ORMU and would allow residential uses to be constructed close to the UPRR alignment. In particular, Parcel 46 would be directly adjacent to the UPRR alignment with resultant exposure of the proposed residential uses to noise levels above 70 dBA  $L_{dn}$ , as would be the case for other residential uses on other parcels if they were placed within 150 feet of the railroad alignment. The parcels would also be subject to high SELs from freight train pass-bys (i.e., measurements indicate that exterior SELs could exceed 95 dBA several times per night for receptors within 150 feet of the tracks).

Residential units would be designed to comply with all applicable noise regulations, including Title 24. Outdoor residential spaces such as balconies are not typically considered living space (as opposed to a backyard), so they do not need to meet the exterior standards.

#### Central Shops District

The Central Shops District (CSD) includes existing historic structures. These structures are adjacent to the UPRR alignment and subject to train noise. The parcels containing these structures are designated RCMU. The EIR Analysis Scenario calls for cultural, commercial and entertainment uses, such as museums and exhibit space in this area. Nevertheless, the proposed designation under the Specific Plan could allow residential uses to be built there. If residential uses were located in the Central Shops District, all requirements for residential indoor and outdoor noise levels would be met. Residential outdoor areas would be located away from train noise sources.

#### West End District

The West End District includes areas adjacent to and directly beneath I-5, which is raised above ground level in this area. Noise levels at parcels directly adjacent to and beneath the I-5 structure would exceed City standards for most uses, in particular residential uses. Parcels 1, 2, 11a, 12, and 33 would be particularly affected by I-5 traffic noise levels. According to the EIR Analysis Scenario, no residential uses are planned for these parcels. While residential uses are not planned in these parcels, the proposed designations in the Specific Plan would allow residential uses to be built in these areas.

Within the West End District, parcels 17 and 47b would be designated RCMU and would allow for residential uses to be constructed adjacent to the UPRR alignment. Parcel 47a is adjacent to the UPRR alignment and is designated ORMU. Parcel 48 is also designated ORMU; these ORMU parcels would also allow residential uses in these areas. Parcels 47a and 48 are adjacent to 7<sup>th</sup> Street and the potential light rail alignment.

If residential uses were constructed in the West End adjacent to I-5, the UPRR alignment, or the potential light rail alignment, compliance with applicable residential indoor noise standards, including Title 24, would ensure that noise levels are acceptable.

### East End District

The East End District includes residential land use designations on parcels near the UPRR alignment and 7<sup>th</sup> Street near the proposed light rail alignment. Parcels adjacent to or near the UPRR alignment include parcels 49a, 49b, 49c, 51, and 52S. These parcels are designated RCMU, ORMU, and RMU, which all allow residential uses. The EIR Analysis Scenario assumes residential units would be built on parcels 49a, 51, and 52S.

Residential uses within this district are proposed for both the east and west sides of 7<sup>th</sup> Street. The parcels that are within this area include RMU and OS land use designations. Existing traffic noise levels along 7<sup>th</sup> Street are currently above the City's residential standards; in addition, a light rail extension is proposed to be aligned within 7<sup>th</sup> Street. Noise levels for light rail activities would include light rail train passbys and train horn use. These train noise sources combined with traffic noise would result in future noise levels also in excess of the City's residential standards.

Although exterior noise levels near the UPRR alignment and 7<sup>th</sup> Street currently exceed the City's 60 dBA standard for residential uses, the proposed Specific Plan would require future development to meet all applicable noise standards for residential uses, including Title 24, so noise levels would be acceptable.

### Riverfront District

The Riverfront District is located between the Sacramento River and I-5. Because of the district's proximity to I-5, existing noise levels are relatively high in this area. The proposed Specific Plan designations in this district include OS and RMU land uses. Within the parcel designated as RMU planned uses would include a hotel and a mix of residential and retail uses. Although exterior noise levels adjacent to I-5 exceed the City's 60 dBA standard for residential and hotel uses, the proposed Specific Plan would require future development to meet all applicable noise standards for residential and hotel uses, including Title 24, so noise levels would be acceptable.

### Summary

Residential units constructed in every district would include multi-family residential uses, which would be required to meet Title 24 standards for interior noise levels. Because residential development would meet all applicable noise regulations and site design would further reduce indoor noise levels, the impact would be ***less than significant***.

### **Traffic and Rail Noise Levels in the Project Vicinity**

Existing sensitive noise receptors that would be affected by development of the proposed project are the mostly residential uses located along 7<sup>th</sup> Street, 12<sup>th</sup> Street, 16<sup>th</sup> Street, Bannon Street, and Richards Boulevard. Most of these receptors are exposed to existing traffic noise from the local roads and I-5, and to noise from the nearby railroad. Increases in ambient noise associated with development of the proposed project would come primarily from traffic, but there are potential effects

from the proposed UPRR rail alignment modifications and from the planned light rail lines when they are built.

The proposed project would realign the existing UPRR rail line. This realignment would result in a reduced curvature of the rail and would allow for higher train speeds along this stretch of rail. This modification would result in an increase in noise levels for residents that are near the UPRR line. Using the FTA's methodology for freight trains and assuming that commuter trains increase in speed from the current range of 10-15 miles per hour to 30-35 miles per hour<sup>12</sup> (which would be allowed with the proposed realignment), an approximately 2 dB increase in noise levels would result for nearby residents. Since this would be less than the DEIR's 3 dB significance criterion, this impact is considered *less than significant*.

The results of traffic noise modeling for roads in the vicinity of the Specific Plan Area are shown in Table 6.8-10 (noise levels shown in the table represent traffic noise generated at ground level). With the exception of 7<sup>th</sup> Street and North B Street, project-related traffic would contribute to an increase of 0.5 to 4.0 dBA  $L_{eq}$  to surrounding roadway noise levels during the peak hours. As shown in the table, traffic noise levels along 7<sup>th</sup> Street would decrease under baseline conditions with the project. This reduction in traffic noise levels along 7<sup>th</sup> Street would occur because traffic volumes for 7<sup>th</sup> Street would be reduced with the project-induced redistribution of traffic along the proposed extensions of 5<sup>th</sup> and 6<sup>th</sup> streets. According to the City of Sacramento General Plan DEIR noise impact criteria, an increase of 3 dB would constitute a significant increase.<sup>13</sup> Project-related traffic would result in noise level increases greater than 4 dB at existing sensitive receptor locations. Therefore, the impact of increased noise levels on existing nearby residential uses would be *significant*.

Receptor	Roadway Segment	Peak-Hour Noise Levels (dBA) <sup>1</sup>			
		Existing	Baseline No Project <sup>2</sup>	Baseline Plus Project <sup>2</sup>	Increase
517 7 <sup>th</sup> Street	7 <sup>th</sup> Street, south of E Street	66.6	67.9	66.4	-0.2
619 12 <sup>th</sup> Street	12 <sup>th</sup> Street between F and G streets	69.9	69.9	70.4	0.5
Econo Lodge (along 16 <sup>th</sup> Street)	16 <sup>th</sup> Street between G and H streets	71.1	71.2	71.4	0.3
1239 Richards Boulevard	Richards Boulevard east of Del Rios Street	66.3	68.2	68.6	2.3
North B Street and Bannon Street	North B Street east of 7 <sup>th</sup> Street (and the proposed 5 <sup>th</sup> Street extension)	63.7	64.7	67.7	4.0
7 <sup>th</sup> Street within the Specific Plan Area	7 <sup>th</sup> Street south of North B Street	68.3	69.6	68.0	-0.3

Notes:

- Noise levels were calculated based on peak-hour traffic volumes proved by Dowling Associates, Inc. PM peak-hour traffic volumes were used for all roadway segments except 12<sup>th</sup> Street, where the AM peak hour represented the worst-case noise level increase.
- See Section 6.12, Transportation and Circulation, for a description of the Baseline.

Source: PBS&J/EIP, 2007.

### Mitigation Measures

*None available.*

12 Fran Halbakken, City of Sacramento, personal communication, May 7, 2007.

13 City of Sacramento, *City of Sacramento General Plan Update Draft Environmental Impact Report, SCH#86101310*, prepared by Jones and Stokes Associates, March 1987, page AA-48.

### **6.8-3 The proposed Specific Plan could expose sensitive receptors in the Specific Plan Area to noise produced by onsite stationary sources.**

In addition to increases in vehicle noise, operation of the proposed project would introduce new stationary sources such as heating, ventilation and air conditioning (HVAC) equipment, garbage pickup activity, and truck activity at residential and commercial building loading docks.

HVAC systems would be installed to service the project residential and commercial buildings. Noise generated by HVAC systems can vary significantly depending on the type of equipment and the size. The potential for noise impacts from such equipment would depend on its proximity to noise-sensitive uses, the equipment type and size, and whether the equipment would be surrounded by noise-abating enclosures.

On-site truck activity would be associated with garbage pickup and truck delivery service to project residential and commercial buildings. At this early stage of the project design/review process, the expected number of deliveries, types of trucks, truck circulation routes, and anticipated delivery times are not available. However, as the uses proposed for the site do not include large retail, warehouse, or industrial, it seems likely that most deliveries would be by small and medium trucks, rather than heavy trucks.

Due to the possibility of stationary source noise exceeding the standards established by the Sacramento Municipal Code at onsite residential and other noise-sensitive uses, the project's operational stationary source noise sources would be considered to have a *significant impact*.

#### Mitigation Measures

Implementation of the following mitigation measures would reduce this impact to a ***less-than-significant level***.

6.8-3 *The project sponsor shall ensure that the following measures are implemented for all development under the proposed Specific Plan:*

- a) *Prior to the issuance of building permits, the applicant shall submit engineering and acoustical specification for project mechanical HVAC equipment to the Planning Director demonstrating that the equipment design (types, location, enclosure, specifications) will control noise from the equipment to at least 10 dBA below existing ambient at nearby residential and other noise-sensitive land uses.*
- b) *Noise generating stationary equipment associated with proposed commercial and/or office uses, including portable generators, compressors, and compactors shall be enclosed or acoustically shielded to reduce noise-related impacts to noise-sensitive residential uses.*

#### **Vibration Analysis**

### **6.8-4 Construction of the Specific Plan could temporarily increase levels of groundborne vibration.**

Groundborne vibration levels from construction equipment that would be used in the Specific Plan Area are shown in Table 6.8-11. As shown in the table, vibration levels from equipment operating within approximately 25 feet of a receptor would exceed the 0.5 inches per second which the City uses as a threshold for structural damage during pile driving. There are no existing receptors outside of the Specific Plan Area that would be within 25 feet of pile driving activities on the site. But

TABLE 6.8-11

## VIBRATION SOURCE LEVELS FOR CONSTRUCTION EQUIPMENT

Construction Equipment		PPV at 25 feet (in/sec)	Approximate VdB at 25 feet
Pile Driver (impact)	Upper range	1.518	112
	Typical	0.644	104
Pile Driver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: FTA, Transit Noise and Vibration Impact Assessment, May 2006, p. 12-12.

future onsite receptors and the existing historic structures on site could be affected by pile driving activities in the Specific Plan Area. Project construction during later phases could occur on parcels that have been developed and pile driving vibration levels could exceed the damage threshold. Therefore, this impact is *significant*.

#### Mitigation Measures

As discussed above under Impact 6.8-1, implementation of Mitigation Measure 6.8-1 would require the construction contractor to use sonic pile drivers when feasible to reduce noise. The use of these methods would also reduce the project's vibration impacts. However, the feasibility of using sonic pile drivers has not been established yet for this project, so the impact is considered ***significant and unavoidable***.

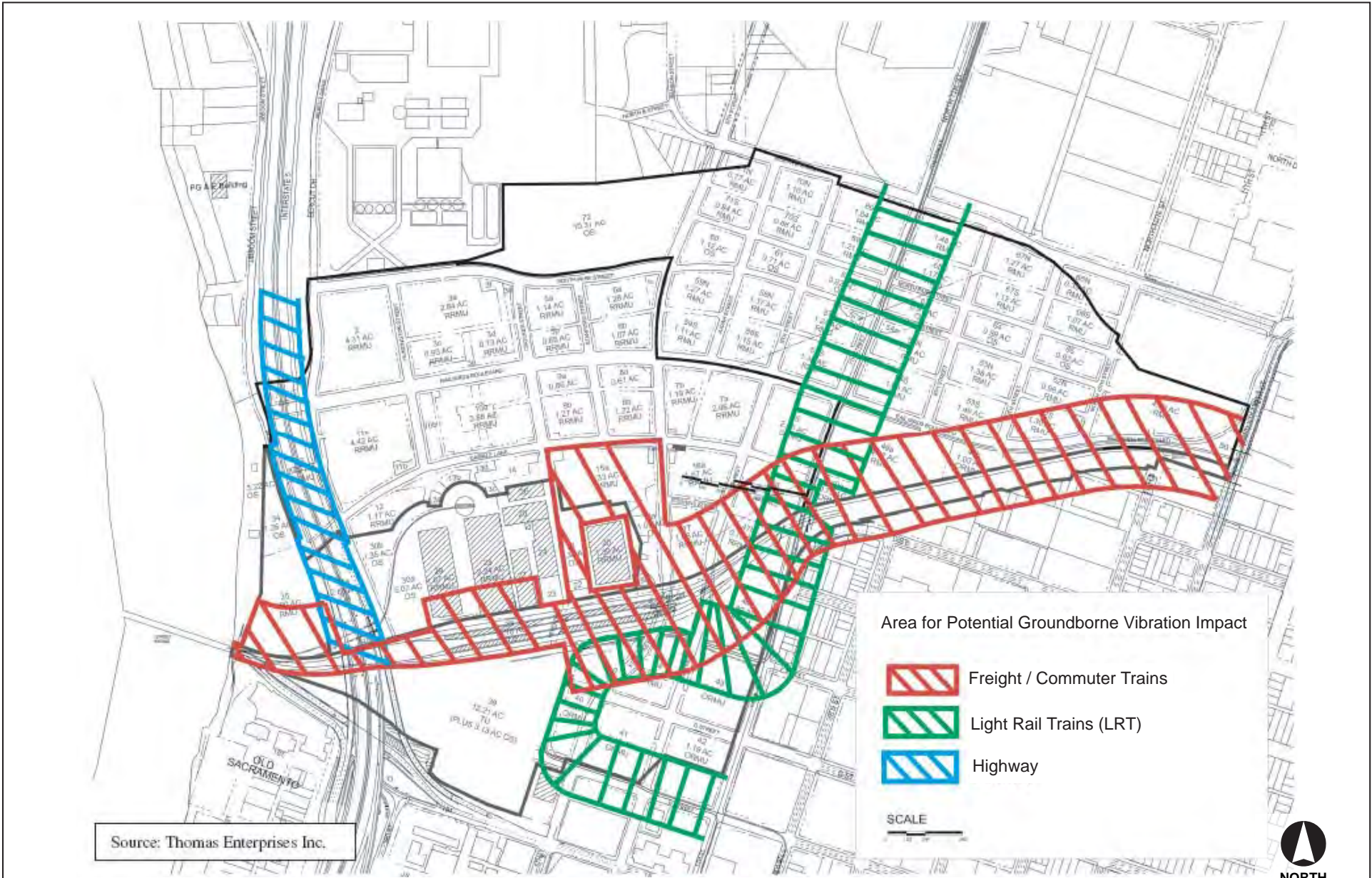
6.8-4 *Implement Mitigation Measure 6.8-1.*

#### **6.8-5 Development of the Specific Plan could expose new receptors to vibration on an ongoing basis.**

To assess vibration impact significance for the Specific Plan Area, the Vibration Analysis applied the procedure described in the FTA Guidance Manual for screening separately to each source of vibration: rail, light rail transit, and highway. The screening distances for potential vibration impacts are listed in Table 6.8-11 and graphical results for each individual source of vibration are presented in Figure 6.8-3. The screening distances presented in the Vibration Analysis were based on the FTA criteria for human annoyance. These criteria were chosen because they were more conservative than other criteria, including the standards established by the City to prevent structural damage of vibration peak particle velocities of 0.5 inches per second for project residential and commercial areas, and vibration peak particle velocities of 0.25 inches per second for historic buildings and archaeological sites. Because the Vibration Analysis is a conservative analysis for structural damage according to the City's standards, the buffer areas identified are greater than would be necessary to avoid exceedance of the City's damage thresholds.







Source: Thomas Enterprises Inc.

Area for Potential Groundborne Vibration Impact

-  Freight / Commuter Trains
-  Light Rail Trains (LRT)
-  Highway

SCALE



Sources: Sacramento Railyards Specific Plan, Basemap; Wilson, Ihrig & Associates, Inc., 2007.



FIGURE 6.8-3  
Areas of Potential Groundborne Vibration Impact

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The screening analysis identifies areas of potential vibration impact. The actual vibration levels will depend on the ultimate uses, building design, site layout, construction techniques, relocated rail alignment, construction methods for the relocated tracks and other factors. None of these details are known at present. During design phases, subsequent evaluation may will be needed, where indicated by this screening analysis, to determine the extent of vibration impacts and appropriate methods for minimizing vibration.

#### The Depot District

According to screening distances, four buildings (on parcels 40, 43, 44, and 46) located east of the proposed SITF and 7<sup>th</sup> Street have the potential to be adversely affected by vibration due to freight/commuter train operations. In addition, residences in parcels 40, 41, 42, 43, 44, and 46 located next to the future light rail alignment and/or heavy rail lines could be affected by associated vibration.

#### Central Shops District

All buildings in this area would be used during the day. Current plans identify the area to be used for a mix of cultural, entertainment, and retail uses. Parcels 27, 28, and 29 were identified as particularly sensitive because they are expected to include exhibit and museum space, and are in close proximity to the proposed relocated rail line. The remaining buildings are outside of the screening area or would not include as sensitive uses, so the vibration impact would be considered less than significant. The exhibit space, considered to be a Category 3 land use, would be approximately 45 to 75 feet from the nearest rail alignment. Due to the proximity of the rail lines, the potential exists for ground-borne vibration and ground-borne noise levels to create significant impacts at this receptor.

#### West End District

The critical distance for potential impacts from I-5 along the western boundary of the district was estimated to be within 75 feet of any support column. Since the closest buildings, planned as RCMU, would be located at least 90 feet from the I-5 support columns, it is not expected that vehicle traffic on I-5 would result in vibration impacts.

Along the eastern boundary of the district, four parcels (parcels 17, 47a, 47b, and 48) located just north of the realigned tracks would be within the area for potential vibration impact due to heavy rail. The Specific Plan designates these areas for RCMU and ORMU land uses. Since receptors located just north of the realigned tracks would be within screening distances, subsequent vibration study would be warranted for these areas.

Land uses located along 7<sup>th</sup> Street (parcels 47a, 47b, and 48) would be within the screening distance for potential vibration impacts from the DNA light rail extension. The Specific Plan designates these parcels ORMU. Since receptors along 7<sup>th</sup> Street, would be within screening distances for the proposed light rail, a subsequent vibration study would be warranted for these areas.

Parcel 15a could include a performing arts facility, which is an FTA Category 1 land use. The screening distance for this type of facility is 900 feet from the freight and commuter line and 675 feet from a light rail line. The performing arts facility is planned to be approximately 550 feet from the closest realigned UPRR track and 800 feet from the DNA light rail line. This puts the performing arts center within the zone of potential vibration impact from the UPRR alignment, but not the light rail lines. The parcel is designated as RCMU and could include residential uses as well, but these residential uses would not be within the zone of potential vibration impact from either UPRR or light rail.

Due to the proximity of the UPRR line, potential exists for ground-borne vibration and ground-borne noise levels to create significant impacts at proposed the performing arts facility in the West End District.

### East End District

The East End District has the potential for vibration impacts due to the freight/commuter track relocation and the DNA light rail extension. Five parcels (parcels 49a, 51, 52N, 52S, and 53S) were found to be within the critical distance for potential vibration impact due to freight and commuter train operations. Future residential buildings within these parcels could have the potential for impacts and warrant additional vibration analysis. For receptors along 7<sup>th</sup> Street, screening distances suggested that buildings on both sides of the light rail alignment (assumed to run down the middle of 7<sup>th</sup> Street) could be impacted. Based on the Screening Analysis, eight parcels (parcels 54S, 54a, 68S, 68N, 57S, 57N, 69S, and 69N) could be adversely affected by light rail (LRT) vibration in the East End District.

### Riverfront District

Results of the screening analysis showed that buildings in close proximity to UPRR tracks have the potential to be adversely affected by vibration. Buildings of concern in this area would be on parcel 35 (planned hotel/residential uses) and were assumed to be FTA Category 2 land uses. The proposed hotel/residential buildings on parcel 35 would be within the critical screening distance of 300 feet for the heavy rail lines. The critical screening distance for I-5 support columns would be 75 feet. Setbacks for the hotel were estimated to be about 70 to 75 feet from the closest support column. Building within this parcel would be within the screening distance for vibration associated with I-5 and the UPRR rail alignment.

In summary, there are areas within each District could be subjected to disruptive levels of vibration. This is considered a *significant impact*.

### Mitigation Measures

Implementation of the following mitigation measures would reduce impacts to a ***less-than-significant level*** by ensuring that vibration levels do not cause substantial annoyance or structural damage.

- 6.8-5 a) *The City shall work with UPRR and RT to identify methods of vibration reduction that could be implemented during UPRR track relocation and LRT track construction. Such methods could include, but would not be limited to:*
- *soil densification under the tracks;*
  - *use of deep piles under the track bed;*
  - *use of tire derived aggregate below the track bed;*
  - *floating slab tracks;*
  - *for light rail, use of a resiliently supported fastener system; and*
  - *for light rail, installation of a ballast mat beneath the track.*
- b) *After relocation of the UPRR tracks, the applicant shall prepare a revised screening analysis to address reductions in the potential area of impact due to incorporation of measures in Mitigation Measure 6.8-3(a). The revised screening analysis shall supersede Figure 6.8-3 in this EIR.*

- c) *Prior to use of the relocated tracks, the historic structures to be retained in the Central Shops Historic District shall be stabilized using methods that would protect against vibration levels identified in the screening analysis.*
- d) *Prior to design review, the applicant shall have a certified vibration consultant prepare a site-specific vibration analysis for residential uses and historic structures that are within the screening distance (shown in Figure 6.8-3) for freight and passenger trains or light rail trains. The analysis shall detail how the vibration levels at these receptors would meet the applicable vibration standards to avoid potential structural damage and annoyance. The results of the analysis shall be incorporated into project design.*

### **Cumulative Impacts and Mitigation Measures**

For evaluation of cumulative impacts, the cumulative setting would be other existing and future development or other activities that would add stationary or mobile source noise to the Specific Plan Area and the surrounding area.

Noise generated by project construction, including vibration, would be temporary, and therefore, would not add to the permanent environment. In addition, construction noise is localized and would only be part of the cumulative context if other construction activities that could affect sensitive receptors would occur immediately adjacent to the Specific Plan Area at the same time. Noise associated with stationary sources (i.e., HVAC systems, truck deliveries, etc.) attributed to project operations would effect onsite project uses and is considered localized noise that would not contribute to the cumulative noise environment. Therefore, construction-related and onsite stationary noise sources are not evaluated in a cumulative context.

Increases in vehicle trips due to project development would combine with other adjacent development projects in the City and would result in a cumulative increase in traffic along area roadways as evaluated as part of the traffic study for this project, thus affecting noise levels within the City.

#### **6.8-6 The proposed project would contribute to cumulative increases in traffic and rail noise levels.**

The project would, in combination with cumulative development, increase noise levels experienced by sensitive receptors due to increased traffic (local and interstate traffic noise sources) and rail use (associated with increased freight, passenger rail, and light rail services). The proposed project would also contribute to future traffic volumes along area roadways, which would result in increases in traffic noise levels at off-site receptors.

Cumulative noise levels along the UPRR rail alignment would potentially increase in the future with increased freight and Amtrak passenger train activity due to an increased demand for services in the area. Freight train activities are projected to increase by approximately two to three percent annually; however, the City of Sacramento staff indicates that UPRR generally absorbs the growth by adding rail cars to the existing trains. Amtrak's train service currently offers 36 trains per day. Amtrak's long distance inter-city service is also expected to increase its ridership, which will necessitate an increase in the number of trains serving the region. Noise levels along the UPRR alignment would also increase if the proposed future high speed rail project was implemented. The high speed rail project is expected to include steel-wheeled, electric-traction power trains, with approximately 67 daily trips between Sacramento and Merced. The number of trains using the UPRR line and the potential for high-speed rail is not part of the proposed project. The proposed project's contribution to noise levels along the UPRR rail alignment would be associated with the

realignment of the rails in the project vicinity and associated increase in allowable train speeds. Using FTA's General Transit Noise Assessment, increases in the existing level of freight and commuter trains would result in an approximately 2 dB increase for nearby residential uses. Combined with future increases in train activities along the alignment, the higher speeds could result in noise level increases greater than 3 dB, which would be considered a significant cumulative increase. In addition, because the project would allow for greater speeds for all future trains in this area, the project's contribution is considered to be cumulatively considerable. Because the project's contribution would be cumulatively considerable, the cumulative rail noise impact would be *significant*.

Noise from motor vehicles associated with the proposed project and other cumulative development that would be built over the next approximately 20 years would have an effect on local sensitive receptors. Table 6.8-12 shows cumulative traffic noise levels with and without the proposed project at the identified sensitive receptors. As shown in the table, traffic noise levels along 7<sup>th</sup> Street would decrease under cumulative conditions with the project, due to redistribution of traffic along the proposed extensions of 5<sup>th</sup> and 6<sup>th</sup> streets. Noise levels for 16<sup>th</sup> Street and Richards Boulevard would also decrease under cumulative conditions because of other changes to the roadway network that would lead to a reduction of traffic volumes along these roadways. As with near-term conditions, development of the proposed project would substantially increase noise levels along B Street, where cumulative traffic noise levels would be increased by 5.2 dBA, of which, 3.0 dBA would be attributable to buildout of the proposed project. According to the City of Sacramento General Plan DEIR noise impact criteria, an increase of 3.0 dB would constitute a significant increase. Therefore, under project plus cumulative conditions there would be a significant cumulative impact along B Street. The project's contribution to the cumulative significant increase would be cumulatively considerable because the project's contribution would be equal to the City's significance criteria. For all other identified roadways, the project's contribution would be below the significance criteria and would therefore be considered less than cumulatively considerable.

Receptor Location	Roadway	Noise Levels (CNEL)				
		Existing No Project (dB)	Cumulative without Project (dB)	Cumulative with Project (dB)	Change over Existing (dB)	Project Contribution (dB)
517 7 <sup>th</sup> Street	7 <sup>th</sup> Street, south of E Street	66.6	71.5	67.8	1.2	-3.7
619 12 <sup>th</sup> Street	12 <sup>th</sup> Street between F and G Streets	69.9	70.5	70.5	0.6	0.0
Econo Lodge (along 16 <sup>th</sup> Street)	16 <sup>th</sup> Street between G and H Streets	71.1	71.6	71.4	0.3	-0.2
1239 Richards Boulevard	Richards Boulevard east of Del Rios Street	66.3	71.1	69.6	3.3	-1.5
North B Street and Bannon Street	North B Street east of 7 <sup>th</sup> Street (and the proposed 5 <sup>th</sup> Street extension)	63.7	65.9	68.9	5.2	3.0
7 <sup>th</sup> Street within the Specific Plan Area	7 <sup>th</sup> Street south of North B Street	68.3	73.2	69.5	1.2	-3.7

Notes:

- Noise levels were calculated based on peak-hour traffic volumes proved by Dowling Associates, Inc. PM peak-hour traffic volumes were used for all roadway segments except 12<sup>th</sup> Street, where the AM peak hour represented the worst-case noise level increase.
- Cumulative is analyzed for be Year 2030. Cumulative Plus Project assumes Full Buildout of the project by the year 2030.

Source: PBS&J/EIP, 2007.

However, because the project's contribution would be cumulatively considerable along B Street, the cumulative traffic noise impact would be *significant*.

#### Mitigation Measure

*None available.*

There are no feasible mitigation measures available to eliminate the potential exposure of existing sensitive receptors to noise in the project vicinity. Therefore, this impact would be considered ***significant and unavoidable***.

#### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility overlay is implemented, portions of the Specific Plan Area (Parcels 48, 47a, and a portion of 49a) would be developed as an event/sports arena, rather than mixed-use containing residential, office, and retail uses. Each of the Sports and Entertainment Facility parcels that would be developed (Parcels 48, 47a, and 49a) are within the screening distance for the UPRR and/or light rail line. If as a result of developing the Sports and Entertainment Facility, fewer residential uses are placed within the screening distance, the potential for impacts from noise and vibration at these receptors would be reduced. Fewer vehicle trips might also result from the Sports and Entertainment Facility, if residential and office uses are reduced. However, the development of an event/sports arena would replace those vehicle trips with trips generated by residents and employees associated with the events/sports area development. The development that would be constructed with the Sports and Entertainment Facility overlay would likely generate different vehicle trips and patterns of use than typical commercial uses (i.e., there may be fewer peak hour trips and increased trips during weekends and evenings associated with special events). In the event the Sports and Entertainment Facility overlay is implemented, the vehicle trip generation rate and associated noise levels on area roadways would vary from those analyzed in this document, and would depend on the specific size and design of the facility which is not known at this time. A Sports and Entertainment Facility could also generate different types of noise, including amplified music and crowd noise. The City's Noise Ordinance would address most types of event noise. If the Sports and Entertainment Facility overlay is implemented, that project would be evaluated for specific noise level increases that would be associated with that development.





## **6.9 PARKS AND OPEN SPACE**

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## 6.9 PARKS AND OPEN SPACE

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### INTRODUCTION

This section discusses parks and open space issues related to implementation of the proposed Specific Plan. Existing parks, open space, and recreational facilities in the vicinity of the Specific Plan Area are documented. The need for expansion of existing facilities or the construction of new facilities is also discussed. The evaluation addresses potential effects of the proposed project and cumulative development on parks and open space resources in the Specific Plan Area vicinity, primarily the Central City,<sup>1</sup> and analyzes the proposed project's support of applicable goals and policies of local park-related planning documents.

Information was obtained from the City of Sacramento General Plan, the City of Sacramento Municipal Code, the Sacramento River Parkway Plan, the 2005-2010 Parks and Recreation Master Plan, and the Riverfront Master Plan, the latter of which was prepared jointly by the cities of Sacramento and West Sacramento.

Four NOP comment letters addressed parks and open space (see Appendix B). The City of Sacramento Department Parks and Recreation provided two comment letters and commented that the types of parks and open spaces in the Specific Plan Area should be reflective of the City's urban core, and that parks and open space areas should meet the same contamination level that is required for residential uses. The Alkali Flat Project Area Committee asked for clarification of the canal feature and definition of uses in the public use designation. The previously-proposed canal has since been removed from the proposed Specific Plan. The California State Lands Commission noted it has jurisdiction over the State's sovereign tide and submerged lands in navigable and non-navigable waterways, and that a lease from the Commission would be required for a marina in the Sacramento River. The previously-proposed marina has also been removed from the proposed project.

### ENVIRONMENTAL SETTING

#### Parks

The City of Sacramento Department of Parks and Recreation (Parks Department) maintains more than 2,000 acres of developed parkland, and manages more than 210 parks, 81 miles of on- and off-road bikeways and trails, 17 lakes, ponds, or beaches, over 20 aquatic facilities, and 18 community centers and provides park and recreation services at city-owned facilities within the City of Sacramento.<sup>2</sup> Several facilities within the City of Sacramento are owned or operated by other jurisdictions, such as the County of Sacramento and the State of California. The City of Sacramento Parks and Recreation Master Plan (PRMP) guides park development in the city.

The City's parks contain a variety of recreational facilities, with areas available for active organized sports, including soccer fields, baseball diamonds, tennis courts, volleyball courts, and basketball courts. Additionally, benches, picnic tables, and barbecues are available for informal recreation activities. There are many play areas for children in the City's parks. Biking and walking trails are also utilized. In addition, swimming pools and wading and play pool facilities are available to the

- 
- 1 The City's Parks and Recreation Master Plan (Parks Plan) divides Sacramento into a series of Planning Areas; the plan area falls within the Central City Planning Area. For clarity of presentation and analysis, this section uses the Central City boundary identified in the Parks Plan, which is essentially between the Sacramento and American Rivers, and I-5 and the Capitol City Freeway.
  - 2 City of Sacramento, *Parks and Recreation Department*.

public. Additional recreational facilities include community centers; bocce ball courts; and equestrian trails. Specialized recreational facilities include the Garden & Arts Center, the Southside Jogging Center, the Mangan Rifle and Pistol Range, and the Sacramento Horsemen's Association.<sup>3</sup>

The Department also provides for community services as well as recreational and leisure time opportunities. The Department offers adult and youth sports classes; special events; after-school, summer, and aquatic programs; community classes and enrichment programs; and reservations for baseball and softball fields, picnics, and facilities.

As indicated in Table 6.9-1 and illustrated by Figure 6.9-1, existing City park facilities within the Central City consist of approximately 275 acres of parkland, 75 acres of which are developed. In addition, two non-city-owned parks and open space areas are situated within the Central City: Capitol Park encompasses 36 acres and Old Sacramento State Historic Park occupies 28 acres.

### **Open Space Areas**

A variety of open space areas exist within the Central City area in addition to parks, including the Sacramento River Parkway, the American River Parkway, and non-city owned space and public plazas.

Open space in Sacramento is maintained for several reasons, including natural resource preservation, managed production of resources, recreational use, community agriculture, and plant and wildlife preservation. Open space areas in the Specific Plan Area currently include portions of the Sacramento River Parkway and utility and transportation easements.

### **Sacramento River Parkway**

The City adopted the Sacramento River Parkway Plan in 1997 to guide development along the Sacramento River within the City limits. The objectives for establishment of the parkway include the protection of riparian vegetation and the provision of public access to the Sacramento River. The Sacramento River is classified as an "urban" river, with natural habitat limited to a few areas. Because it is zoned "Flood Plain," the area is limited to facilities such as picnic benches and basic restroom facilities that can withstand repeated inundation.

The Sacramento River is a popular fishing and boating area. Currently, access to and travel within the Parkway is restricted by the Union Pacific Railroad right of way and yard, industrial development, I-5, fences and gates within the Parkway, and the nature of the river itself. Although access to the levee along urbanized portions is difficult due to the proximity of adjacent uses, fishing and other natural recreational uses continue to be popular in the area.

Major river access points providing vehicular access to the Sacramento River Parkway near the Specific Plan Area presently exist at the Jibboom Street Bridge, Old Sacramento, and Tower Bridge. Minor river access points providing pedestrian access only are found at a variety of points throughout the Parkway; most of these have no public improvements.

The Sacramento River Parkway Plan recognizes the portion of the Sacramento River Parkway situated near the Specific Plan Area as a high use area, suitable for developed parkland uses. This category roughly corresponds to the Developed Recreation Area designation used in the American River Parkway Plan, and permits amenities similar to those found in a neighborhood park. A portion of the parkway, including an approximately 3-acre parcel in the Specific Plan Area is owned by the State.

3 City of Sacramento, *General Plan Technical Background Report*, September 27, 2005, pages 5.3-8 and 5.3-9.

TABLE 6.9-1

## EXISTING PARKS IN THE CENTRAL CITY PLANNING AREA

Park Name and Address	Total Acres	Dvlpd. Acres	Class I Picnic Area	Class II Picnic Area	Class III Picnic Area	Ball-field	Full Size and Bntm. Soccer	Vollybl. and Basktbl.	Tennis Court *lights	Advntr. and Tot Play Areas	Swmng. and Wading Pools	Indoor Comm. Facility	Rest room	Other Amenities
Chavez Plaza (Cesar E.); 910 I Street	3.05	3.05		2	3								1	Fountain; Café; Farmer's Market May-November
Crocker Park; 211 O Street	6.10	6.10			4									Crocker Art Museum
Fremont Park; 1515 Q Street	3.05	3.05		2	2					AP			1	Seating Plaza; Farmer's Market May-November
Grant Park; 205 21 <sup>st</sup> Street	2.61	2.61		1	2	Lighted	1 Full						1	Overlay Soccer Field
Jibboom Street Park Site - Jibboom Street at Sac. River	6.0	2.0												Water Spray Area; Bike Trail; First phase done; see master plan for information
Johnson Park (J. Neely); 516 11 <sup>th</sup> Street	1.17	1.17			1									community garden
Marshall Park (John); 915 27 <sup>th</sup> Street	3.05	3.05			2							1		Hart Sr. Citizen's Center; Horseshoe Pit
Muir Park (John); 1515 C Street	2.69	2.69		1	2	1	1 Bantam	1V; 1B		AP				Water Play Misters; Small Softball Backstop; Perimeter Security Fence
O'Neil Park; 715 Broadway	6.45	6.45				Lighted	1 Full						1	
Roosevelt Park (Theodore); 1615 9 <sup>th</sup> Street	3.05	3.05		1	2	Lighted	1 Full	2B					1	Overlay Soccer; Farmer's Market May-November
Sacramento River Pkwy; 100 J Street	25.73													Old Sacramento State Park; Bicycle Trail
Saint Rose of Lima Park; 705 K Street	0.51	0.51												Stage, Seasonal Ice Rink

TABLE 6.9-1

## EXISTING PARKS IN THE CENTRAL CITY PLANNING AREA

Park Name and Address	Total Acres	Dvlpd. Acres	Class I Picnic Area	Class II Picnic Area	Class III Picnic Area	Ball-field	Full Size and Bntm. Soccer	Vollybl. and Basktbl.	Tennis Court *lights	Advntr. and Tot Play Areas	Swmng. and Wading Pools	Indoor Comm. Facility	Rest room	Other Amenities
Southside Park; 2115 6 <sup>th</sup> Street	19.99	19.99		4	3			1B	2*	AP; TP	SP; WP	1	3	Clubhouse; Lake; Jogging Trail 3/4 mile; Community Garden; Handicap Accessible Playground/Fishing
Stanford Park (Leland); 205 27 <sup>th</sup> Street	3.05	3.05		1	2	1							1	John Sutter's Landing Memorial
Sutter's Landing Park; (John) 20 28 <sup>th</sup> Street	172.60	8.0											1	Bicycle Trail, Access to American River, 28 <sup>th</sup> & B Skate Park
Tiscornia Park; 195 Jibboom Street	9.83	5.00											1	American River Access; Beach; Bicycle Trail
Washington Park; 1631 F Street	1.56	1.56			2					AP				Adjacent to Washington School; Shade Structure
Winn Park (Albert); 2715 P Street	3.05	3.05			4									
Zapata Park (Emiliano); 905 E Street	1.37	1.37		1	2			1B		AP				Shade Structure
<b>TOTAL</b>	<b>274.91</b>	<b>75.75</b>												

Notes:

**PICNIC AREAS**

Class I Picnic Areas - 1.0-2.0 acres, Group area with 10 or more tables, food preparation area and barbecue.

Class II Picnic Areas - Tables only, for group or individuals, with or without barbecue.

Class III Picnic Areas - Shaded grass area

**BALLFIELD**

Skinned: Skinned Infield

Grass: Grass Infield (Skinned Baselines) Call (916) 808-6060 to identify which infields are Skinned or Grass

Lgtd: Ballfield is lighted.

**SOCCER**

Bantam Soccer: Approximately 120' X 180'

Full Size Soccer: Approximately 170' X 300' (or larger) (Intermediate &amp; Regulation fields)

Source: City of Sacramento, Department of Parks and Recreation website, Parks in Central Area, <http://www.cityofsacramento.org/parksandrecreation/parks/central.htm>, accessed August 9, 2007.



Source: Railyards Specific Plan, 2007.

**FIGURE 6.9-1**  
**Relationship of Specific Plan Area to Area Parks**



A Division of **PBS&J**

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A paved bicycle path extends along the east bank of Sacramento River and along the edge of the Specific Plan Area, providing a recreational resource and connection between Old Sacramento and the Jedediah Smith National Recreation Trail on the north bank of the American River. Bicycle trails are discussed in greater detail in Section 6.12, Transportation, of this document.

### **Additional Recreational Resources in the Planning Area Vicinity**

Additional recreational resources in the vicinity of the Specific Plan Area, but outside of the Central City area, include public parks, marinas, boat launches, and golf courses. Other nearby City-owned recreational resources include Tiscornia Park (6 acres), Jibboom Street Park (9 acres), McKinley Park (4 acres), William Land Park (167 acres), Miller Park (57 acres), and Garcia Bend Park (24 acres). Sacramento County operates Discovery Park (275 acres) and the City of West Sacramento operates Yolo County Park (4 acres). Although not all of these areas are not located within the Central City, they are included in the discussion because they are within usable distance of the Specific Plan Area.

Discovery Park, located where the American River flows into the Sacramento River, is a 275-acre recreational facility that includes boat launching, fishing, an archery range, and equestrian, pedestrian, and bike trails.

Yolo County Park, located directly across the Sacramento River from the Specific Plan Area, contains mostly undeveloped parkland. Primary uses of the park are boat launching and fishing. The Broderick Boat Launch, a popular launching facility, is situated within Yolo County Park.

William Land Park is situated several miles south of the Specific Plan Area. William Land Park contains a wide variety of recreational facilities, including the Sacramento Zoo, William Land Park Golf Course, Fairytale Town, and an amphitheater. Miller Park, located south of the Specific Plan Area on the Sacramento River, includes several amenities, such as a marina, boat launching and service facilities, and a concession stand. Sutter's Landing Regional Park, located east of the Specific Plan Area at 28<sup>th</sup> Street and B Street, includes a skate park, a bicycle trail, and access to the American River. Lastly, Garcia Bend Park, also located south of the Specific Plan Area, includes boat launching, fishing, a tot lot, and three regulation soccer fields.

Although no golf courses are located within the Central City, the William Land Park Golf Course is located nearby.

## **REGULATORY SETTING**

### **Federal**

There are no pertinent federal regulations related to parks and open space.

### **State**

#### **State Public Park Preservation Act**

The primary instrument for protecting and preserving parkland is the State Public Park Preservation Act. Under the Public Resources Code, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This provides no net loss of parkland and facilities.

#### **Quimby Act**

California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely

for park and recreation purposes. The required dedication and/or fee are based upon the residential density, parkland cost, and other factors. Land dedicated and fees collected pursuant to the Quimby Act may be used for developing new, or rehabilitating existing park or recreational facilities.

### Government Code 65560

Government Code 65560 defines open space as:

- (b) "Open space land" is any parcel or area of land or water which is essentially unimproved and devoted to an open space use as defined in this section, and which is designated on a local, regional or state open space plan as any of the following:
- (1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lake shores, banks of rivers and streams, and watershed lands.
  - (2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of ground water basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.
  - (3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lake shores, beaches, and rivers and streams; and areas which serve as links between major recreation and open space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
  - (4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

## **Local**

### City of Sacramento General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project:

#### Conservation and Open Space Element

#### PRESERVATION OF NATURAL RESOURCES

#### **Goal A      Implement the Master Plan for Parks Recreation**

#### OUTDOOR RECREATION

#### **Goal A      Conserve and protect the Sacramento and American Rivers, their shorelines and parkways.**

#### Public Facilities and Services (Parks and Recreation Services) Element

#### **Goal A      Provide adequate parks and recreational services in all parts of the City, adapted to the needs and desires of each neighborhood and community. Attempt to achieve the Acreage Service Level Goals established in the Parks and Recreation Master Plan.**

#### Policies

1. Encourage private development of recreational facilities that complement and supplement the public recreational system.
2. Give high priority to improving parks, open space and recreation uses in redevelopment, Community/Specific Plan infill and target areas where these uses are deficient.

3. Encourage joint development of parks with compatible uses such as new schools, libraries and detention basins.
4. Apply Smart Growth and environmental sustainability principles to park and recreation facility planning, location, design and management.
5. Design parks to enhance and preserve natural site characteristics and environmental values.
6. Review all necessary infrastructure improvements for their potential park and open space usage.
7. Locate community and regional parks and linear recreational areas on or adjacent to major thoroughfares.
12. Ensure adequate public access to the American and Sacramento Rivers in developing areas.

### City of Sacramento Municipal Code

#### *Chapter 12.72 Park Buildings and Recreational Facilities*

This City Code includes regulations associated with building and park use, fund raising, permit procedures, and various miscellaneous provisions related to parks. Park use regulations include a list of activities that require permits for organized activities that include groups of 50 or more people for longer than 30 minutes; amplified sound; commercial and business activities; and fund raising activities. This code also includes a list of prohibited uses within parks such as unleashed pets; firearms of any type; and riding bicycles, drinking alcoholic beverages, or smoking with children's playground areas. Activities such as golfing, swimming, and horseback riding are only permitted within the appropriate designated areas.

#### *Chapter 16.64 Parks and Recreational Facilities*

Chapter 16.64 provides standards and formulas for the dedication of parkland and in-lieu fees. These policies help the City to acquire and/or develop new parkland. This chapter sets forth the standard that five acres of property for each 1,000 persons residing within the City be devoted to local recreation and park purposes. Where a recreational or park facility has been designated in the general plan or a specific plan, and is to be located in whole or in part within a proposed subdivision to serve the immediate and future needs of the residents of the subdivision, the subdivider shall dedicate land for a local recreation or park facility sufficient in size and topography to serve the residents of the subdivision. The amount of land to be provided shall be determined pursuant to the appropriate standards and formula contained within the chapter. Under the appropriate circumstances, the subdivider shall, in lieu of dedication of land, pay a fee equal to the value of the land prescribed for dedication to be used for recreational and park facilities, which will serve the residents of the area being subdivided.

#### *Chapter 18.44 Park Development Impact Fee*

Chapter 18.44 imposes a park development fee on residential and non-residential development within the City. Fees collected pursuant to Chapter 18.44 are primarily used to finance the construction of park facilities and reimburse the City for existing facilities, and cannot be used to acquire land.

### Sacramento River Parkway Plan

The Sacramento River Parkway Plan was adopted by the Sacramento City Council on October 21, 1997. The original Sacramento River Parkway Master Plan was developed in 1975 and incorporated into the Conservation and Open Space Element of the General Plan. The Plan is a policy guide for habitat preservation and restoration, and recreational development for lands adjacent to the River. The Sacramento River Parkway Plan area is located along the easterly bank

of the Sacramento River within the city limits of Sacramento, from South Natomas to the north, the Sacramento River on the west, the city limits at Freeport on the south, and I-5 on the east or 10 feet landside of the landward toe of the Sacramento River levee, or the inland boundary of public land along the River, whichever is most appropriate for land use issues.<sup>4</sup>

The following goals and policies are relevant to the proposed project:

**Goals**

- To recognize the multiple use aspect of the Sacramento River Parkway for recreation, habitat preservation, and flood control
- To provide appropriate access and facilities for the enjoyment of the Parkway by present and future generations.

Policies

- G5. The Parkway is primarily a recreational, open space, educational, and water-oriented resource.
- G6. The Parkway shall be protected from injurious or incompatible elements associated with adjacent land uses.
- G7. Land adjacent to the Parkway shall be protected from injurious or incompatible elements associated with Parkway land uses.
- R2. "Recreation Area" activities and facilities shall be accommodated only at designated locations, which afford minimal conflict with adjacent land uses, natural, and cultural resources.
- R3. Recreational activities which are hazardous or incompatible with Parkway natural habitat and uses, or detrimental to adjacent and surrounding habitat are prohibited.
- R4. All recreational development including trails, signs, structures, and fences shall be constructed to prevent erosion, protect the structural integrity of the levee, and blend harmoniously with the surrounding landscape.
- P1. Access points to the Parkway shall accommodate pedestrians, bicyclists, and emergency vehicles.
- D1. The City shall ensure that all developments which take place within and adjacent to the Parkway will adhere to the intent and purpose of the Parkway Concept.
- D3. Commercial and residential development within the Parkway, subject to the City's planning review process, shall be designed to visually blend with and be in scale with the surrounding riverline environment. Color, texture, style, height, width, and bulk should be considered in design.
- D4. Commercial, office, industrial, or residential structures within the Parkway should be built so as to not obscure the view of or public access to the River. All development within or immediately to the Parkway shall have linear lot coverage no greater than 60%.
- D6. All commercial development within the Parkway shall incorporate amenities that enhance the public's enjoyment of the river resource. The following are examples of possible amenities:
  - public promenades
  - picnic areas
  - parks
  - amphitheaters for public performances
  - museums or interpretive centers
  - bicycle paths

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4 City of Sacramento, *Sacramento River Parkway Plan*, October 21, 1997, page 3.

### City of Sacramento 2005-2010 Parks and Recreation Master Plan

The City of Sacramento Parks and Recreation Department prepared the *2005-2010 Parks and Recreation Master Plan*, which was adopted by the City Council on December 7, 2004. The Master Plan is considered part of the City's General Plan, Conservation and Open Space Element. The Master Plan calls for a ratio of approximately ten park acres per thousand population, including all categories of parks. This Service Level Goal is intended to be implemented city-wide, and is not intended to be applicable or enforceable for every project proposed within the city. The categories of City Parks and Service Level Goals are as follows:<sup>5</sup>

- **Neighborhood Park:** Developed to serve the recreation needs of a small portion of the City. A neighborhood park serves an area within a one half-mile radius of the park and is often situated adjacent to an elementary school. Improvements are usually oriented toward the recreation needs of children. The size is generally from two to ten acres, depending on the nature of the service area. The Service Level Goal for this type of park is 2.5 acres per thousand residents of the City.
- **Community Park:** Developed to meet the recreational needs of residents within a three mile radius. The size ranges from six to 60 acres. In addition to neighborhood park elements, a community park may have restrooms, large landscaped areas, a community center, a swimming pool, lighted sport fields, and specialized equipment not found in a neighborhood park. Some of the small sized community may be dedicated for one particular use. Some elements in the park maybe under lease to community groups. The Service Level Goal for this type of park is 2.5 acres per thousand residents of the City.
- **City Regional Park:** Contains a wide range of improvements usually not found in local community or neighborhood facilities. These parks serve an area within a 30-minute driving time radius and the size is generally larger than 75 acres. In addition to neighborhood and community park type improvements, a regional facility may include a golf course, a marina, amusement areas, a zoo, or nature areas. Some elements in the park may be under lease to community groups.
- **City Parkway:** A linear park or closely interconnected system of City or school parks located along a roadway, waterway, bikeway, or other common corridor. The size of parkways varies and the overall shape is generally elongated and narrow. The Service Level Goal for City Regional Park and City Parkway combined with other open space is eight acres per one thousand residents.

The Master Plan also sets Service Level Goals for recreation facilities. Those goals for neighborhood centers and community centers are as follows:

- **Neighborhood Center:** 1 per neighborhood as defined by service area of an elementary school.
- **Community Center:** 1 per 30,000 population.

### Sacramento Central City Community Plan

The following goals and policies are relevant to the proposed project:

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5 City of Sacramento, *General Plan*, Section 6 – Conservation and Open Space Element, adopted January 19, 1988, page 7-25.

Parks and Recreation

- Provide adequate parks and recreation facilities and services within convenient access of Central City residents.
- Increase development of bikeway facilities within the Central City and provide convenient access to City and regional bikeways.
- Encourage joint use of school sites for active recreation areas.
- Encourage development of community recreation centers in conjunction with park and recreation facilities.
- Provide neighborhood mini-parks with activities oriented towards the Central City neighborhood residents.
- Enhance the open space/recreation and scenic value of the Sacramento and American Rivers.

**IMPACTS AND MITIGATION MEASURES****Methods of Analysis**

The City of Sacramento has park acreage Service Level Goals for the three categories of parks identified in the PRMP. While the PRMP identified a Service Level Goal of 5.0 acres per 1,000 residents for neighborhood and community serving parks, this is a preferred goal, instead of a minimum guideline. Meeting these guidelines would provide public residential opportunities within reasonable walking or driving distance of all residences.

- Neighborhood Serving: 2.5 acres per 1,000 population with a service area guideline of 0.5 mile.
- Community Serving: 2.5 acres per 1,000 population with a service area guideline of 3 miles.
- Citywide/Regionally Serving and Open Space: 8.0 acres per 1,000 population.

Table 6.9-2 shows the park acres required to serve the proposed project. Impacts to bike trails and pedestrian facilities are discussed in Section 6.11 Transportation and Circulation.

<b>TABLE 6.9-2</b>			
<b>PROJECT PARKLAND NEEDS BASED ON CITY SERVICE LEVEL GOALS</b>			
<b>Type of Park</b>	<b>City Standards</b>	<b>Population</b>	<b>Required Park Acres/Mileage</b>
Neighborhood Serving Park	2.5 acres per 1,000 population	22,002	55.00 ac
Community Serving Park	2.5 acres per 1,000 population	22,002	55.00 ac
Citywide/Regionally Serving Park and Open Space	8.0 acres per 1,000 population	22,002	176.01 ac
Trails/Bikeways	0.5 miles per 1,000 population	22,002	11.00 mi
<small>Source: City of Sacramento, <i>Parks and Recreation Master Plan 2005-2010</i>, December 7, 2004, PBS&amp;J/EIP, 2007.</small>			

The proposed project would have approximately 12,500 housing units. Using a persons per household (pph) factor of 1.76 for purposes of estimating the amount of required parkland dedication, the resulting population would be 22,002 residents. For the purposes of this analysis, a significant impact would occur if the threshold park acreage Service Level Goals are not reached and the use of existing park facilities causes a substantial physical deterioration or construction of additional park facilities is required which could cause adverse environmental impacts. Land that can legally be dedicated to the City is considered to contribute toward meeting the Service Level Goals for parks. Land that would be constructed as parks and recreation uses, but not under the

City's jurisdiction, would not be considered to contribute toward meeting the Service Level Goal established in the PRMP.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project causes or accelerates a substantial physical deterioration of existing area parks or recreational facilities; or
- The project creates a need for construction or expansion of recreational facilities beyond what was anticipated in the General and/or Community Plans.

### **Project Components**

The proposed project would develop up to approximately 12,500 residences within the Central City, which would generate a population of up to 22,002 new residents, as discussed under the Methods of Analysis section above. These new residents would require additional parkland and open space to be dedicated in the City. The proposed project would develop 41.16 acres of parks, plazas, and open space within the proposed project. The following Specific Plan policies address the provision of parks and open space areas:

#### Policies

- OS-1.1. Locate parks so they are accessible to the greatest concentration of employees and residents and are suitable for a wide range of age groups and recreational purposes.
- OS-1.2. Design plazas, parks and urban open spaces in association with important civic buildings or community gathering places.
- OS-1.3. Utilize opportunities provided by planned open spaces to provide functional and attractive pedestrian and bicycle connections through the Plan Area and to adjacent open space areas such as the Riverfront.
- OS-1.4. Promote smaller, amenity-oriented open space areas that complement the urban nature of the Railyards area and downtown Sacramento.
- OS-1.5. Encourage innovative use of nontraditional open space, such as rooftops, green roofs, community gardens and areas under freeways.
- OS-1.6. Take advantage of remediated areas by reclaiming them for public open space.
- OS-1.7. Ensure safety in public spaces through lighting, design for visibility, and other preventive measures.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.9-1 The proposed Specific Plan would increase demand for parks and recreation facilities.**

Based on the EIR Analysis Scenario, the Specific Plan would provide 41.16 acres of new parks and open space. The Open Space designation of the Specific Plan allows for parks, plazas, and other forms of urban open space. The largest park in the Specific Plan Area, Vista Park (10.37 acres), would have several public amenities including a green turf area for sports and other recreation activities, a monument and landmark that would provide views of the city and the rivers, a public garden themed to Sacramento's history and the history of technology in the Sacramento region, an active use area including playgrounds, skate features, court games, and picnic area, and an amphitheatre stage and grass area for seating. Other recreational amenities provided in the Specific Plan Area include open space plazas, a greenbelt, and small parks near residential areas.

The Specific Plan would generate approximately 22,000 residents. Based on the City park Service Level Goal, approximately 55 acres of Neighborhood Park, 55 acres of Community Park, and 176 acres of Citywide/Regional/Open Space parkland would be needed to adequately serve the project population.

The *First Amendment to Memorandum of Understanding Between the City of Sacramento and Millennia Sacramento, III, LLC*<sup>6</sup> Regarding the Planning Process for Development of the Downtown UP Railyards Site (October 2004) describes the challenge of providing the same percentage of park space in an urban setting as in a suburban setting. It goes on to say that, “the City agrees to work with [the project applicant] to pursue creative ways of minimizing the impact of the Quimby Act and park impact fee requirements on the redevelopment of the Railyards Property.”<sup>7</sup> The City subsequently agreed to work with the project applicant to pursue creative ways of providing unique urban parks, plazas, public gathering areas, and connectivity to the Sacramento Riverfront through features such as retention basins, condominium swimming pools, indoor or outdoor joint-use basketball courts, clubhouses, or sidewalks widened above the City’s required width of 5-6 feet.<sup>8</sup>

According to City staff, all properties given park dedication credit must be dedicated for public recreation use through either dedication in-fee, recreation easements, or some other real estate interest as approved by City Parks Staff. This ensures the dedication would be available to the public in perpetuity.

It should be noted that the City’s Service Level Goal does not differentiate between urban and suburban projects or suggest that every project should contain its portion of every type of park. For example, a 10-acre residential project could not reasonably contain its portion of a regional park, which could be 75 acres in size. Rather the goals are citywide, and recognize that parkland will be distributed throughout the city. Due to the lack of available undeveloped area in the downtown urban area, it would be infeasible to require each proposed project in an urban area to provide large amounts of active and/or passive parkland. Further, the Specific Plan proposes dedication of more parkland than any other previously approved urban project in Sacramento.

Although the Specific Plan would provide both active and passive open space, the proposed acreage would not meet the City’s Service Level Goal. Therefore, the impact on park and recreation facilities would be *significant*.

### Mitigation Measure

Implementation of the following mitigation measure would ensure that enough parkland is provided to meet the City’s Service Level Goal. The impact would be reduced to a ***less-than-significant level***.

- 6.9-1 *Prior to the recordation of the tentative map, the project applicant shall reach agreement with the City on an appropriate urban park standard and on which of the proposed project elements and acreage meet these parkland dedication requirements. The project applicant shall pay in-lieu fees (Quimby and/or PIF) on the difference in acreage between the City*

6 Millenia Associates assigned its rights to the MOU to Millenia Sacramento, III, LLC, now known as S. Thomas Enterprises of Sacramento, LLC.

7 *First Amendment to Memorandum of Understanding Between the City of Sacramento and Millennia Sacramento, III, LLC Regarding the Planning Process for Development of the Downtown UP Railyards Site*, City Agreement No. 2003-0176-1, October 26, 2004.

8 Haenggi, Teresa, City of Sacramento, Park Planning, Design and Development Advance Planning Team, personal communication, June 29, 2006; City of Sacramento website, Municipal Code Section 18.04.190 Standard Street Sections, <http://www.qcode.us/codes/sacramento/>, accessed July 10, 2006.



*parkland requirement and the amount of parkland the proposed project would supply, or provide "turnkey" improvements equal to the value of in-lieu fees owed, if any.*

### **6.9-2 The proposed Specific Plan would increase demand for and use of the bicycle path network.**

The addition of residents to the Specific Plan Area would result in an increased demand for bicycle paths and trails. The proposed Specific Plan calls for a network of on- and off-street bicycle paths. Class I (off-street) bikeways would extend north along 7<sup>th</sup> Street then east along Railyards Boulevard to the eastern edge of the Specific Plan Area, along Bercut Drive, along South Park Street between 5<sup>th</sup> Street and Bercut Drive, on 5<sup>th</sup> Street along Vista Park, and along the railroad tracks in the Depot District. Class II bikeways (five-feet wide minimum with painted lane striping) would be added to several streets within the Specific Plan Area, including Railyards Boulevard, 5<sup>th</sup> Street, 6<sup>th</sup> Street, 7<sup>th</sup> Street, North 10<sup>th</sup> Street, and North Park Street and South Park Street in the East End. A Class III bike route would be located along Camille Lane from Jibboom Street to 6<sup>th</sup> Street. Bicycle parking would be located close to all residential buildings and commercial amenities. Figure 3-10 provides an overview of the bicycle network within the Specific Plan Area.

The proposed project's construction of on- and off-street bicycle paths would provide connections to the broader network of bike paths.

There is an existing regional bike trail at the western boundary of the Specific Plan Area along the Sacramento River. While this trail is expected to be incorporated into the overall bicycle network for the Specific Plan Area, some disruption to the trail could occur during project construction. The potential disruption to the bike trail during project construction would be a *potentially significant impact* because it would impede bicycle circulation.

#### Mitigation Measure

Implementation of the following mitigation measure would provide for adequate access to the existing bike trail, which would reduce this impact to a ***less-than-significant level***.

6.9-2 *During construction, the project applicant shall not impede continuous access to the existing bike trail at the western boundary of the Specific Plan Area along the Sacramento River or provide an alternate bicycle access route through or around the Specific Plan Area.*

#### **Cumulative Impacts and Mitigation Measures**

The scope of the cumulative analysis includes the Central City because that is the most likely area where residents of the Specific Plan Area would recreate. It is unlikely that remote neighborhood parks within the City, but at a great distance from the Specific Plan Area, would be regularly visited by residents of the proposed project and relied upon for primary recreational purposes.

The current Sacramento General Plan estimates the population in the Central City will grow to approximately 72,000 by 2030. This projection is based on lower intensity development, which was more prevalent in the Central City at the time of the current General Plan's adoption in 1988. Since then, the City has begun working toward higher intensity uses within the Central City, which would cause increases in population, which exceed current General Plan projections. For example, there have been several planned and recently approved projects within the Central City area that include higher density residential towers and commercial high rises, which in combination with the proposed project would exceed the current general plan's population projections. The City is preparing a new General Plan and anticipates that due to this movement toward higher intensity uses and approval of several higher density projects in the Central City, the new General Plan will include in higher

population projections that reflect this, particularly in the Central City. The increases in population would increase the need for all public services, including the provision of parks and open space, in excess of service levels anticipated in the adopted General Plan.

### **6.9-3 The proposed Specific Plan would contribute to cumulative increases in the demand for additional parkland in the Central City.**

The Specific Plan would increase the demand for parks in the Central City. Based on the City's Service Level Goal, approximately 286 acres of neighborhood, community, and regional/open space parkland would be needed to serve the Specific Plan population alone.

Assuming a population of 72,000 in the year 2030 in the Central City, a total of approximately 936 acres of parkland would be needed to meet the City's Service Level Goal. Currently, the Central City area provides 275 acres of City parkland, 75 acres of which are developed, which would not satisfy the City's parkland Service Level Goal. In addition, it is possible that the appropriate categories of parks, such as neighborhood parks, may not be available throughout the city, and therefore, may not adequately provide parks or open space areas to existing or future Central City residents. Residents in the Central City could also use regional facilities, such as Capitol Park, Discovery Park, the Sacramento River Parkway, and the American River Parkway, as well as local community parks and neighborhood parks.

It should be noted that the Specific Plan proposes dedication of more parkland than any other previously approved urban project in Sacramento. The City's Service Level Goal does not differentiate between urban and suburban projects, but rather sets a goal for city wide parkland provision. Due to the lack of available undeveloped area in the downtown urban area, it would be infeasible to require each proposed project in an urban area to provide large amounts of active and/or passive parkland. Nonetheless, because the Specific Plan would contribute to unmet park demand in the Central City, the Specific Plan's contribution is cumulatively considerable, and the impact is *significant*.

#### Mitigation Measure

Implementation of the following mitigation measure would ensure that enough parkland is provided to advance the City's Service Level Goal. Therefore, the cumulative impact on parks and recreation facilities would be *less than significant*.

#### 6.9-3 *Implement Mitigation Measure 6.9-1.*

### **Sports and Entertainment Facility Overlay**

The Sports and Entertainment Facility Overlay is located on parcels designated for a mix of uses including residential. It is not known whether the development of the Sports and Entertainment Facility would incorporate the dwelling units assumed for the project, or replace them, or if they would be redistributed elsewhere in the Specific Plan Area. If the total number of dwelling units in the Specific Plan Area is unaffected, then there would be no change in the acreage of parkland required. If the number of residential units were decreased, the population in the Specific Plan Area would be reduced. As a result, the number of acres of parkland required in the Specific Plan Area would be reduced. The requirement for in-lieu fees, if any, would also likely decrease. The exact reduction in required parkland acreage would depend on the exact number of units eliminated from the Specific Plan. Impacts 6.9-1 through 6.9-5 would still be applicable, as would Mitigation Measures 6.9-1 through 6.9-3. There would be no new impacts.

## **6.10 PUBLIC SERVICES**

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## 6.10 PUBLIC SERVICES

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This section of the EIR describes existing public services available in the vicinity of the proposed project in the City of Sacramento and evaluates the effects of implementation of the proposed Specific Plan on those services. The services evaluated in this section include the following:

- Police Protection;
- Fire Protection;
- Solid Waste;
- Schools; and
- Libraries.

Public services will be funded through a variety of mechanisms, as described in Appendix P. Funding mechanisms used could include plan area fees, citywide impact fees, school district impact fees, establishment of special districts and assessments, developer financing, tax increment financing, federal, state, and regional financing, and other potential methods.

### POLICE PROTECTION

#### INTRODUCTION

This section describes existing police protection services in the Specific Plan Area. Existing plans and policies relevant to police protection issues associated with implementation of the project are provided. Potential impacts to police protection services due to the project are evaluated based on analyses of service levels and project data. In addition, mitigation measures intended to reduce impacts to police protection services are proposed, where appropriate.

Information for this section was obtained from project plans, the City of Sacramento General Plan, the Central City Community Plan, the Sacramento Police Department (Sacramento PD) 2005 Annual Report, communication with Sacramento PD staff, and other environmental documentation for the Specific Plan Area.

One Notice of Preparation (NOP) comment letter was received regarding police protection services. This letter was from the Sacramento PD and provided projected staffing and facility needs. This letter is addressed in this section.

#### ENVIRONMENTAL SETTING

The proposed Specific Plan Area would be served by the Sacramento PD for law enforcement services. The Sacramento PD is staffed by approximately 798 sworn police officers, 438 civilian staff, and 27 part-time non-career employees and received 949,586 calls for service in 2006, resulting in 320,025 calls dispatched.<sup>1</sup> The Sacramento PD currently houses its main headquarters at the Public Safety Center, Chief Deise/Kearns Administration Facility, located at 5770 Freeport Boulevard. The Sacramento PD has two substations from which patrol divisions operate.<sup>2</sup> The

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1 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention Through Environmental Design, written communication, June 8, 2007.  
2 Sergeant Eric Poerio, Sacramento Police Department, Memorandum to Nedzelene Ferrario, Senior Planner, City of Sacramento, May 11, 2006.

substation that currently serves the Specific Plan Area is the William J. Kinney Police Facility, located approximately five miles from the Specific Plan Area at 3550 Marysville Boulevard. The second substation is the Joseph E. Rooney Police Facility located at 5303 Franklin Boulevard. These facilities are depicted in Figure 6.10-1.

The Specific Plan Area is located within District 3, Beat A, which is part of the Sacramento PD's Central Command. The Central Command is bounded by the American River to the north, Highway 50 to the south, the Sacramento River to the west, and Watt Avenue to the east. The Central Command has a staff of 1 police captain, 3 police lieutenants, 10 patrol, POP (Problem Oriented Patrol), and Core sergeants, 62 patrol officers, 11 POP Officers, 18 Downtown Core Officers, and 4 Community Service Officers.<sup>3</sup> The Central Command is co-located with the Northern Command at the William J. Kinney Police Facility. The Central Command is scheduled to move to a new shared facility at 300 Richards Boulevard in 2008 on an interim basis. The new facility is to be shared with other divisions of Sacramento PD and other City departments. Further growth in the downtown area, along with limited space at the new facility, will result in the need for an additional police facility in order to continue to provide services in the area.<sup>4</sup>

The Sacramento PD has an unofficial goal of 2.0 to 2.5 sworn police officers per 1,000 residents and one civilian support staff per two sworn officers. The department is currently funded for 1.7 officers per 1,000 residents.<sup>5</sup> The Sacramento PD is in the process of preparing a Master Plan, which is expected to provide more specific information regarding the needs of the department and plans for determining appropriate levels of service. The Master Plan is expected to be completed in summer 2007.

Sacramento PD maintains mutual aid agreements as part of a statewide emergency response system. Locally, the Sacramento PD maintains memorandums of understanding (MOUs), which are basically contracts to provide services, with Regional Transit and school districts within the City, with the exception of Grant Joint Union School District, which employs their own police force. Sacramento PD has specialized staff to work with Regional Transit and in City high schools.<sup>6</sup>

## REGULATORY SETTING

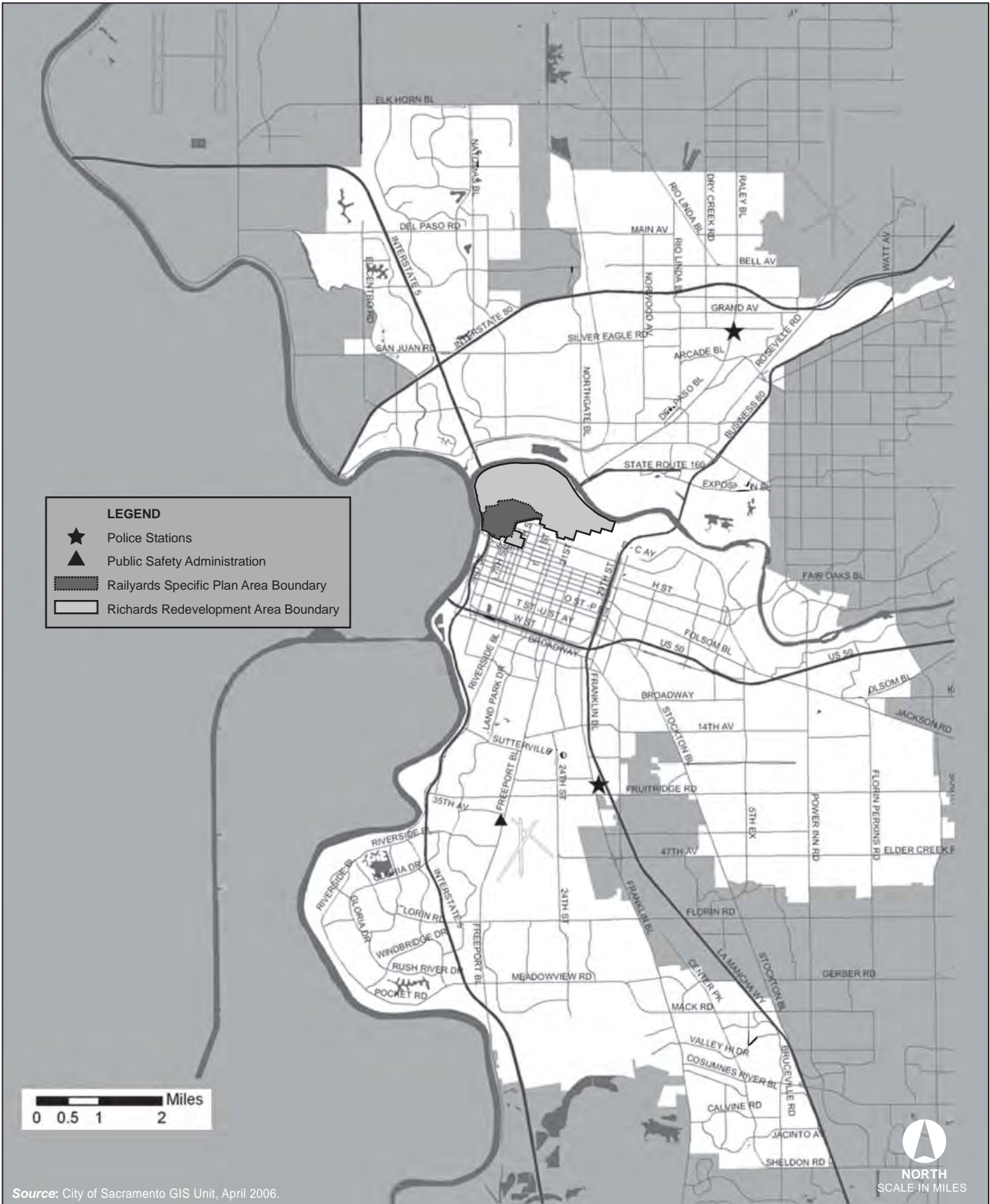
### Federal

There are no federal regulations regarding police protection services that pertain to the proposed project.

### State

There are no State regulations regarding police protection services that pertain to the proposed project.

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- 3 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention Through Environmental Design, written communication, June 8, 2007.
  - 4 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention Through Environmental Design, written communication, June 8, 2007.
  - 5 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention Through Environmental Design, written communication, June 8, 2007.
  - 6 Sergeant Eric Poerio, Sacramento Police Department, Crime Prevention Through Environmental Design, written notes, June 27, 2006.



**FIGURE 6.10-1**  
**Sacramento Police Department Station Locations**





## Local

### City of Sacramento General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project:

#### Public Facilities and Services Element

- Goal A:** Provide and maintain a high quality of public facilities and services to all areas of the City.
- Goal B:** Time all new public facilities and services as closely as possible to approved urban expansion.
- Goal E:** Design public facilities in such a manner as to ensure safety and attractiveness.

#### Police Services

- Goal A:** Provide the highest level of police service to protect City residents and businesses.

#### Policies

1. Continue Police Department participation in the review of subdivision proposals and in assisting the Public Works Department with traffic matters.
2. Maintain communication with residents and businesses in order to learn about developing crime problems and to educate people on crime prevention measures and programs.

### Sacramento Central City Community Plan

The following goals from the Sacramento Central City Community Plan are applicable to the proposed project:

#### Open Space and Community Facilities Goals

- Goal 4.C Public Safety: Provide for the expansion of existing public safety facilities in the Railyards area, including fire and police protection services.**
- 1) Provide a site for a new fire station within the Railyards.
  - 2) Contribute to the construction of a new police substation for the Central City.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

This impact analysis determines whether the proposed project would require new or expanded facilities in order to house officers required to respond to emergencies, the construction of which would result in physical environmental effects. Reductions in service levels can be indicative of significant project impacts and the need for additional staff and/or police facilities. Proper staffing levels ensure appropriate service levels and response times for police protection. This analysis uses a 2.0:1,000 ratio of sworn officers to residents and 1:2 ratio for civilian support staff to sworn officers to determine staffing needs to serve the proposed project. Staffing needs required for the proposed hotel/hospitality uses were determined by using a formula provided by Sacramento PD using an occupancy rate of 63.3 percent with an average 2.0 persons per room. Staffing projections for the retail uses were provided by the Sacramento PD, based on expert analysis and comparisons to similar uses. The commercial uses within the proposed project would not likely generate a demand in addition to that created by the other uses within the Specific Plan Area.

The analysis of required additional Sacramento PD staff and facilities is largely based on the residential population generated by a project. The proposed project includes a large mixed-use component, which may be developed as a combination of residential, commercial, and/or retail uses.

It should be noted that due to the mixed use component of the proposed project, as more residential units are developed, less commercial space would be developed, and vice versa. Therefore, the maximum residential unit count and maximum commercial square footage would both not be developed. Because the exact uses to be developed within the mixed use component of the project are not known at this time, this analysis uses the maximum of 12,501 residential units to create the most conservative estimate of additional Sacramento PD staff required to maintain levels of service at the Specific Plan Area. To determine the population that would be generated by the proposed project, the maximum number of dwelling units was multiplied by a population generation factor of 2.1 persons per household, as used in the Urban Decay Assessment prepared for the proposed project (see Appendix N). This factor was used to determine population of the proposed project, rather than the City of Sacramento's citywide average household size of 2.57, as estimated by the U.S. Census Bureau. The use of a lower population per household figure properly reflects the proposed Specific Plan Area's location near the downtown area of the City and the planned high density housing with small unit sizes. Households in high density downtown housing tend to comprise of singles, childless couples, and empty nesters, and are therefore, generally smaller than households in other areas of the City.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project requires, or results in, the construction of new, or the expansion of existing, facilities related to the provision of police protection.

### **Project Components**

Based on the anticipated mix of uses in the proposed Specific Plan, full implementation would result in the development of up to approximately 12,501 residences, which would generate a population of up to 26,252 new residents, as discussed under the Methods of Analysis section, above. These new residents would require police protection services to be provided by the Sacramento PD. The following Specific Plan policy addresses public safety specific to the public areas within the proposed project:

#### Policy

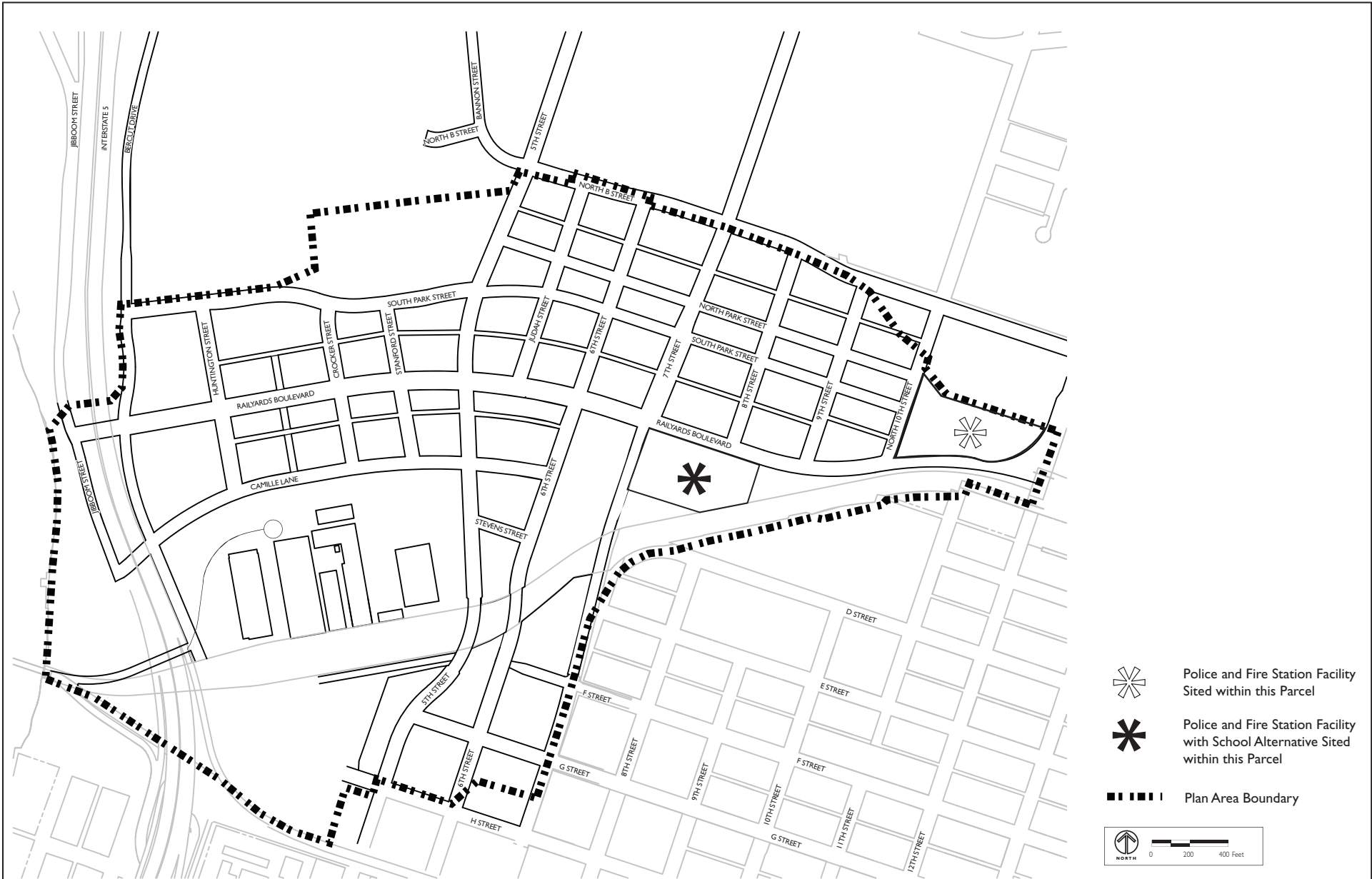
- OS-1.7. Ensure safety in public spaces through lighting, design for visibility, and other preventative measures.

The proposed Specific Plan does not mandate the development of a police station, but the Specific Plan has identified two potential locations for a possible police sub-station, as shown in Figure 6.10-2. If a new police sub-station is developed within the Specific Plan Area, it would likely be co-located with a new fire station and other uses.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.10-1 The proposed project would increase demand for law enforcement services.**

As explained under the Methods of Analysis, development of up to approximately 12,501 dwelling units would result in approximately 26,252 new residents. This increase in population would create an additional demand for law enforcement/police services. Based on the Sacramento PD's goal of two officers per 1,000 residents, approximately 53 sworn officers would be required. Twenty-seven civilian support staff would be required to maintain the Sacramento PD's 1:2 ratio of support staff to sworn officers.






Source: Railyards Specific Plan, 2007.

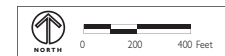
**FIGURE 6.10-2**  
**Potential Locations for Police Sub-Station and Fire Station**



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-  Police and Fire Station Facility Sited within this Parcel
-  Police and Fire Station Facility with School Alternative Sited within this Parcel
-  Plan Area Boundary





The Sacramento PD may need additional law enforcement staff to serve the retail uses within the proposed project, the intermodal transportation facility, and hotel. The Sacramento PD estimates that retail uses within the proposed project could have a moderate impact on staffing and police services and would require approximately 4 sworn officers and 2 civilian support staffing in addition to those required to serve residential uses.<sup>7,8</sup> Based on a 63.3 percent occupancy rate, the hotel/hospitality uses would require approximately 3 sworn officers and 1.5 civilian support staff, using the 2 officers per 1,000 residents ratio. As proposed, the project would require the addition of approximately 90 new staff to the Sacramento PD, including both sworn officers and civilian support staff. The Sacramento PD has stated that the three existing police facilities within the City are already staffed beyond capacity, and could not accommodate the additional staff needed to serve the proposed project. Additionally, the existing police stations are not adequately located to properly serve the Central City. Therefore, due to the location and staffing needs of the proposed project, a new facility would be needed to maintain public safety within the Specific Plan Area.<sup>9</sup>

The Sacramento PD is developing a Master Plan designed to accommodate City-wide department needs, including new facilities and staff, for the next ten years. The Sacramento PD would add personnel on an add-needed basis as the project builds out to meet proposed project service goals. New facilities, such as a substation in the Specific Plan Area would be part of the City-wide Master Plan and would be funded through the City's General Fund.

The Specific Plan identifies two potential locations for a police sub-station within the Specific Plan Area. If one of these locations is selected to be developed with a police sub-station, it would likely be co-located with a new fire station in a multi-story mixed-use building with other uses. The building that would house these facilities would be developed whether or not the police and/or fire station are developed. Physical environmental impacts related to the development of this building are analyzed in relevant technical sections of this EIR. Once the police sub-station location is selected and the facility has been designed, the City would determine whether it could result in environmental effects beyond those evaluated in this EIR and whether subsequent project-specific analysis is warranted. Therefore, this would be a **less-than-significant impact**.

#### Mitigation Measures

*None required.*

#### Cumulative Impacts and Analysis

The cumulative context for this analysis is the service area for the Sacramento PD, which coincides with the City's boundaries, particularly in the Central City area of Sacramento, which is defined by the Sacramento Central City Community Plan as the area between the Sacramento River on the west, the American River to the north, Sutter's Landing and Alhambra Boulevard to the east, and Broadway to the south. Areas within the Central City have similar densities and land uses, and would be most affected by development of the proposed project.

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- 7 Sergeant Eric Poerio, Sacramento Police Department, Memorandum to Nedzelene Ferrario, Senior Planner, City of Sacramento, May 11, 2006.
- 8 Sergeant Eric Poerio, Sacramento Police Department, Memorandum to Nedzelene Ferrario, Senior Planner, City of Sacramento, May 11, 2006.
- 9 Lieutenant Eric Poerio, Sacramento Police Department, Crime Prevention Through Environmental Design division, Memorandum, Subject: Railyards EIR Update, June 8, 2007.

### **6.10-2 The proposed project would contribute to the cumulative increased demand for police protection services within the Central City.**

The proposed project would add up to approximately 26,252 new residents and office, retail, and other uses to the Central City. The proposed project would create an increased need for police protection services that would be provided by the Sacramento PD. This could cause a decrease in service to other communities served by this facility. Other development within the service area could further increase the demand on police protection services in the Central City portion of Sacramento.

The current Sacramento General Plan estimates the population in the Central City will grow to approximately 72,000 by 2030. This projection is based on lower intensity development, which was more prevalent in the Central City at the time of the current General Plan's adoption in 1988. Since then, the City has begun working toward higher intensity uses within the Central City, which would cause increases in population which exceed current General Plan projections. For example, there have been several planned and recently approved projects within the Central City area that include higher density residential towers and commercial high rises, which in combination with the proposed project, could exceed the current general plan's population projections. The City is preparing a new General Plan and anticipates that due to this movement toward higher intensity uses and approval of several higher density projects in the Central City, the new General Plan will include in higher population projections that reflect this, particularly in the Central City. The increases in population would increase the need for all public services, including the provision of police protection, in excess of service levels anticipated in the adopted General Plan.

Growth and development in the downtown area, including the development of the proposed project, would require the development of at least one new police station, especially in the Central City area. As stated under Impact 6.10-1, the Sacramento PD is developing a Master Plan, which will identify City-wide department needs and identify new facilities and staffing necessary to maintain police protection services throughout the City. Once the plan is adopted, new facilities and staff would be added to the Sacramento PD on an as-needed basis to continue to meet service goals. All new facilities and staff would be part of the City-wide Master Plan and would be funded through the City's General Fund. Therefore, this would be a ***less-than-significant cumulative impact***.

#### Mitigation Measure

*None required.*

#### Sports and Entertainment Facility Overlay

In the event that the Sports and Entertainment Facility Overlay is approved and an event/sports facility is developed, events at that facility could require additional law enforcement staff as well. Sacramento PD has estimated that up to 40 full time officers could be required to serve the event/sports facility. Due to the sporadic nature of events at these facilities, police protection services for these events are often provided by off-duty police officers and sheriff's deputies as overtime opportunities, so hiring additional staff may not be required, depending on the frequency of these events.

## FIRE PROTECTION

### INTRODUCTION

This section describes existing fire protection services in the Specific Plan Area. Existing plans and policies relevant to fire protection issues associated with implementation of the proposed Specific Plan are provided. Potential impacts to fire protection services due to the project are evaluated based on analyses of service levels and project data. In addition, mitigation measures intended to reduce impacts to fire protection services are proposed, where appropriate.

Information for this section was obtained from project plans, the City of Sacramento General Plan, the Central City Community Plan, the Sacramento Fire Department (SFD) website, communication with SFD staff, and other environmental documentation for the Specific Plan Area.

One NOP comment letter was received regarding fire protection services. A letter from the SFD addressed the need for a new fire station to serve the proposed project. This issue will be analyzed in this section.

### ENVIRONMENTAL SETTING

The SFD provides fire suppression, emergency medical services, fire prevention, and special operations services within the City of Sacramento. Special operations include hazardous materials response, domestic preparedness, urban search and rescue, swiftwater rescue, and specialized/technical rescue services. In 2007, the SFD employed approximately 535 fire suppression personnel and 100 fire prevention personnel and support staff.<sup>10</sup> The SFD is divided into three offices: the Office of the Fire Chief, providing fiscal management, special projects, and public information, the Office of Operations, providing emergency services, special operations, and shift operations, and the Office of Administrative Services, providing support to operations staff, including fire prevention, training, technical services, human resources, and emergency planning.<sup>11</sup>

The SFD currently operates 23 fire stations, which house 23 engine companies, eight truck companies, one heavy rescue company, and 12 medic units (ambulances).<sup>12</sup> The location of existing fire stations can be seen in Figure 6.10-3.

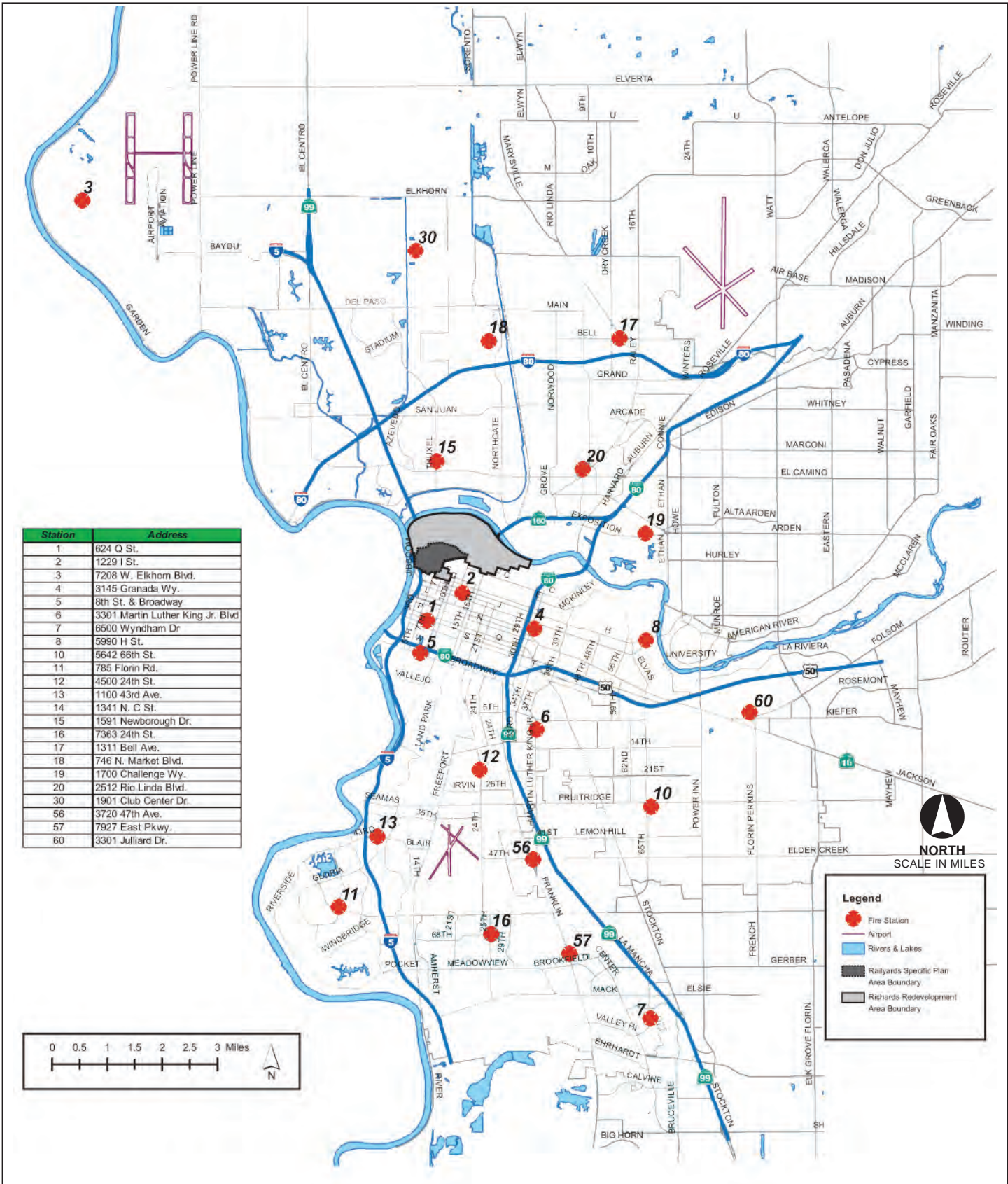
The Specific Plan Area is currently served by multiple stations. The northern portion of the Specific Plan Area, nearest to Richards Boulevard, is served by Station 14, located at 1341 North C Street.<sup>13</sup> Station 14 houses an engine and hose tender.<sup>14</sup> The southern portion of the site, adjacent to downtown, is served by either Station 1, located at 624 Q Street, or Station 2, located at 1229 I Street.<sup>15</sup> Station 1 houses an engine and a medic unit. Station 2 is located on the first floor of the Fire Headquarters and houses an engine, a truck, a swift water cache, and a CO<sub>2</sub> trailer.<sup>16</sup>

Stations are staffed by four-person companies for engine and truck companies and two-person companies for each medic unit. At a full station, which would include an engine, a truck, and a medic unit, there would be 10 staff per shift, for three shifts per day.<sup>17</sup>

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- 10 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.  
 11 City of Sacramento, *FY 2006/07 Proposed Budget*, Section 15 – Fire, page 160.  
 12 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.  
 13 Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.  
 14 Sacramento Fire Department website, [www.cityofsacramento.org/fire](http://www.cityofsacramento.org/fire), accessed June 22, 2006.  
 15 Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.  
 16 Sacramento Fire Department website, [www.cityofsacramento.org/fire](http://www.cityofsacramento.org/fire), accessed June 22, 2006.  
 17 Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.







Source: City of Sacramento, Parks and Recreation Department, January 25, 2007.

**FIGURE 6.10-3**  
**Sacramento Fire Department Station Locations**



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Railyards Specific Plan EIR



The SFD has automatic aid agreements with all the fire departments and fire protection districts that receive dispatch services from the Sacramento Regional Fire/EMS Communications Center (SRFECC).<sup>18</sup> The SRFECC is a Joint Powers Authority comprised of the SFD, Sacramento Metropolitan Fire District, Elk Grove Fire Department, Folsom Fire Department, and Galt Fire Protection District.

The SRFECC also provides dispatch services for the Courtland Fire Protection District, Herald Fire Protection District, McClellan Air Force Base Fire Department, Walnut Grove Fire Protection District, and Wilton Fire Protection District.<sup>19</sup> SFD also has an automatic aid agreement with the City of West Sacramento.<sup>20</sup>

In 2006, SFD responded to more than 69,000 calls for service.<sup>21</sup> The average response time for all SFD engine companies in 2006 was 4.5 minutes, except in cases where additional resources are needed, which currently takes more than 9 minutes.<sup>22</sup> In recent years, response times have increased in some areas due to increasing population. Other areas have experienced improved response times due to increased coverage, most notably the North Natomas area due to the opening of Station 30.<sup>23</sup>

## **REGULATORY SETTING**

### **Federal**

There are no federal regulations regarding fire protection services that pertain to the proposed project.

### **State**

#### **California Occupational Safety and Health Administration**

In accordance with California Code of Regulations, Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment", Cal OSHA has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hosing sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all fire fighting and emergency medical equipment.

#### **Uniform Fire Code**

The Uniform Fire Code (UFC) contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The UFC contains specialized technical regulations related to fire and life safety.

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- 18 Captain Jim Doucette, Public Information Officer, Sacramento Fire Department, written notes, June 20, 2006.
- 19 Sacramento City Fire Department website, [www.cityofsacramento.org/fire](http://www.cityofsacramento.org/fire), accessed June 20, 2006.
- 20 Captain Jim Doucette, Public Information Officer, Sacramento Fire Department, written notes, June 20, 2006.
- 21 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.
- 22 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.
- 23 Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.

## California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building, childcare facility standards, and fire suppression training.

## Local

### City of Sacramento General Plan

The following goals and policies from the City of Sacramento General Plan are applicable to the proposed project:

#### Goals and Policies for Fire Service

**Goal A: Provide adequate fire service for all areas of the City.**

#### Policies

1. Continue to support all efforts directed at providing the best fire protection services for the least cost.
2. Ensure that adequate water supplies are available for fire-fighting equipment in newly developing areas.
3. Work with the various fire protection districts bordering the City in establishing centralized communications and fire-fighter training facilities.
4. Promote greater coordination of land use development proposals with the Fire Department in order to insure adequate onsite fire protection provisions.
5. Promote greater use of fire sprinkler systems for both commercial and residential use.

## Sacramento City Code

The following City ordinances from the Sacramento City Code are applicable to the proposed project:

**Section 8.100.540** - All buildings or portions thereof shall be provided with the degree of fire resistive construction as required by the California Building Code for the appropriate occupancy, type of construction and location on property or in fire zone; and shall be provided with the appropriate fire-extinguishing systems or equipment required by the California Building Code.

Chapter 15.36 includes numerous codes relating to the inspection and general enforcement of the City of Sacramento fire code, control of emergency scenes, permits, general provisions for safety, fire department access, equipment, and protection systems, and many standards for fire alarm systems, fire extinguisher systems, commercial cooking operations, combustible materials, heat producing appliances, exit illumination, emergency plans and procedures, and so on.

## Sacramento Central City Community Plan

The following goals from the Sacramento Central City Community Plan are applicable to the proposed project:

#### Open Space and Community Facilities Goals

**Goal 4.C. Public Safety: Provide for the expansion of existing public safety facilities in the Railyards area, including fire and police protection services.**

- 1) Provide a site for a new fire station within the Railyards.
- 2) Contribute to the construction of a new police substation for the Central City.

## **Richards Boulevard Area Plan**

The following policy from the RBAP is applicable to the proposed project:

### **POLICE AND FIRE**

#### Policy

- 1.8. Provide for the relocation of the existing fire station on North C Street to a new location which is centrally located within the Richards planning area and meets department criteria for construction and siting.

At the time of adoption of the RBAP, the SFD was seeking to relocate the station on North C Street to a central location within the planning area. The plan supports the relocation and construction of a new fire station approximately 8,000 sf and 12,000 sf of outside area for training, equipment maintenance, and secure parking for employees in a suitable location within the Specific Plan Area. A suitable location is one that is located with easy access to multi-directional streets and highway transportation corridors, and centrally located to allow equal response time to all parts of the service area. The station at North C Street has not been relocated as of publication of this document.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

This impact analysis determines whether implementation of the proposed Specific Plan would require new or expanded facilities in order to respond to emergencies, the construction of which would result in physical environmental effects. Reductions in service levels can be indicative of significant project impacts and the need for additional fire protection facilities.

The SFD is currently preparing a Fire Department Master Plan which will include specific triggers for new fire stations in the City of Sacramento. These triggers will include factors such as number of residents, density, call volume, response times, and proximity to existing stations. However, the Master Plan is not yet completed, so demands for fire service have been developed in consultation with SFD staff. SFD does not have an official staffing ratio goal. The department uses the number of fire stations per resident population to determine need for fire protection services.<sup>24</sup> The SFD currently has approximately one fire station per 20,000 residents. Although the SFD would like to see one fire station per 12,000 residents, this is not a required standard. This analysis uses the 1:20,000 ratio and consultation with SFD staff, which would ensure that service levels remain the same as they are currently.

The SFD does not have an adopted service level standard for response times, but has a goal of less than five minutes for emergency medical response and less than seven minutes for fire suppression response,<sup>25</sup> which will be used in this analysis.

The analysis of required additional SFD facilities is largely based on the residential population generated by a project. The proposed project includes a large mixed-use component, which may be developed as a combination of residential, commercial, and/or retail uses. It should be noted that due to the mixed use component of the proposed project, as more residential units are developed, less commercial space would be developed, and vice versa. Therefore, the maximum residential unit count and maximum commercial square footage would both not be developed. Because the exact uses to be developed within the mixed use component of the project are not known at this time, this analysis uses the maximum of 12,501 residential units to create the most conservative estimate of additional SFD facilities required to maintain levels of service at the Specific Plan Area. To determine the population that would be generated by the proposed project, the maximum number

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24 Angie Shook, Sacramento Fire Department, written notes, June 22, 2006.

25 Angie Shook, Sacramento City Fire Department, written notes, June 22, 2006.

of dwelling units was multiplied by a population generation factor of 2.1 persons per household. This factor was used to determine population of the proposed project, rather than the City of Sacramento's citywide average household size of 2.57, as estimated by the U.S. Census Bureau. The use of a lower population per household figure properly reflects the proposed Specific Plan Area's location near the downtown area of the City and the planned high density housing with small unit sizes. Households in high density downtown housing tend to comprise of singles, childless couples, and empty nesters, and are therefore, generally smaller than households in other areas of the City.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project requires, or results in, the construction of new, or the expansion of existing, facilities related to the provision of fire protection.

### **Project Components**

The proposed project would develop up to 12,501 residences within the Central City, which would generate a population of up to 26,252 new residents, who would require fire protection services to be provided by the SFD. Other uses within the Specific Plan Area would also require fire protection services. There are no Specific Plan goals or policies specific to fire protection services. The proposed project does not mandate the development of a fire station, but the Specific Plan has identified two potential locations for a new fire station, as shown in Figure 6.10-2. If a new fire station is developed within the Specific Plan Area, it would likely be co-located with a police sub-station and other uses.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.10-3 The proposed project would increase demand for fire protection services.**

At buildout, the proposed project would include up to a maximum of 12,501 residences, resulting in up to approximately 26,252 new residents, as well as additional office, retail, and other uses that would require fire protection services. Population density within the proposed project would be higher than most of the communities within the SFD's service area. Areas of high density generally experience high levels of traffic congestion (see Section 6.12, Transportation and Circulation), which, in turn, lead to worsening response times.<sup>26</sup>

As discussed in the Environmental Setting, the SFD's average response time for all calls in 2006 was 4.5 minutes for approximately 69,000 calls. According to the SFD, the response time goals of five minutes for emergency medical response and seven minutes for fire response are currently met most of the time.<sup>27</sup> However, response times at some stations have gone up due to increases in population.<sup>28</sup> The population and density of the proposed project would likely increase response times for both emergency medical services and fire suppression services.

According to the SFD, residential population is the best way to determine need for fire protection services. As stated above, the fire department currently maintains a ratio of approximately one fire station per 20,000 residents. The office, retail, park and open space, and cultural/entertainment

<sup>26</sup> Angie Shook, Sacramento City Fire Department, written notes, June 22, 2006.

<sup>27</sup> Angie Shook, Sacramento City Fire Department, written notes, June 22, 2006.

<sup>28</sup> Captain Jim Doucette, Public Information Officer, Sacramento City Fire Department, written notes, June 20, 2006.

uses within the proposed project would be adequately served for fire protection services based on the need generated by number of residents.<sup>29</sup> Based on this standard, construction of the proposed project would require that a fire station be built to serve the proposed project. To prevent increases in response times within the proposed project, the SFD has requested that a new fire station be built within the Specific Plan Area.<sup>30</sup> The SFD has indicated that a single fire station would adequately serve the Specific Plan Area, as long as it is constructed with the capacity to house two companies (one engine company and one truck company), a medic unit, and battalion chief quarters.<sup>31</sup> Staffing at this fire station would require 10 people per shift, for three shifts a day.

The Specific Plan identifies two potential sites for a new fire station, although the Specific Plan does not indicate how the station would be acquired and/or how the station would be funded. If one of these locations is selected to be developed with a fire station, it would likely be co-located with a police sub-station in a multi-story mixed-use building with other uses. The building that would house these facilities would be developed whether or not the police and/or fire station are developed. Physical environmental impacts related to the development of this building are analyzed at a programmatic level in relevant technical sections of this EIR. Once the fire station location is selected and the facility has been designed, the City would determine whether it could result in environmental effects beyond those evaluated in this EIR and whether subsequent project-specific analysis is warranted. Any potential physical impacts related to the construction of a fire station within the Specific Plan Area would be discussed in relevant sections of this EIR. This would be a ***less-than-significant impact***.

#### Mitigation Measure

*None required.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for this analysis is the service area for the SFD, which coincides with the City boundaries, particularly in the Central City area of Sacramento, which is defined by the Sacramento Central City Community Plan as the area between the Sacramento River on the west, the American River to the north, Sutter's Landing and Alhambra Boulevard to the east, and Broadway to the south. Areas within the Central City have similar densities and land uses, and would be most affected by implementation of the proposed Specific Plan.

#### **6.10-4 Development of the proposed project could contribute to cumulative increases in demand for fire protection services within the Central City.**

The proposed project would add a maximum of approximately 26,252 new residents to the Central City area of Sacramento, which would require additional fire protection services. This could result in increases in response times throughout the Central City, as calls for service would increase and fire stations within the area would be responsible for the protection of more developed areas and additional residents. Other development within the service area could further increase the demand on fire protection services in the Central City portion of Sacramento.

The current Sacramento General Plan estimates the population in the Central City will grow to approximately 72,000 by 2030. This projection is based on lower intensity development, which was more prevalent in the Central City at the time of the current General Plan's adoption in 1988. Since then, the City has begun working toward higher intensity uses within the Central City, which would

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29 Angie Shook, Sacramento City Fire Department, written notes, June 22, 2006.

30 Angie Shook, Sacramento City Fire Department, Transmittal to Nedzelene Ferrario, City of Sacramento, Subject: P05-097, Sacramento Downtown Railyards, dated April 14, 2006.

31 Lloyd Ogan, Deputy Chief, Operations, Sacramento Fire Department, written communication, May 8, 2007.

cause increases in population which exceed current General Plan projections. For example, there have been several planned and recently approved projects within the Central City area that include higher density residential towers and commercial high rises, which in combination with the proposed project would exceed the current general plan's population projections. The City is preparing a new General Plan and anticipates that due to the movement toward higher intensity uses and approval of several higher density projects in the Central City, the new General Plan will include in higher population projections that reflect this, particularly in the Central City. The increases in population would increase the need for all public services, including the provision of fire protection, in excess of service levels anticipated in the adopted General Plan.

Due to this increase in development in the downtown area, it is anticipated that Station 2 could experience reductions in service levels as much of the planned downtown development occurs.<sup>32</sup> Growth and development in the downtown area, including the development of the proposed project, would require the development of additional new fire stations. The Master Plan being developed by the SFD will consider the needs for service in throughout the City, including the project area and determine when and where new facilities would be constructed as development occurs. Existing facilities would be used until such time any new facilities are operational. A new fire station would be funded by tax payers (including future proposed project residents and other future residents in the City) through the City's General Fund. Because the timing and location are not yet known, the environmental analysis of the construction and operation of the new facility would occur at prior to its approval. All new facilities and staff would be part of the Master Plan and would be funded through the City's General Fund. Therefore, this would be a ***less-than-significant cumulative impact***.

#### Mitigation Measures

*None required.*

#### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility Overlay is approved and an event/sports facility is developed, events at that facility may require additional fire protection services. According to the SFD, residential population is the best way to determine need for fire protection services. The SFD does not anticipate that the development of a sports/event facility would result in a significant increase in demand for fire protection services over that which would be generated by the residential demand of the proposed project. Therefore, approval of the Sports and Entertainment Facility Overlay would not result in an additional need for fire protection services.

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32 Angie Shook, Prevention/Plan Review, Sacramento Fire Department, written notes, July 6, 2006.



## SOLID WASTE

### INTRODUCTION

This section describes existing solid waste collection services in the Specific Plan Area. Existing plans and policies relevant to solid waste issues associated with implementation of the project are provided. Potential impacts to solid waste collection services due to the project are evaluated based on analyses of service levels and project data. In addition, mitigation measures intended to reduce impacts to solid waste collection services are proposed, where appropriate.

Information for this section was obtained from the proposed Specific Plan, the City of Sacramento General Plan, the Central City Community Plan, the California Integrated Waste Management Board, communication with City of Sacramento Solid Waste Division staff, and other environmental documentation for the Specific Plan Area.

No comment letters associated with solid waste services were received during the Notice of Preparation (NOP) review period.

### ENVIRONMENTAL SETTING

Within the City of Sacramento, commercial waste collection is performed by both the City and permitted private haulers. Residential and commercial solid waste collected by the City is transported to the Sacramento Recycling and Transfer Station (8491 Fruitridge Road) and is then transported to Lockwood Landfill, near Sparks, Nevada. Commercial waste collected by private companies is disposed at a variety of facilities including the Sacramento County Kiefer Landfill, the Yolo County Landfill, Forward Landfill, L and D Landfill, and several privately run transfer stations.<sup>33</sup> Private haulers can deliver waste to the landfill of their choice; they typically select the most cost-efficient option.

In 2005, the City of Sacramento alone disposed of a total of 291,691 tons of solid waste. The total generation, including the disposal of waste from private haulers in the City, generated 1.13 million tons of waste<sup>34</sup> with approximately 44 percent diversion.<sup>35</sup> After diversion, this would add approximately 632,800 tons of solid waste to a variety of landfills annually. The City of Sacramento does not have control over nearly 70 percent of the City's total waste stream; private haulers handle most of the City's waste.<sup>36</sup>

There are two large volume transfer stations that generally serve the project site - Sacramento Recycling and Transfer Station, owned by BLT Enterprises, and North Area Recovery Station, owned by the County of Sacramento Public Works Department. Currently, the Sacramento Recycling and Transfer Station is permitted for a maximum daily disposal of 2,500 tons.<sup>37</sup> The North Area Recovery Station accepts up to 2,400 tons per day of construction/demolition, industrial, and green materials, tires, wood waste, and mixed municipal waste.<sup>38</sup>

The Lockwood Regional Landfill is a Class I landfill on a total of 3,700 acres, 500 acres of which are currently used. The landfill currently accepts an average of between 8,000 and 9,000 tons per day.

33 City of Sacramento, *General Plan*, 1988, page 7-10.

34 City of Sacramento, *Township 9 DEIR*, February 2007, page 6.10-1.

35 Marty Strauss, City of Sacramento, Department of Utilities, Solid Waste Division, written communication, August 6, 2007.

36 Marty Strauss, City of Sacramento, Department of Utilities, Solid Waste Division, written communication, August 6, 2007.

37 CIWMB, *Transfer Station Profile*, [www.ciwmb.ca.gov](http://www.ciwmb.ca.gov), accessed May 29, 2007.

38 CIWMB, *Transfer Station Profile*, [www.ciwmb.ca.gov](http://www.ciwmb.ca.gov), accessed May 29, 2007.

Lockwood Landfill has a contract with the City of Sacramento, which allows the landfill to accept up to 200,000 tons per year (approximately 550 tons per day) from the City.<sup>39</sup> Between April 2006 and May 2007, the City delivered 142,296 tons of solid waste to Lockwood Landfill.<sup>40</sup> Additional solid waste that may have been delivered to Lockwood Landfill from other sources, such as private haulers, are not included in this figure since private haulers may collect solid waste from multiple jurisdictions and may deliver solid waste to a variety of landfills, often depending on market conditions. Lockwood Landfill currently has enough remaining capacity to operate for 20 years, although staff is currently working on an expansion that will add an additional 800 acres and 100 years of life to the landfill. The expansion is expected to be completed by 2008.<sup>41</sup>

Kiefer Solid Waste Landfill, operated by the Sacramento County Department of Public Works, is the primary municipal solid waste disposal facility in Sacramento County. Kiefer Landfill, categorized as a Class III facility, accepts waste from the general public, businesses, and private waste haulers. More specifically, wastes accepted include: construction/demolition, mixed municipal, and sludge (biosolids). The facility is on a 1,084-acre site near the intersection of Kiefer Boulevard and Grantline Road. The permitted capacity for the landfill is 117,400,000 cubic yards (10,815 tons/day) and, as of 2000, the landfill had a remaining capacity of 112,900,000 cubic yards (96 percent).<sup>42</sup> The landfill has an estimated closure date of 2064.<sup>43</sup>

Other landfills that could receive solid waste from the proposed project if a private hauler is selected for waste disposal include the Yolo County Landfill in Davis, Forward Landfill in Manteca, and L and D Landfill in Sacramento. If the project is served by a private waste disposal company, the waste could be delivered to a variety of landfills, depending on market conditions and capacity.

## REGULATORY SETTING

### Federal

#### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), Subtitle D, contained in Title 42 of the United States Code (USC) §6901 et seq. contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills. The U.S. Environmental Protection Agency (EPA) waste management regulations are codified in Volume 40 of the Code of Federal Regulations (CFR) pts. 239-282. The RCRA Subtitle D is implemented by Title 27 of the Public Resources Code (PRC), approved by the EPA.

### State

#### Integrated Waste Management Act (Assembly Bill 939)

Regulation affecting solid waste disposal in California is embodied in Public Resources Code Title 14, known as the Integrated Waste Management Act originally adopted in 1989. AB 939 was designed to increase landfill life by diverting solid waste from landfills within the state and conserving other resources through increasing recycling programs and incentives. AB 939 requires that counties prepare Integrated Waste Management Plans to implement landfill diversion goals, and requires that cities and counties prepare and adopt Source Reduction and Recycling Elements

39 Chris Thomas, Waste Management, Lockwood Landfill, personal communication, April 25, 2006.

40 Marty Strauss, City of Sacramento, Department of Utilities, Solid Waste Division, written communication, August 6, 2007.

41 Chris Thomas, Waste Management, Lockwood Landfill, personal communication, April 25, 2006.

42 CIWMB, *Active Landfills Profile*, [www.ciwmb.ca.gov](http://www.ciwmb.ca.gov), accessed May 29, 2007.

43 CIWMB, *Active Landfills Profile*, [www.ciwmb.ca.gov](http://www.ciwmb.ca.gov), accessed May 29, 2007.

(SRRE). The SRRE must set forth a program for management of solid waste generated with the jurisdiction of the respective city or county. Each source reduction and recycling element must include, but is not limited to, all of the following components for solid waste generated in the jurisdiction of the plan:

- A waste characterization component,
- A source reduction component,
- A recycling component,
- A composting component,
- A solid waste facility capacity component,
- An education and public information component,
- A funding component, and
- A special waste component.

The SRRE programs are designed to achieve landfill diversion goals by encouraging recycling in the manufacture, purchase and use of recycled products. AB 939 also requires that California cities implement plans designed to divert the total solid waste generated within each jurisdiction by 50 percent based on a base year of 2000. The diversion rate is adjusted annually for population and economic growth when calculating the percentage achieved in a particular jurisdiction.

#### Assembly Bill 1220

The California Integrated Waste Management Board (CIWMB) and the State Water Resources Control Board (SWRCB) completed a parallel rulemaking as a result of Assembly Bill 1220 (Chapter 656, Statutes of 1993). Assembly Bill 1220 required clarification of the roles and responsibilities of the two boards, the Regional Water Quality Control Boards and the CIWMB's local enforcement agencies in regulating solid waste disposal sites. The approved Title 27 regulations combine prior disposal site/landfill regulations of the CIWMB and SWRCB that were maintained in Title 14 CCR and Chapter 15 of Title 23 CCR (which contains requirements for disposal of hazardous waste). The regulations were adopted at a joint meeting of the CIWMB and SWRCB on January 23, 1997.

The purpose for the CIWMB standards in this subdivision is to protect public health and safety and the environment. The regulations apply to active and inactive disposal sites, including facilities or equipment used at the disposal sites. These standards make clear that the primary responsibility for enforcing state minimum standards rests with the local enforcement agency in cooperation with the Regional Water Quality Control Board or other oversight agency. Subchapters of Title 27 include operating criteria for landfills and disposal sites, requirements to have enough materials to cover waste to prevent a threat to human health and the environment, requirements for operations at solid waste facilities for the handling of waste and equipment needs of the site, requirements for controlling activities on site, requirements for controlling landfill gas that is made from the decomposition of wastes on site, and requirements of the owner/operator of a facility to properly operate the site to protect the site from fire threat.

### **Local**

#### Sacramento Regional Solid Waste Authority (SWA)

The Sacramento Regional Solid Waste Authority (SWA) is a joint powers authority consisting of a board of supervisors representing Sacramento County and the City of Sacramento. The SWA

enforces its ordinances to regulate commercial solid waste collection, permit franchised haulers, and promote recycling programs.

### *Business Recycling Ordinance*

In March 2007, the SWA adopted the Business Recycling Ordinance, which requires all businesses that generate four or more cubic yards of solid waste per week to have a recycling plan. This ordinance replaces the SWA's Ordinance 8, which included a 30 percent diversion requirement for commercial franchises.

### City of Sacramento General Plan

The following goal is applicable to solid waste and the proposed project:

**Goal: Provide adequate solid waste disposal facilities and services for collection, storage and reuse of refuse.**

### Central City Community Plan

The CCCP does not contain goals or policies applicable to the provision of solid waste services.

### Source Reduction Recycling Element

The California Integrated Waste Management Act of 1989 (AB 939, noted above) mandates that each city shall prepare, adopt, and submit a SRRE. AB 939 required all cities to achieve a minimum diversion of 25 percent of the City's waste stream from landfilling by the year 1995 and 50 percent diversion by the year 2000. The City of Sacramento's Final Draft SRRE, approved in 1995, pledges to exceed the requirements of AB 939, where feasible, in an effort to achieve a 70 percent landfill avoidance goal adopted by City Council in August 1989. In order to achieve this goal, the City has implemented a number of programs, including curbside recycling, drop-off and buy-back centers, and compost programs. The City has averaged approximately 45 percent diversion since 2000<sup>44</sup> and is currently looking into ways to increase solid waste diversion rates to up to 75 percent.<sup>45</sup>

### Sacramento Municipal Code

Chapter 17.72 of the City of Sacramento Municipal Code outlines the recycling and solid waste disposal regulations. These regulations are necessary in order to lengthen the lifespan of landfills, encourage recycling, and meet State mandated goals for waste reduction and recycling, specifically AB 939. These policies provide guidelines regarding the location, size and design features of recycling and trash enclosures in a manner by which adequate, convenient space for the collection, storage, and loading of recyclable and solid waste material is provided. In addition, developers are required to submit a "statement of recycling information" to the City's solid waste manager. The requirement for this statement includes: a site plan which includes design specifications, plans for demolition and construction, and any details of proposed education/public relations programs.<sup>46</sup> Section 17.72.030 of the code provides the following recycling volume and plan requirements for new developments:

- Multi-family residential: 1 cubic yard per 16 units

44 Marty Strauss, City of Sacramento, Department of Utilities, Solid Waste Division, written communication, August 6, 2007.

45 Tyler Stratton, Solid Waste Division, Department of Utilities, City of Sacramento, personal communication, May 31, 2006.

46 City of Sacramento website, Municipal Code, Chapter 17.72, *Recycling and Solid Waste Regulations*, <http://ordlink.com/codes/sacramento/index.htm>, Accessed June 19, 2006.

- Office and general commercial: 1 cubic yard per 40,000 sq ft
- Restaurant/bar: 1 cubic yard per 5,000 sq ft 90 gallon container minimum
- Retail sales: 1 cubic yard per 8,000 sq ft 90 gallon container minimum
- Motel/hotel/inn/bed and breakfast: 1 cubic yard per 20 rooms 90 gallon container minimum
- Develop recycling plan to be submitted with improvement plan review for the project

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

The analysis uses the following solid waste generation rates for operation of the proposed project, provided by the CIWMB and City of Sacramento staff:

- Office = 1 lb/100 sf/day<sup>47</sup>
- Retail/Shopping Center = 2.5 lbs/100 sf/day<sup>48</sup>
- Attached Residential = 0.7 tons per year per dwelling unit<sup>49</sup>
- Hotel/Hospitality = 3.2 lbs/room/day (First class hotel)<sup>50</sup>
- Historical/Cultural = 2.5 lbs/100 sf/day<sup>51</sup>

Due to the density of the residential units proposed within the project, this analysis uses the City's residential solid waste generation rate for attached housing.

The analysis scenario includes mixed use component of 491,000 sf. The uses that would be included in this component would likely be a mix of residential and commercial space, but the exact breakdown of the number of dwelling units and commercial space is not known at this time. Solid waste generation estimates are based on land use and acreage for commercial and the number of dwelling units for residential uses. To provide the most conservative analysis, this analysis estimates the solid waste generation of the proposed project under the worst-case scenario, that is, the amount of solid waste that would be generated under the most intense land uses. In this case, residential uses generate more solid waste than commercial uses, so the analysis assumes that the mixed-use component of the proposed project would be developed entirely as residential. Therefore, the proposed project would likely generate less solid waste than the estimate used in this analysis. The maximum number of residential units that would be developed under the proposed Specific Plan would be 12,501.

In addition to solid waste generation during operation of the proposed project, this analysis also estimates the amount of solid waste that would be generated during construction of the proposed project, using generation rates for construction and demolition (C&D) waste used by the EPA. A study done for the EPA found that construction of multi-family housing generates an average of 4 lbs

47 California Integrated Waste Management Board, *Estimated Solid Waste Generation Rates for Commercial Establishments*, [www.ciwmb.ca.gov/](http://www.ciwmb.ca.gov/), Accessed August 11, 2007.

48 California Integrated Waste Management Board, *Estimated Solid Waste Generation Rates for Commercial Establishments*, [www.ciwmb.ca.gov/](http://www.ciwmb.ca.gov/), Accessed August 11, 2007.

49 Marty Strauss, City of Sacramento, Department of Utilities, Solid Waste Division, written communication, August 6, 2007.

50 Tyler Stratton, City of Sacramento, Department of Utilities, Solid Waste Division, personal communication, June 28, 2006.

51 Solid waste generation for the Historical/Cultural uses within the proposed project is estimated using the solid waste generation rate used for retail uses.

per square foot, while construction of commercial uses generated an average of 3.89 lbs per square foot.<sup>52</sup> This analysis assumes an average dwelling unit size of approximately 1,100 square feet. Based on the residential unit count of 12,501, this would result in approximately 13.8 million square feet of residential space. The study also determined rates for demolition and renovation activities. The proposed project does not include significant demolition activities; rather, the existing Central Shops buildings would be renovated. However, the study states that there is not enough available information to determine a solid generation rate for non-residential renovation activities.<sup>53</sup> It should be noted that although C&D activities would produce a large amount of solid waste that would need to be disposed of, this would be a one-time contribution to the solid waste stream.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project would require or result in the construction of new landfills or the expansion of existing facilities to accommodate the project's solid waste disposal needs.

### **Project Components**

The proposed project would develop a mix of uses that would require solid waste collection and disposal services to be provided by either the City Solid Waste Division or permitted private haulers. There are no Specific Plan goals or policies specific to solid waste services.

### **Specific Impacts and Mitigation Measures**

#### **6.10-5 The proposed project would generate solid waste, which could result in the need for new landfills or the expansion of existing facilities.**

The proposed project would result in the addition of office, retail, residential, hotel/hospitality, cultural, and transportation uses, which would generate solid waste and would be collected and disposed of by either the City of Sacramento Solid Waste Division or licensed private haulers. Based on the generation rates provided by the CIWMB and the City, the proposed project would generate up to approximately 22,193.8 tons per year (see Table 6.10-1). This would increase Sacramento's total annual solid waste disposal (1.13 million tons) by approximately two percent. Assuming 44 percent diversion for the proposed project, only 12,428.5 tons would be sent to landfills for disposal. If all of the solid waste generated by the proposed project (after diversion) were delivered to Lockwood Landfill, it would be approximately 8.7 percent of the total waste accepted at the landfill each year from the City alone (142,296 tons from April 2006 to May 2007).

There is no guarantee that the City would provide solid waste collection services to all uses within the entire proposed Specific Plan Area. Commercial, retail, and multiple-family residential uses with more than four units may use licensed private haulers for solid waste disposal. Private waste haulers operating within in the City of Sacramento are not required to dispose of solid waste at any facility in particular, so the destination of the solid waste is uncertain. Nonetheless, there are several landfills in northern California and northwestern Nevada with adequate capacity that could serve the proposed project.<sup>54</sup> They include:

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- 52 U.S. EPA, *Characterization of Building-Related Construction and Demolition Debris in the United States*, June 1998, pages 2-3 to 2-4.
- 53 U.S. EPA, *Characterization of Building-Related Construction and Demolition Debris in the United States*, June 1998, page 2-10.
- 54 California Integrated Waste Management Board, *Active Landfill Profile*, [www.ciwmb.ca.gov](http://www.ciwmb.ca.gov). accessed June 28, 2007.

<b>TABLE 6.10-1</b>			
<b>OPERATIONAL SOLID WASTE GENERATION</b>			
<b>Use</b>	<b>Units/Acreage</b>	<b>Generation Rate (lbs/year)</b>	<b>Solid Waste (lbs/year)</b>
<b>Proposed Specific Plan</b>			
Residential	12,501 units	0.7 tons/unit/year	8,750.7 tons/year
Office	2,337,200 sf	1 lb/100 sf/day	23,372 lbs/day/11.69 tons/day (4,266.9 tons/year)
Retail	1,384,800 sf	2.5 lbs/100 sf/day	34,620 lbs/day/17.31 tons/day (6,318.2 tons/year)
Hotel/Hospitality	1,100 rooms	3.2 lbs/room/day	3,520 lbs/day/1.76 tons/day (642.4 tons/year)
Historical/Cultural <sup>1</sup>	485,390 sf	2.5/100 sf/day	12,135 lbs/day/6.07 tons/day (2,215.6 tons/year)
<b>TOTAL</b>			<b>22,193.8 tons/year</b>
Notes: 1. Historical/Cultural uses use the Retail use solid waste generation rate. Sources: Residential: Marty Strauss, written communication, August 6, 2007. Office: California Integrated Waste Management Board, Estimated Solid Waste Generation Rates for Commercial Establishments, www.Ciwmb.ca.gov, Accessed August 11, 2007. Retail: California Integrated Waste Management Board, Estimated Solid Waste Generation Rates for Commercial Establishments, www.Ciwmb.ca.gov, Accessed August 11, 2007. Hotel: Tyler Stratton, Solid Waste Division, City of Sacramento, June 28, 2006			

- Neal Road Landfill, Butte County, 21,716,471 cubic yards (85.9%) remaining capacity
- L and D Landfill, Sacramento County, 4,100,000 cubic yards (68%) remaining capacity
- Sacramento County (Kiefer) Landfill, Sacramento County, 112,900,000 cubic yards (96.2%) remaining capacity
- Foothill Sanitary Landfill, San Joaquin County, 97,900,000 cubic yards (96%) remaining capacity
- Forward Landfill, San Joaquin County, 40,031,058 cubic yards (78.4%) remaining capacity
- Hay Road Landfill, Solano County, 22,476,431 cubic yards (79.6%) remaining capacity
- Potrero Hills Landfill, Solano County, 8,200,000 cubic yards (38.1%) remaining capacity
- Tehama County/Red Bluff Landfill, Tehama County, 2,424,448 cubic yards (47.6%) remaining capacity
- Fink Road Landfill, Stanislaus County, 10,000,000 cubic yards (69%) remaining capacity
- Yolo County Central Landfill, Yolo County, 16,122,000 cubic yards (64.5%) remaining capacity
- Norcal Waste Systems Ostrom Road LF Inc., Yuba County, 40,600,000 cubic yards (97.1%) remaining capacity
- Lockwood Landfill, Sparks, Nevada, 37,500,000 cubic yards remaining capacity

Although the ultimate destination of the solid waste generated by the proposed project cannot be determined with certainty at this time, there are several other facilities with substantial capacity remaining that could serve the proposed project. Some of the landfills listed above are planning expansions to further increase their ability to accept solid waste. If the Lockwood Landfill cannot serve the proposed project, other landfills would be available to accept solid waste from the proposed project without substantially affecting capacity.

Recycling programs can significantly reduce the amount of solid waste disposed of in landfills. In accordance with Sacramento City Code 17.72, developers must submit a “statement of recycling” and a recycling plan to the City’s solid waste manager that must include a demolition and construction plan to specify any proposed recycling of building material in the demolition of any structure on the site and to specify any recycled material to be used in the construction of the proposed development. The statement of recycling information must also include the location and design specifications of proposed recycling and trash enclosure(s) and receptacle(s) that meet the volume and material requirements, as shown above in the Regulatory Setting and the development standards and identify materials to be recycled. The plan must also detail education and outreach efforts to inform users of the development of the benefits of recycling and how to recycle.

Implementation of the recycling program and adherence to the required recycling volume requirements would help the City approach the 50 percent solid waste diversion mandated by the State. However, due to the density of the proposed project and presence of mid- and high-rise buildings, it is likely that diversion numbers for the proposed would be lower. The Division of Solid Waste is working with other City departments to address issues regarding construction design guidelines and recycling programs for high rise buildings.<sup>55</sup> Assuming that the City maintains its 44 percent diversion rate for the proposed project, its solid waste generation could be reduced to approximately 12,428.5 tons per year. This would reduce the proposed project’s contribution of solid waste to Sacramento’s total solid waste stream (1.13 million tons per year) to approximately one percent.

Waste from the operation of the proposed project could be disposed of in a variety of locations, depending on the solid waste collection service provider the proposed project would use. If disposal services are provided by the City, solid waste will be sent to Lockwood Regional Landfill, where most of the City’s waste is shipped. As discussed in the Environmental Setting, Lockwood Landfill currently accepts between 8,000 and 9,000 tons per day and has enough remaining capacity to remain operational for at least 20 years. The facility is currently undergoing an expansion which will add an additional 100 years of life to the landfill. The expansion is scheduled to be completed prior to operation of the proposed project. If the project is served by a private waste disposal company, the waste could be delivered to a variety of landfills, depending on market conditions and capacity. This mechanism would ensure the waste is disposed of at a facility with adequate capacity.

Construction and demolition (C&D) activities can generate significant amounts of solid waste associated with demolition of existing structures and construction of new buildings. Based on EPA estimates for C&D waste generation, the proposed project would generate approximately 36,600 tons of C&D waste during project construction (see Table 6.10-2). Required recycling programs, including the required plan for how C&D waste would be disposed of, would ensure that a large amount of the C&D waste would be recycled to minimize the amount of waste to be disposed of at the landfill. The C&D waste could be disposed of at a variety of landfills including, but not limited to, any of the facilities mentioned above.

The proposed project could generate up to approximately 12,463.9 tons per year during its operation. This would increase Sacramento’s total solid waste disposal by approximately one percent. After diverting 44 percent of the solid waste, based on the City’s current diversion rate, the proposed project would send approximately 12,428.5 tons per year to landfills. The City would attempt to divert as much C&D waste as possible. C&D waste would be disposed of over the course of several years to a variety of landfills. Also, Lockwood Landfill, where most of the City’s solid waste goes, has adequate capacity and is currently being expanded to extend its life an additional 100 years. This would be a **less-than-significant impact**.

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55 Marty Strauss, City of Sacramento, Department of Utilities, Solid Waste Division, written communication, August 6, 2007.



TABLE 6.10-2			
CONSTRUCTION SOLID WASTE GENERATION			
Use	Total Square Footage	Generation Rate (lbs/sf)	Solid Waste (lbs)
<b>Proposed Specific Plan</b>			
Residential	13,801,104 sf <sup>1</sup> (12,501 units)	4 lbs/sf	55.2 million lbs
Office	2,337,200 sf	3.89 lbs/sf	9.1 million lbs
Retail	1,384,800 sf	3.89 lbs/sf	5.4 million lbs
Hotel/Hospitality	880,000 sf <sup>2</sup> (1,100 rooms)	3.89 lbs/sf	3.5 million lbs
<b>TOTAL</b>			<b>36,600 tons</b>
Notes			
1. The analysis assumes 1,104 sf per residential unit.			
2. The analysis assumes an average of 800 sf per hotel room.			
Source: US EPA, Characterization of Building-Related Construction and Demolition Debris in the United States, June 1998, pages, 2-3 to 2-4.			

### Mitigation Measure

*None required.*

### Cumulative Impacts and Mitigation Measures

The cumulative analysis is based on the project's contribution and potential impact upon landfills. The cumulative context for solid waste services includes all development in the Sacramento Regional County Solid Waste Authority service area. This includes the City of Sacramento and unincorporated areas of the County.

#### **6.10-6 The proposed project would contribute to cumulative increases in solid waste, which could result in the construction of new landfills or the expansion of existing facilities.**

As addressed in the setting section, a number of landfills operate in the Sacramento region, and landfills outside the region also serve Sacramento's solid waste needs. Lockwood Landfill, the primary destination for waste collected by the City of Sacramento, is undergoing an expansion that will increase its capacity enough to continue operation for at least the next 100 years. Kiefer Landfill is not expected to reach capacity for another 60 years. As growth continues in the region, in accordance with the County General Plan and city general plans, population would increase and the solid waste stream would continue to grow. Implementation of the Solid Waste Authority and Sacramento recycling requirements, however, would continue to significantly reduce potential impacts on landfill capacity. The existence of significant capacity at the City's primary landfills, the exporting of solid waste and aggressive recycling policy would result in a ***less-than-significant cumulative impact***.

### Mitigation Measure

*None required.*

### Sports and Entertainment Facility Overlay

In the event that the Sports and Entertainment Facility Overlay is approved and an event/sports facility is developed, events at that facility could result in additional solid waste generation within the Specific Plan Area. The amount of solid waste generated at such a facility would depend on the frequency and type of events held at the facility. However, this type of information is not yet known. Due to the potential size of this facility and because these types of facilities often generate large amounts of solid waste, it is likely that the development of an event/sports facility could result in the generation of a significant amount of solid waste. In the event that the Sports and Entertainment

Facility Overlay is approved, the development of an event/sports facility would require subsequent environmental analysis and documentation, which would require a thorough solid waste analysis. At this time, not enough is known about the potential event/sports facility that could be developed to estimate the amount of solid waste that would be generated. Therefore, it cannot be determined at this time how much solid waste would be generated by the implementation of the Sports and Entertainment Facility Overlay.

## PUBLIC SCHOOLS

### INTRODUCTION

This section summarizes schools available in the Sacramento City Unified School District (SCUSD). Existing facilities are listed and any expansion of existing facilities or the construction of new facilities is also discussed. Potential impacts to schools as a result of implementation of the proposed project are evaluated, based on whether the proposed project would create an increased demand for schools that would exceed the current or projected capacity such that new or physically altered school facilities would be constructed. Existing plans and policies relevant to schools are also provided. Information was obtained from personal communication with the school district, the Administrative Draft Railyards Specific Plan (May 2007), and the SCUSD website.

One comment letter related to public schools was provided by SCUSD in response to the NOP, expressing specific concerns about project-related school development.

### ENVIRONMENTAL SETTING

#### Sacramento City Unified School District

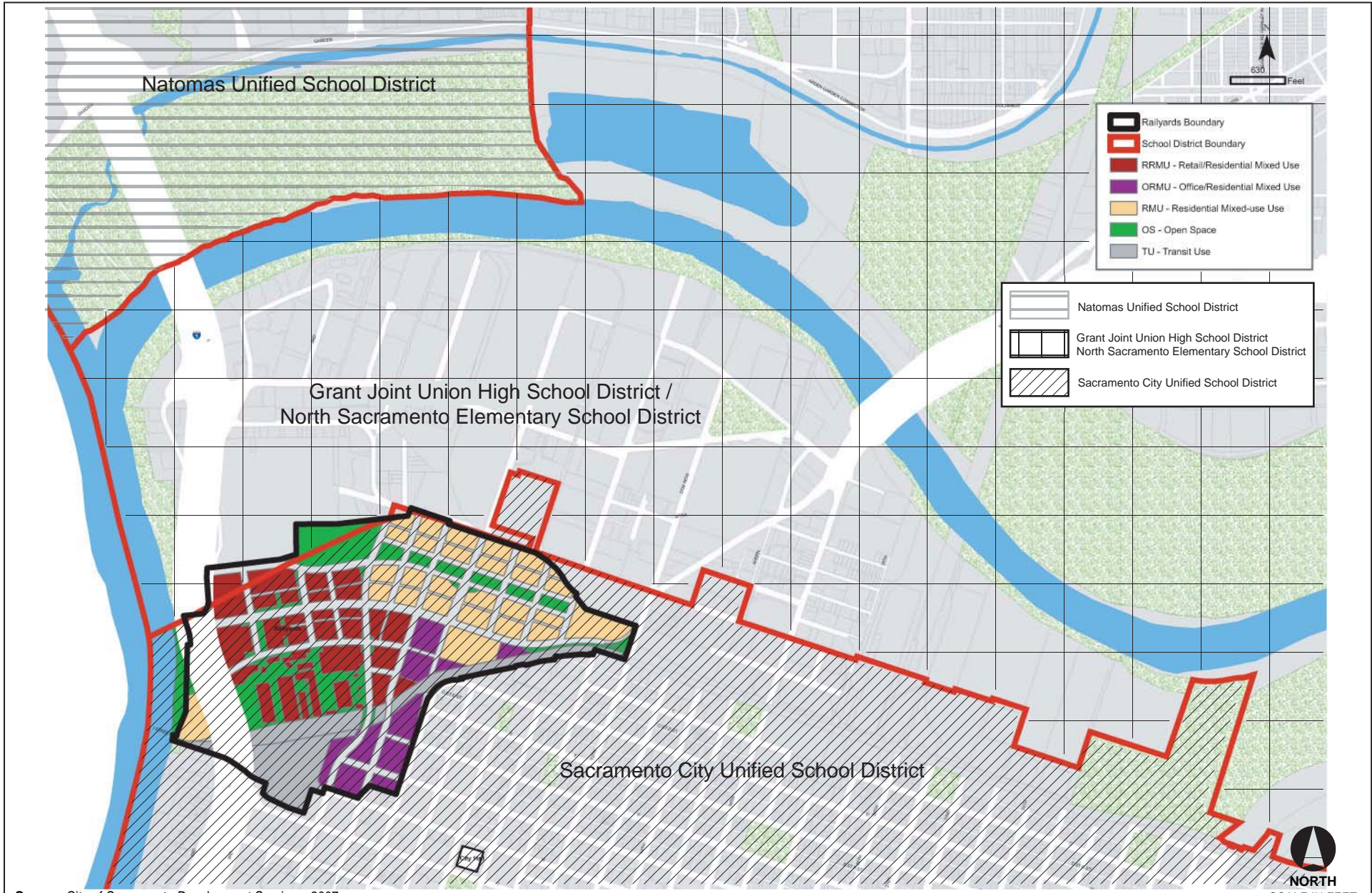
The majority of the Specific Plan Area (with the exception of portions of Parcels 2, 3a, and 72) is within the SCUSD (see Figure 6.10-4). The District currently has 60 elementary and K-8 schools, 8 middle schools, 6 high schools, 1 continuation school, 1 independent study K-12 school, 1 alternative school, 6 charter schools, and 5 adult education centers.<sup>56</sup> SCUSD is currently building a new elementary school in the south part of the city, and a new high school in eastern Sacramento, both of which recently opened.<sup>57</sup> The District has a design capacity for 28,018 elementary, 9,071 middle school, and 12,086 high school students, and currently has 26,633 elementary, 7,711 middle school, and 11,499 high school students enrolled District-wide.<sup>58</sup>

The Specific Plan Area is within the attendance boundaries for Washington Elementary School, located at 520 - 18th Street, Sutter Middle School located at 3150 I Street, and C.K. McClatchy High School located at 3066 Freeport Boulevard (see Figures 6.10-5 through 6.10-7). Students in the project area may also attend Arthur Benjamin Health Professions High School, located at 451 McClatchy Way, or the MET Charter High School or the Success Academy Alternative School, both located at 810 V Street.

Washington Elementary School serves students in grades K-6. Washington has a design capacity of 317 students, and 286 students were enrolled there for academic year 2006-07 (see Table 6.10-3).<sup>59</sup> The academic focus of the school is literacy in both Spanish and English. The Bilingual Alternative Program gives the students an opportunity to continue their bilingualism into adulthood. Washington is one of five bilingual programs in the Sacramento City Unified School District.<sup>60</sup>

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- 56 City of Sacramento Unified School District website, Who We Are, [http://www.scusd.edu/about\\_district/about\\_scusd.htm](http://www.scusd.edu/about_district/about_scusd.htm), accessed August 9, 2007.
- 57 City of Sacramento, *Draft Railyards Specific Plan*, August, 2007, page 8-10.
- 58 Blair Aas, SCI Consulting Group, written communication, July 3, 2006.
- 59 Rosie Carrillo, Washington Elementary School, personal communication, June 21, 2007.
- 60 City of Sacramento Unified School District Website, School Guide, <http://www.scusd.edu/ourschools/K-6.pdf>, accessed June 20, 2006.





Source: City of Sacramento Development Services, 2007.

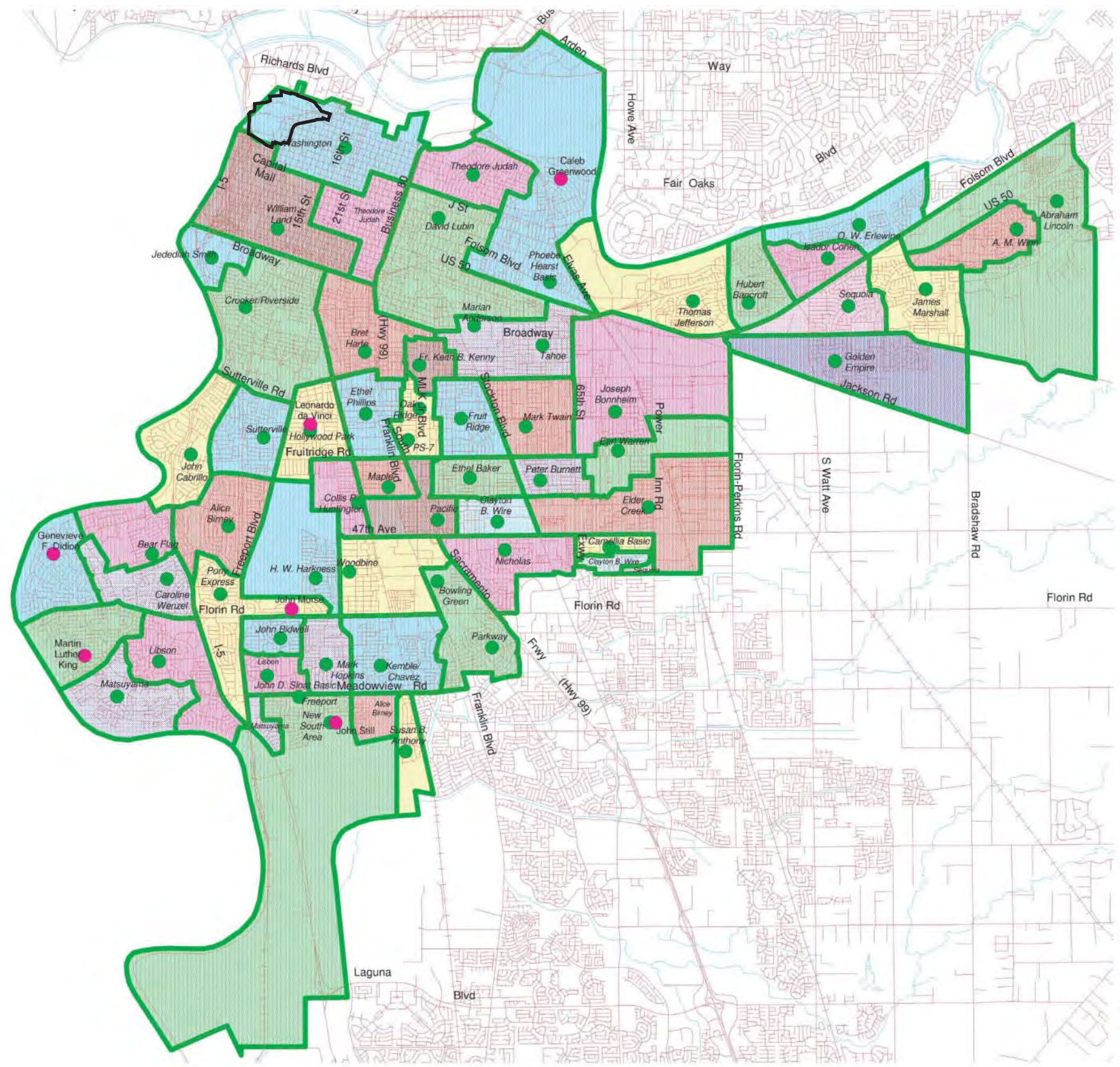
**FIGURE 6.10-4**  
**Railyards School Districts**



A division of **PBS&J**

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- Railyards Specific Plan Area
- Elementary Location
- K-8 Location
- Assignment Area

The following schools do not have assignment areas:

- Bowling Green
- John Morse
- John Still
- Leonardo di Vinci
- Marian Anderson
- New South Area
- Phoebe Hearst
- PS-7

- Roads
- Water
- Railroad

Architectural Research Consultant, Incorporated  
 1 inch is approximately 1.7 miles  
 May 2006



Source: Sacramento Area Council of Governments TIGER file.

**FIGURE 6.10-5**  
**Sacramento City Unified School District, Elementary School Assignment Areas**

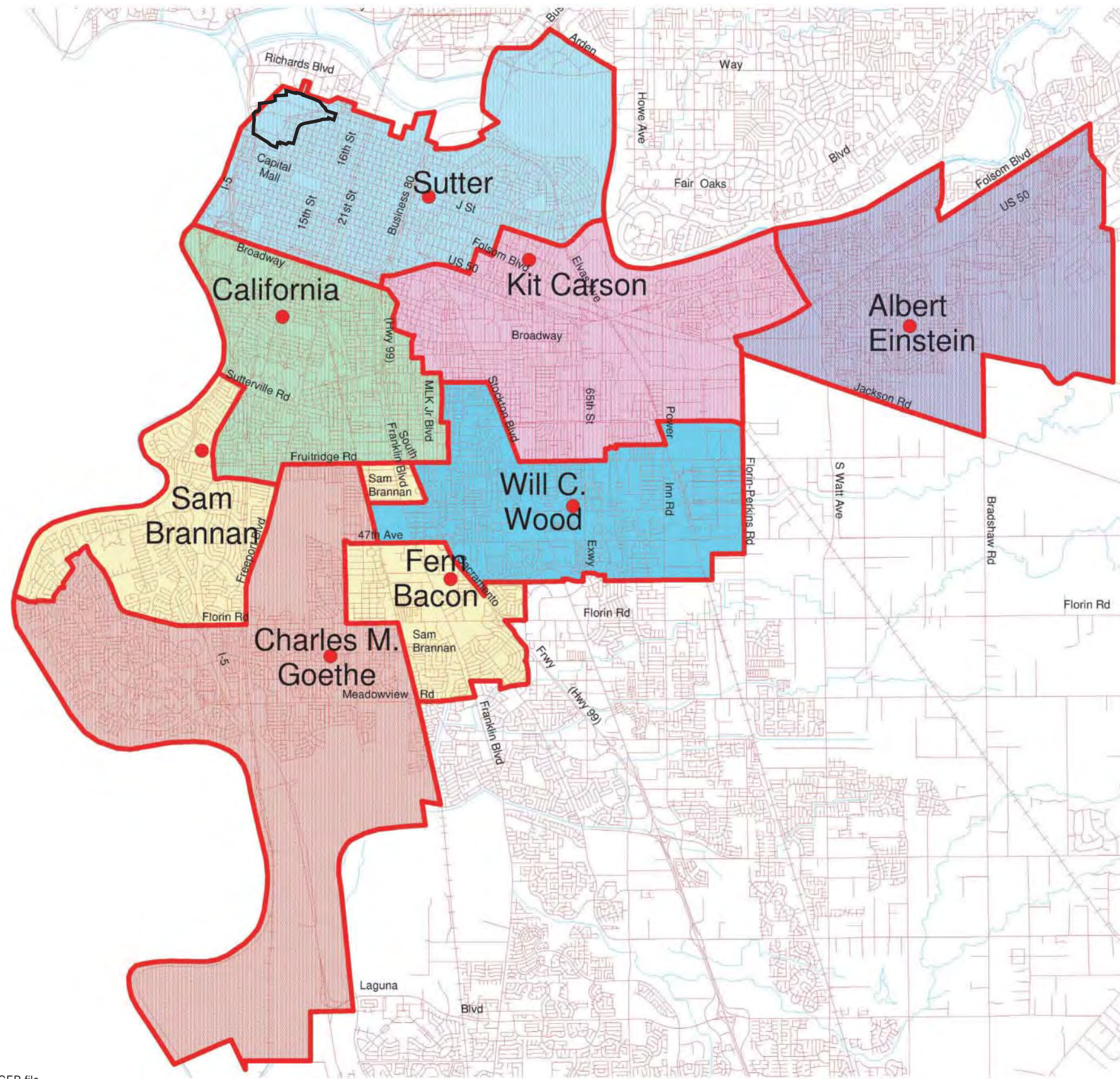





D51234.00




061801\_CSJ.07








-  Railyards Specific Plan Area
  -  Middle School Location
  -  Assignment Area
- Note: Fern Bacon Middle School does not have an assignment area.

-  Roads
-  Water
-  Railroad

 Architectural Research Consultant, Incorporated  
 1 inch is approximately 1.7 miles  
 May 2006



Source: Sacramento Area Council of Governments TIGER file.

**FIGURE 6.10-6**  
**Sacramento City Unified School District, Middle School Assignment Areas**

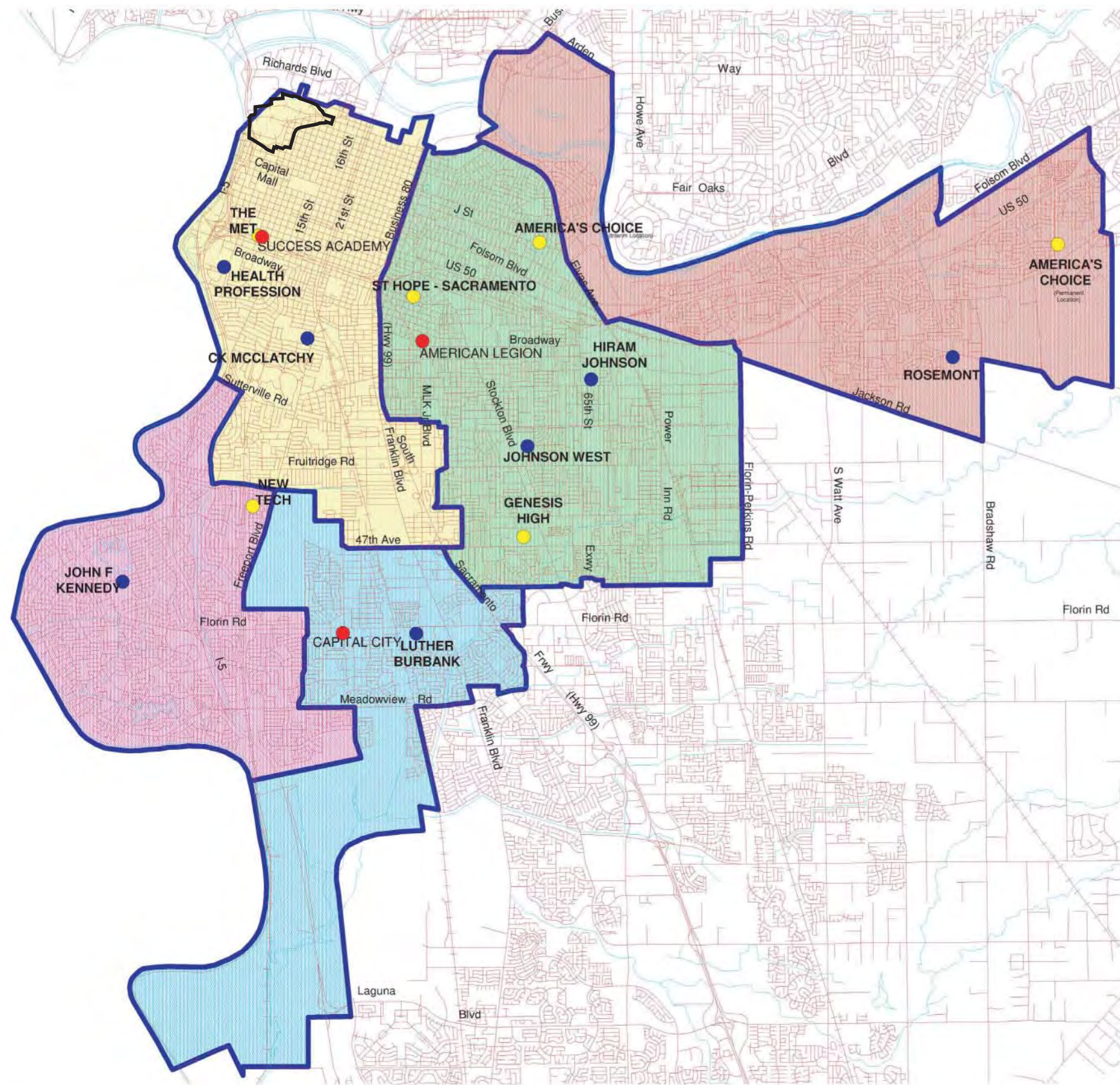


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- Railyards Specific Plan Area
- High School Location
- Alternative High School Location
- Charter High School Location
- Assignment Area

Note:  
 Alternative and Charter schools do not have an assignment area as well as Health Profession and Johnson West.

- Roads
- Water
- Railroad

Architectural Research Consultant, Incorporated  
 1 inch is approximately 1.7 miles  
 May 2006



Source: Sacramento Area Council of Governments TIGER file.

**FIGURE 6.10-7**  
**Sacramento City Unified School District, High School Assignment Areas**



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TABLE 6.10-3

## SCUSD SCHOOLS AND CAPACITIES IN THE PLAN AREA VICINITY

School Name	Design Capacity	Current Enrollment*	Excess Capacity
Washington Elementary School	317	286	31
Sutter Middle School	1,293	1,350	-57
C.K. McClatchy High School	1,754	2,112	-358

Notes:  
 \* For academic year 2006-07.  
 Sources: Carrillo, Rosie, Washington Elementary School, personal communication, June 21, 2007; Woo, Pakou, Sutter Middle School, personal communication, June 22, 2007; Blackshire, Delories, C.K. McClatchy High School, personal communication, June 22, 2007; PBS&J/EIP, 2007.

Sutter Middle School serves students in grades 7-8. Sutter has a design capacity of 1,293 students, and 1,350 students were enrolled there for academic year 2006-07 (see Table 6.10-3).<sup>61</sup> Sutter promotes a rigorous curriculum coupled with extra-curricular activities.<sup>62</sup>

McClatchy High School serves students in grades 9-12. McClatchy has a design capacity of 1,754 students, and 2,112 students were enrolled there for academic year 2006-07 (see Table 6.10-3).<sup>63</sup> McClatchy houses the Humanities and International Studies Program magnet school.<sup>64</sup> McClatchy houses other specialty programs including The Air Force Junior ROTC program, the Fire Science Academy, and four new Small Learning Communities (SLC) with career themes.<sup>65</sup>

Health Professions High School is an Education for the 21st Century (e21) small high school. These e21 small high schools are student-centered, high performance, public charter high schools that enroll no more than 500 students each.<sup>66</sup> Health Professions High School opened during the 2005-2006 school year with a healthcare-based curriculum.<sup>67</sup> The school serves grades 9-12, although currently only 9<sup>th</sup> and 10<sup>th</sup> grade students attend the school.<sup>68</sup> Students must enroll in the school as 9<sup>th</sup> graders.<sup>69</sup> Attendance is through open enrollment within the SCUSD, or an intra-district transfer is required for students residing outside of the District to attend. The school's current enrollment is 266 students, and the school's capacity is 500 students.<sup>70</sup> There is no ability for the school to grow beyond 500 students because the e21 designation places a cap on enrollment at 500 students to maintain the small school environment.<sup>71</sup>

The MET Charter School serves grades 9-12 and is an open enrollment school, 50 students from inside and outside the District attend the MET.<sup>72</sup> The MET opened in 2003 and currently shares a building with the Success Academy. Next year, the MET is taking over the building completely. The capacity of the school for the 2007-2008 school year will be 200 students.<sup>73</sup> By 2010-2011, the

61 Pakou Woo, Sutter Middle School, personal communication, June 22, 2007.

62 City of Sacramento Unified School District website, School Guide, <http://www.scusd.edu/ourschools/MIDDLE.pdf>, accessed June 20, 2006.

63 Delories Blackshire, C.K. McClatchy High School, personal communication, June 22, 2007.

64 City of Sacramento Unified School District website, School Guide, <http://www.scusd.edu/ourschools/HIGH.pdf>, accessed June 20, 2006.

65 City of Sacramento Unified School District website, School Guide, <http://www.scusd.edu/ourschools/HIGH.pdf>, accessed June 20, 2006.

66 Education for the 21st Century Students First website, *Small Schools, Big Results, A Vision for Student Success in Sacramento's Urban High Schools*, <http://www.studentsfirst.info/index.htm>, accessed May 21, 2007.

67 Christy Winn, Attendance Technician, Health Professions High School, personal communication, May 17, 2007.

68 Christy Winn, Attendance Technician, Health Professions High School, personal communication, May 17, 2007.

69 Christy Winn, Attendance Technician, Health Professions High School, personal communication, May 17, 2007.

70 Christy Winn, Attendance Technician, Health Professions High School, personal communication, May 17, 2007.

71 Christy Winn, Attendance Technician, Health Professions High School, personal communication, May 17, 2007.

72 Beth Kay, Principal, The MET Sacramento Charter School, personal communication, May 17, 2007.

73 Beth Kay, Principal, The MET Sacramento Charter School, personal communication, May 17, 2007.

capacity of the school will grow to 300.<sup>74</sup> There is no bond money available to build more classrooms and there is no capacity for additional portable buildings.<sup>75</sup> Therefore, the school's capacity will not grow beyond 320 students in the foreseeable future. The enrollment for school year 2006-2007 is 144 students.<sup>76</sup>

## REGULATORY SETTING

### Federal

There are no federal regulations pertinent to schools.

### State

#### Developer Fees

Prior to the passage of Proposition 1A/Senate Bill 50 (Chapter 407, Statutes of 1998), which is summarized below, it was possible for school districts to collect developer fees in accordance with Government Code Section 65995 (often called "statutory fees" or "Stirling fees" after the author of the enabling legislation, AB 2926). The School Facilities Legislation, as it is also referred to, was enacted to generate revenue for school districts for capital acquisitions and improvements.

#### California State Assembly Bill 2926 – School Facilities Act of 1986

In 1986, AB 2926 was enacted by the state of California authorizing entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926, entitled the "*School Facilities Act of 1986*," was expanded and revised in 1987 through the passage of AB 1600, which added Section 66000 *et seq.* of the Government Code.

#### Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill (SB) 50 (Chapter 407, Statutes of 1998) is a school construction measure that was approved by the voters on the November 3, 1998 ballot. The passage of SB 50 defined the Needs Analysis process in Government Code Sections 65995.5-65998. Under the provisions of SB 50, school districts may collect fees to offset the costs associated with increasing school capacity as a result of development. The fees (referred to as Level One fees) are assessed based upon the proposed square footage of residential, commercial/industrial, and/or parking structure uses. Level Two fees require the developer to provide one-half of the costs of accommodating students in new schools, while the state would provide the other half. Level Three fees require the developer to pay the full cost of accommodating the students in new schools and would be implemented at the time the funds available from Proposition 1A (approved by the voters in 1998) are expended. School districts must demonstrate to the state their long-term facilities needs and costs based on long-term population growth in order to qualify for this source of funding. However, voter approval of Proposition 55 on March 2, 2004, precludes the imposition of the Level Three fees for the foreseeable future. Therefore, once qualified, districts may impose only Level Two fees, as calculated according to SB 50. Under this statute, payment of statutory fees by developers would serve as total CEQA mitigation to satisfy the impact of development on school facilities. The SCUSD imposes Level One fees.<sup>77</sup>

74 Beth Kay, Principal, The MET Sacramento Charter School, personal communication, May 17, 2007.

75 Beth Kay, Principal, The MET Sacramento Charter School, personal communication, May 17, 2007.

76 Beth Kay, Principal, The MET Sacramento Charter School, personal communication, May 17, 2007.

77 Blair E. Aas, SCI Consulting Group, written communication to Nedzlene Ferrario, Senior Planner, Development Services Department, City of Sacramento, July 21, 2006.

### California Code of Regulations

California Code of Regulations (CCR), Title 5, Division 1, Chapter 13, Subchapter 1 outlines minimum requirements for the placement of schools.

#### **§ 14010. Standards for School Site Selection.**

All districts shall select a school site that provides safety and that supports learning. The following standards shall apply:

- d. If the proposed site is within 1,500 feet of a railroad track easement, a safety study shall be done by a competent professional trained in assessing cargo manifests, frequency, speed, and schedule of railroad traffic, grade, curves, type and condition of track need for sound or safety barriers, need for pedestrian and vehicle safeguards at railroad crossings, presence of high pressure gas lines near the tracks that could rupture in the event of a derailment, preparation of an evacuation plan. In addition to the analysis, possible and reasonable mitigation measures must be identified.

### California Education Code

The California Education Code authorizes the California Department of Education ("Department") to develop site selection standards for school districts. These standards are found in the California Code of Regulations and require that districts select a site that conforms to certain net acreage requirements established in the Department's 2000 "School Site Analysis and Development" guidebook. The Guide includes the assumption that the land purchased for school sites will be in a ratio of approximately 2 to 1 between the developed grounds and the building area. For example, a school that houses kindergarten through sixth grade and has an enrollment of 600 children, the recommended acreage is 9.2 acres.

The Department's 2000 Guide includes exceptions to its recommended site size that allow smaller school sites. Additionally, the Department has the policy that if the "availability of land is scarce and real estate prices are exorbitant" the site size may be reduced. It is the Department's policy that if a school site is less than the recommended acreage required, the district shall demonstrate how the students will be provided an adequate educational program including physical education as described in the district's adopted course of study. Through careful planning, a reduced project area school site could follow the recent trend of school downsizing and meet the Department's criteria.

## **Local**

### City of Sacramento General Plan

The following City of Sacramento General Plan goals and policies are applicable to the proposed project:

**Goal A      Continue to assist school districts in providing quality education facilities that will accommodate projected student enrollment growth.**

#### Policies

1. Assist school districts with school financing plans and methods to provide permanent schools in existing and newly developing areas in the City.
2. Involve school districts in the early stages of the land use planning process for the future growth of the City.
3. Designate school sites on the General Plan and applicable specific plans of the City to accommodate school district needs.
4. Continue to explore ways of utilizing existing school facilities for non-school related and child care activities.
5. Continue to assist in reserving school sites based on each district's criteria, and upon the City's additional locational criteria as follows:

- o Locate elementary schools on sites that are safely and conveniently accessible, and free heavy traffic, excessive noise and incompatible land uses.
  - o Locate schools beyond the elementary level adjacent to major streets. Streets that serve as existing or planned transit corridors should be considered priority locations.
  - o Locate all school sites centrally with respect to their planned attendance areas. (Attendance areas will change with the addition of other schools)
- 6 Work with school districts to realign district boundaries to coincide with neighborhood and community boundaries.

### Sacramento Unified School District Facilities Master Plan 2006-2015

The SCUSD Facilities Master Plan explains changes in the District since the previous Master Plan was prepared (1991), provides an inventory of existing District facilities, evaluates the condition of each school campus, provides a demographic and economic analysis of the District, describes future facilities needs in response to a growing student population and aging buildings, and outlines a Capital Improvement Plan. The Plan describes how the District should grow, what modifications to make to existing school sites, and outlines planning principles for the development of new school sites. The District will use this Plan as a tool to implement changes to existing campuses and to construct new ones through the year 2015. The development of the Specific Plan Area is anticipated in the Plan.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

Impacts on schools are determined by analyzing the projected increase in the demand for schools as a result of the proposed project and comparing the projected increase with the schools' remaining capacities to determine whether new or altered facilities would be required. Impacts on schools are considered to be less than significant with payment of the State Department of Education Development Fee, which was enacted to provide for school facilities construction, improvements, and expansion.

Construction activities are not anticipated to result in an additional demand for schools, nor are the commercial elements of the proposed project. The operational analysis focuses upon the maximum number of residential units that would result from the proposed project. Consequently, this analysis includes only the residential component of the proposed development.

### **Student Generation Calculations**

For the schools impact analysis, expected student yields were derived using current multi-family student generation rates for the elementary, middle, and high school levels (see Table 6.10-4). The entire Specific Plan Area is within the SCUSD, except for portions of Parcels 2, 3a, and 72. These parcels are not expected to have residential uses on them. Therefore, the entire maximum proposed 12,501 housing units would be developed within the SCUSD. The development of residential units would occur over many years, so the growth in students would be spread across approximately 20 years.

### **Project Components**

The proposed project would develop up to 12,501 residences within the Central City, which would generate a population of up to 26,252 new residents, as discussed under the Methods of Analysis section, above. Approximately 1,250 elementary, 250 middle, and 375 high school students would be generated if the entire 12,501 residences were to develop. The proposed project includes a potential school site in the Specific Plan Area (see Figure 6.10-2). If a school were to be constructed



<b>TABLE 6.10-4</b>			
<b>RAILYARDS STUDENT GENERATION</b>			
<b>SCUSD Student Generation</b>			
<b>Type of School</b>	<b>Generation Rate</b>	<b>Number of Du</b>	<b>Number of Students Generated</b>
Elementary	0.1	12,501	1,250
Middle	0.02	12,501	250
High	0.03	12,501	375
<b>Total</b>			<b>1,875</b>
Source: PBS&J/EIP, 2007.			

on the site, it would likely be an urban school, potentially with multi-story classrooms and compact hardscape recreation areas.

Using current generation rates, approximately 1,250 elementary, 250 middle, and 375 high school students would be generated in the SCUSD.

### **Standards of Significance**

For the purposes of this EIR, impacts on schools are considered significant if the proposed project would:

- Generate students that would exceed the design capacity of existing or planned schools that would result in the need for new or physically altered school facilities, the construction of which could cause significant environmental impacts.

### **Project Components**

The proposed Specific Plan contains the following goal and policies addressing schools:

**Goal CS-5 Provide for adequate school resources in the form of facilities on-site or off-site or in-lieu of fees to meet the needs of future residents.**

#### Policies

CS-5.1. Ensure that school facilities or in-lieu fees are provided at a level that accurately reflects actual student generation within the Plan Area.

CS-5.2. Recognize the need for alternative types of school facilities within the Plan Area and/or accommodate school demands off-site so that demand for school facilities is met, while building on the unique resources and mixed-use nature of the development.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.10-7 The proposed project would generate additional elementary school students in the Sacramento City Unified School District.**

Approximately 1,250 elementary students would be generated in the SCUSD. Based on the remaining capacity of Washington Elementary School, 31 of the students generated by the proposed project could be accommodated at Washington. The remaining 1,219 elementary school students generated could not be accommodated at Washington's existing facilities. While the proposed Specific Plan would likely generate fewer students than simple unit calculations indicate,<sup>78</sup> either

78 City of Sacramento Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-10.

additional facilities would need to be constructed on the Washington campus or at another location to accommodate these additional students generated by the project. One or more schools could be located within the Specific Plan Area, but such a school would have to be urban in nature, with no ground-level playfields or other turf areas in accordance with current remediation plans. In any case, the proposed project would pay school impact fees for use by the District to develop additional school facilities.

Under AB 50, the payment of statutory fees by developers would serve as complete CEQA mitigation to satisfy the impact of development on school facilities. Therefore, the impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.10-8 The proposed project would generate additional middle school students in the Sacramento City Unified School District.**

Approximately 250 middle school students would be generated in the SCUSD. Based on the design capacity of Sutter Middle School and the current student enrollment, the addition of more students to the campus would only exacerbate capacity issues at the school. The 250 middle school students generated could not be accommodated at Sutter Middle School's existing facilities. Either additional facilities would need to be constructed on the Sutter Middle School campus or at another location to accommodate these additional students. As discussed above, the proposed project would pay school fees that could be used to expand school facilities.

Under AB 50, the payment of statutory fees by developers would serve as complete CEQA mitigation to satisfy the impact of development on school facilities. Therefore, the impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.10-9 The proposed project would generate additional high school students in the Sacramento City Unified School District.**

Approximately 375 high school students would be generated in the SCUSD. Based on the design capacity of McClatchy High School and the current student enrollment, the addition of more students to the campus would only exacerbate capacity issues at the school. The 375 high school students generated by the proposed project could not be accommodated at McClatchy's existing facilities. Either additional facilities would need to be constructed on the McClatchy campus or at another location to accommodate these additional students. As discussed above, the proposed project would pay school fees that could be used to expand school facilities.

Under AB 50, the payment of statutory fees by developers would serve as complete CEQA mitigation to satisfy the impact of development on school facilities. Therefore, the impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

**6.10-10 The proposed project could result in a school within 1,500 feet of a railroad track.**

The Specific Plan identifies a potential school site on the east side of the Specific Plan Area adjacent to the Union Pacific Railroad track. It is unlikely that any school constructed within the Specific Plan Area would be designed or have grounds similar to typical schools in the region, with several acres of classrooms and playgrounds. Instead, a school in the Specific Plan Area is likely to be an urban school, with multi-story classrooms and recreation areas in a courtyard or on a rooftop. Nonetheless, placement of a school near a railroad track could result in potentially hazardous situation for students.

The California Education Code guides school site development by establishing thresholds for development. Section 14010 (d) specifically outlines measures that shall be taken if a school is proposed within 1,500 feet of a railroad track. The potential school site identified in the Specific Plan is adjacent to the Union Pacific Railroad tracks. Placement of a school at that location could result in a potentially hazardous situation for students and would be a *significant* impact.

**Mitigation Measure**

Implementation of the following mitigation measure would reduce the impact to ***less than significant*** by ensuring that proper precautions are taken to protect students from potential hazards resulting from placing a school near a railroad track.

- 6.10-10 *Prior to school site approval, the Sacramento Unified School District shall retain a competent professional to prepare a safety study that assesses cargo manifests, frequency, speed, and schedule of railroad traffic, grade, curves, type and condition of track need for sound or safety barriers, need for pedestrian and vehicle safeguards at railroad crossings, presence of high pressure gas lines near the tracks that could rupture in the event of a derailment, and an evacuation plan. In addition to the analysis, the study shall identify and the district shall incorporate measures to avoid potentially hazards to students related to proximity to the rail line on the campus.*

**Cumulative Impacts and Mitigation Measures**

Although the SCUSD boundaries cover a large portion of the City of Sacramento, the more appropriate boundaries for assessing cumulative impacts on the SCUSD are the relevant attendance boundaries of each of the schools directly affected by the Specific Plan. Assessing cumulative growth impacts to the schools themselves is relevant because each school has a different attendance area, with some overlap in the Central City. Estimates for increases in the number of students are based on the SCUSD Facilities Master Plan.

**6.10-11 The proposed project would contribute to cumulative increases in the number of students in the Sacramento City Unified School District.**

According to the SCUSD Facilities Master Plan, enrollment at Washington Elementary from 1999-2004 declined by 14.8 percent.<sup>79</sup> From 2004 to 2005, approximately 66.4 percent of students living inside the Washington attendance area actually attend Washington as their assigned school.<sup>80</sup>

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79 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-27, Exhibit 3-40.  
80 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-30, Exhibit 3-42.

The SCUSD Facilities Master Plan explains that no correlation is apparent between changes in elementary school enrollment and the issuance of building permits from 1990-2004.<sup>81</sup> Because the District has an open enrollment policy, students are able to apply for placement at other schools within the District and are not required to attend the school within the attendance area where the student lives. Elementary school transfers within the same community planning areas are high, involving approximately 31 percent of students District-wide.<sup>82</sup>

Enrollment projections at Washington Elementary School are expected to remain relatively stable. The largest increase in enrollment, a 9 percent increase, is expected to be between the 2009-10 and 2010-11 school years.<sup>83</sup> This reflects a population bubble that is expected to impact elementary grades throughout the District.<sup>84</sup> However, projected enrollment from 2004-05 through 2014-15 is only expected to increase by 13 percent.<sup>85</sup>

Overall, future development in the Washington attendance area is expected to remain relatively stable. According to growth projections, Washington's student enrollment would not exceed its design capacity until the 2014-15 school year when enrollment would exceed capacity by one student.<sup>86</sup> The high rate of intra-District transfers combined with the relatively flat growth rate of enrollment at Washington indicates that any increases to students within the Washington attendance area could be dispersed throughout the District, minimizing direct impacts to Washington Elementary. The proposed project would pay school fees to offset its demand for school facilities. For these reasons, the Specific Plan contribution to cumulative elementary school impacts would be less than considerable, and the impact would be *less than significant*.

#### Mitigation Measure

*None required.*

#### **6.10-12 The proposed project would contribute to cumulative increases in the number of middle school students in the Sacramento City Unified School District.**

Sutter Middle School has traditionally been a "magnet" type of program which attracts students from other attendance areas within the District. Without open enrollment, Sutter would not be able to sustain the facility population.<sup>87</sup> However, middle schools within the SCUSD are expected to experience a dip in attendance until 2012, and then begin growth again as the elementary population increase advances into middle school.<sup>88</sup> Projections for Sutter show a steady decline in student enrollment until 2012 from the current enrollment of 1,350<sup>89</sup> to an enrollment of 902 by academic year 2012-13,<sup>90</sup> a decline of 33 percent.

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- 81 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-27.  
 82 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-44.  
 83 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-38, Exhibit 3-53.  
 84 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-44.  
 85 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-38, Exhibit 3-53.  
 86 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-38, Exhibit 3-53.  
 87 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-41.  
 88 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-34.  
 89 Pakou Woo, Sutter Middle School, personal communication, June 22, 2007.  
 90 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-36.

Although Sutter acts as a magnet school, approximately 14 percent of students living within the school's attendance area attend a different school.<sup>91</sup> The District's open enrollment policy allows students to attend any school within the District, making transfers to and from Sutter frequent occurrences. At Sutter, approximately 68 percent of students attending transferred to the school from a different attendance area.<sup>92</sup> This indicates that there is ample capacity at the school to accommodate students living within Sutter's attendance area if the District does not accept as many intra-district transfers.

As shown in the school's projections, attendance at Sutter is expected to decline for several years, then slowly climb back toward the school's capacity. Enrollment at Sutter would not reach capacity through 2015. Development projected within Sutter's attendance area is expected to consist mostly of multi-family housing with some single-family residential. Overall, future development in the Sutter attendance area is expected to remain relatively stable. The high rate of intra-District transfers combined with the declining growth rate of enrollment at Sutter indicates that any increases to students within the Sutter attendance area could be dispersed throughout the District, minimizing direct impacts to Sutter Middle School. Furthermore, the proposed project will pay school impact fees to offset its demand for school facilities pursuant to SB 50. Therefore the Specific Plan contribution would be less than considerable, and the impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.10-13 The proposed project would contribute to cumulative increases in combination with other projects in the Central City would in the number of high school students in the Sacramento City Unified School District.**

McClatchy High School tends to enroll a high number of students live with the school's attendance area. Approximately 93 percent of students living within McClatchy's attendance area attend the school.<sup>93</sup> Enrollment projections for McClatchy indicate that enrollment will decline through 2015, with a slight increase in enrollment for the 2008-09 and 2009-10 school years.<sup>94</sup> However, enrollment projections through 2015 show that the school will have more students than its design capacity each year.

Several small high schools have been constructed or are only partially online. Once these small high schools are fully operational, it is anticipated that some students projected to attend McClatchy will actually attend a different high school. Because the District has an open enrollment policy, students are able to apply for placement at other schools within the District and are not required to attend the school within the attendance area where the student lives.

Overall, future development in the McClatchy attendance area is expected to remain relatively stable. The high rate of intra-District transfers combined with the declining growth rate of enrollment at McClatchy indicates that any increases to students within the McClatchy attendance area could be dispersed throughout the District, minimizing direct impacts to McClatchy High School. Furthermore, the proposed project will pay school impact fees to offset its demand for school

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- 91 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-30, Exhibit 3-43.
- 92 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-31.
- 93 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-31, Exhibit 3-44.
- 94 Sacramento City Unified School District, *Facilities Master Plan 2006-2015*, September 2006, page 3-41, Exhibit 3-66.

facilities pursuant to SB 50. Therefore the Specific Plan contribution would be less than considerable, and the impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility Overlay is approved, the mixed uses, including residential, office, and retail planned within Parcel 48 and a portion of Parcel 49 would be replaced with a sports and entertainment facility. Demand for school services is determined by the number of students generated within a project. Development of a sports and entertainment facility would not result in the generation of new students; rather, development of such a facility would replace residential uses within the Specific Plan Area that could generate students. Therefore, the impact to schools resulting from approval of the Sports and Entertainment Facility Overlay would be less than those anticipated under the Specific Plan, and no additional mitigation would be necessary.

## LIBRARIES

### INTRODUCTION

This section summarizes the library services provided in the City of Sacramento. Existing facilities are listed and any expansion of existing facilities or the construction of new facilities are discussed. Existing plans and policies relevant to libraries are also provided. Potential impacts to libraries as a result of the proposed project are evaluated, based on the guidelines in the Sacramento Public Library Facilities Master Plan (FMP) and whether the proposed project would create an increased demand for the provision of library services that would exceed the current or planned level of library services. Information was obtained from communications with representatives of the Sacramento Public Library and the Sacramento Public Library Facilities Master Plan.

No comments were received on the NOP regarding the provision of library facilities.

### ENVIRONMENTAL SETTING

#### Existing Facilities

The Sacramento Public Library (SPL) is a joint powers agency of the City of Sacramento and the County of Sacramento.<sup>95</sup> The SPL serves residents of both the City and County.

The main branch of the SPL, also known as the Central Library, is located in downtown Sacramento at 8<sup>th</sup> and I Streets. The Central Library was founded by community leaders in 1857. It now contains nearly 300,000 volumes and more than 1,000 periodical subscriptions. Many special collections are housed at the Central Library, including business, government documents, genealogy, and literature. The Sacramento Room at the Central Library includes special collections on California and Sacramento history, local authors, and the history of the Central Library. The Central Library has many unique resources, including online and CD-based resources, internet stations, and the Schwab-Rosenhouse College Resource Center, which provides free consultations with professional college and career counselors and access to a variety of college preparatory resources. The Tsakopoulos Library Galleria, another resource at the Central Library, provides a 5,400 square foot space available for a variety of events, including weddings, meetings, seminars, parties, receptions, fund raisers, or trade shows. The Galleria also includes two smaller meeting rooms.

The SPL operates 27 branches and two bookmobiles to serve residents. The bookmobiles visit approximately 50 different sites in the City and County each month. The location of each library branch and the number of items in each library collection, are provided in Table 6.10-5.

Libraries operated by other entities are also located in the City. One such facility is the California State Library in Sacramento, which is operated by the State of California. The State Library operates out of two locations, the Stanley Mosk Library and Courts Building at 9<sup>th</sup> and Capitol Streets, and the Library and Courts II Building at 9<sup>th</sup> and N Streets, both in downtown Sacramento. The State Library provides reference services, onsite use of collections, California history information, genealogy resources, Braille and recorded books, a directory of libraries, and internet access.<sup>96</sup> The State Library's circulating materials also provides services to the State government, local governments, and local libraries.<sup>97</sup>

95 Sacramento Public Library, *Sacramento Public Library Authority Facility Master Plan 2007-2025*, March 2007, page 13.

96 California State Library, <http://www.library.ca.gov/html/pubserv.cfm>, accessed May 15, 2007.

97 California State Library, <http://www.library.ca.gov/index.cfm>, accessed May 15, 2007.

TABLE 6.10-5

## SACRAMENTO PUBLIC LIBRARY LOCATIONS AND COLLECTIONS

Branch	Location	Collection
Arcade Learning Library (ARC)	2443 Marconi Avenue	67,000 items
Arden-Dimick Library (ARD)	891 Watt Avenue	75,000 items
Carmichael Library (CAR)	5605 Marconi Avenue (in Carmichael)	n/a
Central Library (CEN)	828 I Street	300,000 volumes
Colonial Heights Library (CHS)	4799 Stockton Boulevard	60,000 volumes
Belle Coolege Library (COO)	5600 South Land Park Drive	90,000 items
Courtland Library (COU)	170 Primasing Avenue (in Courtland)	n/a
Del Paso Heights Library (DEL)	920 Grande Avenue	32,000 items
Elk Grove Library (ELK)	8962 Elk Grove Boulevard (in Elk Grove)	n/a
Fair Oaks Library (FAI)	11601 Fair Oaks Boulevard (in Fair Oaks)	72,000 items
Franklin Library (FRA)	10055 Franklin High Road (in Elk Grove)	n/a
Marian O. Lawrence Library (GAL)	1000 Caroline Avenue (in Galt)	n/a
Isleton Neighborhood Library (ISL)	412 Union Street (in Isleton)	12,500 items
Martin Luther King Jr. Library (KIN)	7340 24 <sup>th</sup> Street Bypass	110,000 volumes
C.K. McClatchy Library (MCC)	2112 22 <sup>nd</sup> Street	n/a
McKinley Library (MCK)	601 Alhambra Boulevard	45,000 volumes
North Highlands/Antelope Library (NHI)	4235 Antelope Road (in Antelope)	70,000 items
North Natomas Library (NNT)	2500 New Market Drive	n/a
North Sacramento/Hagginwood Library (NSA)	2109 Del Paso Boulevard	42,000 items
Orangevale Library (ORA)	8820 Greenback Lane (in Orangevale)	23,000 items
Rancho Cordova Library (RAN)	9845 Folsom Boulevard	100,000 items
Rio Linda Library (RIO)	902 Oak Lane (in Rio Linda)	n/a
South Natomas Library (NAT)	2901 Truxel Road	60,000 items
Southgate Library (SOU)	6132 66 <sup>th</sup> Avenue	80,000 items
Sylvan Oaks Library (SYL)	6700 Auburn Boulevard (in Citrus Heights)	80,000 items
Valley Hi-North Laguna Library (VAL)	6351 Mack Road	30,000 items
Walnut Grove Library (WAL)	14177 Market Street (in Walnut Grove)	15,000 items

Source: Sacramento Public Library website, [http://www.saclibrary.org/about\\_lib/branches.html](http://www.saclibrary.org/about_lib/branches.html), accessed May 15, 2007.

### Planned Facilities

The Sacramento Public Library FMP identifies existing facilities that need to be renovated, relocated, or expanded, or new facilities that need to be built. The recommendations in the FMP are based on facility standards, population projections, and analysis of the age and condition of the existing facilities, combined with a review of site and funding opportunities. The FMP addresses facility needs for the next 20 years.

According to the FMP, 18 new library facilities are currently planned for construction in the City and County of Sacramento through the year 2025. Within the City of Sacramento, two new library facilities are proposed at 65<sup>th</sup> Street and Folsom Boulevard and at Sojourner Truth Park in the Pocket neighborhood by 2015. These improvements are based on population forecasts from Census 2000 data and SACOG projections. By 2015, the population of the City of Sacramento is expected to increase by 61,736 residents for a total population of 521,291 residents. Currently the City of Sacramento has 252,549 sf of library facilities. Through the expansion, renovation, or relocation of existing facilities, or addition of new facilities, by 2025 the City of Sacramento will add approximately 104,032 sf of facilities for a total of 356,581 sf of library facilities.

For fiscal year 2005, the library maintained 0.55 sf of library space per capita in the City of Sacramento.



## REGULATORY SETTING

### Federal and State

There are no federal or State regulations pertaining to the provision of libraries.

### Local

#### City of Sacramento General Plan 1988

**Goal A** Provide adequate library facilities to contribute to the community cultural, academic, and recreational activities.

#### Policies

1. Evaluate all proposed library facilities for consistency with the standards and guidelines of the Libraries Master Plan.
2. Explore methods of financing new library facilities and expanding and upgrading existing facilities.

#### Sacramento Public Library Authority Facilities Master Plan

The Sacramento Public Library Authority FMP contains the following Guiding Principles designed to support SPL customers.

#### **Guiding Principles**

1. Libraries recognize the needs of different communities.
2. Libraries recognize the needs of a diverse population.
3. Libraries add value to the community.
4. Libraries are prime real estate.
5. Libraries are easy for customers to use.
6. Library space is flexible.
7. Libraries recognize the value of community partners.
8. Library design promotes staff efficiency and effectiveness.

The Sacramento Public Library Authority FMP also contains service standards in a tiered three-level approach. The three levels are Threshold, Target, and Prime. The Threshold standard would be used to evaluate current library services available to residents of the specific service area. As individual communities move forward in planning their specific service goals and the facilities required to provide those services, they would select from Threshold, Target, or Prime to tailor their building program. Please refer to the Methods of Analysis discussion below for a detailed look at the SPL service goals.

### Funding<sup>98</sup>

#### *City and County Funding*

Potential funding sources include general and reserve funds. Typically, smaller projects use general revenues. The City of Sacramento periodically uses general fund money to completely or partially augment library project funding. Recently, the City of Sacramento issued Revenue Bonds to accomplish a series of Community Reinvestment projects. Projects currently planned for funding by the bonds include the Pocket and Valley Hi-North Laguna new library construction projects. This

98 Sacramento Public Library, *Sacramento Public Library Authority Facility Master Plan 2007-2025*, March 2007, page 62-64.

funding will play a critical role in moving these projects forward, especially in wake of the defeat of State Proposition 81 in June 2006. Proposition 81 would have provided for a bond issue in an amount not to exceed a total of \$600 million to provide funds for the construction and renovation of public library facilities in order to expand access to reading and literacy programs in California's public education system.

#### *County Fund 11 (County Library Fund)*

Currently, the County Library Fund (Fund 11) has been used to support the annual operating costs of the libraries outside the city of Sacramento. The County also covers certain internal library support costs and overhead from the County Library Fund. All parcels in the county with the exception of those in the cities of Sacramento and Folsom generate Fund 11 revenues. When County Library Fund monies are used for capital project funding, it reduces the amount of money available for library operations. Any future use of Fund 11 for capital construction must be done with careful analysis to determine that the fund can support the one-time cost or ongoing debt service, while continuing to support the expanded annual operating costs.

#### *Redevelopment Area Funding*

The state of California redevelopment law allows a redevelopment agency to obtain funds using "tax-increment financing." This type of financing registers a total property tax value for the area and allows any future increases in taxes (the "tax increment") due to increases in the properties' assessed values within the area to go to the Redevelopment Agency for use in stimulating development. The purpose of these redevelopment areas is to fund new projects that create a healthier environment for businesses and residents. Although the tax increments from redevelopment may not directly be used for library operations, agreements with the redevelopment agency may be negotiated to provide project or multi-year payments that may be used by the Library.

#### *Development Impact Fees*

A development impact fee provides another funding vehicle that has been used by public agencies in California for the construction of new library facilities. The fee is typically charged against new development projects. The fee is based on the calculated impact that new development will have on library facilities and is determined by cost parameters including: the number of dwelling units (du) to be developed; the timing of the build-out of those housing units; and the cost per dwelling unit required to mitigate the impact on library facilities.

#### *General Obligation Bonds*

Since the passage of Proposition 46 in 1986, cities, counties and special districts have been able to issue general obligation (GO) bonds to acquire, construct or improve real property. GO bonds require a two-thirds majority vote in a bond election, include an increase in the tax rate that creates a guaranteed new revenue stream to repay the bonds and, as a result, are the most efficient form of long-term debt financing – they require neither a reserve fund nor funded (capitalized) interest during project construction. Therefore, GO bonds are smaller in size and annual total debt corresponds since it's lower than any other form of long-term debt financing. Receiving the required two-thirds majority voter approval creates a major challenge for a GO bond passage. Passing a GO bond requires broad community support. Time must be invested to educate voters about the need for financing programs, hold and pay for an election and sell bonds.

#### *Benefit Assessment and Parcel Tax*

The city of Sacramento currently levies a benefit assessment for library services on parcels within city boundaries. This assessment expires on June 30, 2007. In November 2004, the City placed a

parcel tax (Measure X) on the ballot to replace the expiring assessment tax and was approved by voters. This parcel tax is \$26.60 per parcel annually for 10 years and replaces the assessment. This tax will become effective July 1, 2007. Although this parcel tax will fund only library operations, such a tax may also be established to specifically fund library capital projects.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The provision of adequate library services is based on the Sacramento resident population as compared to the square footage-per-capita ratio provided in the Sacramento Public Library Authority Planning Standards in the FMP.<sup>99</sup>

- Threshold Level: 0.40 sf library facilities per capita
- Target Level: 0.50 sf library facilities per capita
- Prime Level: 0.60 sf library facilities per capita

For the purposes of this analysis, a significant impact would occur if the threshold level of 0.40 sf of library facilities per capita is not reached.

For the library impact analysis, the maximum number of residential uses was assumed to provide the most conservative analysis. To determine the population that would be generated by the proposed project, the maximum number of dwelling units was multiplied by a conservative population generation factor of 2.1 persons per household. This factor was used to determine population of the proposed project, rather than the City of Sacramento's citywide average household size of 2.57, as estimated by the U.S. Census Bureau. The use of a lower population per household figure properly reflects the proposed Specific Plan Area's location near the downtown area of the City and the planned high density housing with small unit sizes. Households in high density downtown housing tend to comprise of singles, childless couples, and empty nesters, and are therefore, generally smaller than households in other areas of the City. Therefore, development of 12,501 dwelling units under the Specific Plan at a persons per household rate of 2.1 would generate 26,252 residents.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project requires, or results in, the construction of new, or the expansion of existing, facilities related to the provision of library services.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.10-14 The proposed project would result in an increased demand for library services.**

The closest library to the proposed project is the Central Library, which is located at 828 I Street. The Central Library is 160,000 sf and has approximately 300,000 volumes. The Central Library is divided into a neighborhood serving space and a centralized service space. The neighborhood serving space is 15,000 sf and is designed to serve the immediate population in the Downtown

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99 Sacramento Public Library, *Sacramento Public Library Authority Facility Master Plan 2007-2025*, March 2007, page 44; and Lois Ross, Project Manager, Sacramento Public Library, personal communication, July 11, 2006.

Sacramento area. The centralized service space is approximately 140,000 sf which serves the needs of the entire Sacramento Public Library system. The Central Library uses a historic building for its operations and is unable to expand in order to add more square footage. However, the Central Library plans to renovate its space to a new service model. By 2015, the Central Library will have 20,000 sf for the neighborhood serving space and 135,000 sf for the centralized service space.

For 2005, the Central Library maintained a service ratio of 0.59 sf per capita, and the entire City of Sacramento maintained a ratio of 0.55 sf per capita (see Table 6.10-6). The proposed project would result in a total population of approximately 26,252 residents with buildout of the maximum number of residential uses. The FMP for the Sacramento Public Library projects an increase of approximately 61,736 residents in the City by 2015 and by 102,432 residents by 2025 (see Table 6.10-6). These projections are based on Census 2000 data, as well as SACOG population forecasts which include the additional Specific Plan Area population.

<b>Library</b>	<b>Current Square Footage</b>	<b>Square Footage by 2025</b>	<b>Current Service Area Population</b>	<b>Population by 2025</b>	<b>Current Service Ratio</b>	<b>Service Ratio by 2025</b>
Valley Hi-North Laguna	5,850	20,000	36,544	41,265	0.16	0.48
Pocket Library	n/a	15,000	n/a	30,000	n/a	0.50
65th and Folsom	n/a	30,000	n/a	52,000	n/a	0.58
McClatchy	1,900	1,900	13,398	15,880	0.14	0.12
Del Paso Heights	5,425	20,000	32,325	38,693	0.17	0.52
N. Sac Hagginwood	4,000	15,000	27,585	28,686	0.15	0.52
McKinley	4,681	4,681	31,710	32,082	0.15	0.15
Colonial Heights	12,000	20,000	98,798	67,827	0.12	0.29
Belle Cooledge	12,000	25,000	79,544	46,648	0.15	0.54
Central Library – Neighborhood	15,000	20,000	25,367	36,937	0.59	0.54
Central Library – Centralized	140,000	135,000	n/a	n/a	n/a	n/a
Martin Luther King, Jr.	15,078	30,000	49,411	64,175	0.31	0.47
South Natomas	13,615	20,000	40,206	41,470	0.34	0.48
North Natomas	23,000	23,000	24,637	66,294	0.93	0.35
<b>Total</b>	<b>252,549</b>	<b>379,581</b>	<b>459,525</b>	<b>561,957</b>	<b>0.55</b>	<b>0.68</b>

Source: Sacramento Public Library, *Sacramento Public Library Authority Facility Master Plan 2007-2025*, March 2007; and PBS&J/EIP, 2007.

As currently proposed, the proposed project would be implemented in four major phases, Phase 1 to Phase 4, between 2007 and 2027. The neighborhood serving space of the Central Library would consist of 20,000 sf by 2015. Using the population projections from the FMP for 2025, the neighborhood space of the Central Library would decrease from 0.59 sf per capita to a 0.54 sf per capita ratio. This ratio is not only well above the Planning Guidelines threshold for adequate library services, but it is also above the Planning Standards target level of 0.50 sf per capita.

Additional libraries that may be used and are north of the Specific Plan Area are the North Sacramento-Hagginwood Library, which would be relocated to a larger facility within the same service area, and the South Natomas Library, which is slated for a 6,000 sf expansion by 2015. The South Natomas Library is also projected to increase its service ratio from 0.34 to 0.48, so residents from the proposed project would be able to use this library without jeopardizing the service ratios of other libraries.

In addition to using these libraries in the project vicinity, there is a potential for inclusion of Focused Purpose Facilities (FPFs) within the Specific Plan Area.<sup>100</sup> FPFs would not be full scale libraries, but would serve the community based on a direct need. For example, a small amount of square footage could be set aside in a children's club facility that offer computer and internet access provided by the SPL.

The FMP also identifies funding mechanisms from County and City general funds to development impact fees to benefit assessment and parcel taxes. These funding sources would be used by the SPL to continue to provide adequate library services to the Central City area, as well as the entire SPL service area. Any need for expansion, renovation, or construction of library facilities through 2025 has been projected in the FMP with funding sources identified.

As indicated above, the Central Library is planning on renovating the existing facility to accommodate an increase in population and demand for library services. Funding for the renovation would come from both the City of Sacramento and Sacramento County general and reserve funds, County Fund 11, Redevelopment Agency funding, statewide library bond funds, the City's general obligation bonds, parcel tax through Measure X, Mello-Roos Special Tax Bonds, and certificates of participation. The population generated by the project would contribute tax dollars into the City's general fund along with payment of other city fees and taxes.

Therefore, because implementation of the project would contribute funds for future renovation of the Central Library and additional library facilities in the project vicinity would be able to serve the project, impacts to library services would be considered ***less than significant***.

#### Mitigation Measures

*None required.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for library services is the Sacramento Public Library service area, including the City of Sacramento, through the horizon year of 2025 as defined in the FMP.

#### **6.10-15 The proposed project would contribute to cumulative increases in demand for library services.**

As discussed above, the Specific Plan Area residents would be able to use the Central Library, as well as the nearby E.K. McClatchy Library and McKinley Library. Because these libraries are located in historic buildings, they will be undergoing renovations, rather than expansions, by the year 2031. Additional libraries that could be used are north of the Specific Plan Area, including the North Sacramento-Hagginwood Library, which would be relocated to a larger facility within the same service area, and the South Natomas Library, which is slated for a 6,000 sf expansion by 2015. Table 6.10-6 shows other libraries in the City, as well as new facilities planned for construction and completion by 2025.

The FMP also identifies funding mechanisms from County and City general funds to development impact fees to benefit assessment and parcel taxes. These funding sources would be used by the SPL to continue to provide adequate library services to the Central City area, as well as the entire SPL service area. Any need for expansion, renovation, or construction of library facilities through 2025 has been projected in the FMP with funding sources identified.

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100 Lois Ross, Project Manager, Sacramento Public Library, Personal communication, July 11, 2007.

Service ratios for the entire City of Sacramento take into account all of the libraries in the City of Sacramento as well as population projections until the year 2027. The entire City would have a library service ratio of 0.64 sf per capita with buildout of the Specific Plan Area. Because the Sacramento Public Library FMP has proposed improvements to library facilities throughout the City of Sacramento, and because the 0.64 sf per capita service ratio for the entire City would be above the prime level of 0.60 sf per capita, impacts to library services would be considered a ***less-than-significant cumulative impact***.

#### Mitigation Measures

*None required.*

#### **Sports and Entertainment Facility Overlay**

In the event that the Sports and Entertainment Facility Overlay is approved, the mixed uses, including residential, office, and retail planned within Parcel 48 and a portion of Parcel 49 would be replaced with a sports and entertainment facility. Demand for library services is generally determined by residential population. Development of a sports and entertainment facility would not result in the generation of population and would actually reduce the number of residents within the Plan Area, since residential uses would be replaced. Therefore, the impact to library services resulting from approval of the Sports and Entertainment Facility Overlay would be less than those anticipated under the Specific Plan, and no additional mitigation would be necessary.

## **6.11 PUBLIC UTILITIES**

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## 6.11 PUBLIC UTILITIES

This section of the EIR describes existing public utilities available in the vicinity of the proposed project in the City of Sacramento and evaluates the effects of project development on those services. The services evaluated in this section include the following:

- Wastewater and Drainage; and
- Water Supply.

Public services will be funded through a variety of mechanisms, as described in Appendix P. Funding mechanisms used could include plan area fees, citywide impact fees, school district impact fees, establishment of special districts and assessments, developer financing, tax increment financing, federal, state, and regional financing, and other potential methods.

### WASTEWATER AND DRAINAGE

#### INTRODUCTION

The focus of this section is on the capacity of City systems for collection, conveyance, and treatment of wastewater and stormwater flows from the project site, particularly as associated with the City's Combined Sewer System. Issues associated with local or regional flooding, as well as water quality considerations, are evaluated in Section 6.6, Hydrology and Water Quality.

Information for this section comes from variety of sources, including the preliminary engineering plans for the proposed project, information regarding the City's existing wastewater and stormwater collection facilities that serve the project site, including the Central Valley Regional Water Quality Board's Monitoring Program reports, as well as the environmental documents prepared for the Sacramento Regional Wastewater Treatment Plant (SRWTP) and the 2020 Master Plan for the plant. Additional information comes from the City's 2007-2012 Capital Improvement Program.

Comment letters requesting more detailed utility plans and providing permitting and design recommendations were received during the Notice of Preparation (NOP) review period.

#### ENVIRONMENTAL SETTING

##### Existing Wastewater and Storm Drainage System

The Railyards Plan Area is in a portion of the City that is served by the City of Sacramento's Combined Sewer and Stormwater System (CSS) for wastewater and stormwater collection, treatment and disposal. The CSS is a wastewater collection system designed to convey domestic sewage, commercial and industrial wastewater, and surface stormwater runoff to the SRWTP, which is located approximately five miles south of the City in Freeport.

Most of the project site currently consists of undeveloped and/or raw land with little existing usage or facilities. Sanitary sewage and stormwater runoff in the project area currently flows directly to the CSS. Existing storm drainage and sanitary sewer pipelines in the Specific Plan Area are limited to those that are located in the historic Central Shops area and those located south of the main railroad lines. The pipelines in the Central Shops area are limited to conveyance of treated discharge from the groundwater remediation program, while those located south of the main railroad line convey both storm drainage and sanitary flows south to the CSS. These pipelines currently convey small volumes of stormwater (approximately 10 cubic feet per second) and sanitary sewer flows.

Local flooding can occur during large storms when combined wastewater and stormwater flows and volumes exceed the design capacity of the system, resulting in the system backing up into low-lying areas. Please see Section 6.6, Hydrology and Water Quality for details on flooding and water quality.

### **Combined Sewer System**

The project site is located in an area of Sacramento served by the CSS, a collection and conveyance system designed to convey domestic sewage, commercial and industrial wastewater, and surface stormwater runoff in a single pipeline for treatment at a regional wastewater treatment facility. The construction of combined sewers, for the specific use of conveying both sanitary and storm flows, was discontinued in 1946 due to concerns regarding potential negative impacts to water quality to local streams and rivers. Since that time, separate sanitary and stormwater sewers have been constructed in newer parts of the City, and some portions of the original CSS have been improved to separate sanitary and stormwater flows.<sup>1</sup> The project site is located in a portion of the CSS where sanitary and storm flows remain combined. The City's CSS serves roughly 100,000 residents with a service area covering roughly 7,510 acres in the downtown Sacramento, East Sacramento and Land Park areas (see Figure 6.11-1 for a map of the CSS). An additional 3,690 acres in East Sacramento has a separate sewer system that contributes sanitary sewage to the combined system.

### **CSS Facilities<sup>2</sup>**

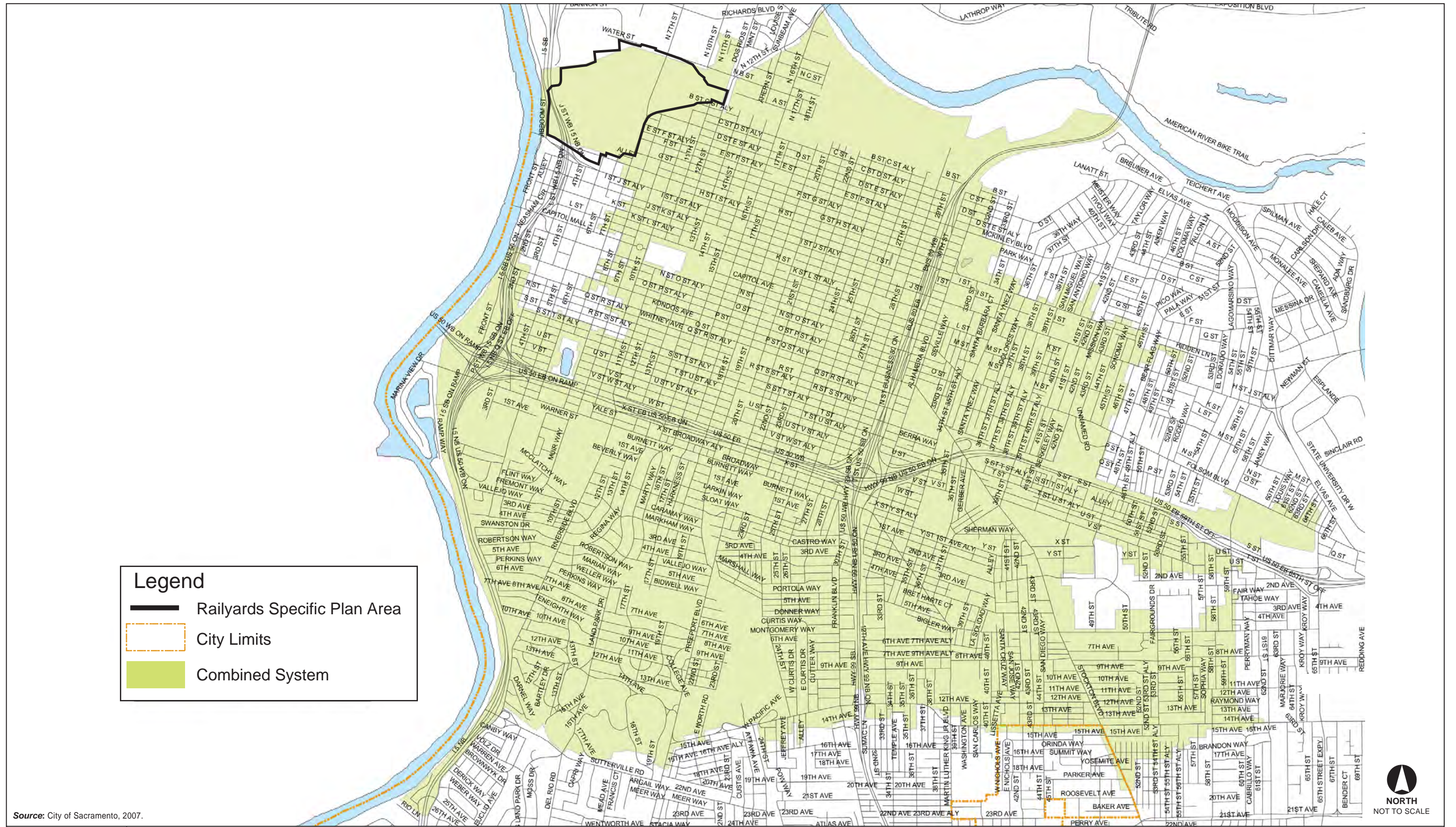
The City of Sacramento's CSS consists of pipelines, pump stations, and associated facilities. Facilities include a flow control structure, an off-line storage facility known as Pioneer Reservoir that also serves as a primary treatment plant, and another primary treatment plants, the Combined Wastewater Treatment Plant (CWTP). The collection system is divided into networks and consists of trunks, interceptors, mains, laterals, and other pipelines. Trunk sewers represent 70 percent of the total collection system capacity (5,000,000 cubic feet total capacity). Recent improvements to the CSS facilities include construction of a second parallel inlet interceptor to Sump 1/1A from 5th and U Streets, under I-5, to the inlet to Sump 1A.

The City operates two pump stations, known as Pump Station 1/1A and Pump Station 2/2A. Pump Station 2/2A, the primary pump station for the CSS, operates continuously throughout the year, as well as during storm events, while Pump Station 1/1A operates only during major storms.




The off-line storage facility, Pioneer Reservoir, is a 3.5-acre, pile-supported, covered, reinforced-concrete structure located adjacent to the east bank of the Sacramento River near Front and U Streets. It was constructed in 1980 to provide 22 million gallons of temporary storage in order to reduce overflows down to approximately five to six events per year. It has a peak hydraulic capacity of 350 million gallons per day (mgd) and a treatment capacity of 250 mgd. Pioneer Reservoir is capable of primary treatment and disinfection prior to discharge. Flows from Pump Station 2 are routed to the reservoir via the Pioneer Interceptor, a 120-inch diameter, 8,800-foot long pipe. The Pioneer Interceptor also provides an additional 5 mgd of storage.

The SRWTP, located approximately five miles south of the City in the unincorporated community near Freeport, is a secondary treatment facility that includes raw influent and effluent pumping, primary clarification, secondary treatment with the high-purity oxygen activated sludge process, disinfection, solids thickening, and anaerobic solids digestion. The SRWTP has an existing

- 
- 1 City of Sacramento, *Combined Sewer System Rehabilitation and Improvement Plan Draft Environmental Report*, November 1996, page 3-1.
  - 2 City of Sacramento Utilities Department, Rick Batha, Supervising Engineer, personal communication, August 10, 2007.



**Legend**

-  Railyards Specific Plan Area
-  City Limits
-  Combined System

Source: City of Sacramento, 2007.

**FIGURE 6.11-1**  
**Combined Sewer System**

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wastewater treatment capacity of approximately 390 mgd of wet weather flow during peak wet weather conditions. The SRWTP currently receives an average influent flow of 165 mgd.

Currently, the discharge rates from the CSS to the SRWTP are restricted to 60 mgd peak flows from Sump 2 by a Master Interagency Agreement with Sacramento Regional County Sanitation District (SRCSD) dated December 1996. During dry weather, approximately 25 mgd typically flows to the SRWTP from Sump 2. The SRWTP also processes wastewater for most of the urbanized areas of the County, including the Cities of Citrus Heights, Rancho Cordova, and Elk Grove and the rest of the City of Sacramento.

Initially, all combined wastewater and stormwater flows are conveyed to the City's pump stations via underground pipes; the primary station is Sump 2, which is on Riverside Boulevard and 11th Avenue.

When flows to Sump 2 exceed 60 mgd, which typically occurs during large storm events, the City must treat the excess wastewater at its CWTP, which is located at 35th Street and South Land Park Drive. The CWTP provides primary treatment with disinfection for an additional 130 mgd of combined flows prior to discharge to the River at points 002 and 003. Flows to Sump 2 greater than 190 mgd are diverted to the Pioneer Reservoir for storage.

During major storms, Sump 1/1A (located adjacent to Pioneer Reservoir) also can pump up to 200 mgd to the reservoir. The stored combined flows are then either treated and discharged to the Sacramento River, or allowed to flow back into the CSS via the collection system or the Pioneer Interceptor, and routed to Sump 2/2A, where it is pumped to the SRWTP. In the event that flows exceed the total combined storage and treatment capacity of the CSS system, the excess is discharged to the River at point 006. During extreme high flow events, discharges of untreated CSS flows may occur at Sump 2 bypass points 004 and 005, and at Sump 1 bypass point 007. In addition, if the capacities of the collection system and storage facilities are surpassed, excess untreated flows back up into local streets in the downtown area through manholes and catch basins as CSS outflows.

CSO discharges of untreated combined wastewater consist primarily of stormwater runoff (90 percent or more), with the remainder as sanitary sewage. The water quality of these discharges varies significantly depending upon the point of discharge and extent of treatment at Pioneer Reservoir (e.g., removal of suspended solids and grit). Generally, untreated CSOs have low pollutant concentrations because the first flush of more polluted flow is treated at the SRWTP and CWTP.

Other components proposed for the CSS are part of the City's Long-Term Improvement Plan, and include the following improvements: underground storage at the Union Pacific Railroad yard near Sacramento City College; underground storage or other improvements in the 65th Street and Oak Park areas; rehabilitation of portions of the collection system; and increasing the size of the CSS interceptors in the downtown area, primarily in 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, S, and L streets.

### **Wastewater and Storm Drainage Infrastructure**

Existing stormwater drainage treatment on much of the Specific Plan Area consists primarily of evaporation and passive infiltration into ground surfaces throughout the site. Stormwater runoff and sanitary sewer flows in the Central Shops and areas south around the existing rail depot are served by a combination of surface runoff and combined drainage facilities, which discharge to both the 3<sup>rd</sup> Street and 7<sup>th</sup> Street CSS pipelines. This system also serves the Amtrak depot and platform, and main line track area. Along 7<sup>th</sup> Street north of I Street, and east of the existing main line railroad track embankment, drainage flows to the two existing CSS pipelines flowing south in 7<sup>th</sup> Street. The pipes

serving the Central Shops area are connected at both ends, the west end flowing southerly to 3<sup>rd</sup> Street and the east end flowing easterly to 7<sup>th</sup> Street.<sup>3</sup> Please refer to Figure 3-13 in Chapter 3, Project Description, for the location of storm drainage pipes.

## REGULATORY CONTEXT

The following federal, State and local regulations and plans are applicable to the proposed project.

### Federal and State Regulations

#### Environmental Protection Agency's National CSO Control Policy

In April 1994, the U.S. EPA issued its Combined Sewer Overflow Policy for controlling discharges to the nation's waters from combined sewer systems (40 CFR Part 122). One of the cornerstones of the CSO Policy is the requirement for Nine Minimum Controls (NMCs), which apply to every CSS in the nation. The NMCs are defined as the minimum technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality without extensive engineering studies or major construction. This policy stipulates that at least 85 percent of the average annual CSS storm flow would be captured and receive primary treatment with disinfection prior to discharge.

The results of a five-year monitoring effort and study (*Effluent and Receiving Water Quality and Toxicity Summary Report for 1991-1995*) found that the City is in compliance with this policy and has generally treated 92 percent of the total CSS storm flow volume prior to discharge.<sup>4</sup> This monitoring effort was completed prior to implementation of the improvements detailed in the CSS Improvement and Rehabilitation Plan.

In addition, the City's NPDES Permit (No. CA0079111) requires that the CWTP be in operation when Pioneer Reservoir is discharging to the river. This plan ensures that the City maximizes flow to the public-owned treatment works, which is one of the nine minimum controls in EPA's National CSO Policy. The NPDES permit also requires a coordinated self-monitoring program for the City and the SRCSD, and an annual report is prepared as part of the coordinated program. Water quality data collected during the year is compared with relevant water quality objectives from the California Toxics Rule (CTR) and the Basin Plan for the Sacramento River watershed, as well as other parameters, including public health criteria and potential effects on the regional aquatic resources.

### Local

#### Combined System Development Fee

The City of Sacramento has developed a sewer ordinance to replace the Mitigation Agreement previously required for developers.<sup>5</sup> The ordinance was adopted March 15, 2005. The ordinance requires payment of a development fee for projects within the CSS service boundary. Key aspects of the CSS development fee include:<sup>6</sup>

- A fee of \$2,633 per equivalent single-family dwelling unit (du) (ESD)<sup>7</sup> that will be subject to periodic adjustments.

3 Nolte Engineers, DRAFT *Report on Downtown Railyards Drainage*, July 1, 2006, page 1.

4 City of Sacramento, *Combined Sewer System Rehabilitation and Improvement Plan Draft Environmental Report*, November 1996, page 7.2-10.

5 City of Sacramento, Department of Utilities, Memorandum subject: Combined Sewer System Development Fee, March 1, 2004.

6 City of Sacramento, Department of Utilities, Memorandum subject: Combined Sewer System Development Fee, March 1, 2004.

7 1 ESD equals 400 gallons per day.

- The first 25 ESDs of a development will be charged \$105 per ESD.
- CSS development fees may be fully or partially offset by constructing or cost sharing in the construction of a mitigation project approved by the City Department of Utilities.
- The fee approximates the cost to construct local storage to mitigate downstream impacts.
- Fees will be collected and deposited in a fund for the City to construct larger projects to mitigate multiple developments.

### City of Sacramento General Plan

The following goal and policies are applicable to wastewater services within the City.

**Goal A Provide adequate sewer service for all urbanized or developing neighborhoods.**

Policies

1. Provide and upgrade sewer facilities where needed to newly developing areas in the City.
2. Develop plans for extension of sewer lines to existing developed areas where sewer service is lacking.
3. Work with property owners to develop financing arrangements in order to provide sewer services.

The following goal and policies are applicable to drainage facilities within the City.

**Goal A Provide adequate drainage facilities to accommodate desired growth levels.**

Policies

1. Ensure that all drainage facilities are adequately sized to accommodate the projected increase in stormwater runoff from urbanization.
4. Require private sector to form assessment districts and/or utilize other funding mechanisms to cover the cost of providing drainage facilities.
5. Design visible drainage facilities to be visually attractive.

### City of Sacramento Utilities Department CSS Conditions of Use

The City has set Conditions of Use for businesses and residences that are located within the combined system, or that conduct mobile operations such as carpet cleaning or pressure washing within this boundary. These are as follows:

- Business activities that produce acceptable types of wastewater that do not require pretreatment prior to being discharged into any sewer system can be discharged directly into the combined drainage system if traditional options such as a sewer clean-out are not available.
- Any discharges into the sewer system, combined or separated, must meet the conditions listed within Chapter 15.04 of the Sacramento County Code, and Chapter 13.08 of the Sacramento City Code.
- Any business discharging wastewater into the sewer system must have a Sewer Use Questionnaire on file with the Sacramento Regional Sanitation District.
- Only wastewater produced within the defined geographic boundary of the combined drainage system can be discharged to a drain inlet inside that boundary.
- Wastewater must be discharged to an on-site drain inlet located on the customer's property whenever possible.

- If an on-site drain inlet or sewer clean-out is not available, wastewater can be discharged directly into the nearest drain inlet located in the street.
- Whenever possible, sheet flow of wastewater to a drain inlet located in the street should be avoided. Wastewater should be collected and pumped directly to a street drain to minimize any nuisances or safety hazards.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

Stormwater runoff volumes and flows were calculated by Nolte Engineering using the City Department of Utilities model for estimation of stormwater runoff from development of the entire project site and used to size the on-site stormwater conveyance system, including the cistern. The post-project “first-flush” water quality volume would be pumped to the CSS at a controlled rate of five cubic feet per second because of limitations on current capacity in the CSS. This would result in a total volume of approximately five acre-feet that would be pumped to the CSS. Stormwater runoff volumes were analyzed by Nolte Engineers using City design standards in the *Department of Utilities Procedures Manual* and the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*.

In addition, the proposed project would result in a variety of land uses and increases in population that would generate new sources of wastewater. A list of specific land uses and square footage for each is presented in Appendix C. This analysis used the square footage for proposed land uses and following generation rates for wastewater:<sup>8</sup>

- Retail = 0.2 ESD/1,000 square feet (sf) (gross floor area)
- Residential = 0.75 ESD/unit
- Hotel = 0.3 ESD/room
- Office = 0.2 ESD/1,000 sf
- Cultural = 0.2 ESD/1,000 sf

Using these generation rates, an estimate of total wastewater was determined for the proposed project, and compared to existing capacity of transmission pipes and treatment plants serving the project. Table 6.11-1 shows the volume of wastewater for each district within the project site, along with peak flow rates.

### **Standards of Significance**

For the purposes of this EIR, impacts to wastewater and drainage services are considered significant if the proposed project would:

- Result in the determination by the wastewater treatment provider that adequate capacity is not available to serve the project’s demand in addition to existing commitments; or
- Require or result in either the construction of new utilities or the expansion of existing utilities, the construction of which could cause significant environmental effects.

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8 Ivan Gennis, Nolte Associates, Inc., personal communication with Erick Cooke, EIP/PBS&J, June 28, 2007.



<b>TABLE 6.11-1</b>			
<b>PROPOSED PROJECT WASTEWATER FLOWS TO THE CSS SYSTEM AT 3<sup>RD</sup> AND I STREETS</b>			
<b>Land Use</b>	<b>Units</b>	<b>Flows per Unit (gpd)</b>	<b>MGD</b>
Residential	12,101 du	300	3.63
Retail	1,384,800 sf	80 per 1,000 sf.	0.111
Hotel	1,100 rooms	120 per room	0.132
Office	2337,200 sf	80 per 1,000 sf.	0.187
Cultural	485,390 sf	80 per 1,000 sf.	0.039
<b>Total Average Dry Weather Flow</b>			4.10
Peaking Factor			2.30
<b>Total Peak Dry Weather Flow</b>			9.43
Less 7 <sup>th</sup> & H Streets Area			-0.44
Cistern Water Quality Bleed			3.2
Richards Area Flow			8.6
<b>Total Peak Flow to 3<sup>rd</sup> Street</b>			20.79
Source: Nolte Associates, Inc., 2007.			

### **Project Components**

The proposed project consists of approximately 244 acres, most of which are in a primary drainage shed defined by the existing secondary flood control levee along the north side of the project boundary, the existing main line railroad track embankment near the southerly and easterly project boundary, and the I-5 freeway embankment and Sacramento River levee on the west. Stormwater runoff from a majority of the proposed project (approximately 220 acres) would be captured in storm drain inlets located throughout the project site. The storm drainage system would convey flows by gravity to an underground detention facility and pumping station located northwest of the Central Shops near the intersection of Railyards Boulevard and Bercut Drive (see Figure 3-13).

A small area (approximately five acres) fronting 7<sup>th</sup> Street along the east side of the existing main line railroad embankment is about six feet lower than the track and Central Shops area, and would continue to drain easterly to the 7<sup>th</sup> Street CSS pipeline. A small area (approximately four acres) fronting on 12<sup>th</sup> Street would continue to drain east to 12<sup>th</sup> Street. A small portion of the project along the northern boundary line contiguous with North B Street (approximately four acres) would continue to drain northerly to drainage facilities in the Richards Boulevard Area discharge to the American River through City Pump Station 111. Except for the Richards Boulevard Area flows, these flows would connect to the City's CSS and either be conveyed to the SRWTP for treatment and discharge, or through the City's alternative facilities during high flow events when flows exceed the capacity of the system or the thresholds mandated by the City's agreement with the SRCSD. No increases over pre-existing runoff are permitted in the CSS without mitigation approved in advance of development.

The proposed Specific Plan includes the following goals and policies regarding wastewater and stormwater.

**Goal CS-2 Provide for the sanitary sewage needs for the project while facilitating the City standards established by the City's NPDES permit with the Regional Water Quality Control Board.**

Policies

CS-2.1. Ensure sanitary sewers meet the criteria of the City's design standards.

CS-2.2. Offset the increased sanitary sewer flows into the combined sewer system through on-site detention of storm water flows, and discharge of retained storm water to the Sacramento River.

**Goal CS-3 Provide a storm drainage system to serve the Plan Area that achieves the water quality provisions of the City's NPDES Stormwater Permit.**

Policies

CS-3.1. Provide for the separation of combined storm and sanitary sewer flows in the Plan Area.

CS-3.2. Design the storm drainage system to meet the design criteria of the City's Department of Utilities, Sacramento City design standards and the terms of the City's NPDES permit.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.11-1 The proposed project would increase wastewater and stormwater flows requiring treatment.**

The proposed project would increase the amount of developed land uses and population in the City and result in the generation and discharge of additional wastewater and stormwater runoff requiring treatment at the SRWTP. Currently, the SRWTP treats an average of 155 mgd. The dry weather capacity is 181 mgd; during dry weather, the SRWTP receives 25 mgd from the CSS. During wet weather, the plant can treat up to 380 mgd, of which 60 mgd is dedicated to receiving flows from the City of Sacramento's CSS.<sup>9</sup> As shown in Table 6.11-1, the proposed project would generate approximately 9.43 mgd of wastewater during peak flow periods, which would increase dry weather CSS flows from the City to the SRWTP by approximately 37 percent, and overall wastewater flows to the SRWTP by less than six percent. This increase would not exceed the dry weather treatment capacity at the SRWTP.

During wet weather, the City may not deliver more than 60 mgd to the SRWTP, which includes a combination of wastewater and stormwater runoff. The proposed project would have a wet weather flow higher than 9.43 mgd because of the addition of stormwater runoff. Runoff calculations have not been prepared for the project at this time. All flows in excess of 60 mgd are routed to other CSS facilities (e.g., Pioneer Reservoir and CWTP). Stormwater flows from approximately 220 acres of the project site would be conveyed to an underground detention cistern with two chambers. The first chamber would detain the "first-flush" volume of approximately five acre-feet, pursuant to City water quality criteria for new development. The capacity of both chambers of the underground detention cistern would be approximately 27 acre-feet and would be designed to detain and pump a portion of the first-flush volume into the CSS at a rate of approximately five cubic feet per second. This pump rate would result in 3.2 mgd delivered to the SRWTP wet weather first-flush flows. This volume, in addition to peak wastewater flows would not exceed treatment capacity of the SRWTP. Further, the timing and rate of pumping from the detention facility to the CSS would be monitored and controlled by the City via telemetry devices in the project site.

Storm volumes in excess of the first chamber capacity would be diverted to the second chamber for peak flow attenuation prior to pumping directly into the Sacramento River. This would relieve the SRWTP of additional stormwater flows during storm events. During smaller storms, the City could control the underground detention facility to divert all stormwater flows into the CWTP, thereby treating the stormwater before its discharge to the Sacramento River. The combined wastewater and stormwater flows from the proposed project would not exceed the capacity of existing wastewater treatment facilities once the cistern is constructed. However, the timing for building the cistern and outfall to the Sacramento River has not been identified. If the cistern and outfall are not constructed before buildout of the proposed project, excess stormwater flows and volumes would be

9 Rick Batha, City of Sacramento, Department of Utilities, personal communication, July 24, 2007.

conveyed along with project wastewater to the SRWTP. This would exceed the existing capacity of the wastewater treatment system and result in a *potentially significant impact*.

#### Mitigation Measure

Implementation of the following mitigation measure would ensure that flows to the SRWTP and CWTP do not exceed wastewater treatment plant capacity or result in construction or expansion of existing wastewater treatment plants.

6.11-1 *Prior to completion of the cistern, the City shall limit development of the proposed project so that combined wastewater and stormwater flows do not exceed the project's peak flow sewage generation rate of 9.43 mgd.*

This mitigation measure would limit the proposed project's combined wastewater and stormwater flows to a level that would not exceed the City's contract for flows to the SRWTP, thus resulting in a ***less-than-significant impact***.

#### **6.11-2 The proposed project would increase stormwater and wastewater flows over pre-development conditions through the CSS conveyance system.**

The proposed project would construct separate stormwater and wastewater conveyance systems. All backbone infrastructure within the project site would be engineered and constructed according to the City's current design criteria for wastewater and stormwater flows..

The proposed project would increase the amount of impervious surfaces, building space, and population in the City, resulting in an expected increase in the amount of stormwater runoff compared to existing baseline conditions. In addition, development of the proposed project would increase the amount of wastewater produced and collected at the site. As a result, there would be an expected increase in the flows received by the City's CSS, which has physical and contractual capacity limitations.

The proposed project would generate 9.43 mgd of wastewater flows from a variety of land uses during peak periods. These flows would require the construction of new infrastructure on the project site to deliver flows to the existing and planned CSS facilities. Wastewater flows generated by the proposed project could be adequately conveyed by existing downstream CSS infrastructure during dry weather conditions. As discussed in the Environmental Setting, under existing conditions, severe storm events can exceed the CSS capacity and result in overflows. Any increase in flows to the CSS during these conditions would be considered a *significant impact*.

As stated above, localized flooding and CSOs can occur during severe storm events, which would be exacerbated by additional flows from the proposed project. The City is currently implementing improvements to the CSS. The proposed project would be required to contribute funds toward City improvements to the CSS. One of the CSS improvements is construction of a separate sewer pipeline starting at 3<sup>rd</sup> and I Streets to convey wastewater from the proposed project and the Richards Specific Plan Area south to U Street at 5<sup>th</sup> Street with an overflow weir connecting to the twin 84-inch mains in U Street that cross under I-5 to Sump 1/1A and Pioneer Reservoir. The 3<sup>rd</sup> Street sewer pipeline project is currently in the preliminary design phase, is included in the City's Capital Improvement Program, but has not gone through the CEQA process and does not have an estimated completion date. The sewer flows discharged from development of the proposed project to the 3<sup>rd</sup> Street sewer line will enter the CSS at 5<sup>th</sup> Street and U Street. This location of the CSS has a series of proposed improvement projects that provide mitigation for flows from the proposed project and other existing and future development projects. These planned CSS mitigation improvement projects are:

1. Relief sewer in 5<sup>th</sup> Street from U to P Streets.
2. Curtis Park Regional Storage.
3. A series of relief sewer lines in P Street from 5<sup>th</sup> to 7<sup>th</sup> Streets.
4. Relief Sewer in S Street from 7<sup>th</sup> to 14<sup>th</sup> Streets.

Compliance with the City's Combined System Development Fee ordinance would reduce the project's wastewater flow impacts by providing (1) funding for construction and operation of future improvements to the CSS system identified in the City's Long-Term Improvement Plan to meet corresponding increases in wastewater and stormwater flows, (2) additional capacity in the City's system to reduce the potential for flooding and CSS overflows, and/or (3) requiring storage of project flows to ensure that the proposed project would not contribute to flooding and overflows. Further, the proposed project would construct a separate stormwater drainage system to control stormwater flows into the CSS and not exceed system capacities. All stormwater flows, except for a portion of the first-flush, would be collected on the project site in an underground cistern, and pumped from there, after water quality treatment, directly into the Sacramento River. The portion of the first-flush stormwater volume would be pumped at a controlled rate of five cubic feet per second to the CSS under control of the City Department of Utilities. Construction of these new and expanded facilities would result in environmental impacts that are covered in other sections of this EIR. However, the timing for building the cistern and outfall to the Sacramento River has not been identified. As discussed in Impact 6.11-1, if a substantial portion of development precedes construction of the cistern and outfall, excess stormwater flows and volumes would be conveyed along with project wastewater to the CSS system. This could exceed the existing capacity of the CSS system and result in a *potentially significant impact*.

#### Mitigation Measure

Implementation of the following mitigation measures would reduce impacts from the construction of new or expanded facilities to convey increases in flows to the CSS system. This would result in a ***less-than-significant impact***.

6.11-2 *The City shall limit development of the proposed project so that combined wastewater and stormwater flows do not exceed a flow rate of five cubic feet per second, until (1) the cistern and outfall for stormwater flows are constructed, and/or (2) planned CSS improvements for wastewater flows are implemented.*

Mitigation Measure 6.11-1 would ensure that project development not exceed the conveyance capacity of the CSS prior to planned improvements in the CSS system.

#### **Cumulative Impacts and Mitigation Measures**

Cumulative impacts to the SRWTP are based on consideration of planned future growth within the service area of the SRWTP. Cumulative impacts to the CSS require examination of all development within the CSS service area.

**6.11-3 The proposed project could contribute to cumulative increases in flows to be treated and discharged at the SRWTP.**

The proposed project, in combination with other development in Sacramento County, would increase population and result in a cumulative increase in wastewater and stormwater flows to the SRWTP. The average daily dry weather flow to the SRWTP at full build-out of the City General Plan is estimated at 129.1 mgd and peak flow is estimated at 305.9 mgd. As previously discussed, the SRWTP currently receives an average dry weather flow of 155 mgd, less than its permitted capacity

of 181 mgd of dry weather flow, so the SRCSD is not currently undergoing any expansions to the treatment plant. However, based on the Sacramento Area Council of Government's (SACOG) regional population projections, SRCSD's Regional 2020 Master Plan accommodates for expansions of the treatment plant as growth occurs to meet projected growth in Sacramento County, including wastewater from the Cities of Sacramento and West Sacramento. This plan is intended to ensure that the SRWTP facilities have sufficient capacity to meet planned growth in the service area through the year 2020. An EIR for the SRCSD's Regional 2020 Master Plan was approved in 2004. In addition, the Master Plan is updated every five years to account for changes in existing and projected population. Any necessary changes to capacity would occur incrementally, as regional population growth demands greater treatment capacity.<sup>10</sup>

Because implementation of the existing programs are expected to ensure that capacity is available as growth occurs, cumulative impacts to the SRWTP facilities would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.11-4 The proposed project could contribute to cumulative increases in stormwater runoff and wastewater through the CSS.**

The proposed project, in combination with other downtown development, would increase impervious surfaces and population in the portion of the City served by the CSS, and result in a cumulative increase in wastewater and stormwater flows within CSS conveyance facilities. This is considered a *significant cumulative impact*.

The City Department of Utilities has completed many of the CSS Improvement and Rehabilitation Program projects, including the rehabilitation and upsizing of Sump 2, construction of new regional storage projects, and numerous rehabilitation and replacement projects throughout the system. The City continues to complete improvements according to the program, including additional storage facilities, and the improvement and expansion of existing facilities. The City has also identified improvements to the older portions of the City's CSS to meet increased demand, including future upgrades to the interceptors that connect into the SRWTP. As previously discussed, the City has implemented a fee program to ensure that these improvements are funded. Although the proposed project's contribution to wastewater and stormwater flows are considerable, the project's compliance with the City's Combined System Development Fee ordinance and construction of separate sewer and storm systems, would result in a reduction of its contribution to cumulative impacts to the CSS facilities to a ***less-than-considerable level***. Therefore, the cumulative impact would be considered ***less than significant***.

#### Mitigation Measure

*None required.*

#### **Sports and Entertainment Facility Overlay**

The evaluation of impacts for the Sports and Entertainment Facility Overlay is the same as that for the Specific Plan. Each of the concerns associated with development of the Specific Plan Area analyzed above would be addressed by the same set of legal requirements listed in the Regulatory Setting and would include the same set of project components to serve Specific Plan Area's stormwater runoff and wastewater discharges. No mitigation measures would be required in addition to those included for the Specific Plan Area above. Consequently, the Sports and Entertainment

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10 Rick Batha, City of Sacramento, Department of Utilities, personal communication, July 24, 2007.

Facility Overlay would have a less-than-significant impact regarding stormwater runoff and wastewater discharges impacts after the implementation of the aforementioned mitigation measure.

## **WATER SUPPLY**

The Water Supply section of the EIR describes the water supply that would serve the proposed project in relation to overall water supplies provided by the City of Sacramento (City). In doing so this section assesses the expected water demand resulting from the proposed project, evaluates the effects of the proposed project on existing and future water infrastructure, and recommends mitigation measures where appropriate. Information in this section is based on the Water Supply Assessment (WSA, Appendix M) prepared for the Specific Plan project, the City of Sacramento General Plan Technical Background Report, the City of Sacramento 2006 Urban Water Management Plan (UMWP), and information from City staff.

Comment letter requesting more detailed utility plans were received during the NOP review period.

## **ENVIRONMENTAL SETTING**

### **Existing Water Sources and Supplies**

The City obtains the majority of its water supply from two surface water sources (the Sacramento and American Rivers) and groundwater makes up the balance of supply.

### **Surface Water**

Most of the City's water supply comes from surface water that the City diverts pursuant to the City's surface water rights and entitlements. These consist of water rights established before 1914, water rights established after 1914 and a settlement contract the City has with the United States Bureau of Reclamation. Each of these is discussed briefly below.

The City has pre-1914 appropriative rights, which entitle the City to water from the Sacramento River. The City's right is based on use of Sacramento River water since 1854; this pre-1914 appropriative right allows for direct diversion of 75 cubic feet per second (cfs) from the Sacramento River.

The City's post-1914 Sacramento River rights are reflected in five water rights permits issued by the State Water Resources Control Board or its predecessor, the State Water Rights Board. Permit 992 authorizes the City to take water from the Sacramento River by direct diversion, and has a priority date of March 30, 1920. Permit 992 authorizes the City to divert up to 81,800 acre-feet annually (AFA) with a maximum diversion of 225 cfs. This permit allows the City to use diverted Sacramento River water within the city limits, as this area changes from time to time through annexations.

The City has four additional water right permits authorizing diversions of American River water. Permits 11358 and 11361 authorize the City to divert water from the American River by direct diversion, and have priority dates of October 29, 1947, and September 22, 1954, respectively. These permits allow for diversions at the City's E.A. Fairbairn Water Treatment Plant (FWTP), and specify a combined maximum allowable rate of diversion of 675 cfs. The authorized place of use (POU) for both permits is 79,500 acres within and adjacent to the City.

The final two permits (Permits 11359 and 11360) authorize re-diversion for consumptive uses of American River tributary water previously diverted by the Sacramento Municipal Utility District's (SMUD's) Upper American River Project (UARP). Permits 11359 and 11360 have priority dates of February 13, 1948, and July 29, 1948, respectively, and the POU for both permits is 96,000 acres within and adjacent to the City. These permits allow for diversions at the FWTP, and at the City's

Sacramento River Water Treatment Plant (SRWTP). The combined maximum allowable diversion under these permits includes re-diversion of up to 1,510 cfs of UARP direct diversion water and up to 589,000 AFA of UARP stored water.

The City also has a water rights settlement contract entered into in 1957 by the City and the U.S. Bureau of Reclamation (USBR). At that time, the State Water Rights Board was deciding how to allocate water rights on the American River among numerous competing applicants, including the City and the USBR. The City and the USBR had protested each others' water rights applications. This contract settled those differences and enabled both parties to withdraw their protests, to the benefit of both parties. The essence of the City/USBR settlement contract is that the City agreed (1) to limit its combined rate of diversion under its American River water rights permits to a maximum of 675 cfs, up to a maximum amount of 245,000 AFA in the year 2030, and (2) to limit its rate of diversion under its Sacramento River water rights permit to a maximum of 225 cfs and a maximum amount of 81,800 AFA. This limits the City's total diversions of Sacramento and American River water to 326,800 AFA in the year 2030 as shown in Table 6.11-2. The contract also specifies an annual build-up schedule to this maximum amount, as shown in Table 6.11-3; the maximum diversion specified for 2005 is 205,000 AFA.

Permit	Supply Source	Maximum Permitted Diversion	
		AFA	cfs
1957 USBR 2030 Contractual Maximum	American River	245,000	675
	Sacramento River	81,800	225
	<b>Total</b>	<b>326,800</b>	<b>900</b>

Source: PBS&J/EIP 2006, adopted from the City of Sacramento USBR Contract.

Source	2005	2010	2015	2020	2025	2030
American River	123,200	145,700	170,200	196,200	222,200	245,000
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
<b>Total</b>	<b>205,000</b>	<b>227,500</b>	<b>252,000</b>	<b>248,000</b>	<b>304,000</b>	<b>326,800</b>

Source: PBS&J/EIP, 2006 adapted from the City of Sacramento USBR Contract.

In return, the contract requires USBR to make available at all times enough water in the rivers to enable the agreed-upon diversions by the City. The City agreed to make an annual payment to USBR for Folsom Reservoir storage capacity used to meet the USBR's obligations under the contract, beginning with payment for 8,000 acre feet of storage capacity in 1963 and building up, more or less linearly, to payment for the use of 90,000 acre feet of storage capacity in 2030. The settlement contract is permanent and not subject to deficiencies. The USBR contract, in conjunction with the City's water rights, provides the City with a very reliable and secure water supply.

The City's diversions of American River water at the FWTP are also subject during certain time periods to limitations specified in the Water Forum Agreement. The Water Forum was started in 1993 by a group of water managers, local governments, business leaders, agricultural leaders, environmentalists, and citizen groups with two "co-equal" goals: to provide a reliable and safe water supply through the year 2030, and to preserve the wildlife, fishery, recreational, and aesthetic values

of the Lower American River. After six years of intense interest-based negotiations, the Water Forum participants approved the 2000 Water Forum Agreement (WFA).

As part of the WFA, each water purveyor signed a purveyor specific agreement (PSA) that specified that purveyor's Water Forum commitments. The City's PSA limits the quantity of water diverted from the American River at the FWTP during two hydrologic conditions: extremely dry years (i.e., "Conference Years") and periods when river flows are below the so-called "Hodge Flow Criteria" issued by Judge Richard Hodge in the *Environmental Defense Fund v. East Bay Municipal Utility District* litigation. These limiting criteria are as follows: 2,000 cfs from October 15 through February; 3,000 cfs from March through June; and, 1,750 cfs from July through October 14. These two conditions, collectively referred to as the "PSA Limitations," are described in more detail below.

The City's PSA defines extremely dry years (i.e., "Conference Years") as years in which the California Department of Water Resources (DWR) projects an annual unimpaired flow into Folsom Reservoir of 550,000 AFA or less, or the projected March through November unimpaired flow into Folsom Reservoir is less than 400,000 AFA. During Conference Years, the City has agreed to limit its diversions for water treated at the FWTP to 155 cfs and 50,000 AFA. Conference Years have occurred on the American River only twice during the 72 year period of record historical hydrology.

In addition to Conference Years, the City's PSA specifies limitations on the City's diversion rate at the FWTP when American River flows bypassing the FWTP are less than the Hodge Flow Criteria. Based on CALSIM II analysis of the 1922 to 1994 climate data, 59 percent of years will experience flows that are less than Hodge flow conditions at some time during the peak months of June through August. In comparison, when flow passing the FWTP is greater than the Hodge Flow Criteria and Conference Year conditions do not exist, the PSA allows diversions of American River water up to the FWTP's current maximum rate of 310 cfs (200 million gallons per day (mgd)).

It is important to note that the WFA does not restrict diversion under the City's American River entitlements from a Sacramento River diversion point; therefore, during a Conference Year condition the City's annual surface water diversion amounts are limited only by the FWTP Conference Year condition and the diversion and treatment capacity at the SRWTP. Assuming a maximum treatment capacity of 50,000 AFA at the Fairbairn WTP and 180,000 AFA at the Sacramento WTP, the current drought limiting scenario allows a surface water production of 230,000 AFA.

### **Sacramento River Water Reliability Study**

The City is participating as a cost-sharing partner in the Sacramento River Water Reliability Study (SRWRS), which includes a feasibility study for a new Sacramento River diversion. The SRWRS includes development of alternatives, an environmental evaluation, and consultation with federal and state agencies regarding potential impacts. The USBR is the lead agency for federal review and Placer County Water Agency is the lead agency for local review.<sup>11</sup>

One of the alternatives being evaluated in the SRWRS is for an additional WTP with a treatment capacity of 235 mgd (325 cfs) off the Sacramento River near Elverta Road, north of the Sacramento International Airport. The City would acquire 145 mgd of new capacity when the new WTP is operational. With the addition of the new Sacramento River WTP, the maximum combined production of potable water at all three WTP's would be 505 mgd, or a total annual production capacity of 311,800 AFA, under continuous operation. This is 95 percent of the maximum diversion amount specified in the USBR settlement contract for the year 2030. The potential completion date of a new Sacramento WTP is within 10 to 15 years prior to buildout in 2030 of Sacramento's current General Plan.

<sup>11</sup> Initial Alternatives Report. Final Version, March 2005. Sacramento River Reliability Study. Updated by personal communication with Jim Peifer, City of Sacramento and Sammie Cervantes, USBR, August 9, 2007.



## **Groundwater**

The City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water.<sup>12</sup> The total capacity of the wells is 33 mgd, with a sustainable capacity of approximately 30 mgd and produces up to 33,600 AFA. The 2000 to 2005 annual average groundwater pumping was 22,992 acre-ft.<sup>13</sup> The wells are shown in Figure 6.11-2 and pump primarily from the Department of Water Resources (DWR) North American Subbasin (5-21.64), with two active drinking water wells pumping from the South American Subbasin (5-21.65).

The North and South American Subbasins are described in the 2003 update to the DWR Bulletin 118-3. The underlying geology or hydrostratigraphy of the both basins consists of a variety of geologic formations that make up the water bearing units. There are two aquifer systems: an upper unconfined system consisting of the Victor, Fair Oaks, Laguna, Modesto Formations, and a lower, semi-confined system in the Mehrten Formation. These geologic formations are composed of lenses and layers of inter-bedded sand, silt, and clay with coarse-grained stream channel deposits. The groundwater contained in the upper aquifer system of the Victor, Fair Oaks, Laguna, Modesto, Riverbank, and Turlock Lake Formations along with Arroyo Seco and South Fork Gravels<sup>14</sup> is of superior quality compared to that in the lower semi-confined system, mainly because the water in the Mehrten Formation is higher in iron and manganese, and requires more treatment. The upper unconfined system only requires chlorination treatment to be potable.<sup>15</sup>

In South American Subbasin, DWR Bulletin 118 references a 1993 Montgomery Watson study that estimates groundwater withdrawals are in balance with recharge for the Subbasin. The conclusion is supported by groundwater levels which have stabilized after recorded declines since the 1960's. As a result of the Water Forum Successor Effort, the Central Sacramento County Groundwater Forum (CSCGF) has developed the Central Sacramento County Groundwater Management Plan (CSCGMP).<sup>16</sup>

The North American Subbasin includes the Project area; DWR Bulletin 118 references a 1990 land-use based water balance for the subbasin which estimated groundwater withdrawals in excess of 285,000 AFA above annual recharge. The Sacramento Groundwater Authority (SGA) prepared a groundwater management plan (GMP) in 2003 for that portion of the Subbasin north of the American River and up to the Sacramento County line. Placer County Water Agency (PCWA) prepared a groundwater storage study for the northern half of the North American Subbasin. The groundwater reports by PCWA and SGA document declining groundwater levels prior to 1992. Since 1992 a reduction of groundwater pumping has resulted in stabilized groundwater levels.<sup>17,18</sup>

The CSCGF and the SGA were developed in a consensus-based process, and these included stakeholders throughout both basins. GMPs are adaptive management tools and represent a critical step in establishing a framework for maintaining a sustainable groundwater resource for the various users overlying the basins. The GMPs are consistent with the provisions of California Water Code sections 10750 et seq. Within these programs the SGA and the CSCGF will continually assess the status of the groundwater basin and make appropriate management decisions to sustain the basin

12 Dan Sherry, *City of Sacramento, Utilities Department*. Status of groundwater wells, June 23, 2005.

13 Calculated from the City of Sacramento, Department of Utilities, *Operational Statistics Annual Reports*.

14 Department of Water Resources, Bulletin 118 Updated 2003, Sacramento Valley Groundwater Basin.

[http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs\\_desc/5-21.65.pdf](http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/5-21.65.pdf)

[http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs\\_desc/5-21.64.pdf](http://www.dpla2.water.ca.gov/publications/groundwater/bulletin118/basins/pdfs_desc/5-21.64.pdf)

15 Sacramento Groundwater Authority, Groundwater Management Plan, 2003, page 7. <http://www.sgah2o.org/sga/programs/groundwater>.

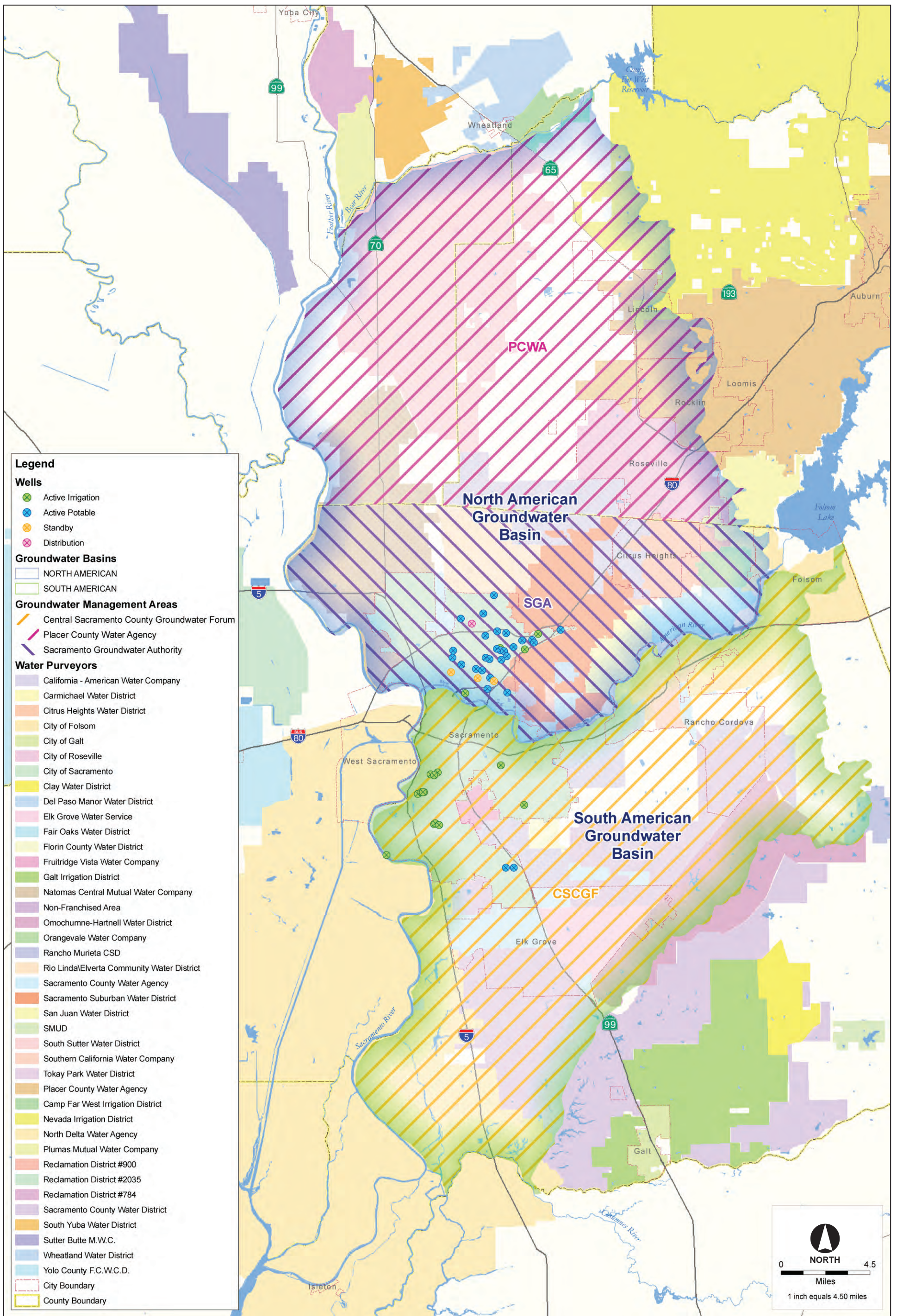
16 Central Sacramento County Groundwater Management Plan. 2006.

[http://www.waterforum.org/CSCGWF/CSCGMP\\_FINAL\\_02\\_27\\_06.pdf](http://www.waterforum.org/CSCGWF/CSCGMP_FINAL_02_27_06.pdf)

17 Western Placer County Groundwater Storage Study. Final Report. December 2005, page 3-9.

18 Sacramento Groundwater Authority, Groundwater Management Plan, 2003, page 17.





Source: City of Sacramento, California Department of Water Resources Bureau of Reclamation, 2007.

**FIGURE 6.11-2**  
**City of Sacramento Well Locations and Groundwater Management Areas**



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The City is a member of both the SGA and CSCGF. The SGA and CSCGF share a common goal of the responsible management of the groundwater basin through a commitment to not exceed the long-term sustainable yield of the Subbasins. The SGA sustainable yield is estimated to be approximately 131,000 AFA and the CSCGF sustainable yield is estimated to be approximately 273,000 AFA according to the WFA and GMPs. The sustainable yields determined through the WFA provide for sufficient groundwater pumping to meet the projected level of groundwater demand through 2030.<sup>19</sup> The process to determine the sustainable yield took into account future pumping by the various groundwater users within the applicable subbasin, water quality, dewatering of wells, groundwater pumping costs, and ground subsidence.

SGA and CSCGF members, in accordance with the WFA, are proceeding with a conjunctive use program to responsibly manage and use the groundwater systems. This conjunctive use effort is part of the WFA 30-year agenda. A conjunctive use program accounts for the annual climatic variability of the region, whereby in normal or wet years of precipitation the water providers will divert more surface water and reduce or eliminate groundwater use, allowing the groundwater systems to recharge. In dry years when the in-stream flows must be maintained in the lower American River, groundwater pumping will be increased to supplement the reduced diversions from the river systems.

As part of this groundwater management strategy the SGA recently released a Basin Management Report (BMR) for 2004-2005 that updates the current SGA uses of the North American Subbasin. The BMR calculated groundwater pumping by SGA signatories at 91,096 AFA; this is below the agreed-upon sustainable yield of 131,000 AFA. Notably, the BMR shows that between 1997 and 2004 a cone of depression near the central part of the SGA area has rebounded by approximately five feet as a result of less groundwater pumping and utilizing more surface water by the members of the SGA.

Based on the information above, the supply of groundwater in the Subbasins from which the City's wells pump groundwater is sufficient to meet cumulative groundwater demands projected through 2030, and this is consistent with the sustainable yields determined for these areas by the WFA.

### **Water Treatment, Storage, and Distribution**

Annually, the City of Sacramento provides more than 45 billion gallons of water for drinking, household use, fire suppression, landscaping, and commercial and industrial use. The distribution system is a pipeline network, where surface water and groundwater is mixed within the system.<sup>20</sup> The Department of Utilities operates and maintains the City's two water treatment plants, eight pump stations, 10 storage reservoirs, 32 municipal wells, thousands of hydrants, and nearly 1,500 hundred miles of pipeline to convey water to homes and businesses throughout the City.<sup>21</sup> The City's service area spans north to Elkhorn Boulevard in North Natomas, east to Watt Avenue and Highway 50, west to the Sacramento River and south to Sheldon Road.

### **Water Treatment**

The City owns and operates two water diversion and treatment facilities: the Sacramento River Water Treatment Plant (SRWTP) and the E.A. Fairbairn WTP on the American River. The WTPs operate as demands dictate, in other words treatment is directly related to consumer demands. The Sacramento WTP is west of I-5 and south of Richards Boulevard, and was expanded in 2003; this increased the plant's capacity from 110 mgd (123,260 AFA) to 160 mgd (179,288 AFA). The Fairbairn WTP, located on the south bank of the lower American River, was recently rehabilitated

19 Central Sacramento County Groundwater Management Plan. 2006, page 1-4.

20 City of Sacramento, Urban Water Management Plan, 2000, page 2-7.

21 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.

and expanded, which increased the plant's capacity from 100 mgd (112,055 AFA) to 200 mgd (224,028 AFA) upon installation of additional pumping mechanisms. The City is currently investigating those improvements necessary to achieve a firm capacity of 200 mgd. The 2006 UWMP states that the plant would be operational 334 days a year and could produce 205,000 AFA.<sup>22</sup>

### **Current Water Use**

As of 2006, the City's average water demand was 50.0 mgd at the FWTP and 58.1 mgd at the SRWTP; peak demand totaled 232 mgd, 96 mgd at FWTP and 119 mgd at SRWTP,<sup>23</sup> an additional 17 mgd came from groundwater. The total amount of surface water and groundwater supplied in 2007 was 138,671 AF (an average daily demand of approximately 125 mgd).<sup>24</sup> Table 6.11-4 presents the City's historical water deliveries.

Year	Surface Water and Groundwater Supplies <sup>b</sup>			Total Water Delivered <sup>b</sup>				
	Population	Annual Surface Water Delivered (AFA)	Annual Groundwater Delivered (AFA)	Maximum Day Water Delivered (mgd)	Maximum Day to Average Day Ratio	Total Annual Water Delivery (AFA)	Average (mgd)	Percent Increase
1998	392,800	93,131	22,692	212.7	2.06	115,822	107.5	
1999	396,200	109,695	23,694	219.7	1.85	133,389	112.3	15.2%
2000	405,963	110,150	24,130	213.0	1.78	134,280	103.4	0.7%
2001	418,711	115,984	24,156	214.5	1.71	140,140	119.1	4.4%
2002	426,013	115,628	23,236	226.8	1.83	138,864	119.9	-0.9%
2003	433,400	114,674	25,607	223.2	1.78	140,281	125.2	1.0%
2004	441,000	128,903	17,924	NA	NA	146,827	131.1	4.7%
2005	452,959	116,452	22,521	NA	NA	138,974	124.1	-5.3
2006 <sup>a</sup>	NA	120,150	18,522	239.9	1.21	138,671	123.5	-0.2%

Notes:  
a. City of Sacramento, Department of Utilities, Operational Statistics Report, 2005/2006.  
b. Other data from corresponding annual reports.  
N/A = Not available.  
Source: Adapted from City of Sacramento, Department of Utilities, Operational Statistics Reports, PBS&J/EIP, 2007.

### **Water Storage**

Water storage is utilized to meet water demand for periods when peak hour demand exceeds maximum daily supply rates. These high demand periods usually occur for four to six hours during hot summer days and for potentially longer periods during large fire events. The City of Sacramento has nine above-ground storage reservoirs; each with a capacity of three million gallons (mg) and one underground reservoir with a capacity of 15 mg. The reservoirs are at different locations throughout the City's water distribution system. In addition, 34.5 mg of on-site storage exists at the water treatment plants (14.5 mg at the Sacramento WTP and 20 mg at the Fairbairn WTP). Therefore, the total water storage capacity in the City is 76.5 mg. This capacity represents approximately 64 percent of the City's 2004/2005 average daily water demand of 128 mgd, or approximately one-third of the 2004/2005 average maximum day demand of 215 mgd.<sup>25</sup>

22 City of Sacramento, Urban Water Management Plan, August 2006, page 5-3.

23 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.

24 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.

25 City of Sacramento Utilities Department, Annual Report, Operational Statistics Fiscal Year 2005/2006.

## **Water Supply Infrastructure at the Project Site**

In the City, water distribution mains range from four inches to 12 inches in diameter and convey water for municipal and industrial services, fire services and fire hydrants. City policy requires new commercial areas to install 12-inch mains in order to maintain fire flow capacities. Transmission mains are 18 inches and larger and are used to transport large volumes of water from the treatment plants throughout the distribution system. Transmission lines are utilized to transfer water to and from the storage reservoirs to meet changing daily and/or seasonal demands. The City determines new water distribution facilities and pipeline alignments as development plans are formulated.

The City is anticipating that existing water supply infrastructure from areas adjacent to the proposed project site would extend onto the project site. Installation of the water distribution system would construct permanent water distribution mains and appurtenances,<sup>26</sup> corresponding to the construction phasing of the project. The proposed water distribution system is presented on Figure 3-11. The on-site water system for the project would consist of 12-inch water distribution lines within the street right-of-way with connections to existing City transmission mains in North 5<sup>th</sup> Street, North 7<sup>th</sup> Street, and Richards Boulevard as evaluated by the project applicant's water supply engineers. Water supply design specifications would comply with Section 13 of the City's Design Standards regarding requirements for design and operation of water distribution facilities. Final approvals would be necessary prior to delivery of water to the project site.

## **REGULATORY SETTING**

### **Federal Regulations**

#### **U.S. Environmental Protection Agency (EPA)**

The EPA established primary drinking water standards in the Clean Water Act (CWA) Section 304 and states are required to ensure that potable water for the public meets these standards. Standards for 81 individual constituents have been established under the Safe Drinking Water Act, as amended in 1986. The U.S. EPA may add additional constituents in the future.

### **State Regulations**

#### **Water Management Planning Act**

California Water Code Section 10610 (et seq.) requires that all public water systems providing water for municipal purposes to more than 3,000 customers, or supplying more than 3,000 AFA, must prepare an UWMP. DWR provides guidance to urban water suppliers in the preparation and implementation of UWMPs. UWMPs must be updated at least every five years on or before December 31, in years ending in five and zero. The City adopted its most recent UWMP on November 14, 2006.

#### **Senate Bill 610 - Water Supply Assessments**

Senate Bill (SB) 610 was adopted in 2001 and reflects the growing awareness of the need to incorporate water supply and demand analysis at the earliest possible stage in the land use planning process. SB 610 amended the statutes of the Urban Water Management Planning Act, as well as the California Water Code Section 10910 et seq. The foundation document for compliance with SB 610 is the UWMP, which provides an important source of information for cities and counties as they update their general plans. Likewise, planning documents such as general plans and specific plans form the basis for the demand information contained in an UWMP, as well as WSAs required under SB 610.

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26 City of Sacramento Utilities Department Comments on Railyards Notice of Preparation, 2007.

Water Code Section 10910 (c)(4) states “If the city or county is required to comply with this part pursuant to subdivision (b), the water assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.”

Water supply planning under SB 610 and SB 221 (see below) requires reviewing and identifying adequate available water supplies necessary to meet the demand generated by a project, as well as the cumulative demand for the general region over the next 20 years, under a broad range of water conditions. This information is typically found in the current UWMP for the project area. SB 610 requires the identification of the public water supplier; the City has been identified in the WSA as the public water supplier to the Specific Plan project.

In addition, SB 610 requires the preparation of a WSA if a project meets the definition of a “Project” under Water Code Section 10912 (a). The code defines a “Project” if it meets any of the following criteria:

- A proposed residential development of more than 500 dwelling units (du);
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet (sf) of floor space;
- A commercial building employing more than 1,000 persons or having more than 250,000 sf of floor space;
- A hotel or motel with more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park, planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 sf of floor area;
- A mixed-use project that includes one or more of these elements; or
- A project creating the equivalent demand of 500 residential units.

Alternately, if a public water system has less than 5,000 service connections, the definition of a “Project” includes any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of service connections for the public water system. The proposed project includes more than 500 du, and, therefore, qualifies as a “Project” under Section 10912 (a) of the Water Code. Thus, the City has prepared a WSA as required by these criteria under SB 610 (included as Appendix M).

The City prepared the Draft WSA in June 2007 for the proposed project using technical information included in the City’s UWMP which satisfies the documentation requirements of SB 610, CEQA 10583.5, and Water Code sections 10631, 10910, and 10912. The WSA concludes that the project site is within the City’s service area and the City provides domestic water to all development in the City’s General Plan. Furthermore, the WSA finds that the City has sufficient water supply under the City’s water rights and entitlements to serve the proposed project and projected future growth in the City over the next 20 years.<sup>27</sup> The full text of the June 2007 Draft Water Supply Assessment is contained in Appendix M.

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27 EIP Associates, a Division of PBS&J, Railyards Draft Water Supply Assessment, June 2007.



### **Senate Bill 221- Written Verification of Water Supply**

Government Code Section 66473.7(a)(1) requires an affirmative written verification of sufficient water supply. Senate Bill 221 is designed as a “fail-safe” mechanism to ensure that collaboration on finding the needed water supplies to serve a new large subdivision occurs early in the planning process. This verification must also include documentation of historical water deliveries for the previous 20 years, as well as a description of reasonably foreseeable impacts of the proposed subdivision on the availability of water resources of the region. Government Code section 66473.7 (b)(1) states “The legislative body of a city or county or the advisory agency, to the extent that it is authorized by local ordinance to approve, conditionally approve, or disapprove the tentative map, shall include as a condition in any tentative map that includes a subdivision a requirement that a sufficient water supply shall be available. Proof of the availability of a sufficient water supply shall be requested by the subdivision applicant or local agency, at the discretion of the local agency, and shall be based on written verification from the applicable public water system within 90 days of a request.” In other words, as a result of the information contained in the written verification, the city or county may attach conditions to assure there is an adequate water supply available to serve the proposed project as part of the tentative map approval process. A SB 221 verification will be required for the proposed project.

### **Drinking Water Quality**

The California Department of Health Services (DHS) is responsible for implementing the federal Safe Drinking Water Act of 1974 and its updates, as well as California statutes and regulations related to drinking water. As part of their efforts, the DHS inspects and provides regulatory oversight for public water systems within California. In addition, in the Sacramento area the CVRWQCB has the responsibility for protecting the beneficial uses of the State’s waters, including groundwater, and these include municipal drinking water supply, as well as various other uses.

Public water system operators are required to regularly monitor their drinking water sources for microbiological, chemical, and radiological contaminants to show that drinking water supplies meet the regulatory requirements listed in Title 22 of the California Code of Regulations as primary maximum contaminant levels (MCLs). Primary standards are developed to protect public health and are legally enforceable. Among these contaminants are approximately 80 specific inorganic and organic contaminants and six radiological contaminants that reflect the natural environment, as well as human activities. Examples of potential primary inorganic contaminants are aluminum and arsenic, while radiological contaminants can include uranium and radium.

Public water system operators are also required to monitor for a number of other contaminants and characteristics that deal with the aesthetic properties of drinking water. These are known as secondary MCLs. Secondary standards are generally associated with qualities such as taste, odor, and appearance, but these are generally non-enforceable guidelines. However, in California secondary standards are legally enforceable for all new drinking water systems and new sources developed by existing public water suppliers.<sup>28</sup> The public water system operators are also required to analyze samples for unregulated contaminants, and to report other contaminants that may be detected during sampling.

### **City of Sacramento Regulations**

#### **City of Sacramento General Plan**

The City’s current General Plan policies related to water are provided below. The City is presently updating its General Plan, which is anticipated to be completed in 2008.

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28 California Department of Water Resources, *California’s Groundwater, Bulletin 118*, 2003.

**Goal A Provide and improve water supply facilities to meet future growth of the City and assure continued supply of safe potable water.**

Policies

1. Develop and adopt a comprehensive water policy for the City of Sacramento that is consistent with a long range adopted plan.
2. Develop and implement a financing strategy that the City can use to construct needed water facilities.
3. Work with property owners to develop financing arrangements in order to provide needed water facilities.
4. Give high priority in the Capital Improvements Program to funding infrastructure in highly depressed and designated infill areas.
5. Provide water service meeting or exceeding State and federal regulatory agency requirements.

### **City of Sacramento Design Standards**

Section 13 of the City's Design Standards sets forth requirements regarding the design and operation of water distribution facilities. Those requirements include standards for pipe design, fire hydrants, and specific requirements for residential, commercial and industrial water service.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

The analysis in this section focuses on the nature and magnitude of the change in levels of water use compared with existing and projected water use in the project site and the City's water service area. To determine potential impacts, water demands were estimated from demand projection calculations and quantitative evaluation of data relative to the proposed project, along with existing land uses, approved projects, and proposed development. The primary resources used for this analysis include the following technical documents: *Draft Water Supply Assessment for the Proposed Railyards Specific Plan Project*, EIP Associates (June 2007); *City of Sacramento Urban Water Management Plan*, adopted November 14, 2006; and the *Sacramento River Water Reliability Study Initial Alternatives Report* (March 2005).

### **Water Demand Analysis**

As presented in Current Water Use above, Table 6.11-4 shows the historical comparison of water demands based on population and treated water delivered.

An accurate projection of demand can be developed using water demand factors based on land use sectors. The expected water use of the proposed project was determined by analyzing each parcel and building use and then assigning a demand factor for each use. To determine the water demand factors of the proposed project, water use demand factors were formulated based on data from a number of water supply planning sources including regional water resources studies, current or historical uses at similar facilities, federal guidelines, personal communications with the State Department of Water Resources, Placer County Water Agency, and the City of Sacramento, Department of Utilities. Table 6.11-5 shows the proposed project would potentially use 4,295 AFA or an annual average demand of 3.834 mgd (3,833,903.20 gpd), demands for each parcel are quantified and demands are aggregated by land use designation. The calculated demand represents the upper range of the potential demand for the proposed project. Table 6.11-6 shows the demand factors for each of the facilities at the proposed project site.

Land Use Designation (LUD)	Acres	Average Annual Demand (gpd)	Total Annual Demand (AFA)
Commercial/Residential Mixed Use (CRMU)	48.83	1,019,261.40	1,142
Residential Mixed Use (RMU)	41.95	2,030,830.00	2,275
Transportation (TU)	28.88	11,987.48	13
Open Space (OS)	41.16	145,649.77	163
Office/Residential Mixed Use (ORMU)**	19.46	626,174.55	701
<b>Total</b>	<b>180.39</b>	<b>3,833,903.20</b>	<b>4,295</b>

Notes:  
 \*\* Assumes higher residential demand source only to avoid double counting both ORMU office demand.  
 Source: PBS&J/EIP, June 2007; Appendix C – Railyards Programmatic Water Demand Spreadsheet.

Building/Facility	Demand Factors/Units
Office <sup>a</sup>	0.0375 gallons/day/ft <sup>2</sup>
Residential/Housing <sup>c</sup>	230 gallons/day/du
Retail/Restaurant <sup>f</sup>	0.35 gallons/day/ft <sup>2</sup>
Hotel <sup>s</sup> /Hospitality <sup>b</sup>	130 gallons/day/room
Railroad Tech Museum <sup>d</sup>	5 gallons/day/visitor
Performing Arts Theatre <sup>g</sup>	2.5 gallons/day/guest
Open Space/Parks <sup>e</sup>	4.29 acre-feet/year/acre

Notes:  
 a. Billings, B. R. and C. V. Jones. 1996. Forecasting Urban Water Demand. American Water Works Association.  
 b. Seattle Public Utilities Resource Conservation Section, Hotel Water Conservation, A Seattle Demonstration, July 2002, prepared by O'Neill & Siegelbaum and The RICE Group.  
 c. Placer County Water Agency Integrated Regional Water Resources Plan, October 2005 High Density Residential (21+ DU/acre).  
 d. U.S. Department of Energy - Energy Efficiency and Renewable Energy, Federal Energy Management Program; Federal Water Use Indices. Agencies should be aware that they are rough estimates of water usage at different types of sites. The indices should only be used to assist in determining baseline data when no other information is available about a site's water usage.  
 e. Sacramento Water Balance calculated from Station 131, CIMIS Western Regional Climate Center; based on a leaching fraction of 5% and assumed distribution uniformity of 90%.  
 f. Mazzetti & Associates, June 2005 for PAMF-SCC Sutter Health Foundation.  
 g. Performing Arts Theatre attendance assumes full capacity of 1,800 seats for 200 events per year.  
 Source: PBS&J/EIP, July 2006; Appendix C-Railyards Programmatic Water Demand spreadsheet.

### **Standards of Significance**

For the purposes of this EIR, impacts on water resources are considered significant if the proposed project would:

- Increase demand for potable water in excess of existing supplies;
- Result in inadequate treatment capacity or inadequate distribution infrastructure to supply the project.

### **Project Components:**

The proposed Specific Plan includes the following goals and policies to address water consumption:

- Goal CS-1: Provide adequate water facilities to serve the needs of new development, and apply water conservation techniques that will reduce overall demand.**

Policies

- CS-1.1: Ensure a safe, reliable on-site water distribution system that meets the criteria of the City's design standards and meets the needs of the community under both normal and stressed conditions.
- CS-1.2: Construct water distribution mains of adequate size in the form of a grid to meet varying rates of demand from different locations within the Plan Area.
- CS-1.3: In accordance with City of Sacramento standards, require landscaping within to utilize drought resistant plantings and water conservative irrigation methods, such as timed drip irrigation.

**Goal S-1 Maximize the use of sustainable development practices in the Plan Area to the extent feasible.**

Policies

- S-1.5: Promote resource conservation through water conservation technologies such as the installation of water conserving appliances and low-flow fixtures such as toilets, shower heads and faucets in all new development, so as to reduce water consumption and wastewater flows.
- S-1.6: Encourage green site design by utilizing native trees and plants where possible, incorporating permeable paving and designing resource-efficient landscapes and gardens.

**Specific Plan Impacts and Mitigation Measures****6.11-5 The proposed project could increase demand for potable water.**

The proposed project at buildout would generate a demand for water of approximately 4,295 AFA, as shown in Table 6.11-5. The WSA assumed that the proposed project would use water supplied through surface water rights and entitlements from the Sacramento and American rivers, along with groundwater pumped through City operated groundwater wells. These supplies would be delivered through existing City supply facilities and new water infrastructure constructed for delivery into the project site per the requirements of the City of Sacramento. Overall water consumption for 2006 (the most recent year for which data are available) totaled 138,671 AF, which is 75,329 AF less than the maximum diversion amount specified in the USBR settlement contract for 2007 (214,000 AFA). If the increased demand from the proposed project is added to the 2006 demand of 138,671, the total demand in the City would be 142,966 AFA, which is 71,034 AF less than the maximum diversion amount specified in the USBR contract for 2007. In addition, the maximum amounts specified in the USBR contract continue to increase annually and culminate at 326,800 AFA in 2030. Therefore, the maximum diversion amount allowed under the USBR contract will continue to increase simultaneously with customer demands. This analysis finds that the City has sufficient water supply under its water rights and entitlements and secured in the City/USBR settlement contract to serve the proposed project. Therefore, the proposed project would not exceed water supplies in the City, and this is considered a ***less-than-significant impact***.

Mitigation Measure

*None required.*

**6.11-6 The proposed project could increase demand for treated water and water distribution systems.**

Sacramento's 2004/2005 maximum day water demand was 232 mgd (96 mgd from the American River, 119 mgd from the Sacramento River and 17 mgd from groundwater). The project's average day demand is 3.83 mgd. Maximum day demands would be greater. It should be noted that this was accounted for in the City's 2006 UWMP maximum day demand projections through the year 2030. Adding the project's water demand to the City's water demand results in a water demand of

approximately 236 mgd. The Sacramento WTP and Fairbairn WTP have a maximum combined treatment capacity of 360 mgd (403,398 AFA) if operated continuously, and a maximum combined treatment capacity of 260 mgd when diversions at the Fairbairn WTP are limited by the City's WFA PSA. In either case, the City's maximum day treatment capacities exceed maximum day demands.

The City is anticipating that existing water supply infrastructure from areas adjacent to the proposed project site would extend onto the project site. Installation of the water distribution system would construct permanent water distribution mains and appurtenances corresponding to the construction phasing of the project.<sup>29</sup> Figure 6.11-2 shows the proposed water distribution system. As stated previously, Section 13 of the City's Design Standards sets forth requirements regarding the design and operation of water distribution facilities. Those requirements include standards for pipe design, fire hydrants, and specific requirements for residential, commercial and industrial water service. Final approvals by Department of Utilities' staff would be necessary prior to delivery of water to the project site. Any impacts associated with the installation of water supply infrastructure on-site are evaluated as part of the construction-related impacts analyzed in the other technical sections of this EIR, as appropriate.

In summary, the City has adequate conveyance systems and sufficient treatment capacity to serve the proposed project. On-site water conveyance and delivery improvements are included in the Specific Plan design packet and would be approved by the Department of Utilities prior to installation. Compulsory construction inspections would approve the materials and installations of the on-site water supply delivery systems. Therefore, impacts pertaining to water supply infrastructure would be considered *less than significant*.

#### Mitigation Measure

*None required.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative analysis for water supply, distribution, and storage considers the potential environmental effects of supplying water to the proposed project in addition to the other anticipated water demands that may be served by the City of Sacramento through year 2030.

#### **6.11-7 The proposed project could contribute to cumulative increases in water demand throughout the City.**

The proposed project would increase the demand for water in the City's service area beyond the existing demand of approximately 138,671 AFA in 2006; this demand is well below the 2007 maximum diversion amount of 214,000 AFA specified in the City/USBR settlement contract. In addition, the City's authorized supply under the USBR contract increases until 2030 when the maximum diversion amount specified in the USBR contract reaches 326,800 AFA. The City projected annual demand would be approximately 70 percent of the maximum diversion amount specified in the USBR settlement contract assuming a constant 2.0 percent annual growth rate as shown in Table 6.11-7. The City's annual growth rate would need to be approximately twice this rate in order to exceed the available water supply. The City is preparing a new General Plan, which is not expected to include a doubling of the population over current buildout estimates, since current

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29 City of Sacramento Department of Utilities preliminary comments for water supply distribution. Railyards Project, Notice of Preparation April 18, 2006.

population projections for Sacramento County estimate that the County would grow less than 10 percent every 5 years.<sup>30</sup>

	2005	2010	2015	2020	2025	2030
American River	50,000	50,000	50,000	50,000	50,000	50,000
American River diverted from the Sacramento River	73,200	95,700	98,200 <sup>b</sup>	98,200 <sup>b</sup>	98,200 <sup>b</sup>	98,200 <sup>b</sup>
Sacramento River	81,800	81,800	81,800	81,800	81,800	81,800
<b>Total Surface Water Supply</b>	<b>205,000<sup>c</sup></b>	<b>227,500<sup>c</sup></b>	<b>230,000</b>	<b>230,000</b>	<b>230,000</b>	<b>230,000</b>
<b>Groundwater Supplies<sup>d</sup></b>	<b>33,600</b>	<b>33,600</b>	<b>33,600</b>	<b>33,600</b>	<b>33,600</b>	<b>33,600</b>
<b>TOTAL WATER SUPPLY<sup>b</sup></b>	<b>238,600</b>	<b>261,100</b>	<b>263,600</b>	<b>263,600</b>	<b>263,600</b>	<b>263,600</b>
City Demand and Wholesale/Wheeling Demand <sup>e</sup>	146,647	161,401	178,253	196,759	217,182	239,805
Project Demand <sup>f</sup>	~	4,295	4,295	4,295	4,295	4,295
<b>TOTAL DEMAND</b>	<b>146,647</b>	<b>165,696</b>	<b>182,548</b>	<b>201,054</b>	<b>221,477</b>	<b>244,100</b>
<b>AVAILABLE SUPPLY</b>	<b>91,953</b>	<b>95,404</b>	<b>81,052</b>	<b>62,546</b>	<b>42,123</b>	<b>19,500</b>
Notes:						
a. “Conference Year”, defined by the WFA, when the projected unimpaired inflow to Folsom Reservoir is less than 400,000 acre-feet.						
b. Limited by present Sacramento River WTP capacity not WFA agreement.						
c. Total Surface water supply is based on maximum amounts specified in the City’s USBR settlement contract and not based on the maximum conference year treatment and diversion capacity of 230,00 AFA.						
d. Based on City’s current groundwater production capacity.						
e. Demands during below-Hodge Flow and Conference Years are reduced by 6,616 AFA as no sales from the City to Sacramento Suburban are required.						
f. Project Demands were calculated into the City’s 2006 Urban Water Management Plan projected demands, therefore the Total Demand is unchanged in all subsequent years.						
Source: PBS&J/EIP, June 2007 adapted from City of Sacramento Urban Water Management Plan.						

The City, under its WFA PSA, has voluntarily limited diversions to 50,000 AFA off the American River during extremely dry years, (i.e. Conference Years) years in which the State of California Department of Water Resources annual projected unimpaired inflow into Folsom Reservoir would be 550,000 AFA or less, also referenced as the March through November projected unimpaired flow into Folsom Reservoir being less than 400,000 AF, or below-Hodge flow criteria.<sup>31</sup> Again, the WFA does not restrict diversion under the City’s American River entitlements from a Sacramento River diversion point; therefore, during a Conference Year condition or below-Hodge flows the City’s annual surface water diversion amounts are limited only by the FWTP Conference Year condition and the diversion and treatment capacity at the SRWTP. Assuming a maximum treatment capacity of 50,000 AFA at the Fairbairn WTP and 180,000 AFA at the Sacramento WTP, the current drought limiting scenario allows a surface water production of 230,000 AFA. Furthermore, the City has sustainable groundwater production of 33,600 AFA, which results in total water supply capacity of 266,600 AFA during a Conference Year or Hodge Flow condition. Again, this exceeds the 2030 projected City-wide demands of 240,000 AFA. The USBR contract, in conjunction with the City’s water rights, provides the City with a very reliable and secure water supply and analysis finds that the City has sufficient water supply under its water rights and entitlements to serve the proposed project and projected City-wide growth. Therefore, the proposed project and buildout of the General Plan would not exceed water supplies in the City, and this is considered a **less-than-significant impact**.

30 State of California, *Interim County Population Projections*, Estimated July 1, 2000 and Projections for 2005, 2010, 2015, and 2020, June 2001.

31 Hodge Flows specify minimum flows that must remain in the Lower American River. October 15 – February is 2,000 cfs; March - June is 3,000 cfs; and July – October 14 is 1,750 cfs.

Mitigation Measure

*None required.*

**6.11-8 The proposed project would contribute to cumulative increases in the need for water supply treatment and/or distribution facilities.**

Although much of the downtown area is already developed, it is likely that the land uses within the City's service area would intensify in the future as development pressure throughout the metropolitan area increases; this proposed project is an example of such intensified development.

The intensification of uses and buildout of the General Plan could result in the need for upgrades to the City's water distribution and/or treatment systems. As such, the City has historically constructed, expanded and improved its water diversion, treatment and transmission facilities as needed to accommodate increasing water supply demands, and it is anticipated that the City will continue to do so now and in the future. This approach does not present any issues regarding the adequacy of the City's water supply, since the City's existing water rights and entitlements are sufficient to supply all City demands at buildout.<sup>32</sup>

The most appropriate approach to identify when the City will require its next additional increment of diversion and treatment facility capacity is to analyze maximum day demand. Maximum day demand at buildout of the proposed project would be approximately 3.83 mgd and would contribute to demands placed on the City's potable water service area.<sup>33</sup>

Table 6.11-8 shows the maximum day surface water supply and demand under normal flow conditions. Table 6.11-9 shows a treatment capacity reduction at the Fairbairn WTP from 200 mgd to 100 mgd during below-Hodge flow conditions (pursuant to the City's PSA), resulting in a total maximum day treatment capacity of 260 mgd under such conditions. When the City's current sustainable groundwater capacity of 30 mgd is added to the treated surface water, this results in a total water delivery of 290 mgd during below Hodge flow conditions. Assuming a more conservative growth rate of 2.2 percent for future maximum day demands, and assuming full use of the current sustainable groundwater supply of 30 mgd during below Hodge flow conditions, a treatment capacity deficit could occur in 2020 as shown in Table 6.11-9. The City could expect a maximum day demand capacity deficit of approximately 18.3 mgd at that time.<sup>34</sup> The deficit would increase over subsequent years and in 2030, under below-Hodge flow conditions the projected capacity deficit would increase to 92 mgd or up to 122 mgd deficit without pumping groundwater. Therefore, during below-Hodge flow conditions, the proposed project along with buildout of the City's General Plan would create a maximum day deficit beginning in 2020. This is considered a *potentially significant cumulative impact*.

32 This assumes the City would continue to achieve observed conservation savings of 7.5 percent overall and would experience greater water supply savings through voluntary residential meter retrofits (BMP 4) outlined in the 2006 Urban Water Management Plan.

33 It should be noted that this was accounted for in the City's 2006 UWMP maximum day demand projections through the year 2030.

34 It is important to note that the City's PSA precludes delivery of 20 mgd to Sacramento Suburban Water District; therefore, City-wide cumulative demand is reduced by 20 mgd.

TABLE 6.11-8

**PEAK DAY SURFACE WATER SUPPLY CAPACITY (EXISTING FACILITIES) AND DEMAND COMPARISON DURING NORMAL (ABOVE-HODGE) FLOW CONDITIONS (MGD)**

	2005	2010	2015	2020	2025	2030
American River <sup>a</sup>	200	200	200	200	200	200
Sacramento River <sup>a</sup>	160	160	160	160	160	160
<b>TOTAL SURFACE WATER SUPPLY</b>	<b>360</b>	<b>360</b>	<b>360</b>	<b>360</b>	<b>360</b>	<b>360</b>
Groundwater Supply	30	30	30	30	30	30
<b>Total Water Supplies</b>	<b>390</b>	<b>390</b>	<b>390</b>	<b>390</b>	<b>390</b>	<b>390</b>
City Demand and Wholesale/Wheeling Demands <sup>b</sup>	235.7	261.9	291.5	324.5	361.2	402
Project Demand	~	3.83	3.83	3.83	3.83	3.83
<b>TOTAL WATER DEMAND</b>		<b>265.73</b>	<b>295.33</b>	<b>328.33</b>	<b>365.03</b>	<b>402</b>
<b>Available Capacity without new facilities</b>		<b>124.27</b>	<b>94.67</b>	<b>61.67</b>	<b>24.97</b>	<b>-12</b>

Notes:

a. Surface supply is based on nominal plant capacity.

b. Based on 2.2 percent annual growth rate between 2004 and 2030 demand.

Source: PBS&amp;J/EIP, June 2007.

TABLE 6.11-9

**PEAK DAY SURFACE WATER SUPPLY CAPACITY (EXISTING FACILITIES) AND DEMAND COMPARISON DURING BELOW-HODGE FLOW CONDITIONS (MGD)**

	2005	2010	2015	2020	2025	2030
American River <sup>a</sup>	100	100	100	100	100	100
Sacramento River <sup>a</sup>	160	160	160	160	160	160
<b>TOTAL SURFACE WATER SUPPLY<sup>b</sup></b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>260</b>
Groundwater Supply	30	30	30	30	30	30
<b>Total Water Supplies</b>	<b>290</b>	<b>290</b>	<b>290</b>	<b>290</b>	<b>290</b>	<b>290</b>
City Demand and Wholesale/Wheeling Demands <sup>c</sup>	235.7	261.9	291.5	324.5	361.2	402
Project Demand	~	3.83	3.83	3.83	3.83	3.83
<b>TOTAL WATER DEMAND<sup>d</sup></b>	<b>235.7</b>	<b>245.73</b>	<b>275.33</b>	<b>308.33</b>	<b>345.03</b>	<b>382</b>
<b>Available Capacity without new facilities</b>	<b>54.3</b>	<b>44.27</b>	<b>14.67</b>	<b>-18.33</b>	<b>-55.03</b>	<b>-92</b>

Notes:

a. American River diversion is limited 100 mgd during below-Hodge flow conditions.

b. Sacramento WTP peak day supply is based on the nominal capacity of the plant.

c. Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.

d. Reduced by 20 mgd during below-Hodge Flow or Conference Year when sales to Sacramento Suburban Water District are not required. A new Sacramento River diversion and WTP potentially could be used to make up this reduction during below-Hodge Flow or Conference Year conditions (not reflected in "Available Capacity without new facilities").

Source: PBS&amp;J/EIP, June 2007.

### Mitigation Measure

The City is aware of this shortfall, and has developed a number of ways in which to mitigate the potential future maximum day demand capacity deficit. The discussion below describes available mitigation options. Generally, over the next 23 years, these options would allow the City a degree of flexibility to implement appropriate mitigations in sequence or in combination to reduce the potentially significant cumulative impact to a ***less-than-significant level***.



6.11-8 a) *Implement Maximum Day Demand Conservation in the proposed project.*

*The City's 2006 UWMP presents three future demand projection scenarios spread over a twenty-five year planning horizon, they include a "no conservation" scenario, a 7.5 percent conservation scenario and a 25.6 percent conservation scenario.*

*Assuming that as a mitigation measure the proposed project could achieve 7.5 percent conservation in average day demands, the proposed project would roughly save approximately 287,250 gpd (3.54 mgd) and reduce average annual demands to 3,965 AFA down from the calculated demand of 4,295 AFA for a savings of 330 AFA. The conservation savings achieved at the project site would not reduce the maximum day demands enough to overcome the 2020 City-wide capacity deficit; therefore, this ultimately is a City-wide issue and the City would be need to the address future potential maximum day demand deficit on a larger scale to reduce the potentially significant cumulative impact to a less-than-significant level.*

b) *Implement Diversion and WTP as cost-sharing partner in Sacramento River Water Reliability Study.*

*The City is a partner on the Sacramento River Water Reliability Study, which is investigating alternatives for an additional 365 cfs (235 mgd) diversion on the Sacramento River and an associated water treatment facility. The City would have access to 145 mgd of the available 235 mgd. The 145 mgd diversion and WTP alternative included in the SRWRS would avoid any future capacity deficits as shown in Table 6.11-9. Upon implementation of this new diversion and WTP plant project, the potentially significant cumulative impact would be reduced to a less than significant cumulative impact.*

*The SRWRS requires is undergoing environmental review under CEQA and NEPA, in addition to compliance with Endangered Species Act and other applicable regulatory requirements. This process began in 2002 with the authorization of Public Law 106 – 554 and is currently ongoing. USBR is the federal lead agency and Placer County Water Agency is the local lead agency. The draft environmental documentation is scheduled to be completed in the spring of 2008 and would be certified in early 2009. USBR plans to issue a Record of Decision in spring 2009.<sup>35</sup>*

*The construction and operation of a second Sacramento River diversion and WTP could result in, at a minimum, the following potentially significant environmental impacts:*

- Exposure of soils to erosion and loss of topsoil during construction;*
- Surface water quality degradation (cumulative impact);*
- Destruction or disturbance of subsurface archeological or paleontological resources;*
- Construction-related air emissions;*
- Construction and operations-related noise impacts;*

<sup>35</sup> Initial Alternatives Report. Final Version, March 2005. Sacramento River Reliability Study. Updated by personal communication with Jim Peifer, City of Sacramento and Sammie Cervantes, USBR, August 9, 2007.

- *Visual and/or light and glare impacts;*
- *Loss of protected species and degradation or loss of their habitats;*
- *Conversion of existing agricultural lands or resources;*
- *Degradation of fisheries habitat (cumulative impact); and*
- *Exposure to pre-existing listed and unknown hazardous materials contamination.*

*Mitigation measures would be to need developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above to less than significant levels:*

- *Reduction in operational and construction air emissions as required by SMAQMD;*
- *Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;*
- *Minimization of operational and construction noise through the use of noise attenuation measures;*
- *Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;*
- *Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;*
- *Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and*
- *Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.*

*The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.*

c) *Implement a City of Sacramento Only Sacramento River Diversion and WTP.*

*Another mitigation option would be for the City to be the sole operator of the second Sacramento River diversion and Elverta Road WTP project. Under this option, the diversion and WTP would be scaled down to provide the additional capacity needed to meet only the City's maximum day demands when diversion limitations apply at FWTP under the City WFA PSA. As presented in the SRWRS, the City would most likely construct capacity to divert roughly 235 cfs and could treat up to 145 mgd at the new WTP. This new diversion and WTP would avoid any future maximum day capacity deficits through 2030 and beyond, as shown in Table 6.11-10, the new 145*

*WTP would provide capacity to meet all demands through 2030.<sup>36</sup> This was presented as one of the alternatives in the SRWRS; therefore, it is reasonable to assume this as a feasible mitigation measure. Upon implementation of this diversion and WTP project, the potentially significant cumulative impact would be reduced to a less than significant cumulative impact.*

*As with the previous SRWRS alternative, this City-only project requires its own environmental review, whether as part of the SRWRS or as an independent project, in addition to compliance with all applicable regulatory requirement.*

*The construction and operation of a second Sacramento River diversion and WTP as described above could in, at a minimum, result in the following potentially significant environmental impacts:*

- Exposure of soils to erosion and loss of topsoil during construction;*
- Surface water quality degradation (cumulative impact);*
- Natural drainage courses and hydrology;*
- Construction-related air emissions;*
- Construction and operations-related noise impacts;*
- Visual and/or light and glare impacts;*
- Loss of protected species and degradation or loss of their habitats;*
- Conversion of existing agricultural lands or resources;*
- Degradation of fisheries habitat (cumulative impact); and*
- Exposure to pre-existing listed and unknown hazardous materials contamination.*

*Mitigation measures would need to be developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed project. The following are illustrative of the types of mitigation measures that could be implemented to avoid or reduce those impacts listed above:*

- Reduction in operational and construction air emissions as required by SMAQMD;*
- Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;*
- Minimization of operational and construction noise through the use of noise attenuation measures;*
- Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;*

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36 *Executive Summary, Initial Alternatives Report, Final Version, March 2005. Sacramento River Water Reliability Study (attached as Appendix C).*

- *Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;*
- *Avoidance of hazardous materials effects through appropriate investigation and remediation of any on-site hazards; and*
- *Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.*

*The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.*

d) *Increase Groundwater Pumping.*

*As previously discussed, the City maintains 32 wells for potable use; 23 wells are actively used to supply drinking water.<sup>37</sup> The total capacity of the wells is 33 mgd, containing a sustainable capacity of approximately 30 mgd and producing up to 33,600 AFA. In 2000 - 2005 the City's annual average groundwater pumping was 22,992 acre-ft.<sup>38</sup>*

*The proposed project's average annual demand is estimated at 3.83 mgd. In comparison to City-wide demands of 325 mgd in 2020 and up to 402 mgd in 2030 above-Hodge conditions, the proposed project's demand contribution is less than considerable. Nonetheless, under a dry year scenario, the project would increase demand on the City's water system infrastructure. In an effort to minimize the project's demand, the project could add new wells to the City's groundwater system paid for through developer or other water connection fees. Assuming a new groundwater well could pump roughly 1,000 gpm or 1.44 mgd, the 3 new wells would be needed to meet the project's peak day demands and offset the demand placed on the City's water system. Furthermore, each new project would have to pay their fair share to fund new groundwater wells to offset project-specific demands.*

*The City's water supply infrastructure is designed to serve the entire City-wide service area and new infrastructure ties into the existing system to meet both average and maximum day demands. The City supplements the surface water capacity by pumping groundwater to meet the maximum day demands. If no surface water diversion and treatment capacity is added by 2025, the City would need to more than double the peak day pumping rate to meet customer demands. This could not be achieved with the current well capacities and new wells would have to be installed. Upon implementation of this mitigation measure, the potentially significant cumulative impact would be reduced to a less-than-significant cumulative impact. This analysis assumes that additional wells would be installed in the SGA groundwater area.*

*The implementation of this mitigation measure would require environmental analysis to assess if the construction or operation of new wells would have any adverse environmental consequences and would require environmental evaluation. The new*

<sup>37</sup> Dan Sherry, City of Sacramento, Utilities Department. Status of groundwater wells, June 23, 2005.

<sup>38</sup> Calculated from the City of Sacramento, Department of Utilities, Operational Statistics Annual Reports.

wells, appurtenances and infrastructure could result in the following potentially significant environmental impacts:

*Exposure of soils to erosion and loss of topsoil during construction:*

- *Construction-related air emissions;*
- *Destruction of buried archeological or paleontological resources;*
- *Changes in natural drainage courses and hydrology;*
- *Construction and operations-related noise impacts;*
- *Visual and/or light and glare impacts;*
- *Conversion of existing agricultural lands or resources;*
- *Drawdown of groundwater in the North American Subbasin; and*
- *Exposure to pre-existing listed and unknown hazardous materials contamination.*

*In addition, although this groundwater pumping mitigation measure could supply potable water to meet proposed site demands and offset a service area capacity deficit; this mitigation measure could also cause rapid drawdown of a sustained groundwater basin the results of which are counter to the SGA Groundwater Management Plan and WFA. Additionally, increasing groundwater withdrawals could adversely affect other groundwater pumping activities in the region, or cause dramatic changes within known and unknown groundwater contamination plumes in the Subbasin.*

*Mitigation measures would be to need developed to reduce any potentially significant impacts to less than significant levels. As such, due to the timing uncertainties associated with the long-term water supply infrastructure necessary to overcome the cumulative maximum day demands deficit in 2020, project-specific mitigation measures would need to be tailored to the proposed project. The following are illustrative of the types of, mitigation measures that could be implemented to avoid or reduce those impacts listed above to less than significant levels:*

- (a) *Reduction in operational and construction air emissions as required by SMAQMD;*
- (b) *Avoidance of surface water pollution through control of on-site stormwater flows, protection of top soils or stock piles from wind and water erosion, and implementation of related BMPs;*
- (c) *Minimization of operational and construction noise through the use of noise attenuation measures;*
- (d) *Avoidance and/or implementation of appropriate measures to restore, create, preserve or otherwise compensate for effects to biological resources;*
- (e) *Avoidance of effects to buried cultural resources through investigation and pre-testing, and/or on-site archaeological monitoring and implementation of appropriate steps if cultural resources are discovered during earth moving activities;*
- (f) *Avoidance of hazardous materials effects through appropriate investigation*

and remediation of any on-site hazards; and

- (g) Avoidance, preservation or other appropriate compensation for loss of or adverse effects to important farmlands.

The City, as a lead or responsible agency, would be required to implement mitigation measures identified for each mitigation project. The City would not be responsible for the actions taken by other local jurisdictions or agencies.

	2005	2010	2015	2020	2025	2030
American River <sup>a</sup>	100	100	100	100	100	100
Sacramento River <sup>b</sup>	160	160	160	160	160	160
New Sacramento River WTP	~	~	~	145	145	145
<b>TOTAL SURFACE WATER SUPPLY</b>	<b>260</b>	<b>260</b>	<b>260</b>	<b>405</b>	<b>405</b>	<b>405</b>
Groundwater Supply	30	30	30	30	30	30
<b>Total Water Supplies</b>	<b>290</b>	<b>290</b>	<b>290</b>	<b>435</b>	<b>435</b>	<b>435</b>
City Demand and Wholesale/Wheeling Demands <sup>c</sup>	235.7	261.9	291.5	324.5	361.2	402.0
Project Demand	~	3.83	3.83	3.83	3.83	3.83
<b>TOTAL WATER DEMAND<sup>d</sup></b>	<b>235.7</b>	<b>245.7</b>	<b>275.3</b>	<b>308.3</b>	<b>345.0</b>	<b>382.0</b>
<b>Available Capacity with new facilities</b>	<b>54.3</b>	<b>44.3</b>	<b>14.7</b>	<b>126.7</b>	<b>90.0</b>	<b>53.0</b>

Notes:

a. American River diversion is limited 100 mgd during Hodge flow conditions.

b. Sacramento WTP peak day supply is based on the nominal capacity of the plant.

c. Based on a constant 2.2 percent annual growth rate between 2004 and 2030 demand.

d. Reduced by 20 mgd during Hodge Flow or Conference Year when sales to Sacramento Suburban Water District are not required. A new Sacramento River diversion and WTP potentially could be used to make up this reduction during Hodge Flow or Conference Year conditions (not reflected in "Available Capacity without new facilities").

Source: PBSJ, August 2007

### Conclusion

The City could use a number of means to mitigate the potential future cumulative maximum day demand capacity deficit as presented in the each of the aforementioned mitigation options. Since the capacity deficit will not occur until 2020, the City has time in which to address this capacity need, consistent with the City's historical practice of constructing, expanding and improving water supply facilities as needed to meet the City's increasing water supply demands.<sup>39</sup> The most likely project, due to current progress, is the construction of an additional diversion and treatment facility on the Sacramento River whether as part of the SRWRS project or as a City-only project. This project as well as the other mitigation options identified would allow the City some degree of flexibility in how the City chooses to reduce the potentially significant cumulative impact to a **less-than-significant level**.

### Sports and Entertainment Facility Overlay

The evaluation of impacts for the Sports and Entertainment Facility Overlay is the same as that for the Specific Plan. Each of the concerns associated with development of the plan area analyzed above would be addressed by the same set of legal requirements listed in the Regulatory Setting

<sup>39</sup> As recently noted by the California Supreme Court in *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 432, CEQA does not require that all facilities necessary to treat and deliver the water supply for future build-out of a long-term land use plan be approved or built when the land use plan is approved, as this would require water planning to far outpace land use planning.

and would include the same set of project components to serve plan area's water supply demand. No mitigation measures would be required in addition to those included for the plan area above. Consequently, the Sports and Entertainment Facility Overlay would have a less-than-significant impact on water supply after the implementation of the aforementioned mitigation measures.





## **6.12 TRANSPORTATION AND CIRCULATION**

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## 6.12 TRANSPORTATION AND CIRCULATION

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### INTRODUCTION

This section summarizes the effects on the transportation and circulation system resulting from vehicle trips associated with the proposed Railyards Specific Plan. The Railyards Specific Plan is composed of five distinct phases (the Full Project) and includes development of the Sacramento Intermodal Transfer Facility (SITF). This study considers two different land use scenarios, Maximum Residential and Maximum Office, for the Full Project. Trip generation estimates were calculated for both scenarios and an in-depth analysis was then performed for the Maximum Office scenario, which would generate higher number of trips. A quantitative analysis of weekday a.m. and p.m. commuter hour conditions were conducted for the following conditions:

- Existing
- Baseline
- Baseline with the Initial Phase
- Near-term (2013)
- Near-term (2013) with the Initial Phase
- Long-term (2030)
- Long-term (2030) with Initial Phase
- Long-term (2030) with Full Project

The effects of the first two phases of the Railyards Specific Plan (the Initial Phase) under the Maximum Office scenario were evaluated for baseline conditions, near-term (2013) conditions, and long-term (2030) conditions; while the effects of the Full Project were evaluated for long-term (2030) conditions. For comparison, an assessment of baseline, near-term, and long-term conditions without the proposed Railyards Specific Plan is also provided.

The transportation discussion, prepared by Dowling Associates, Inc., addresses impacts of all conditions identified in the analysis.

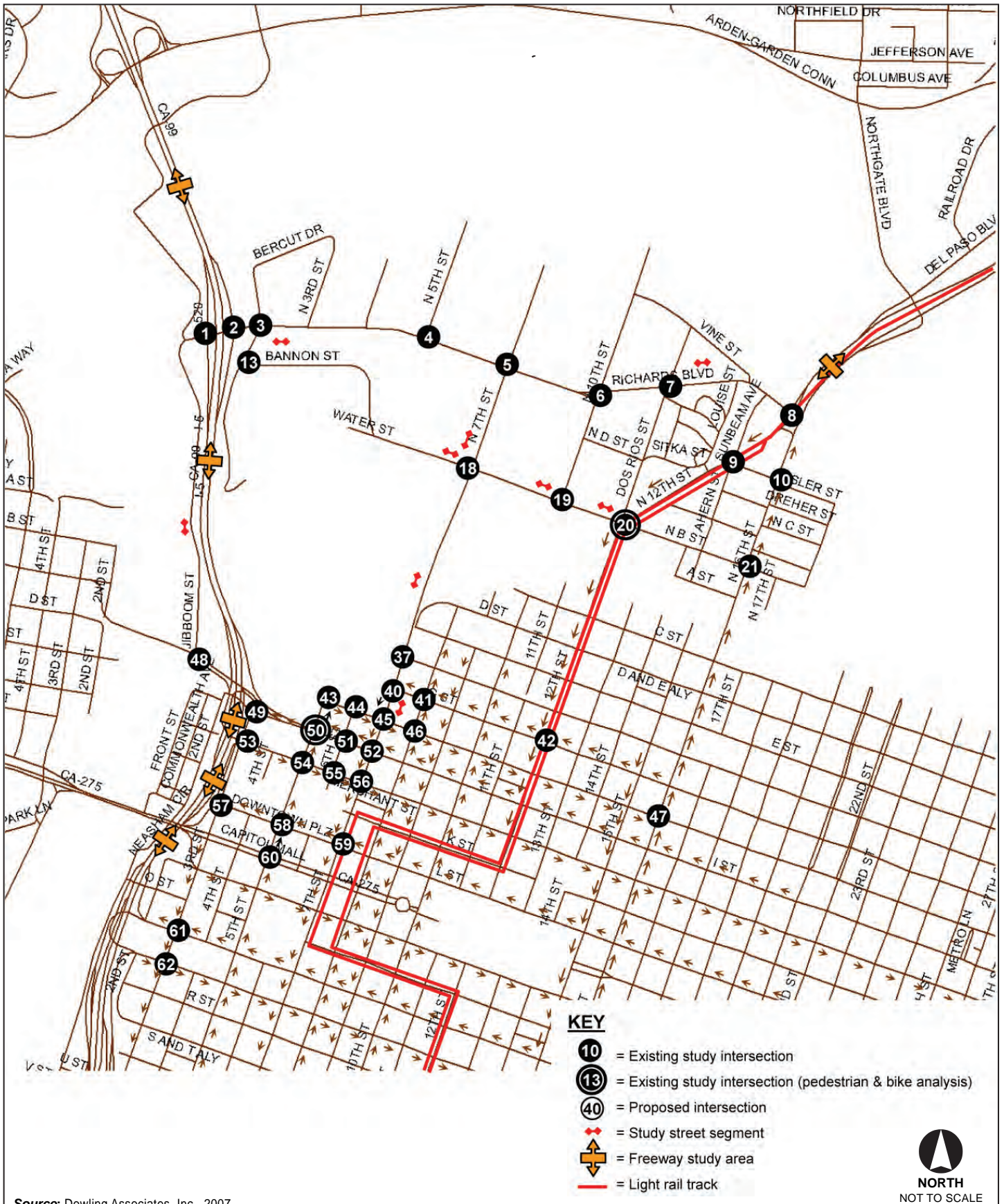
### ENVIRONMENTAL SETTING

The existing and planned roadway, transit, bicycle and pedestrian components of the transportation system within the study area are described below. A map of the vicinity and existing transportation system is provided in Figure 6.12-1.

#### **Existing Transportation System**

Regional vehicular access to the project area is provided primarily by the freeway system that serves the central areas of Sacramento. Interstate 5 (I-5) is a north-south facility located just west of the project site. Access to I-5 is provided via I Street, P Street and Richards Boulevard, and access from I-5 is provided via J Street, Q Street and Richards Boulevard. To the south, I-5 provides access to southern portions of the City and County, as well as other Central Valley communities. To the north, I-5 provides access to I-80, northern portions of the City and County, Sacramento International Airport, and other Central Valley communities.





Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-1**  
**Transportation System Existing Conditions**



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The east-west U.S. Route 50 (U.S. 50) lies approximately 1.5 miles south of the plan area. Access to U.S. 50 is provided via 9<sup>th</sup> and 15<sup>th</sup> Streets to the 11<sup>th</sup> and 16<sup>th</sup> Street on-ramps. Access from U.S. 50 is provided from the 16th and 10th Street off-ramps. U.S. 50 may also be accessed via I-5 and Capitol Mall/U.S. 275 (Tower Bridge). To the east, U.S. 50 serves eastern portions of the City and County and extends into El Dorado County. To the west, U.S. 50 extends via the Pioneer Bridge to West Sacramento and Yolo County.

Business Loop Interstate 80 (Business 80), also known as State Route 51 between U.S. 50 and Auburn Avenue, lies approximately two miles east of the project site. Although access between the project site and Business 80 is available at several locations along the east edge of downtown, more direct access to Business 80 is provided via State Route 160 (SR 160) and the 12th and 16th Street crossings of the American River. SR 160 provides access to North Sacramento, northeastern portions of the City and County, South Natomas via Northgate Boulevard, and I-80 extending into Placer County.

The existing site, primarily consisting of railroad maintenance facilities, has few existing roads. As a part of the Railyards Specific Plan, new roadways will be laid and a number of existing streets will be extended onto the site from downtown. Downtown Sacramento is served by a grid street system. North-south streets have numbered street names and east-west streets have lettered street names. Many streets operate as one-way facilities and most major intersections in downtown are signal-controlled. In general, the one-way streets carry three travel lanes, with parking permitted along both curbs. Two-way streets generally have one lane in each direction with parking on both sides of the street. To accommodate critical traffic volumes and turning movements in selected locations, parking has been prohibited to provide additional lanes.

Primary downtown east-west streets for project area access include H and J Streets, which are one-way eastbound, and G and I Streets, which are one-way westbound. G Street is proposed to be extended onto the project site. I Street provides a link across the American River via the I Street Bridge to West Sacramento. Outside of downtown, Richards Boulevard is a four-lane arterial that provides connection to I-5 and SR 160 to the north of the site.

Key downtown north-south streets for project area access include 3rd, 7th, 9th, 12th, and 15th streets, which are one-way southbound (except for a portion of 3rd street between L and J Street and 7<sup>th</sup> Street north of F Street), 5th, 8th, 10th, and 16th streets, which are one-way northbound (except for a portion of 5th Street between J and L Streets), and 6<sup>th</sup> Street. 5<sup>th</sup> and 6<sup>th</sup> streets are proposed to be extended to provide key site circulation. Outside of downtown, Jibboom Street currently runs south from the Discovery Park along the west side of I-5 to the I Street Bridge. Development of the Full Project would terminate Jibboom Street at the new Camille Lane and eliminate its connection to the I Street Bridge.

### **Existing Transit System**

Amtrak's downtown depot at 4<sup>th</sup> and I Street is located on the southernmost portion of the project site and provides regional train service. Amtrak operates daily scheduled passenger train service from the downtown station to Richmond-BART-Oakland-San Francisco-San Jose, the San Joaquin Valley, Los Angeles, and Portland-Seattle. Reno-Denver-Chicago service is also available. Connections can be made to locations throughout the United States and Canada.

The Sacramento Regional Transit District (RT) is the major transit provider within Sacramento County, providing light rail service and fixed-route bus service on more than 70 routes. Light rail service and many of the bus routes are oriented to the downtown area. Current light rail service extends from the downtown area to the Watt / I-80 station to the northeast, to the Folsom Station to

the east, and to Meadowview Station to the south, and light rail lines along 7th and 8th Street connect to the existing depot.

Transit schedules are synchronized to provide "timed transfers" between bus routes and light rail at several stations. Many suburban stations include park-and-ride facilities. Light rail operates at 15-minute headways daily and on weekends, and at 30-minute headways during the evening. In addition to light rail service, many bus routes serve the downtown area including the Amtrak depot. Currently, Route 11 serves the project site directly along 7<sup>th</sup> Street and provides connection between Natomas and Downtown.

A number of other transit services connect downtown Sacramento with neighboring communities, providing primarily peak period services designed to accommodate commuter. Such services include:

- El Dorado Transit operates commuter service from Placerville, Shingle Springs, Cameron Park, and El Dorado Hills to Downtown Sacramento.
- Folsom Stage Lines operates commuter transit service from Folsom to Downtown Sacramento.
- Roseville Transit provides commuter service from Roseville to Downtown Sacramento.
- Elk Grove e-Tran operates commuter service from Elk Grove to Downtown Sacramento.
- Yolobus operates bus routes connecting to Downtown Sacramento from Davis, Woodland, Winters, and West Sacramento. Yolobus also operates transit service between Downtown Sacramento and the Sacramento International Airport.
- Yuba-Sutter Transit provides commuter transit service from Yuba and Sutter counties to Downtown Sacramento with connections to Regional Transit bus and light rail service.
- The San Joaquin Regional Transit District also provides service to Sacramento from park-and-ride locations in Stockton and Lodi.
- The Solano Transportation Authority provides service from Solano County to downtown Sacramento through its Solano Express Intercity Transit Consortium.

### **Existing and Planned Pedestrian and Bicycle Facilities**

Within downtown Sacramento, sidewalks are provided on both sides of virtually all streets. Pedestrian crossings of major streets are accommodated by pedestrian signals and marked crosswalks at signalized intersections.

A Sacramento City / County Bicycle Task Force developed a 2010 Bikeway Master Plan for the region. The Master Plan is a policy document that was prepared to coordinate and develop a bikeway system that will benefit and serve the recreational and transportation needs of the public. Officially designated bicycle facilities are classified as follows:

Class I	Off-street bike trails or paths which are physically separated from streets or roads used by motorized vehicles.
Class II	On-street bike lanes with signs, striped lane markings, and pavement legends.
Class III	On-street bike routes marked by signs and shared with motor vehicles and pedestrians. Optional four-inch edge lines painted on the pavement.



According to the Bikeway Master Plan map contained in the City of Sacramento Parks and Recreation Master Plan 2005-2010, existing bikeways may be found along the following roadways in the project area:

- E Street between 8th and 35th Streets
- G Street between 16th Street and Alhambra Boulevard
- H Street between 16th Street and Elvas Avenue
- K Street between 14th Street and Alhambra Boulevard
- Capitol Avenue between 15th Street and city limit
  
- North Street between 2nd and 13th Streets
  
- Front Street between Capitol Mall and Marina View Drive and from J Street to North Sacramento
- 11th Street between C and J Streets; and between North and W Street, then continue on Riverside Boulevard to around 43rd Avenue
- 13th Street between C and North Streets
- 18th Street between D Street and 2nd Avenue (with short segment on 17th Street)
- Richards Boulevard between Jibboom and 10<sup>th</sup> Streets
- North 12<sup>th</sup> Street/Dos Rios Street between C and Vine Streets
- Water Street/North B Street

Additional bikeways were proposed to further enhance the already extensive network. Proposed bikeways that pass through the project site include on-street bike lanes along Jibboom, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, and H Streets. Bike trails are proposed around the perimeter of the Amtrak depot. The existing and proposed bikeway network is presented in Figure 6.12-2.

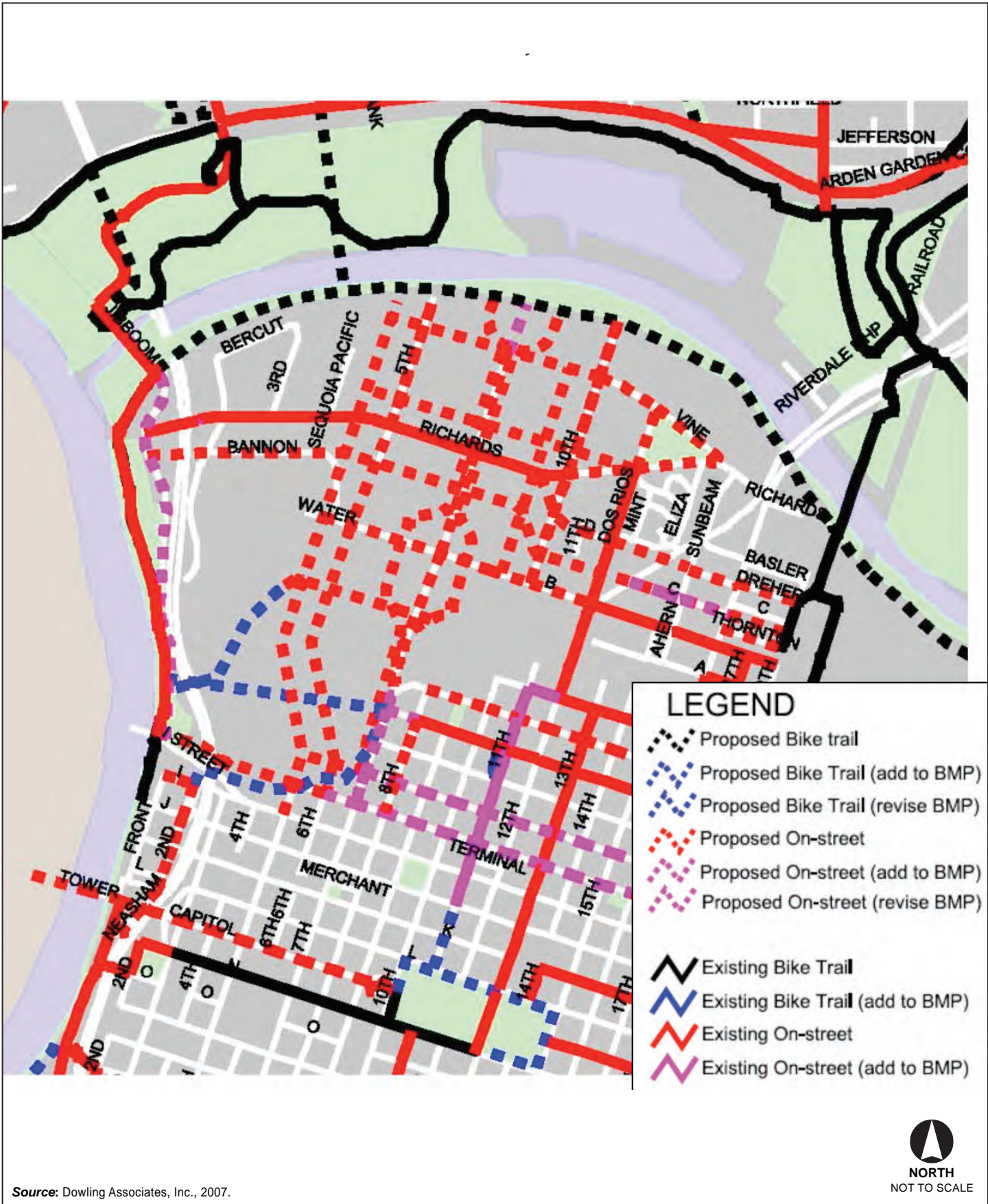
## **STUDY AREA**

A set of intersections, street and freeway mainline segments, freeway merge/diverge areas, and freeway ramps were selected for study based upon the anticipated volume and distributional patterns of traffic and known locations of operational difficulty. This selection was made in collaboration with the City of Sacramento and Caltrans staff members. The following locations, shown in Figure 6.12-1.

Intersections:

1. I-5 SB Ramps / Richards Boulevard
2. I-5 NB Ramps / Richards Boulevard
3. Bercut Drive / Richards Boulevard
4. 5th Street / Richards Boulevard
5. 7th Street / Richards Boulevard
6. 10th Street / Richards Boulevard
7. Dos Rios Avenue / Richards Boulevard / North F Street
8. 16th Street / Richards Boulevard / 12th Street





Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-2**  
**Existing and Proposed Bikeway Network**



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9. 12th Street / Sproule Avenue /Sunbeam Avenue
10. 16th Street / Sproule Avenue
11. I-5 Southbound Ramps / Bannon Street
12. I-5 Northbound Ramps / Bannon Street
13. Bercut Drive / Bannon Street
14. 5th Street / Bannon Street
15. 7th Street / Bannon Street
16. 12th Street / Bannon Street
17. 5th Street / North B Street
18. 7th Street / North B Street
19. North 10th Street / North B Street
20. 12th Street / Dos Rios Street / North B Street
21. 16th Street / North B Street
22. Bercut Drive / South Park Street
23. 5th Street / South Park Street
24. 7th Street / North Park Street
25. 7th Street / South Park Street
26. Jibboom Street / Railyards Boulevard
27. Bercut Drive / Railyards Boulevard
28. Crocker Street / Railyards Boulevard
29. Stanford Street / Railyards Boulevard
30. 5th Street / Railyards Boulevard
31. Judah Street / Railyards Boulevard
32. 6th Street / Railyards Boulevard
33. 7th Street / Railyards Boulevard
34. 10th Street / Railyards Boulevard
35. Jibboom Street / Camille Lane
36. Bercut Drive / Camille Lane
37. 7th Street / F Street
38. 5th Street / G Street
39. 6th Street / G Street
40. 7th Street / G Street
41. 8th Street / G Street
42. 12th Street / G Street
43. 5th Street / H Street
44. 6th Street / H Street
45. 7th Street / H Street
46. 8th Street / H Street
47. 16th Street / H Street
48. Jibboom Street / I Street
49. 3rd Street / I Street

50. 5th Street / I Street
51. 6th Street / I Street
52. 7th Street / I Street
53. 3rd Street / J Street
54. 5th Street / J Street
55. 6th Street / J Street
56. 7th Street / J Street
57. 3rd Street / L Street
58. 5th Street / L Street
59. 7th Street / L Street
60. 5th Street / Capitol Mall
61. 3rd Street / P Street
62. 3rd Street / Q Street
63. Dos Rios Street / Richards Boulevard
64. 12th Street / Richards Boulevard

Street Segments: (ADT only, not LOS)

1. Richards Boulevard – east of Bercut Drive
2. Richards Boulevard – east of Dos Rios Street
3. 5th Street – north of H Street
4. 5th Street – south of Railyards Boulevard
5. 5th Street – south of N. B Street
6. 7th Street – north of N. B Street
7. 7th Street – south of Railyards Boulevard
8. 7th Street – north of H Street
9. 6th Street – north of H Street
10. N. 10th Street – south of N. B Street
11. Jibboom Street – north of Railyards Boulevard
12. Bercut Drive – north of Railyards Boulevard
13. Railyards Boulevard – east of N. 10th Street
14. Railyards Boulevard – east of 7th Street
15. Railyards Boulevard – west of 7th Street
16. Railyards Boulevard – west of 5th Street
17. South Park Street – west of 5th Street
18. South Park Street – west of 7th Street
19. North Park Street – east of 7th Street
20. N. B Street – west of 7th Street
21. N. B Street – west of N. 10th Street
22. N. B Street – west of Dos Rios Avenue
23. Camille Lane – west of 5th Street
24. Huntington Street – north of Railyards Boulevard
25. Crocker Street – north of Railyards Boulevard

26. Stanford Street – north of Railyards Boulevard
27. Judah Street – north of Railyards Boulevard
28. 6th Street – north of Railyards Boulevard
29. 8th Street – north of Railyards Boulevard
30. 9th Street – north of Railyards Boulevard
31. Bannon Street – east of Bercut Drive
32. Bannon Street – east of Dos Rios Street

Freeway Segments:

- I-5 Northbound
  - South of L Street on-ramp
  - South of I Street on-ramp
  - South of Richards Boulevard off-ramp
  - North of Richards Boulevard off-ramp
  - North of Richards Boulevard on-ramp
- I-5 Southbound
  - North of Richards Boulevard off-ramp
  - North of Richards Boulevard on-ramp
  - North of J Street off-ramp
  - North of I Street on-ramp
- SR 160 Northbound at American River Bridge
- SR 160 Southbound at American River Bridge

Freeway Merge / Diverge / Weave:

- I-5 Northbound
  - P Street to J Street weave
  - L Street on-ramp
  - I Street on-ramp
  - Richards Boulevard off-ramp
  - Richards Boulevard on-ramp
  - Garden Highway off-ramp
- I-5 Southbound
  - Garden Highway on-ramp
  - Richards Boulevard off-ramp
  - Richards Boulevard on-ramp
  - J Street off-ramp
  - I Street to Q Street weave

Freeway Ramps:

- I-5 Northbound
  - Q Street off-ramp

- J Street off-ramp
- Richards Boulevard off-ramp
- I-5 Southbound
  - Richards Boulevard off-ramp
  - J Street off-ramp
  - Q Street off-ramp

### **Existing Traffic Operations**

#### **Traffic Volumes**

Turning traffic volumes were observed at the study intersections between September 2004 and June 2006. The existing traffic volumes, lane configurations, and traffic controls at study area intersections are shown in Figure 6.12-3. An inventory of traffic controls (signals, stop signs and other traffic controls) was developed for each of the study area intersections, ramps, and street and freeway mainline segments.

Freeway mainline and ramp data were taken from the California Department of Transportation (Caltrans) Traffic and Vehicle Data Systems website. Caltrans data were supplemented by intersection and ramp volume counts conducted during the same period as mentioned above.

#### **Levels of Service**

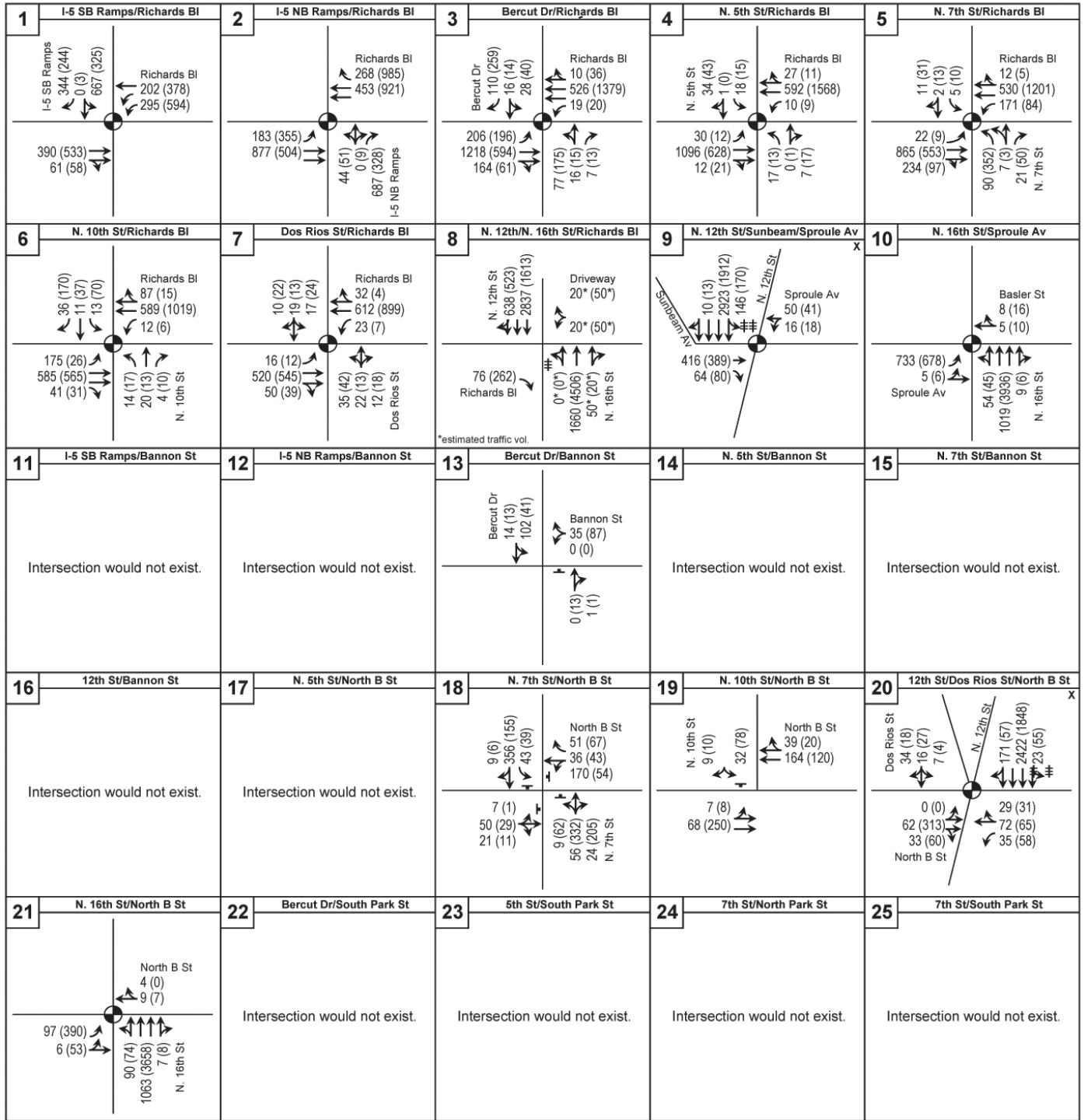
“Levels of service” describe the operating conditions experienced by motorists. Level of service is a qualitative measure of the effect of a number of factors, including speed and travel time, traffic interruptions, freedom to maneuver, driving comfort and convenience. Levels of service are designated "A" through "F" from best to worst, which cover the entire range of traffic operations that might occur. Levels of Service (LOS) "A" through "E" generally represent traffic volumes at less than roadway capacity, while LOS "F" represents over capacity and/or forced flow conditions.

The City of Sacramento General Plan (October 1987) outlines the goals and policies that coordinate the transportation and circulation system with planned land uses. The General Plan (Goal D, Street and Road section) identifies LOS C as the goal for City’s local and major street system except at freeway ramp intersections, where the goal is LOS D. In addition, the General Plan smart growth principles identify the need for a balanced transportation system, including walkability and improved bicycle infrastructure. The current LOS C goal is being evaluated as a part of the General Plan update. The General Plan update will further evaluate how alternative mode opportunities, and support developments in infill areas and near transit stations should be recognized.

The City’s pedestrian friendly Street Standards (adopted in February 2004) provide guidelines on conceptual street standards to enhance and improve the pedestrian environment and encourage alternate mode use in the City of Sacramento. The key elements of the standards are listed below:

- Eliminate rolled curb
- Provide separated sidewalks on all streets
- Reduce widths of collector and arterial streets
- Reduce travel lane widths





**KEY**

- 31 (27) = AM (PM) peak hour traffic volume
- ⊙ = Signalized intersection
- ↔ = Intersection approach lane
- ☑ = Lane provided during AM peak, only
- ☒ = Lane provided during PM peak, only

Source: Dowling Associates, Inc., 2007.



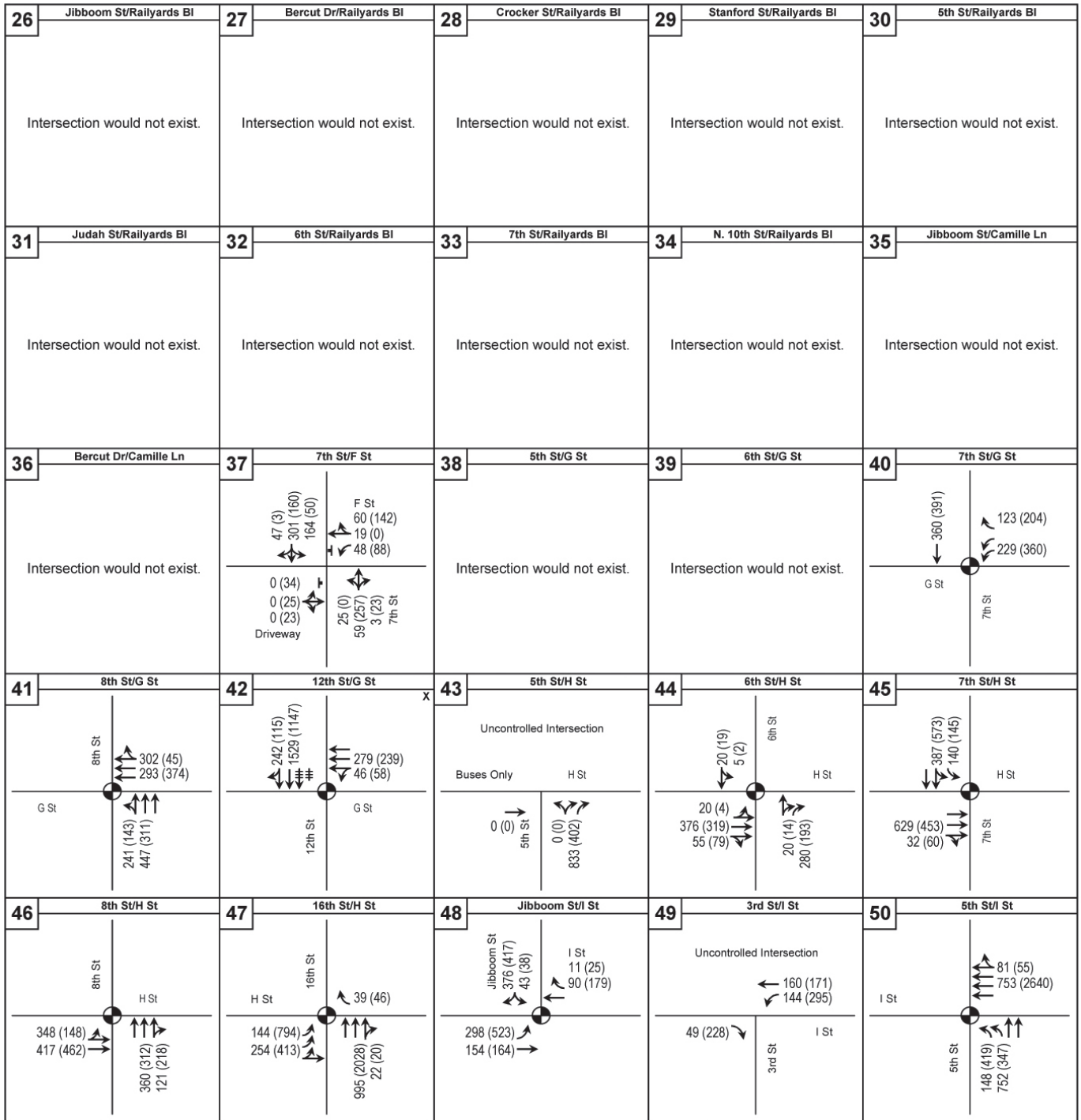
**NORTH**  
NOT TO SCALE

**FIGURE 6.12-3A**  
**Existing Traffic Volumes, Lanes, and Traffic Controls**

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**KEY**

- 31 (27) = AM (PM) peak hour traffic volume
- = Signalized intersection
- ↖ = Intersection approach lane
- ↖ = Lane provided during AM peak, only
- ☑ = Lane provided during PM peak, only



**NORTH**  
NOT TO SCALE

Source: Dowling Associates, Inc., 2007.



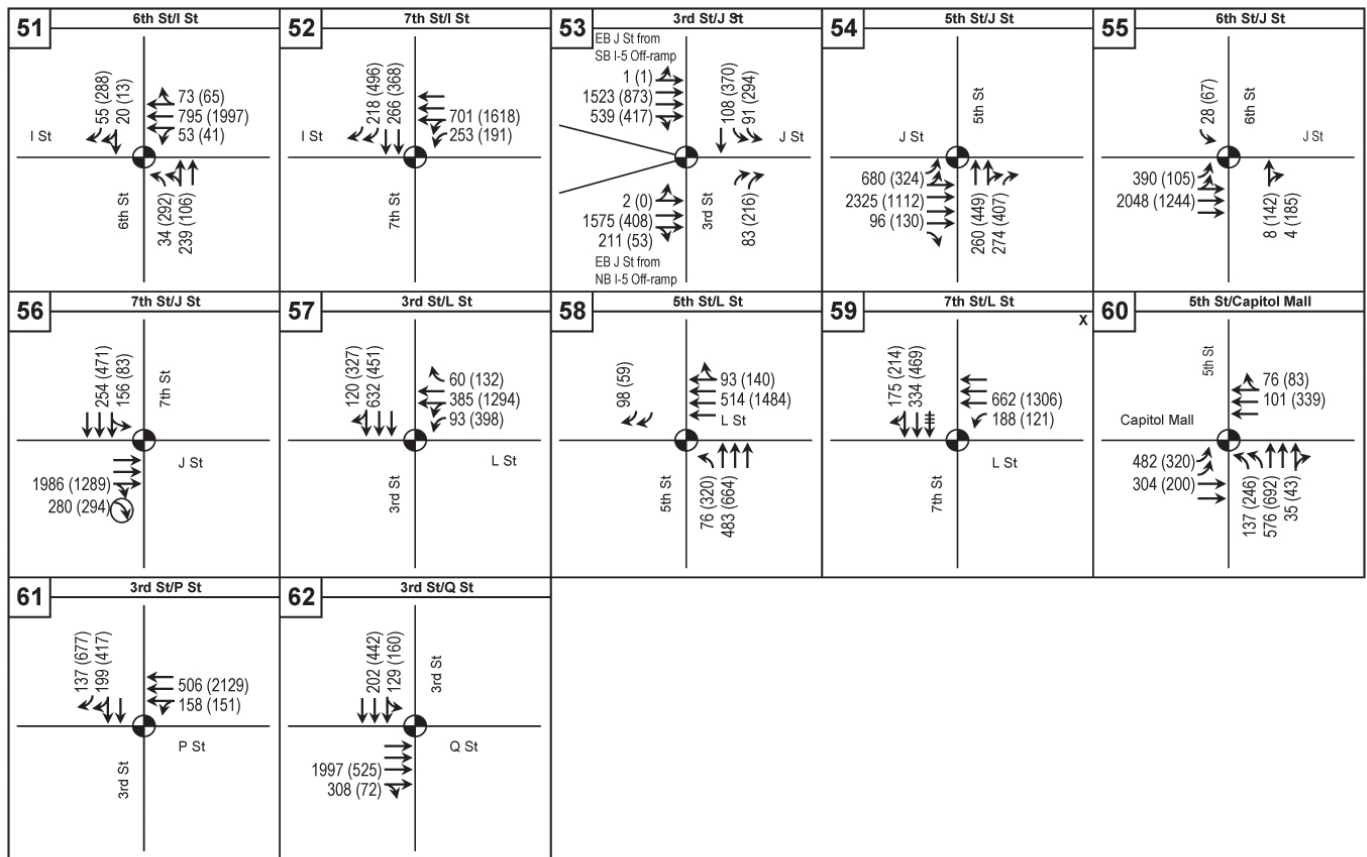
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**FIGURE 6.12-3B**  
**Existing Traffic Volumes, Lanes, and Traffic Controls**

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**KEY**

- 31 (27) = AM (PM) peak hour traffic volume
- ⊙ = Signalized intersection
- ↔ = Intersection approach lane
- ☑ = Lane provided during AM peak, only
- ☒ = Lane provided during PM peak, only

Source: Dowling Associates, Inc., 2007.



**NORTH**  
NOT TO SCALE



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**FIGURE 6.12-3C**  
**Existing Traffic Volumes, Lanes, and Traffic Controls**

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- Add bike lanes to all new collector and arterial streets

### Signalized Intersections System Analysis

Signalized intersection analyses were conducted using the operational methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 16).

This procedure calculates an average stopped delay per vehicle at a signalized intersection, and assigns a level of service designation based upon the delay. The method also provides a calculation of the volume-to-capacity (v/c) ratio of the critical movements at the intersection. Table 6.12-1 shows level of service criteria for signalized intersections.

<b>TABLE 6.12-1</b>		
<b>LEVEL OF SERVICE CRITERIA – SIGNALIZED INTERSECTIONS</b>		
Level of Service (LOS)	Average Delay (seconds/vehicle)	Description
A	≤ 10	Very Low Delay: This level of service occurs when progression is extremely favorable and most vehicles arrive during a green phase. Most vehicles do not stop at all.
B	> 10 and < 20	Minimal Delays: This level of service generally occurs with good progression, short cycle lengths, or both. More vehicles stop than at LOS A, causing higher levels of average delay.
C	> 20 and < 35	Acceptable Delay: Delay increases due to only fair progression, longer cycle lengths, or both. Individual cycle failures (to service all waiting vehicles) may begin to appear at this level of service. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	> 35 and < 55	Approaching Unstable Operation/Significant Delays: The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume / capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55 and < 80	Unstable Operation/Substantial Delays: These high delay values generally indicate poor progression, long cycle lengths, and high volume / capacity ratios. Individual cycle failures are frequent occurrences.
F	> 80	Excessive Delays: This level, considered unacceptable to most drivers, often occurs with over-saturation (that is, when arrival traffic volumes exceed the capacity of the intersection). It may also occur at nearly saturated conditions with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.
<i>Source: Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2000, pages 10-16 and 16-2.</i>		

### Unsignalized Intersections Analysis

Stop sign controlled intersections were analyzed utilizing the methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 10 and 17). This methodology determines the Level of Service by calculating an average total delay per vehicle for each controlled movement and for the intersection as a whole. A LOS designation is assigned based upon the average control delay of all movements. Table 6.12-2 presents the relationship of total delay to level of service for stop-controlled intersections.

TABLE 6.12-2

## LEVEL OF SERVICE CRITERIA AT STOP-CONTROLLED INTERSECTIONS

Level of Service	Average Control Delay (seconds/vehicle)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, pages 10-16 and 16-2.

Street Segment Analysis

Selected street segments were evaluated by comparing annual daily traffic volumes to the level of service criteria set forth in the City's Traffic Impact Guidelines. Table 6.12-3 shows level of service criteria for arterial roadways, local streets, and collector streets. The criteria for local and collector streets were based on the maximum daily traffic for those types of facilities listed in the City of Sacramento Municipal Code (Code). The maximum daily traffic in the Code was set as the threshold for LOS C traffic operations. The thresholds for other levels of service were based on volume-to-capacity ratios of 0.60 for LOS A, 0.70 for LOS B, 0.80 for LOS C, 0.90 for LOS D, and 1.00 for LOS E.

TABLE 6.12-3

## LEVEL OF SERVICE CRITERIA – ROADWAYS

Facility Type	Number of Lanes	Maximum Volume for Given Service Level				
		A	B	C	D	E
Arterial, low access control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, moderate access control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000
Arterial, high access control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Local Street	2	3,000	3,500	4,000	4,500	5,000
Collector Street	2	5,250	6,125	7,000	7,875	8,750
Facility Type		Stops/Mile	Driveways	Speed		
Arterial, low access control		4+	Frequent	25-35 MPH		
Arterial, moderate access control		2-4	Limited	35-45 MPH		
Arterial, high access control		1-2	None	45-55 MPH		

Sources: Arterial volumes from City of Sacramento, *Traffic Impact Analysis Guidelines*, 1996.  
Local and Collector Street volumes based on City of Sacramento *Design and Procedures Manual*, Section 15.



### Freeway Segment Analysis

The freeway mainline was analyzed utilizing a methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 13 and 23). Maximum service flow rates of 2,200 vehicles per lane per hour for typical freeway lanes and 1,600 vehicles per lane per hour for auxiliary lanes were used, based upon data collected by Caltrans in the Sacramento urban area. Table 6.12-4 shows the relationship of freeway volume-to-capacity ratios and density to level of service.

<b>LEVEL OF SERVICE CRITERIA – FREEWAY MAINLINE</b>		
Level of Service	Maximum Volume-to-Capacity Ratio	Maximum Density (passenger vehicles per mile per lane)
A	0.32	11
B	0.53	18
C	0.74	26
D	0.90	35
E	1.00	45
F	Varies	Varies

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, pages 23-3 and 23-4.

### Freeway Ramp and Merge / Diverge Analysis

Freeway ramps and merge / diverge areas were analyzed using a methodology outlined in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 13 and 25). Freeway ramp operating conditions are dependent upon traffic volumes and the ramp characteristics. These characteristics include the length and type of acceleration / deceleration lanes; free-flow speed of the ramps; number of lanes; grade; and types of facilities that the ramps interconnect. Table 6.12-5 shows the relationship of level of service to freeway density.

<b>LEVEL OF SERVICE CRITERIA – FREEWAY RAMP MERGE / DIVERGE AREAS</b>	
Level of Service	Maximum Density (passenger vehicles per mile per lane)
A	10
B	20
C	28
D	35
E	> 35
F	Demand exceeds capacity

Source: Transportation Research Board, *Highway Capacity Manual*, Washington, D.C., 2000, page 25-5.

As shown in Table 6.12-6, the basic criterion used to determine Freeway Ramp LOS is vehicle density in the merge or diverge area. Note that the 2000 Highway Capacity Manual<sup>1</sup> requires that several additional criteria be considered so that LOS F is automatically attained for a ramp if:

<sup>1</sup> See *Highway Capacity Manual*, Transportation Research Board, Washington, D.C., 2000, pages 13-22 and 13-23.

Level of Service (LOS)	Service Flow Rates for Single Lane / Two Lane Ramps Ramp Design Speed (Mph)					Definition
	< 20	21-30	31-40	41-50	> 51	
A	(1)	(1)	(1)	(1)	800/ 1,550	Conditions of free flow; speed is controlled by driver's desires, speed limits, or physical conditions.
B	(1)	(1)	(1)	1,150/ 2,250	1,150/ 2,350	Conditions of stable flow; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	(1)	(1)	1,400/ 2,600	1,600/ 3,100	1,700/ 3,350	Conditions of stable flow; speeds and maneuverability more closely restricted
D	(1)	1,550/ 2,900	1,700/ 3,200	1,950/ 3,850	2,050/ 4,150	Conditions approach unstable flow; tolerable speeds can be maintained, but temporary restrictions may cause extensive delays; little freedom to maneuver; comfort and convenience low.
E	1,800/ 3,200	1,900/ 3,500	2,000/ 3,800	2,100/ 4,100	2,200/ 4,400	Conditions approach capacity; unstable flow with stoppages of momentary duration; maneuverability severely limited.
F	Widely Variable					Forced flow conditions; stoppages for long periods; low operating speeds.

(1) Level of service not attainable due to restricted design speed.  
Sources: Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2000, page 25-5.  
Transportation Research Board, Highway Capacity Manual, Washington, D.C., 1985, page 5-15.

At an on-ramp, volume exceeds capacity ( $V > C$ ) in:

1. The segment of a freeway downstream, or
2. The merge-area defined by the on-ramp and the two adjacent freeway lanes

At an off-ramp, volume exceeds capacity ( $V > C$ ) in:

1. The segment of a freeway upstream OR downstream,
2. The off-ramp itself, or
3. The diverge-area defined by the two adjacent freeway lanes approaching the ramp

Table 6.12-6 shows maximum service flow rates for freeway ramps, based upon information presented in the *Highway Capacity Manual* (Transportation Research Board, Washington, D.C., 2000, Chapters 13 and 25; 1985, Chapter 5). This methodology is used in cases where the freeway ramp configuration governs the operating condition.

The freeway ramps were also analyzed in terms of the expected queues versus the storage capacity. The length of a vehicle is assumed to be 25 feet long.

### Existing Levels of Service

#### Intersections

The existing a.m. and p.m. peak hour operating conditions at the study area intersections are shown in Table 6.12-7. A number of study intersections operate below the City's level of service "C" goal.

Intersection	Traffic Control	Peak Hour	Existing	
			LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	E	64.1
		PM	C	23.3
2. I-5 NB Ramps & Richards Blvd	Signal	AM	B	15.0
		PM	E	56.8
3. Bercut Dr & Richards Blvd	Signal	AM	A	7.1
		PM	B	12.5
4. N 5th St & Richards Blvd	Signal	AM	B	11.3
		PM	B	13.1
5. N 7th St & Richards Blvd	Signal	AM	B	17.3
		PM	B	18.1
6. N 10th St & Richards Blvd	Signal	AM	B	13.2
		PM	B	10.9
7. Dos Rios St & Richards Blvd & N F St	Signal	AM	A	7.4
		PM	A	8.3
9. N 12th St/Sunbeam/Sproule Av	Signal	AM	C	24.9
		PM	B	18.1
10. N 16th St & Sproule Ave	Signal	AM	B	19.8
		PM	E	57.9
13. Bercut Dr & Bannan St	Stop Signs	AM	A	0.1
		PM	A	0.8
18. N 7th St & North B St	Stop Signs	AM	B	12.5
		PM	C	24.9
19. N 10th St & N B St	Stop Signs	AM	A	1.4
		PM	B	2.1
20. 12th St & North B St	Signal	AM	E	78.6
		PM	C	31.4
21. N 16th St & North B St	Signal	AM	A	2.0
		PM	B	16.2
37. 7th St & F St	Stop Signs	AM	A	4.7
		PM	A	5.9
40. 7th St & G St	Signal	AM	B	12.3
		PM	B	11.3
41. 8th St & G St	Signal	AM	A	9.8
		PM	A	8.2
42. 12th St & G St	Signal	AM	B	19.8
		PM	B	17.2
44. 6th St & H St	Signal	AM	A	4.2
		PM	A	7.8
45. 7th St & H St	Signal	AM	B	12.2
		PM	B	10.5

Intersection	Traffic Control	Peak Hour	Existing	
			LOS <sup>1</sup>	Delay <sup>2</sup>
46. 8th St & H St	Signal	AM	A	5.4
		PM	A	6.8
47. 16th St & H St	Signal	AM	B	11.8
		PM	C	23.9
48. Jibboom St & I St	Signal	AM	B	15.1
		PM	C	20.6
50. 5th St & I St	Signal	AM	A	7.9
		PM	B	13.1
51. 6th St & I St	Signal	AM	B	13.0
		PM	C	27.9
52. 7th St & I St	Signal	AM	A	7.9
		PM	B	15.5
53. 3rd St & J St	Signal	AM	D	43.7
		PM	C	29.8
54. 5th St & J St	Signal	AM	B	12.2
		PM	B	10.6
55. 6th St & J St	Signal	AM	A	9.5
		PM	B	15.1
56. 7th St & J St	Signal	AM	A	8.2
		PM	A	7.6
57. 3rd St & L St	Signal	AM	B	11.2
		PM	B	15.9
58. 5th St & L St	Signal	AM	B	11.9
		PM	B	19.8
59. 7th St & L St	Signal	AM	B	15.4
		PM	B	16.2
60. 5th St & Capitol Mall	Signal	AM	B	19.9
		PM	B	18.4
61. 3rd St & P St	Signal	AM	A	8.7
		PM	C	20.9
62. 3rd St & Q St	Signal	AM	A	9.5
		PM	B	11.2

Source: Dowling Associates, Inc., 2007  
<sup>1</sup> LOS = Level of Service  
<sup>2</sup> Delay = Average Delay in seconds

Roadway Segment		Lanes	Existing Conditions		
			ADT	LOS	V/C
1	Richards Boulevard – east of Bercut Drive	4	20,820	A	0.58
2	Richards Boulevard – east of Dos Rios Street	4	14,970	A	0.42
6	7th Street – north of N. B Street	2	5,610	A	0.37
7	7th Street – south of N. B Street	2	7,275	A	0.49
8	7th Street – north of H Street	3	6,225	A	0.28
20	N. B Street – west of 7th Street	2	1,420	A	0.09
21	N. B Street – west of N. 10th Street	3	3,180	A	0.14
22	N. B Street – west of Dos Rios Avenue	4	4,425	A	0.15
31	Bannon Street - east of Bercut Drive	2	1,335	A	0.07
33	Jibboom Street – north of I Street	2	8,655	A	0.58
Source: Dowling Associates, Inc., June 2007 ADT = Averaged daily traffic LOS = Level of service V/C = Volume/Capacity					

### Roadway Segments

Each of the roadway segments along Richards Boulevard has four travel lanes and is classified as arterial, moderate access control facility type for the purpose of the roadway analysis. The remaining roadway segments are classified as low access control facility type. As shown in Table 6.12-8, all the existing roadway segments are operating in the LOS A range.

### Freeway Mainline

Table 6.12-9 shows levels of service for freeway mainline study segments. Detailed calculations are provided in Appendix Q. The analysis showed that many of the freeway mainline study segments operate acceptably during peak periods although many of the freeway study segments operate at LOS F during peak periods. The analysis is based on the number of vehicles that can travel through each freeway segment. During congested conditions drivers must divert to other routes, fewer vehicles are able to get through than the actual demand would otherwise indicate, resulting in lower traffic counts and higher levels of service than are typically observed. The analysis shows many segments are near capacity (Volume/Capacity is close to 1.00), so the analysis of future conditions would identify impacts on segments that are already congested.

### Freeway Interchanges

Table 6.12-10 provides a summary of traffic operations at study area interchanges and backup calculations are provided in Appendix Q.

### Freeway Ramp Queues

Queue summary of freeway off-ramp is provided in Appendix Q. All study area off-ramps have adequate storage capacity.

Location	AM Peak Hour			PM Peak Hour		
	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>
<b>Northbound I-5</b>						
South of L Street on-ramp	5,994	0.99	E	6,073	1.01	F <sup>3</sup>
South of I Street on-ramp	6,195	0.77	D	6,988	0.87	F <sup>3</sup>
South of Richards Blvd off-ramp	6,478	0.68	C	8,255	0.87	F <sup>3</sup>
North of Richards Blvd off-ramp	5,747	0.60	C	7,876	0.83	F <sup>3</sup>
North of Richards Blvd on-ramp	6,198	0.65	C	9,216	0.97	F <sup>3</sup>
<b>Southbound I-5</b>						
North of Richards Blvd off-ramp	9,977	1.05	F	6,952	0.73	C
North of Richards Blvd on-ramp	8,966	1.12	F	6,380	0.79	D
North of J Street off-ramp	9,322	0.98	E	7,032	0.74	C
North of I Street on-ramp	7,259	0.90	E	5,741	0.71	F <sup>3</sup>
<b>Northbound SR 160</b>						
At the American River Bridge	1,680	0.27	A	4,556	0.73	C
<b>Southbound SR 160</b>						
At the American River Bridge	3,475	0.56	C	2,136	0.34	B

Source: Dowling Associates, Inc., 2007.  
 1 V/C = Volume / Capacity  
 2 LOS = Level of Service  
 3 Queue extends from downstream bottleneck

Ramp	AM Peak Hour			PM Peak Hour		
	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume
<b>Northbound I-5</b>						
P Street to J Street weave	C	23.97	7,767	B	19.60	6,690
L Street on-ramp	C	(293)	269	C	(995)	912
I Street on-ramp	B	12.16	230	C	20.82	1,114
Richards Boulevard off-ramp	C	20.44	731	D	31.20	379
Richards Boulevard on-ramp	C	(492)	451	D	(1462)	1,340
Garden Highway off-ramp	C	22.31	1,017	E	39.53	1,203
<b>Southbound I-5</b>						
Garden Highway on-ramp	C	(1027)	941	C	(884)	810
Richards Boulevard off-ramp	F	23.85	1.02	B	16.62	0.73
Richards Boulevard on-ramp	C	(388)	356	C	(711)	652
J Street off-ramp	C	22.28	1,909	B	16.81	1,291
I Street to Q Street weave	C	21.01	7,643	B	18.34	6,652

Source: Dowling Associates, Inc., 2007.  
 1 LOS = Level of Service  
 2 Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

### Pedestrian and Bicycle Access

Pedestrian and bicycle access through the area is constrained due to the lack of facilities to accommodate users. Although there is pedestrian and bicycle access along 7<sup>th</sup> Street and along the streets in the downtown area, travel through the Railyards area by pedestrians and bicyclists is otherwise not possible because of the lack of roadways.

### **REGULATORY SETTING**

Roadway operations are regulated by agencies with jurisdiction of a particular roadway. In the study area, the interstate freeways are under the jurisdiction of Caltrans. The non-freeway roadways are under the jurisdiction of the City of Sacramento and governed by the policies and standards in the City of Sacramento General Plan.

### **IMPACTS AND MITIGATION MEASURES**

The transportation infrastructure for the Railyards Specific Plan, methods of analysis, standards of significance, and traffic impacts and mitigation measures are summarized below.

#### **Transportation Infrastructure**

##### **Baseline Transportation Systems**

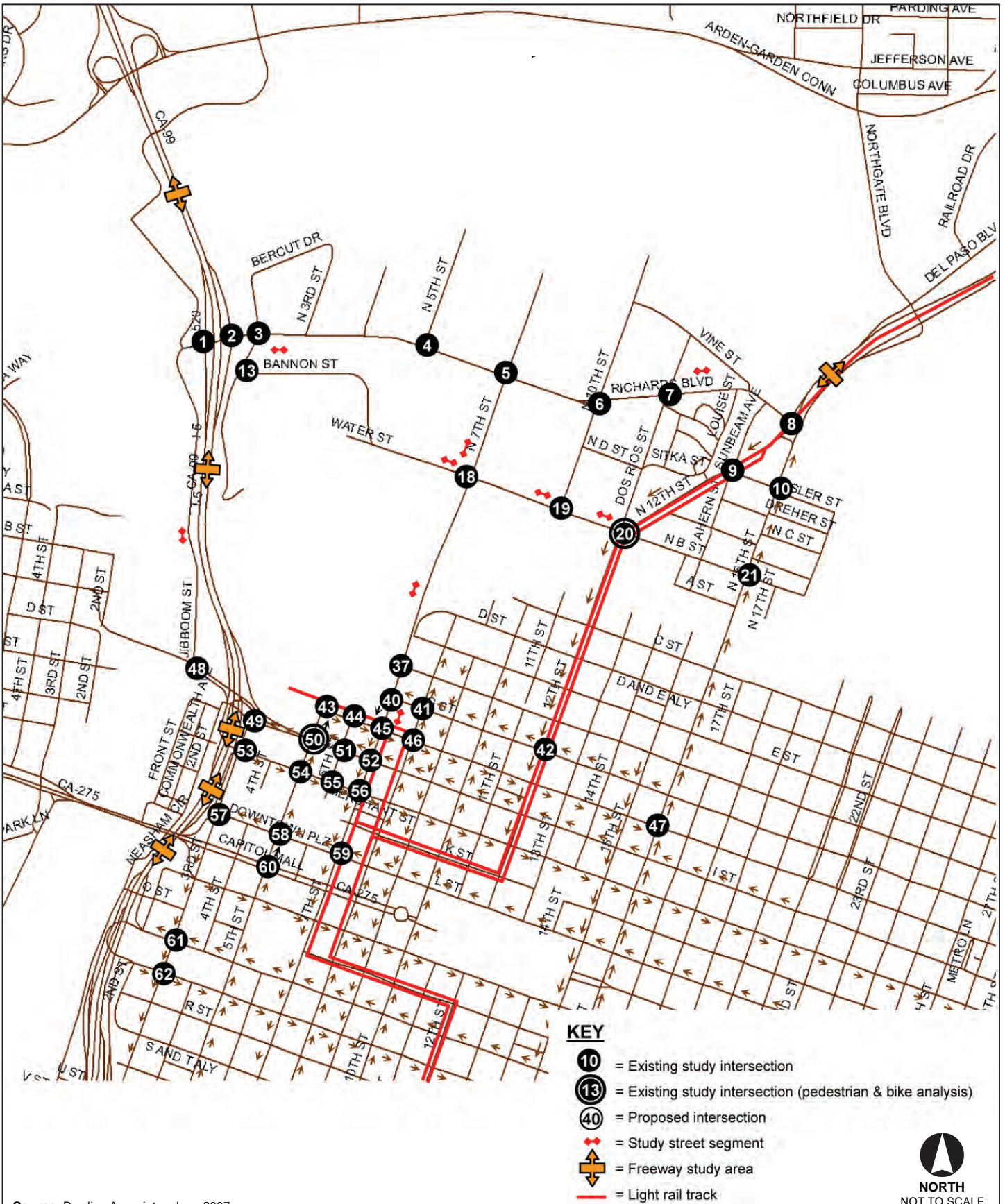
The transportation system for baseline conditions without the project (shown in Figure 6.12-4) includes only those other projects that have already been approved and funded at the time the issuance of the Notice of Preparation for the Railyards project.

Expansion of the roadway system for baseline conditions includes:

- Installation of a traffic signal and access modifications at the Richards Boulevard & 12<sup>th</sup> Street intersection.
- Reduction from three eastbound lanes to two eastbound lanes along H Street between 5<sup>th</sup> Street and 8<sup>th</sup> Street to accommodate the addition of LRT tracks.
- Addition of two southbound right-turn lanes on 5th Street at the I Street intersection. (This modification is already in place).
- Conversion of 3<sup>rd</sup> Street from one-way southbound to two-way operations between L Street and Capitol Mall.
- Addition of a third right-turn lane southbound on 3<sup>rd</sup> Street at the P Street intersection during the p.m. peak hour (by prohibiting parking).







Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-4**  
**Transportation System Baseline Conditions**



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In addition, the LRT line to the existing Amtrak Depot would have the following characteristics in the Initial Phase area:<sup>2</sup>

- Extension of a northbound single track in mixed flow in the left lane along 8<sup>th</sup> Street from K Street to H Street.
- Extension of a southbound single track in mixed flow in the left lane along 7<sup>th</sup> Street from H Street to K Street.
- Extension of a single track on separate right-of-way serving westbound LRT travel from 8<sup>th</sup> Street to 7<sup>th</sup> Street and two directions of travel along a single track on separate right-of-way between 7<sup>th</sup> Street and the Depot.
- 15 minute headways would be provided along the new Amtrak extension.

The changes to the roadway system that would occur with the implementation of the Initial Phase (shown in Figure 6.12-5) include the following elements:

- Extension of 5<sup>th</sup> Street from H Street to N. B Street as a three-lane, one-way northbound street with traffic signals at all study intersections.
- Conversion of 7<sup>th</sup> Street to one-way southbound with three through lanes south of N. B Street with traffic signals at all study intersections.
- Extension of Bercut Drive as a two-lane, two-way street from south of Bannon Street to Camille Lane with a traffic signal at Railyards Boulevard and all-way stop sign control at South Park Street and Camille Lane.
- Construction of South Park Street as a four-lane two-way street from Bercut Drive to 5<sup>th</sup> Street.
- Construction of Railyards Boulevard as a four-lane two-way street from Jibboom Street to 7<sup>th</sup> Street with traffic signals at all study intersections except Crocker Street, which would have all-way stop sign control and Judah Street, which would have side-street stop sign control.<sup>3</sup>
- Construction of Camille Lane as a two-lane street from west of Bercut Drive to 6<sup>th</sup> Street.
- Construction of Huntington Street, Crocker Street, and Stanford Street as two-lane streets with a center turn lane between Camille Lane and South Park Street.

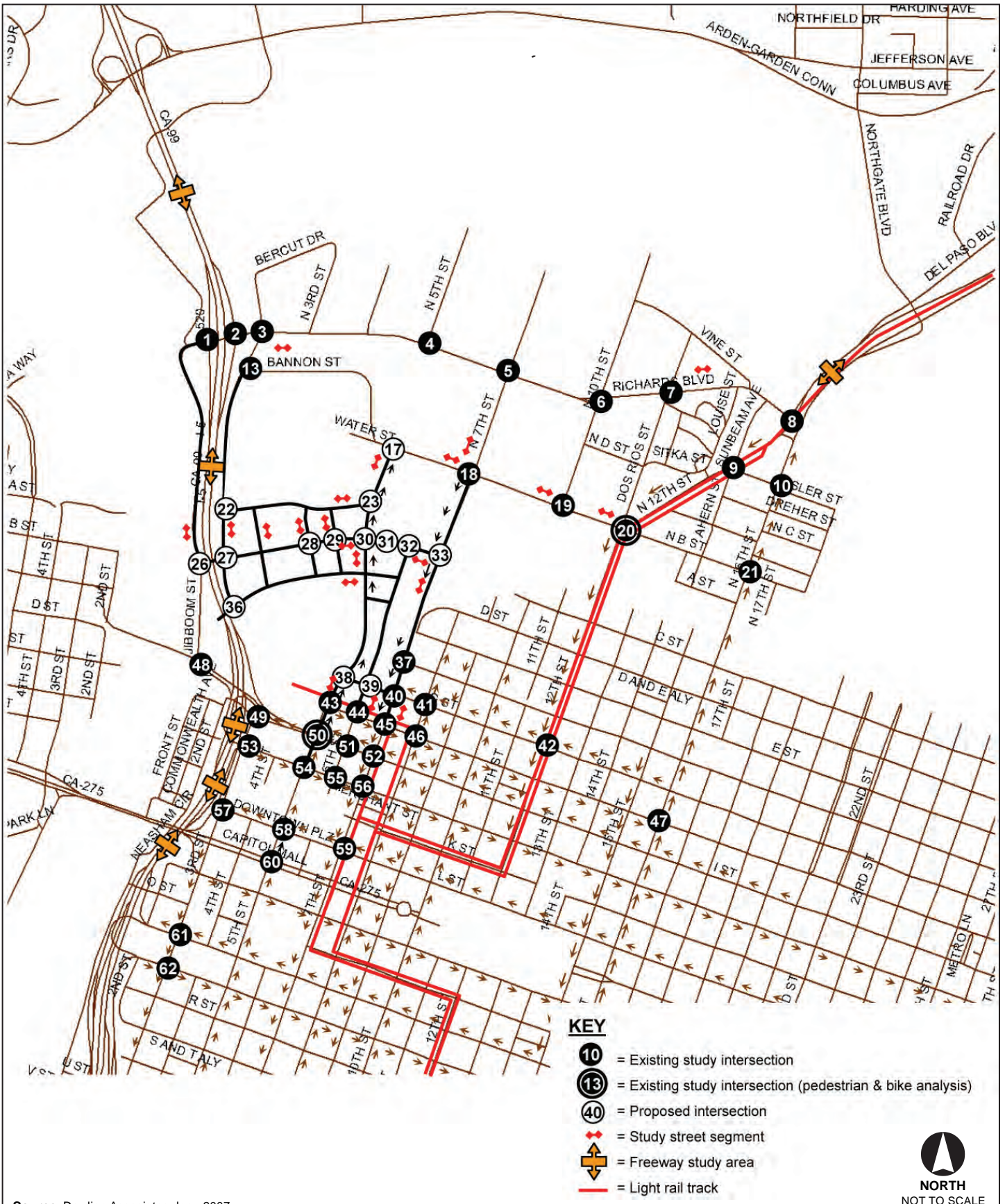
The Initial Phase will maintain the Jibboom Street elevated connection to I Street.

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2 The Amtrak extension had already been completed at the publication of this document but is considered a baseline project because the extension was constructed after the existing traffic data were collected. Existing conditions are defined as the date of the Notice of Preparation.

3 The traffic signal at the intersection of Railyards Boulevard and 7<sup>th</sup> Street was assumed to have an exclusive pedestrian phase to provide adequate service for pedestrians.





Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-5**  
**Transportation System Baseline Plus Initial Phase**



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### 2013 Transportation Systems

The transportation system for 2013 conditions without the project (shown in Figure 6.12-6) includes only those other projects that have funding allocated for implementation by 2013. Expansion of the roadway system for 2013 conditions includes the following modifications in addition to those considered for baseline conditions:

- Expansion of the north ramps at the I-5/Richards Boulevard interchange to provide an additional southbound lane at the southbound ramp intersection with Richards Boulevard and an additional right turn lane at the Richards Boulevard westbound approach to the intersection with the I-5 northbound ramps as defined in the MTP.
- Modification of the signal timing at the following Richards Boulevard intersections: I-5 southbound ramps, I-5 northbound ramps, and Bercut Drive.

The changes to the roadway system in 2013 for the Initial Phase are the same as described above for baseline conditions (and are shown in Figure 6.12-7).

### 2030 Transportation Systems

The roadway system for 2030 conditions is based on the previously adopted *Facility Element of the Railyards Specific Plan and the Richards Boulevard Area Plan* (ROMA Design Group 1997). The transportation system for 2030 conditions without either the Initial Phase or the Full Project (shown in Figure 6.12-8) includes only those projects that have funding programmed for implementation by 2030.

Expansion of the roadway system for 2030 conditions includes the following modifications beyond those considered for 2013 conditions:

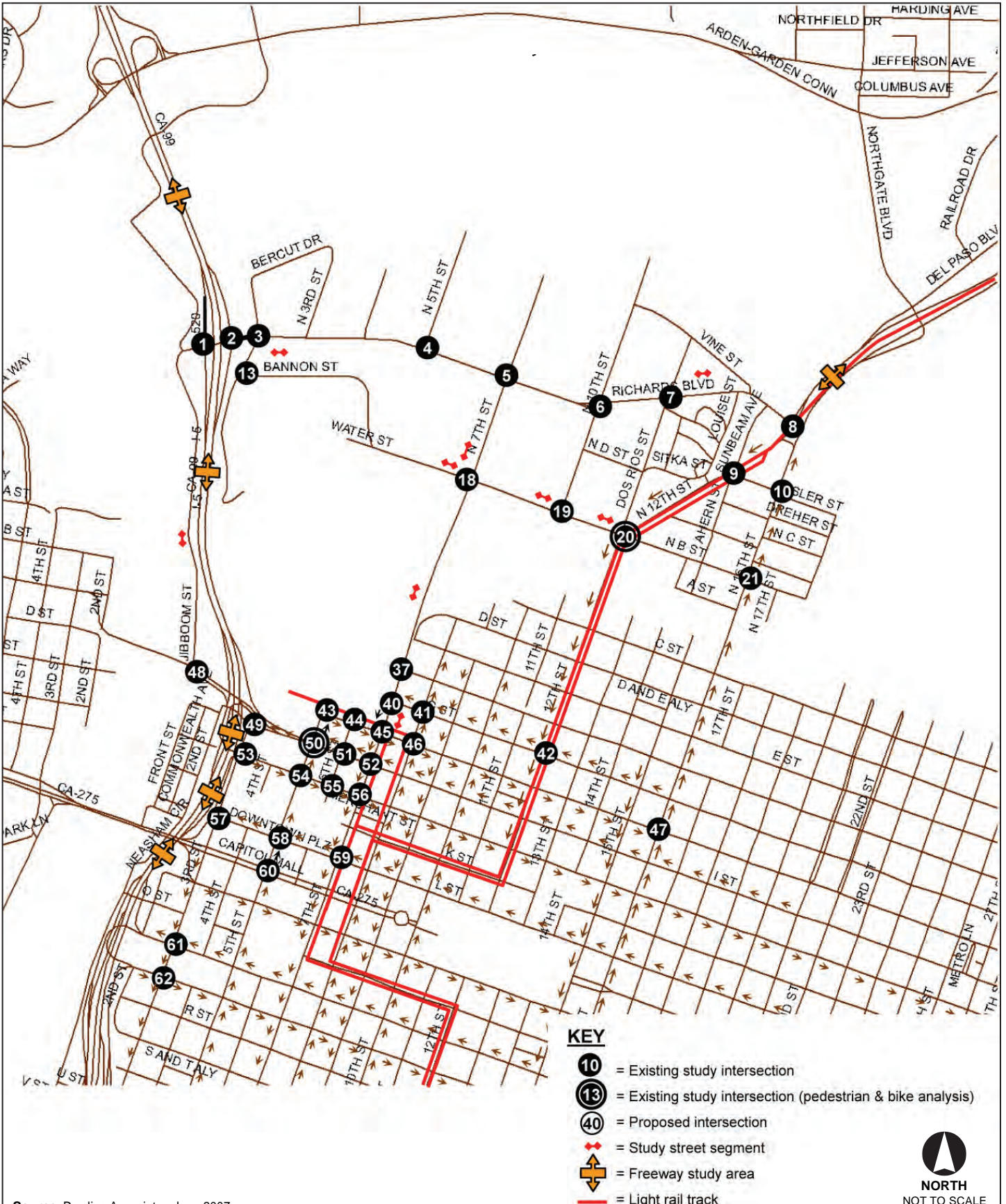
- Creation of a one-way street pair with Richards Boulevard heading westbound and Bannon Street heading eastbound between I-5 and 10th Street.
- Development of a split-diamond interchange at I-5 and the Richards Boulevard/Bannon Street one-way pair.
- Connection of North B Street westward to Richards Boulevard along the west end.

The Downtown Natomas Airport (DNA) LRT extension from H Street to the Sacramento Airport was considered to be in place for 2030 with the following characteristics:

- A single track would head north on an exclusive alignment west of 7<sup>th</sup> Street from H Street to F Street, where the tracks would cross the intersection under signal control and become a dual track mixed use line to the north at the railroad underpass. Where the 7th Street profile matches the surrounding terrain (well south of the N. B Street intersection) a signal will be installed that will provide a transition from dual track mixed flow (south) to single-track exclusive alignment west of 7th Street. A new traffic signal will be installed at the N. B Street intersection. Just south of Richards Boulevard, a dual track alignment will be developed and extend to the Richards LRT station and beyond with dual tracks across 5<sup>th</sup> Street and a single track across the American River. The LRT line to the existing depot and the 7<sup>th</sup> Street line north of H Street would each be served at 30 minute headways. No LRT service would be provided between the existing depot and the N. 7<sup>th</sup> Street line.







Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-6**  
**Transportation System Near-Term (2013) No Project**



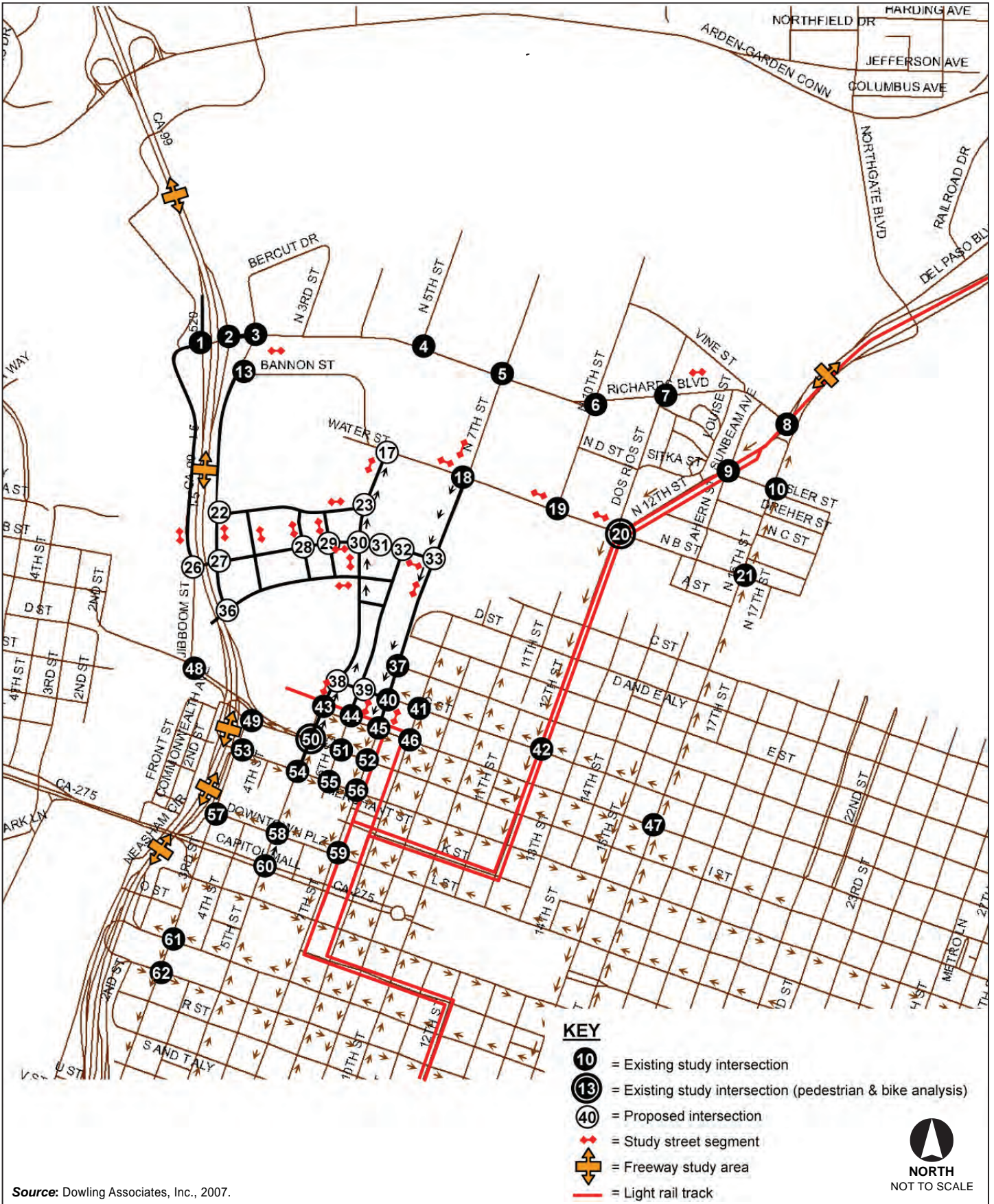
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Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-7**  
**Transportation System Near-Term (2013) Plus Initial Phase**



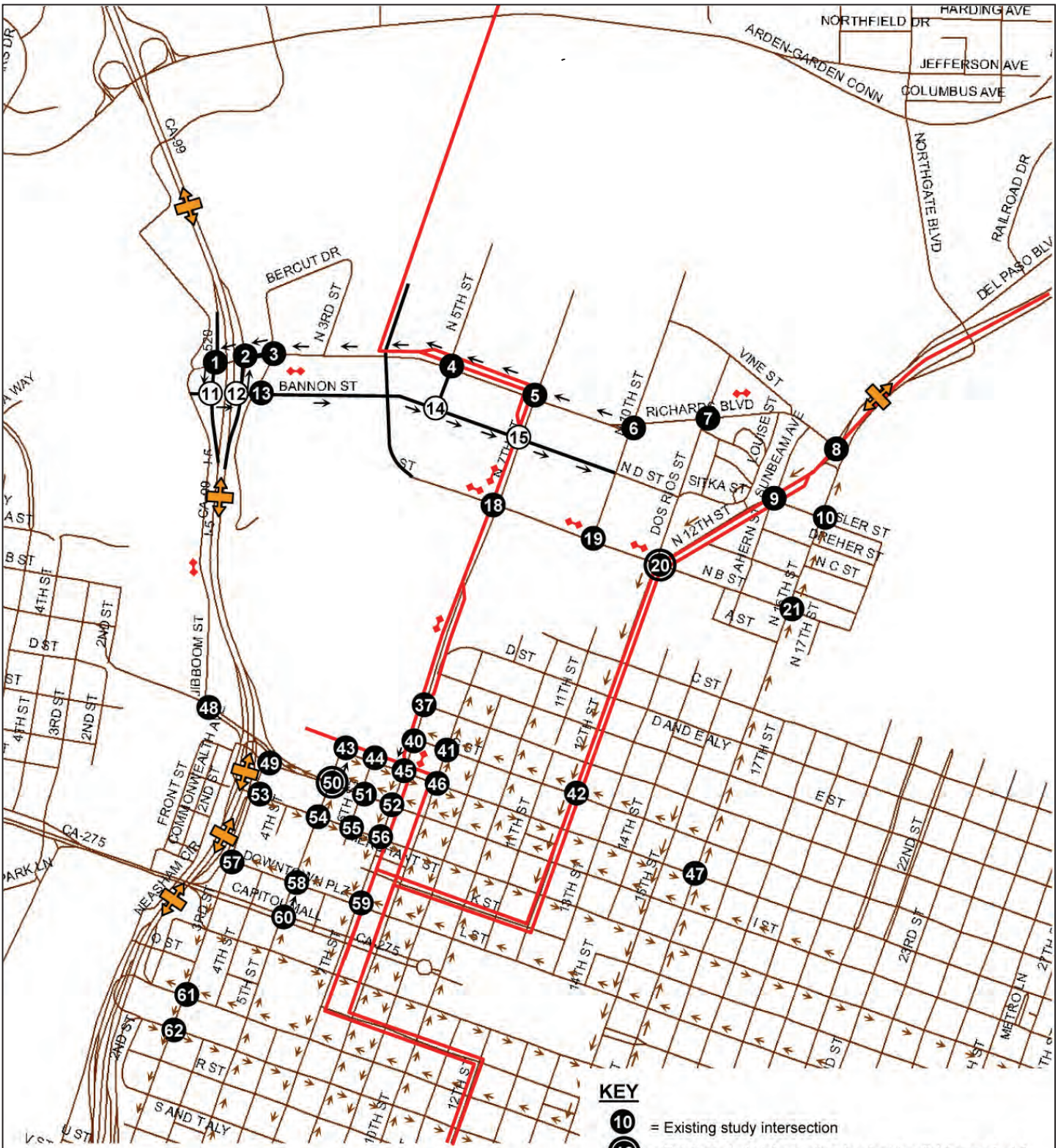
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Source: Dowling Associates, Inc., 2007.

- KEY**
- 10 = Existing study intersection
  - 13 = Existing study intersection (pedestrian & bike analysis)
  - 40 = Proposed intersection
  - Study street segment
  - Freeway study area
  - Light rail track
-   
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**FIGURE 6.12-8**  
**Transportation System Long-Term (2030) No Project**

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Additional expansion of the transportation system would occur with the implementation of the Initial Phase (as shown in Figure 6.12-9). The additional roadway elements called for in the Facilities Element would be added for the Initial Phase:

- Extension of the one-way Richards Boulevard and Bannon Street system to 16th Street.
- Conversion of 12th Street to two-way operations between North B Street and the existing Richards Boulevard intersection.
- Conversion of the existing Richards Boulevard & 12th Street intersection to right-in-right-out access to Vine Street (formerly Richards Boulevard).
- Conversion of the existing Sunbeam/Sproule Avenue & 12th Street intersection to right-in-right-out access to Sunbeam Avenue and Sproule Avenue.
- Expansion of the roadway system in the Richards Boulevard Area to provide a grid network with a connection across SR 160 south of the American River.
- Expansion of the SR 160 Bridge across the American River to four lanes in each direction.
- Elimination of the Dos Rios Street connection to North B Street at 20th Street.

Other changes to the roadway system that would result from implementation of the Initial Phase include the addition of project roadways generally as described above for baseline conditions plus the following additional modifications:

- Extension of 5th Street from N. B Street to Richards Boulevard as a three-lane, one-way northbound street with traffic signals at Bannon Street and Railyards Boulevard.
- Conversion of 7th Street to one-way southbound with three through lanes south of Railyards Boulevard.
- Conversion of N. B Street from two-way to eastbound one-way between N. 5<sup>th</sup> Street and N. 7<sup>th</sup> Street.

The Initial Phase would also result in the following modifications to the light rail line along 7th Street:

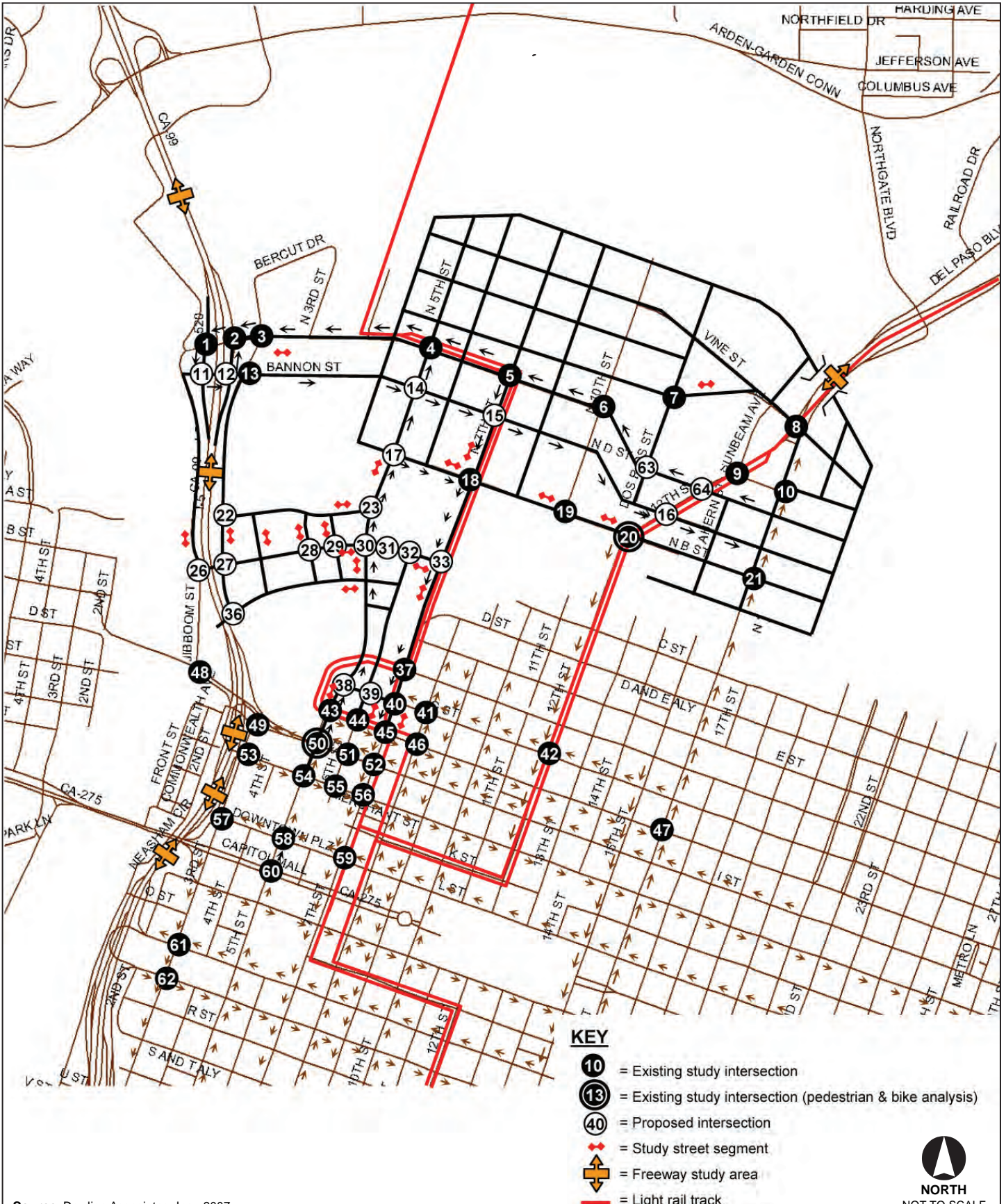
- Along with the expansion of 7th Street to three lanes, the DNA LRT line will be modified to be dual-track along the entire 7th Street section between F Street and Richards Boulevard.
- 15-minute headways would be provided along North 7th Street.

Additional changes to the transportation system would result from implementation of the Full Project (as shown in Figure 6.12-10). The additional roadway elements called for in the Facilities Element would be added as part of the Full Project:

- Extension of Railyards Boulevard as a three-lane one-way westbound street from 12th Street to 7th Street with a traffic signal at N. 10 Street.
- Conversion of N. B Street from two-way to eastbound one-way from N. 7th Street to 12th Street.
- Extension of South Park Street as a one-way eastbound street from N. 5th Street to N. 10th Street with a traffic signal at 7th Street.
- Construction of North Park Street as a one-way westbound street from N. 10th Street to N. 5th Street with a traffic signal at 7th Street.







Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-9**  
**Transportation System Long-Term (2030) Plus Initial Phase**



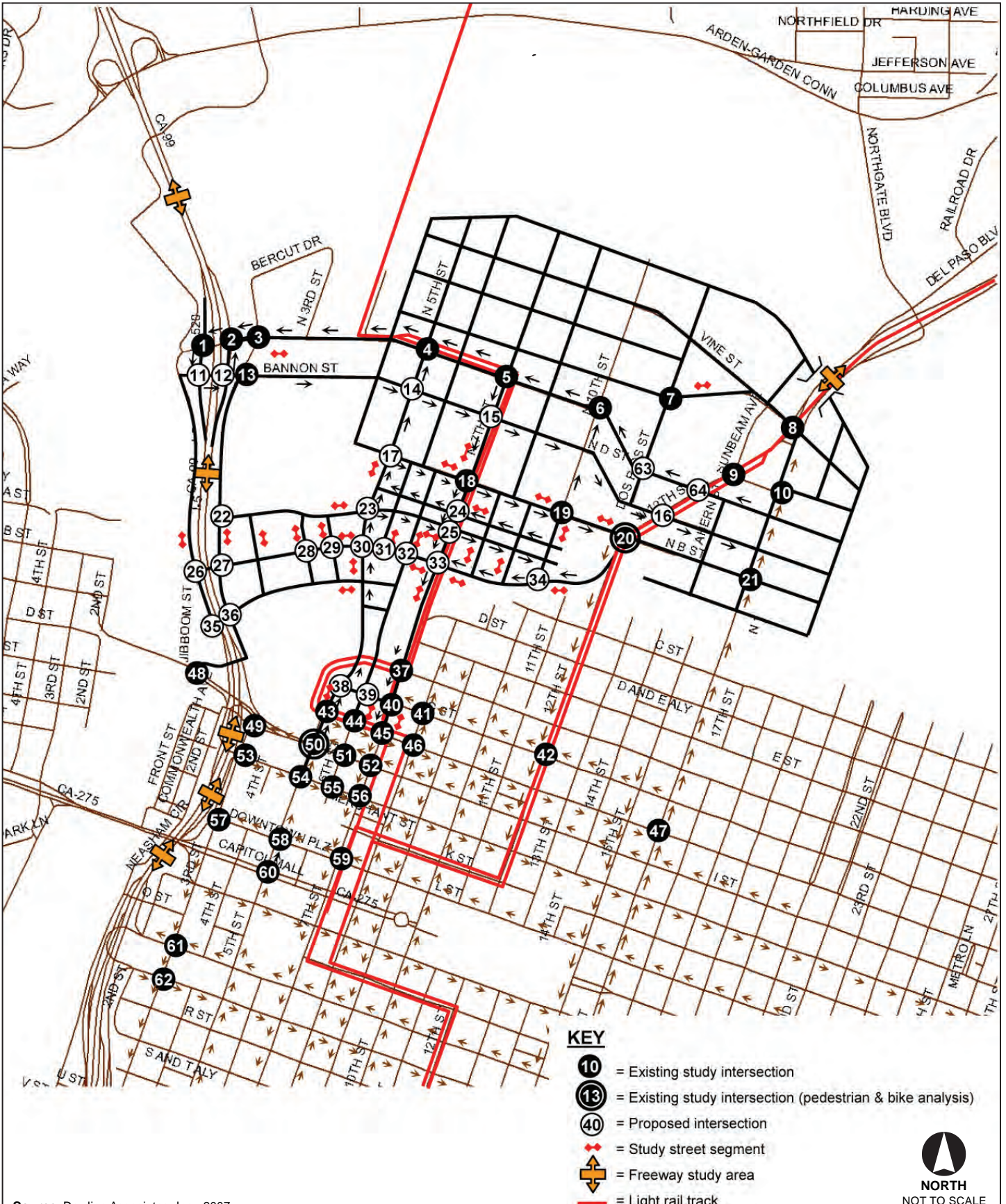
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Source: Dowling Associates, Inc., 2007.

**FIGURE 6.12-10**  
**Transportation System Long-Term (2030) Plus Full Project**



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- Construction of Judah, 6th, 8th, and 9th streets as two-lane streets with a center turn lane between Railyards Boulevard and N. B Street.
- Installation of a traffic signal at the intersection of Railyards Boulevard and Judah Street.
- Removal of the existing Jibboom Street elevated connection to I Street.
- Construction of new elevated connection between Bercut Drive and I Street with a traffic signal serving all traffic movements except the westbound movement from I Street to the Bercut connector roadway.
- Installation of a traffic signal at the intersection of Bercut Drive and Camille Lane.
- Implementation of the Westside Access Improvements described as Alternative 1 in the Feasibility Study: West Side Access to the Sacramento Depot (David Evans and Associates, Inc. 2005).

### **Methods of Analysis**

Traffic forecasts for all conditions analyzed were prepared using a combination of travel demand models developed by SACOG and standard trip generation procedures with adjustments made to reflect the dense development in an environment much like downtown which would be well served by transit.

Typical methods of analysis for relatively small proposed projects use travel demand models to develop traffic volume forecasts for future years without the project and then add trips developed by ITE trip generation procedures to those no-project conditions. That procedure is relatively straightforward when major changes in land use or substantial changes in the transportation system are not proposed as part of the project. In the case of the proposed Railyards project, major changes in land use and substantial changes in the transportation system are proposed. The procedures used to develop future traffic volumes described below for the Railyards project rely more heavily on the use of travel demand models to forecast future traffic for the project. These procedures (described in more detail, below) are more consistent with those typically used to evaluate the effects of a specific plan for a large area like the proposed Railyards project.

### **Automobile Trip Generation**

Trip generation of the Railyards Specific Plan is based upon information compiled by the Institute of Transportation Engineers (*Trip Generation, Seventh Edition, 2003* and *Trip Generation Handbook, 2004*). Table 6.12-11 shows the number of trips that would be generated by the Initial Phase and the Full Project under the Maximum Office and Maximum Residential scenarios for the various years of analysis. The Maximum Office scenario would generate more traffic than the Maximum Residential scenario during all time periods. A detailed analysis of transportation impacts was performed only for the Maximum Office scenario because the assessment of impacts and development of mitigation measures that would apply to that scenario would apply to, and result in, a conservative assessment of the potential impacts and required mitigation measures for the Maximum Residential scenario.

The LRT extension along 7<sup>th</sup> Street was assumed to be completed by Year 2030 and would better serve the project area when completed. As a result, a higher number of Project-generated transit trips were estimated under Year Long Term (2030) conditions as compared to the baseline and 2013 conditions. Consequently, the number of Project-generated vehicular trips was expected to lower in Year 2030 as compared to the baseline and 2013 conditions due to the improved transit service.

TABLE 6.12-11

## TRIP GENERATION SUMMARY FOR MAXIMUM OFFICE AND RESIDENTIAL SCENARIOS

	Trips Generated						
	Weekday	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
<b>Railyards Initial Phase (Baseline &amp; 2013)</b>							
Initial Phase with Maximum Office (Baseline & 2013) (-22%)	107,150	4,385	1,800	6,185	4,476	6,822	11,301
Initial Phase with Maximum Residential (Baseline & 2013) (-23%)	94,792	1,916	1,945	3,860	4,296	4,532	8,829
<b>Railyards Initial Phase (2030)</b>							
Initial Phase with Maximum Office (2030) (-23%)	105,060	4,215	1,765	5,979	4,415	6,639	11,057
Initial Phase with Maximum Residential (2030) (-24%)	93,781	1,888	1,922	3,810	4,261	4,484	8,747
<b>Railyards Full Project</b>							
Full Project with Maximum Office (-27%)	149,461	6,185	4,039	10,222	6,473	8,972	15,447
Full Project with Maximum Residential (-24%)	140,931	3,173	4,290	7,462	6,591	6,478	13,070

Source: Dowling Associates, Inc. 2007.

Under the Maximum Office scenario, the Initial Phase has the potential to generate about 107,150 external trips on an average day for the baseline and near-term conditions and about 105,060 trips for the long-term conditions of which approximately 5.7 percent of the trips would take place during the weekday morning peak hour and 10.5 percent during the weekday evening peak hour. Under the Maximum Residential scenario, the Initial Phase has the potential to generate approximately 94,792 external trips on an average day for the baseline and near-term conditions and about 93,781 trips for the long-term conditions of which approximately 4.1 percent of the trips would take place during the weekday morning peak hour and 9.3 percent during the weekday evening peak hour.

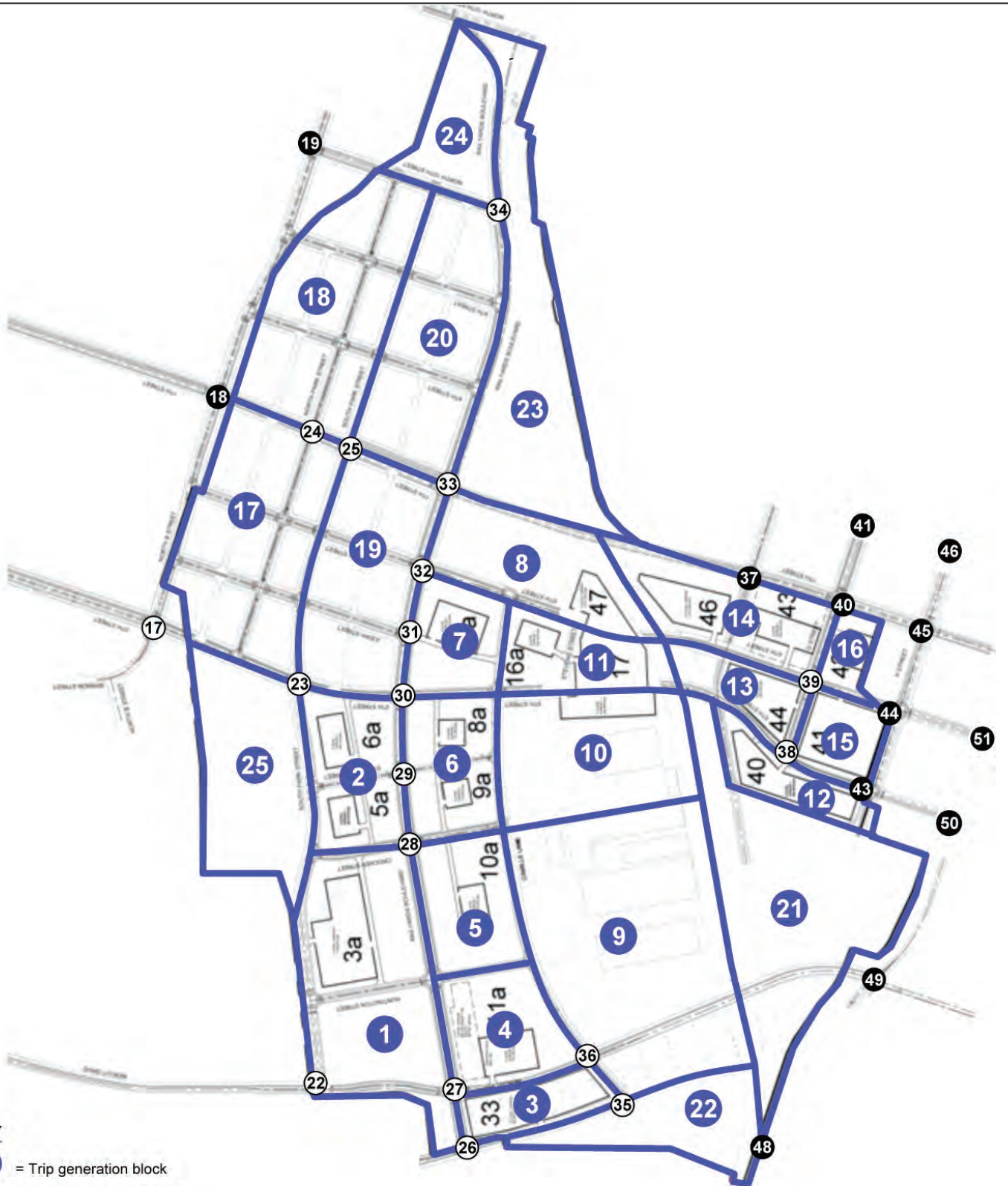
The Full Project has the potential to generate about 149,461 and 140,931 external trips on an average day under Maximum Office and Maximum Residential scenarios, respectively. Of the external trips, approximately 10,222 and 7,462 external trips would occur during the weekday morning peak hour under the two scenarios, and 15,447 and 13,070 external trips would occur during the weekday evening peak hour under the two scenarios, respectively.

The Specific Plan Area was subdivided into twenty-five (25) blocks for the purposes of developing trip generation estimates as shown in Figure 6.12-11.<sup>4</sup> External trips were derived for each block by adjusting the Institute of Transportation Engineers (ITE) trip generation estimates. ITE trip generation estimates are based on empirical data collected at *suburban* locations throughout the United States.

Adjustments to the ITE trip generation estimates were made to account for higher transit ridership, higher levels of walking and bicycle use within the highly urbanized project setting, and the interaction of the mixture of land uses in the Specific Plan Area.<sup>5</sup> Adjustments for the higher use of transit and walk, bike, and other non-auto travel were based on information contained in the *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey* (DKS, 2001). A summary of the trip generation adjustments for the Maximum Office scenario is provided in Table 6.12-12. Details of the trip generation adjustments for both development scenarios are provided in the appendix.

4 Block 25 was identified as open space and was assumed not to generate automobile traffic.

5 Trip generation procedures and adjustments were coordinated with Gordon Garry and Bruce Griesenbeck (SACOG) at a meeting held on April 18, 2007, at Sacramento City Hall.



**KEY**

- 9** = Trip generation block
- 10** = Existing study intersection
- 13** = Existing study intersection (pedestrian & bike analysis)
- 40** = Proposed intersection



**NORTH**  
NOT TO SCALE

**Sources:** Dowling Associates, Inc., 2007; Project Area Parking Plan, Kimley-Horn and Associates, Inc., 2007.



**FIGURE 6.12-11**  
**Blocks for Trip Generation**

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TABLE 6.12-12

## TRIP GENERATION ADJUSTMENTS FOR MAXIMUM OFFICE SCENARIO

Land Use	Amount*	Unit	Weekday	AM Peak Hour			PM Peak Hour		
				IN	OUT	Total	IN	OUT	Total
Office (General Office Building)	2,993	KSF	31,175	3,972	542	4,514	773	3,762	4,535
Retail (Shopping Center)	1,566	KSF	116,989	1,937	1,376	3,312	5,273	5,510	10,783
Subtotal Residential	11,300	Units	50,780	1,072	2,947	4,018	2,639	1,730	4,369
Other			4,819	516	130	645	167	703	869
<b>Total Program Trips</b>			<b>203,762</b>	<b>7,497</b>	<b>4,995</b>	<b>12,489</b>	<b>8,852</b>	<b>11,705</b>	<b>20,556</b>
Transit Adjustments (-3.9%)			-6,895	-504	-173	-677	-245	-555	-799
Walk, Bike & Other Non-Auto Travel Adjustments (-8.9%)			-19,454	-435	-409	-844	-866	-911	-1,775
Internal Trips Within Project Area Blocks (-5.6%)			-12,635	-193	-193	-385	-596	-596	-1,193
Trips To-From Other Blocks within the Project Area (-6.7%)			-15,317	-180	-180	-361	-671	-671	-1,342
<b>New External Trips (75%) of Total Program Trips</b>			<b>149,461</b>	<b>6,185</b>	<b>4,039</b>	<b>10,222</b>	<b>6,473</b>	<b>8,972</b>	<b>15,447</b>

## Notes:

\*Quantities may differ slightly from those listed in Chapter 3: Project Description. Land uses for trip generation purposes represent those likely to cause the greatest transportation impacts. Where land uses were flexible, the most intense combination was assumed for the office scenario.

Source: Dowling Associates, Inc. 2007.

After the adjustments were made for transit, walk, bike, and other non-auto travel, an adjustment was made to account for internal trips between different types of land uses within each block of the Railyards Full Project area. The internal trip adjustments were performed using procedures recommended by the Institute of Transportation Engineers for multi-use developments (*Trip Generation Handbook*). Internal trips are trips that would occur between different land uses within the same block without accessing the street system. A summary of the trip generation adjustments for the Maximum Office scenario is provided in Table 6.12-12. Details of the trip generation adjustments for this scenario and for the Maximum Residential scenario are provided in the appendix.

A second adjustment was made to account for trips that would be made internal to the Specific Plan Area between different blocks. This adjustment was also performed using ITE procedures. The number of trips between blocks was estimated as the total number of internal trips in the Specific Plan Area minus the number of internal trips within each block.

No pass-by trips were assumed for retail uses because it is not convenient to drive by, park and stop to shop as would be the case in suburban locations. Most of these types of trips would be served by non-motorized travel modes – walking or biking.

Details of the trip generation estimates and the adjustments made are provided in Appendix A.

### Special Trip Generators

Special consideration was given to the trip generation for some of the land uses within the Full Project area that are not addressed by ITE data.

#### *Railroad Technology Museum*

Trip generation for the Railroad Technology Museum located in Blocks 9 and 10 was estimated from annual visitation data reported by the California State Railroad Museum ([www.csrnf.org](http://www.csrnf.org), Visitor

Information, About the Museum). Approximately 500,000 visits to the museum occur annually at the 225,000 square feet facility. This would represent 2,200 annual visits per thousand square feet (KSF). A higher estimate of trip generation was provided by the "Market Overview for the Proposed Railroad Technology Museum at the Historic Southern Pacific Shops" and supplemental Visitation Stats (04/05), which states that the 100 KSF Railroad Technology Museum would generate 350,000 annual visits, or 3,500 annual visits per KSF. For this study the higher trip generation estimate was used.

The State Railroad Museum website states that hours of operations are from 10 a.m. to 5 p.m., so there would be negligible a.m. peak hour traffic for the Railroad Technology Museum. There would be 7,000 annual person trips per KSF (because every person arriving during the day would also leave). A total of approximately 20 person trips would occur per day per KSF. At an auto-occupancy of 2 persons per vehicle, there would be 10 vehicle trips per day per KSF. It was assumed that 10 percent of the Railroad Technology Museum trips would occur during the p.m. peak hour and 90 percent of those trips would be outbound leaving the museum.

#### *SITF Transit and Public Space*

Daily trip generation for the SITF was based on ITE trip generation rates for Light Rail Transit Station with Parking (ITE Code 093) as a surrogate for the Amtrak and Greyhound bus facilities. The total number of 1,027 parking spaces identified as requested by facilities operators (Sacramento Intermodal Transportation Facility, Draft for Public Review, Working Paper #10, 2004) were assumed to be split equally in Block 13 and Block 21. For the total 1027 parking spaces, the trip generation would be 2,578 trips per day. An assumption was made that 25% of the trips would occur during each of the a.m. and p.m. peak hours and that 80 percent of the peak hour trips would be inbound in the morning and 80 percent would be outbound during the afternoon peak hour.

#### **Transit Trip Generation**

Transit trip generation estimates were generally based on information contained in the *Pre-Census Travel Behavior Report: Analysis of the 2000 SACOG Household Travel Survey* (DKS, 2001). Summaries of transit trips generated by the Initial Phase and the Full Project under the Maximum Office and Maximum Residential scenarios for the various years of analysis are shown in Table 6.12-13. The transit trips generated by the project for Baseline and 2013 conditions were assumed to be half the number of trips generated in 2030 because the light rail extension would not be in place for the near-term conditions.

<b>TRANSIT TRIP GENERATION SUMMARY</b>									
			<b>New Transit Trips</b>						
			<b>Weekday</b>	<b>AM Peak Hour</b>			<b>PM Peak Hour</b>		
				<b>In</b>	<b>Out</b>	<b>Total</b>	<b>In</b>	<b>Out</b>	<b>Total</b>
<b>Railyards Initial Phase (Baseline &amp; 2013)</b>									
	Maximum Office		3,142	227	61	288	109	273	382
	Maximum Residential		1,864	51	47	98	2	109	191
<b>Railyards Initial Phase (2030)</b>									
	Maximum Office		6,267	454	116	570	220	544	762
	Maximum Residential		3,730	107	87	194	167	218	384
<b>Railyards Full Project</b>									
	Maximum Office		9,172	656	239	895	352	773	1,123
	Maximum Residential		5,903	202	203	405	284	350	633

Source: Dowling Associates, Inc. 2007.

## Travel Demand Modeling

The SACOG Sacramento Metropolitan (SACMET) model is a mathematical tool that estimates the general travel choices people will make, based upon the primary social, demographic, and physical conditions that affect such choices. The travel demand models used for the analysis of the proposed project were based on the SACMET model with modifications made as necessary to reflect the proposed project. The travel demand models were used to produce forecasts of roadway link traffic volumes and turning movements at study intersections.

The first step in the travel forecasting process was to develop estimated traffic volumes for existing and baseline conditions. The differences in the two travel models reflect the changes in traffic associated with the transportation system modifications described above and the effects of developments that have already been approved (baseline conditions), listed below. The differences in traffic volumes produced by the travel model for existing and baseline conditions were added to existing traffic volumes observed in the field to develop baseline no project traffic volume estimates.

A similar process was used to develop forecasts of traffic volumes for all future conditions that were analyzed. Future conditions were modeled to reflect the changes in traffic volumes expected to occur between baseline no-project conditions and each future condition with and without the project. The incremental changes in traffic volumes were added to the baseline no-project traffic volumes to produce traffic forecasts for all future conditions. Traffic volumes for all conditions that were analyzed are provided in the appendix.

The travel demand models begin with transportation network and socio-economic information developed for each model year by SACOG. The transportation system includes roadways and transit lines included in the *2006 Metropolitan Transportation Plan* (SACOG 2006). The SACMET transportation network was modified only as required to reflect the transportation infrastructure for each condition that was modeled. The socio-economic data in the SACMET model includes employment, population, and other data that reflect the expected development of the region. These data were modified only as necessary to reflect land use changes that have already been approved (for baseline conditions) or to represent the proposed project.

Each model run involves four steps: Trip generation, trip distribution, mode choice, and assignment of trips to the network. The four-step modeling process is described in *Sacramento Regional Travel Demand Model Version 2001 (SACMET 01)* (Sacramento Area Council of Governments 2002). Trip generation for the project area was controlled to match the trip generation estimated for the project using ITE procedures with adjustments as described above. The trip distribution and mode choice elements of the modeling process were applied without modification.

The trip assignment process was modified to provide a more precise allocation of trips to specific roadways downtown and in project area. The roadway network in the SACMET model only includes major streets and has land uses defined for Traffic Analysis Zones (TAZs) that include several city blocks. This transportation network is not capable of producing realistic traffic assignments on individual streets in the Central City; therefore, a refined travel demand model was developed for the *DEIR: Central City Two-Way Conversion Study* (Planning Dynamics Group 2006) to provide more precise traffic assignments. This Central City model was modified to include the proposed project and was used to assign the vehicle trips to the roadway network. The trips forecasted between pairs of TAZs through the trip distribution step of the modeling process were disaggregated to the block level and were assigned to the more detailed roadway network.

The travel demand modeling process used in this study takes two factors into account that may not be considered in other studies. This study considers:

- The potential of new roadways proposed for the project to attract traffic that would otherwise use other roadways, and
- The potential for traffic that would otherwise use existing roadways to be diverted to other roadways because of the introduction of new project traffic.

In an equilibrium transportation system, the introduction of new roadways or new traffic into the system will almost always affect the route choice behaviors of other travelers. As a result, the assignment of non-project traffic will not be exactly the same as the assignment of that same traffic with new roadways or new traffic in the system. This potential rerouting effect is typically ignored for the analysis of transportation impacts of small projects. For the proposed project, which includes major changes in land uses and major changes in the transportation system, the use of the SACMET model provides more realistic forecasts of travel demand and takes into account the rerouting effect caused by the introduction of proposed project.

Travel demand for future conditions was estimated under the assumption that the transportation system elements included in the MTP would be in place. For example, the MTP includes high occupancy vehicle (HOV) lanes along I-5 in the vicinity of the project. The traffic forecasts assume those HOV lanes would be in place, resulting in higher travel forecasts along that route to the project area and downtown than would otherwise be forecasted without the HOV lanes. For the analysis of the potential project impacts, only the transportation elements for which funding has been identified were included. Using the I-5 example, HOV lanes were not assumed to be in place for the assessment of project impacts on the freeway. This procedure results in a conservative assessment of potential project impacts.

The assignment of traffic to I-5 was constrained by the freeway's limited capacity. This constraint caused freeway traffic volumes to decrease at some locations after the project was added. For example, as shown in Table 6.12-17, northbound traffic volumes on I-5 decrease slightly with the initial phase of the project at three study segments. The initial phase would add substantial traffic volumes to I-5 north of the Richards Boulevard on ramp and increase traffic volumes slightly south of the Richards Boulevard off ramp. The most northern segment of I-5 would operate near capacity without the initial phase and the addition of initial phase traffic would cause some I-5 traffic to divert to other routes. Similar decreases in traffic volumes would occur on some freeway segments due to increased traffic demand on other segments for all study scenarios.

### **Standards of Significance**

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. For the purposes of this analysis, an impact is considered significant if implementation of the Specific Plan (project) would have the effects described below.

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies. For most areas related to transportation and circulation, the standards of the City of Sacramento have been used. For traffic flow on the freeway system and associated interchanges, the standards of Caltrans have been used.

### **Intersections**

In the City of Sacramento, a significant traffic impact occurs at a signalized or unsignalized intersection (except for freeway ramp/arterial intersections within North Natomas) when:

- The traffic generated by the project degrades peak period level of service (LOS) from A, B, or C (without the project) to D, E, or F (with the project); or,
- The level of service (without project) is D, E, or F and project generated traffic increases the average vehicle delay by 5 seconds or more.

These standards have been developed consistent with a goal set forth in the City of Sacramento, General Plan Update (1988). Specifically, Section 5-11 – Goal D, states to “Work towards achieving a Level of Service C on the City’s local and major street system.”

### **Street Segments**

In the City of Sacramento, a significant traffic impact occurs at a roadway segment when:

- The traffic generated by the project degrades peak period level of service (LOS) from A, B, or C (without the project) to D, E, or F (with the project); or,
- The level of service (without project) is D, E, or F and project generated traffic increases the volume/capacity ratio by 0.02 or more.

### **Freeway Ramps and Mainline**

Caltrans considers the following to be significant impacts:

- Off-ramps with vehicle queues that extend into the ramp’s deceleration area or onto the freeway.
- Project traffic increases that cause any ramp’s merge / diverge level of service to be worse than the freeway’s level of service.
- Project traffic increases that cause the freeway level of service to deteriorate beyond level of service defined for the freeway in the Route Concept Report. For the freeway in the study area, the standard is LOS “E.”
- The expected queue at a ramp is greater than the storage capacity.

### **Transit System**

For the purposes of this analysis, impacts to the transit system are considered significant if the project would:

- Increase ridership, when added to the existing or future ridership, would exceed available or planned system capacity. Capacity is defined as the total number of passengers the system of buses and light rail vehicles can carry during the peak hours of operations.

### **Bikeways**

For the purposes of this analysis, impacts to bikeways are considered significant if the project would:

- Hinder or eliminate an existing designated bikeway, or interfered with implementation of a proposed bikeway; or
- Result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts.

### **Pedestrian Circulation**

For the purposes of this analysis, impacts to pedestrian circulation are considered significant if the project would:

- Result in unsafe conditions or create a hindrance for pedestrians, including unsafe pedestrian/bicycle or pedestrian/motor vehicle access.

### **Traffic Circulation and Safety**

For the purposes of this analysis, impacts to traffic circulation and safety are considered significant if the project would:

- Not comply with City design standards or normal traffic engineering practices.

### **Parking**

For the purposes of this analysis, impacts to parking are considered significant if the project would:

- Result in parking demand that exceeds the available or planned parking supply. However, the impact would not be significant if the project is consistent with the parking requirements stipulated in the City Code.

### **Baseline Conditions**

The analysis of baseline conditions considers the potential traffic impacts of the Initial Phase in the context of other projects in the study vicinity that have already been approved. The anticipated traffic generated by these projects is added to the existing data for the baseline and future conditions as these are approved development projects within the study vicinity. The following is a list of projects that have been approved and may potentially affect traffic conditions:

1. Crocker Art Museum Expansion
2. 301 Capitol Mall
3. 601 Capitol Mall
4. Metro Place Office / Residential
5. 15th & L Street Hotel
6. CalPERS Headquarters Expansion
7. Sutter Medical Center and the Trinity Cathedral
8. CADA East End Gateway Residential
9. Capitol West Side Projects
10. Discovery Center
11. Continental Plaza
12. Conversion of 3rd Street to two-way operations between I and J Streets and between L Street and Capitol Mall
13. Signalization of the intersection of 16<sup>th</sup> Street / Richards Boulevard / 12<sup>th</sup> Street

14. Amtrak/Folsom Corridor Light Rail Extension – Amtrak Extension (Regional Transit)<sup>6</sup>

The Light Rail - Amtrak Extension would affect the following intersections:

- 5th Street / I Street, where two new southbound right turn lanes will be provided (with no change to the existing signal timing);
- 8th Street / I Street, where a new northbound left-turn lane will be added to 8th Street; and
- 8th Street / L Street, where a northbound combination left-through lane on 8th Street will be converted to a left-turn only lane.

Full development of the Initial Phase is assumed to occur “instantaneously.” In this manner, the traffic and impacts associated with the Initial Phase and other approved projects can be directly compared to known and measured conditions. The impacts and mitigations for bikeway, pedestrian circulation, and parking are similar for all Initial Phase conditions; hence the project’s impacts are only discussed under baseline conditions and long-term (2030) Full Project conditions.

A quantitative analysis of transportation impacts was performed only for the Maximum Office scenario, as it would generate a higher number of automobile and transit trips than the Maximum Residential scenario. Consequently, the impacts of the Maximum Residential scenario are expected to be less substantial than those of the Maximum Office scenario.

### **Baseline Conditions Impacts and Mitigation Measures**

#### **6.12-1 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**

A summary of intersection operations for baseline conditions is provided in Table 6.12-14.

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	F	101.2	F	91.4
		PM	D	37.2	<b>F</b>	<b>174.4</b>
2. I-5 NB Ramps & Richards Blvd	Signal	AM	C	24.4	C	32.5
		PM	E	61.6	<b>F</b>	<b>296.4</b>
3. Bercut Dr & Richards Blvd	Signal	AM	B	12.3	<b>D</b>	<b>53.5</b>
		PM	C	30.3	<b>F</b>	<b>314.5</b>
4. N 5th St & Richards Blvd	Signal	AM	B	11.5	B	10.5
		PM	B	12.9	B	13.1
5. N 7th St & Richards Blvd	Signal	AM	C	20.8	<b>D</b>	<b>39.6</b>
		PM	C	20.4	C	28.8
6. N 10th St & Richards Blvd	Signal	AM	B	14.0	B	17.0
		PM	B	12.9	B	14.6

<sup>6</sup> This project/improvement had been completed at the publication of this study but was not in place at the time of traffic volume counts.

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
7. Dos Rios St & Richards Blvd & N F St	Signal	AM	A	7.8	A	8.0
		PM	A	9.6	A	9.6
8. 12th/N 16th St/Richards Blvd	Signal	AM	D	48.0	<b>E</b>	<b>68.2</b>
		PM	F	219.8	F	183.3
9. N 12th St/Sunbeam/Sproule Av	Signal	AM	A	5.9	A	6.3
		PM	B	15.4	B	16.2
10. N 16th St & Sproule Ave	Signal	AM	B	11.8	B	11.9
		PM	A	5.4	A	5.4
13. Bercut Dr & Bannon St	Stop Signs	AM	A	1.9	B	12.7
		PM	A	6.4	<b>F</b>	<b>&gt;999</b>
17. 5th St & North B St	Signal	AM	N/A	N/A	A	9.4
		PM	N/A	N/A	A	7.5
18. N 7th St & North B St	Stop Signs: No Project; Signal: Project	AM	C	24.7	B	18.3
		PM	F	138.6	B	15.6
19. N 10th St & N B St	Stop Signs	AM	A	3.3	A	2.7
		PM	A	6.6	B	13.7
20. 12th St & North B St	Signal	AM	C	29.0	<b>D</b>	<b>43.7</b>
		PM	D	35.3	<b>E</b>	<b>61.5</b>
21. N 16th St & North B St	Signal	AM	A	2.9	A	3.0
		PM	B	14.8	B	18.7
22. Bercut Drive & South Park St	All-Way Stop Stop Signs	AM	N/A	N/A	A	8.4
		PM	N/A	N/A	B	13.3
23. 5th St & South Park St	Signal	AM	N/A	N/A	A	8.9
		PM	N/A	N/A	A	7.1
26. Jibboom St & Railyards Blvd	Signal	AM	N/A	N/A	B	12.5
		PM	N/A	N/A	B	19.9
27. Bercut Dr & Railyards Blvd	Signal	AM	N/A	N/A	B	16.0
		PM	N/A	N/A	C	33.4
28. Crocker St & Railyards Blvd	All-Way Stop Signs	AM	N/A	N/A	A	8.1
		PM	N/A	N/A	B	14.2
29. Stanford St & Railyards Blvd	Signal	AM	N/A	N/A	B	17.0
		PM	N/A	N/A	C	20.1
30. 5th St & Railyards Blvd	Signal	AM	N/A	N/A	B	16.6
		PM	N/A	N/A	C	26.9
31. Judah St & Railyards Blvd	Stop Signs	AM	N/A	N/A	A	0.5
		PM	N/A	N/A	A	3.5
32. 6th St & Railyards Blvd	Signal	AM	N/A	N/A	B	14.7
		PM	N/A	N/A	B	16.1



Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	B	18.0
		PM	N/A	N/A	<b>F</b>	<b>119.9</b>
36. Bercut Dr & Camille Ln	All-Way Stop Signs	AM	N/A	N/A	A	8.2
		PM	N/A	N/A	B	11.4
37. 7th St & F St	Stop Signs: No Project; Signal: Project	AM	A	4.2	C	23.0
		PM	A	7.0	C	20.2
38. 5th St & G St	Signal	AM	N/A	N/A	A	7.7
		PM	N/A	N/A	<b>D</b>	<b>41.4</b>
39. 6th St & G St	Signal	AM	N/A	N/A	<b>E</b>	<b>73.2</b>
		PM	N/A	N/A	<b>F</b>	<b>264.6</b>
40. 7th St & G St	Signal	AM	B	16.3	B	13.4
		PM	E	69.7	A	8.5
41. 8th St & G St	Signal	AM	A	9.5	A	8.2
		PM	A	6.7	A	6.4
42. 12th St & G St	Signal	AM	B	10.2	B	10.5
		PM	B	16.5	B	17.6
43. 5th St & H St	Signal	AM	N/A	N/A	A	1.6
		PM	N/A	N/A	B	18.5
44. 6th St & H St	Signal	AM	B	19.1	<b>F</b>	<b>103.7</b>
		PM	B	14.9	<b>F</b>	<b>221.5</b>
45. 7th St & H St	Signal	AM	B	14.2	B	17.7
		PM	B	16.6	<b>F</b>	<b>83.9</b>
46. 8th St & H St	Signal	AM	B	15.8	B	11.4
		PM	B	10.2	C	26.3
47. 16th St & H St	Signal	AM	B	11.9	B	12.0
		PM	C	26.3	C	27.6
48. Jibboom St & I St	Signal	AM	B	15.9	C	31.3
		PM	C	23.7	<b>F</b>	<b>140.8</b>
50. 5th St & I St	Signal	AM	A	7.9	B	13.8
		PM	B	14.5	<b>D</b>	<b>42.2</b>
51. 6th St & I St	Signal	AM	B	15.8	C	24.6
		PM	D	36.4	<b>F</b>	<b>425.6</b>
52. 7th St & I St	Signal	AM	A	8.0	A	9.5
		PM	C	23.1	C	24.3
53. 3rd St & J St	Signal	AM	D	49.4	<b>F</b>	<b>87.4</b>
		PM	C	25.7	C	33.9
54. 5th St & J St	Signal	AM	B	12.3	B	14.1
		PM	B	10.7	B	12.1

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
55. 6th St & J St	Signal	AM	A	9.7	B	10.9
		PM	B	15.4	B	14.2
56. 7th St & J St	Signal	AM	C	21.7	C	20.8
		PM	B	18.9	B	17.1
57. 3rd St & L St	Signal	AM	C	26.8	C	29.3
		PM	D	52.3	<b>F</b>	<b>104.2</b>
58. 5th St & L St	Signal	AM	B	11.9	B	11.8
		PM	B	19.9	B	19.9
59. 7th St & L St	Signal	AM	B	12.6	B	12.2
		PM	B	19.6	B	18.4
60. 5th St & Capitol Mall	Signal	AM	C	20.7	<b>D</b>	<b>38.7</b>
		PM	B	18.4	B	19.2
61. 3rd St & P St	Signal	AM	B	18.5	B	18.4
		PM	B	19.2	B	19.5
62. 3rd St & Q St	Signal	AM	B	10.4	B	10.4
		PM	A	7.6	A	7.5

Source: Dowling Associates, Inc., 2007.  
 1 LOS = Level of Service  
 2 Weighted average control delay in seconds  
 Note: **Bold** values indicate potential significant impacts.

The Initial Phase would increase traffic volumes at study area intersections and would cause *significant impacts* under baseline plus Initial Phase conditions at the following intersections:

- (a) I-5 SB Ramps / Richards Boulevard (PM peak hour)
- (b) I-5 NB Ramps / Richards Boulevard (PM peak hour)
- (c) Bercut Drive / Richards Boulevard (AM and PM peak hours)
- (d) 7th Street / Richards Boulevard (AM peak hour)
- (e) 12<sup>th</sup>/N 16<sup>th</sup> Streets / Richards Boulevard (AM peak hour)
- (f) Bercut Drive / Bannon Street (PM peak hour)
- (g) 12th Street / North B Street (AM and PM peak hours)
- (h) 7<sup>th</sup> Street / Railyards Boulevard (PM peak hour)
- (i) 5th Street / G Street ( PM peak hour)
- (j) 6<sup>th</sup> Street / G Street (AM and PM peak hours)
- (k) 6th Street / H Street (AM and PM peak hours)
- (l) 7th Street / H Street (PM peak hour)
- (m) Jibboom Street / I Street (PM peak hour)
- (n) 5th Street / I Street (PM peak hour)

- (o) 6th Street / I Street (PM peak hour)
- (p) 3rd Street / J Street (AM peak hour)
- (q) 3<sup>rd</sup> Street / L Street (PM peak hour)
- (r) 5<sup>th</sup> Street / Capitol Mall (AM peak hour)

Mitigation Measures (Baseline Plus Initial Phase)

The following measures would improve operations at study intersections. However, one or more of the intersections analyzed as part of this system would continue to operate at unacceptable levels after mitigation. Therefore, the impact on the transportation system is considered **significant and unavoidable**.

- 6.12-1(a) *At the I-5 southbound ramps / Richards Boulevard intersection, the City shall install, or cause to be installed, one southbound lane to provide one exclusive left-turn lane, a combination left-through lane, and a right turn lane; and optimize the signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (31.5 seconds delay) in the a.m. peak hour and the delay would be reduced to 84.1 seconds (but the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-15.*

*The City will further mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode.*

- 6.12-1(b) *At the I-5 northbound ramps / Richards Boulevard intersection, the City shall install, or cause to be installed, one westbound right-turn lane to provide two right-turn lanes and two through lanes; and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*The City will further mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode.*

*With implementation of this mitigation measure, the level of service would be maintained at LOS C (25.4 seconds delay) in the a.m. peak hour and improved to LOS C (31.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

6.12-1(c) *At the Bercut Drive / Richards Boulevard intersection, the City shall install, or cause to be installed, one eastbound right turn lane to provide one left turn lane, two through lanes, and one right-turn lane; re-stripe the northbound lanes to provide one left-turn lane and one combination left-through-right lane; and optimize the signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (11.7 seconds delay) in the a.m. peak hour and LOS E (69.7 seconds delay) in the p.m. peak hour. To further mitigate the impact would require additional widening of Richards Boulevard, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-15.*

6.12-1(d) *At the 7th Street / Richards Boulevard intersection, the City shall install, or cause to be installed, overlapped signal phasing for the northbound 7<sup>th</sup> Street right turning movement that would be displayed at the same time the green left turn arrow is displayed for the westbound left turning movement from Richards Boulevard, and prohibited U-turning movements for the westbound approach to the intersection. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (34.9 seconds delay) in the a.m. peak hour and would remain at LOS C (28.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

6.12-1(e) *At the N 12<sup>th</sup>/N 16<sup>th</sup> Streets / Richards Boulevard intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 12<sup>th</sup> Street. With implementation of this mitigation measure, the level of service be improved to LOS D (47.7 seconds delay). These results are shown in Table 6.12-15.*

6.12-1(f) *At the Bercut Drive / Bannon Street intersection, the City shall install, or cause to be installed, one southbound left turn lane, a traffic signal, and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (16.0 seconds delay) in the a.m. peak hour and LOS D (39.8 seconds delay) in the*

*p.m. peak hour. To further mitigate the impact would require additional widening of Bercut Drive, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-15.*

- 6.12-1(g) *At the 12<sup>th</sup> Street / North B Street intersection, the City shall increase the cycle length at the N 12<sup>th</sup> Street / Sunbeam / Sproule Avenue intersection to 150 seconds, decrease the cycle length at the N 12<sup>th</sup> Street / Sunbeam / Sproule Avenue intersection to 75 seconds, and optimize the signal timing at both intersections during both the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 12<sup>th</sup> Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (20.9 seconds delay) in the a.m. peak hour and to LOS D (41.1 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-1(h) *At the 7<sup>th</sup> Street / Railyards Boulevard intersection, the applicant shall install a second eastbound right turn lane on Railyards Boulevard. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (17.9 seconds delay) in the a.m. peak hour and to LOS C (27.9 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

- 6.12-1(i) *At the 5<sup>th</sup> Street / G Street intersection, the applicant shall install a second eastbound left turn lane, provide split signal phasing for eastbound and westbound movements on G Street, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (17.9 seconds delay) in the a.m. peak hour and to LOS D (35.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require additional widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-1(j) *At the 6<sup>th</sup> Street / G Street intersection, the applicant shall install a second southbound lane 150 feet in length to provide one left-through lane and one right-through lane and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (33.3 seconds delay) in the a.m. peak hour and the delay would be reduced to 103.2 seconds delay (but the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require additional widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-1(k) *At the 6th Street / H Street intersection, the applicant shall re-stripe the northbound 6th Street approach to the intersection to provide one through lane and one combination through-right turn lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (35.3 seconds delay) in the a.m. peak hour and the delay would be reduced to 142.7 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-1(l) *At the 7th Street / H Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (31.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

- 6.12-1(m) *At the Jibboom Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the delay would be reduced to 109.0 seconds delay (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.*

- 6.12-1(n) *At the 5th Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (31.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

- 6.12-1(o) *At the 6<sup>th</sup> Street / I Street intersection, the City shall prohibit parking during the p.m. peak hour for 100 feet along the right side of westbound I Street to provide one combination through-left lane, two through lanes, and one-combination through-right lane; and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the delay would be reduced to 52.0 seconds (although the level of service would remain at LOS D) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-15.*

- 6.12-1(p) *At the 3<sup>d</sup> Street / J Street intersection, the City shall provide, or cause to be provided, conversion of one southbound left-turn lane to a through lane to provide two through lanes and one left-turn lane; conversion of the eastbound combination through-right lane to an exclusive right-turn lane to provide one combination left-through lane, two through lanes, and one right-turn lane; and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (50.8 seconds delay) in the a.m. peak hour and LOS C (32.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

- 6.12-1(q) *At the 3<sup>d</sup> Street / L Street intersection, the City shall provide, or cause to be provided, conversion of one northbound through lane to a left-turn lane to provide two left-turn lanes and one through lane; conversion of southbound combination through-right lane to an exclusive right-turn lane to provide two through lanes and one right-turn lane; and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (25.4 seconds delay) in the a.m. peak hour and LOS D (44.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-15.*

- 6.12-1(r) *At the 5<sup>th</sup> Street / Capitol Mall intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. With implementation of this mitigation measure, the level of service would be improved to LOS C (20.3 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-15.*

TABLE 6.12-15

## INTERSECTION LEVELS OF SERVICE WITH MITIGATION – BASELINE CONDITIONS

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase		With Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	F	101.2	F	91.4	C	31.5
		PM	D	37.2	<b>F</b>	<b>174.4</b>	<b>F</b>	<b>84.1</b>
2. I-5 NB Ramps & Richards Blvd	Signal	AM	C	24.4	C	32.5	C	25.4
		PM	E	61.6	<b>F</b>	<b>296.4</b>	C	31.6
3. Bercut Dr & Richards Blvd	Signal	AM	B	12.3	<b>D</b>	<b>53.5</b>	B	11.7
		PM	C	30.3	<b>F</b>	<b>314.5</b>	<b>E</b>	<b>69.7</b>
5. N 7th St & Richards Blvd	Signal	AM	C	20.8	<b>D</b>	<b>39.6</b>	C	34.9
		PM	C	20.4	C	28.8	C	28.1
8. 12th/N 16th St/Richards Blvd	Signal	AM	D	48.0	<b>E</b>	<b>68.2</b>	D	47.7
		PM	F	219.8	F	183.3	F	183.3
13. Bercut Dr & Bannon St	Stop Signs; Signal for Mitigation	AM	A	1.9	B	12.7	B	16
		PM	A	6.4	<b>F</b>	<b>&gt;999</b>	<b>D</b>	<b>39.8</b>
20. 12th St & North B St	Signal	AM	C	29.0	<b>D</b>	<b>43.7</b>	C	20.9
		PM	D	35.3	<b>E</b>	<b>61.5</b>	<b>D</b>	<b>41.1</b>
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	B	18.0	B	17.9
		PM	N/A	N/A	<b>F</b>	<b>119.9</b>	C	27.9
38. 5th St & G St	Signal	AM	N/A	N/A	A	7.7	B	17.9
		PM	N/A	N/A	<b>D</b>	<b>41.4</b>	<b>D</b>	<b>35.6</b>
39. 6th St & G St	Signal	AM	N/A	N/A	<b>E</b>	<b>73.2</b>	C	33.3
		PM	N/A	N/A	<b>F</b>	<b>264.6</b>	<b>F</b>	<b>103.2</b>
44. 6th St & H St	Signal	AM	B	19.1	<b>F</b>	<b>103.7</b>	<b>D</b>	<b>35.3</b>
		PM	B	14.9	<b>F</b>	<b>221.5</b>	<b>F</b>	<b>142.7</b>
45. 7th St & H St	Signal	AM	B	14.2	B	17.7	B	18.2
		PM	B	16.6	<b>F</b>	<b>83.9</b>	C	31.2
48. Jibboom St & I St	Signal	AM	B	15.9	C	31.3	C	31.3
		PM	C	23.7	<b>F</b>	<b>140.8</b>	<b>F</b>	<b>109.0</b>
50. 5th St & I St	Signal	AM	A	7.9	B	13.8	B	12.6
		PM	B	14.5	<b>D</b>	<b>42.2</b>	C	31.5
51. 6th St & I St	Signal	AM	B	15.8	C	24.6	C	24.2
		PM	D	36.4	<b>F</b>	<b>425.6</b>	D	<b>52.0</b>
53. 3rd St & J St	Signal	AM	D	49.4	<b>F</b>	<b>87.4</b>	D	50.8
		PM	C	25.7	C	33.9	C	32.5
57. 3rd St & L St	Signal	AM	C	26.8	C	29.3	C	25.4
		PM	D	52.3	<b>F</b>	<b>104.2</b>	D	44.6
60. 5th St & Capitol Mall	Signal	AM	C	20.7	<b>D</b>	<b>38.7</b>	C	20.3
		PM	B	18.4	B	19.2	B	19.2

Notes: **Bold** values indicate potential significant impacts.  
1. LOS = Level of Service  
2. Weighted average control delay in seconds



### 6.12-2 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.

A summary of roadway segment operations for baseline conditions is provided in Table 6.12-16. The Initial Phase would increase traffic volumes at study area roadway segments and would cause significant impacts under baseline plus Initial Phase conditions on the following roadway segment:

Roadway Segment	Lanes	Without Project			With Initial Phase		
		ADT <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>3</sup>	ADT <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>3</sup>
Richards Boulevard – east of Bercut Drive	4	21,605	B	0.60	23,475	B	0.65
Richards Boulevard – east of Dos Rios Street	4	19,765	A	0.55	21,120	A	0.59
5th Street – north of H Street	3	N/A	N/A	N/A	7,290	A	0.32
5th Street – south of Railyards Boulevard	3	N/A	N/A	N/A	7,530	A	0.33
5th Street – south of N. B Street	3	N/A	N/A	N/A	8,115	A	0.36
7th Street – north of N. B Street	3	8,040	A	0.36	11,705	A	0.52
7th Street – south of N. B Street	3	10,035	A	0.45	8,520	A	0.38
7th Street – north of H Street	3	7,120	A	0.32	8,460	A	0.38
6th Street – north of H Street	3	N/A	N/A	N/A	<b>21,775</b>	<b>E</b>	<b>0.97</b>
Jibboom Street – north of Railyards Boulevard	2	N/A	N/A	N/A	6,585	A	0.37
Bercut Drive – north of Railyards Boulevard	2	N/A	N/A	N/A	4,945	A	0.27
Railyards Boulevard – west of 7th Street	3	N/A	N/A	N/A	10,920	A	0.49
Railyards Boulevard – west of 5th Street	3	N/A	N/A	N/A	7,140	A	0.32
South Park Street – west of 5th Street	4	N/A	N/A	N/A	1,915	A	0.06
N. B Street – west of 7th Street	2	4,945	A	0.33	9,130	B	0.61
N. B Street – west of N. 10th Street	3	4,490	A	0.20	8,085	A	0.36
N. B Street – west of Dos Rios Avenue	4	6,165	A	0.21	9,410	A	0.31
Camille Lane – west of 5th Street	2	N/A	N/A	N/A	4,865	A	0.32
Huntington Street – north of Railyards Boulevard	2	N/A	N/A	N/A	5,100	A	0.34
Crocker Street – north of Railyards Boulevard	2	N/A	N/A	N/A	5,090	A	0.34
Stanford Street – north of Railyards Boulevard	2	N/A	N/A	N/A	3,245	A	0.22
Bannon Street - east of Bercut Drive	2	1515	A	0.08	4680	A	0.26
Jibboom Street – north of I Street	2	9,210	A	0.61	13795	C	0.77

Source: Dowling Associates, Inc., 2007.  
<sup>1</sup> ADT = Averaged daily traffic  
<sup>2</sup> LOS = Level of service  
<sup>3</sup> V/C = Volume/Capacity

(a) 6th Street north of H Street.

The 6<sup>th</sup> Street roadway segment just north of H Street would operate a LOS E (v/c = 0.97). This is considered a *significant impact*.

#### Mitigation Measures (Baseline Plus Initial Phase)

*None available.*

No mitigation measure was found that would lessen the impact of the Initial Phase. To mitigate the impact would require widening 6<sup>th</sup> Street to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Hence, the impact would remain ***significant and unavoidable***.

**6.12-3 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**

Freeway mainline operating conditions for baseline conditions are summarized in Table 6.12-17. The Initial Phase would add traffic to the following segments already operating at LOS F and be made worse by project traffic:

- (a) *Northbound I-5 South of Richards Blvd off-ramp (PM peak hour).*
- (b) *Northbound I-5 North of Richards Blvd on-ramp (PM peak hour).*

The Initial Phase would also add traffic to the following segments and cause the segment to degrade to LOS F:

- (c) *Southbound I-5 North of J Street off-ramp (AM peak hour).*

This is considered a *significant impact*.

Mitigation Measures (Baseline Plus Initial Phase)

*None available.*

The Traffic Study found that the impacted freeway mainline segments currently operate at LOS "F" in the Baseline Condition during the PM Peak Hour without the Project, and would continue to operate at LOS "F" in both the "Near Term Cumulative Condition (2013)" and "Long Term Cumulative Condition (2030)" both without and with the Project. Freeway mainline improvements are within the exclusive jurisdiction of Caltrans which can and should propose and adopt appropriate improvement plans that would reduce freeway mainline impacts pursuant to Public Resources Code Section 21081 and CEQA Guideline Section 15091.

The City consulted with Caltrans prior to the preparation of this Draft EIR concerning possible mitigation measures to address impacts to the identified freeway mainline segments. The discussion focused on (1) identifying any Caltrans approved or adopted capital improvement projects that would improve access to and from Sacramento's downtown and improve the existing LOS F on the freeway mainline segments to LOS "E" or better in the Near Term (2013) and Long Term (2030), and (2) proportional share mitigation impact funding contributions to those projects as a means of addressing impacts to the highways from the Project and various other pending developments in the area.

Caltrans indicated that they have developed general cost estimates for the following projects. Though these projects are designed to address regional transportation needs that extend far beyond the downtown area, Caltrans believes they would serve to mitigate impacts from pending downtown developments and are viable:

- I-5 American River Bridge widening - two structures. Add one standard lane and re-establish standard shoulders to each structure: \$134 million.
- I-5 HOV lanes - Garden Highway to I-80 HOV lanes with direct connectors: \$300 million.

TABLE 6.12-17												
FREEWAY MAINLINE OPERATIONS – BASELINE CONDITIONS												
Location	Without Project						With Initial Phase					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>
<b>Northbound I-5</b>												
South of L Street on-ramp	6,224	1.03	F	6,476	1.07	F	6,166	1.02	F	6,322	1.05	F
South of I Street on-ramp	6,549	0.81	D	7,429	0.92	F <sup>3</sup>	6,510	0.81	D	7,370	0.92	F <sup>3</sup>
South of Richards Blvd off-ramp	6,781	0.71	C	8,563	0.90	F <sup>3</sup>	6,724	0.70	C	<b>8,614</b>	<b>0.90</b>	<b>F<sup>3</sup></b>
North of Richards Blvd off-ramp	5,743	0.60	C	7,934	0.83	F <sup>3</sup>	5,569	0.58	C	7,704	0.81	F <sup>3</sup>
North of Richards Blvd on-ramp	6,209	0.65	C	9,318	0.98	E	6,184	0.65	C	<b>9,730</b>	<b>1.02</b>	<b>F</b>
<b>Southbound I-5</b>												
North of Richards Blvd off-ramp	10,252	1.07	F	7,109	0.75	D	9,930	1.04	F	6,933	0.73	C
North of Richards Blvd on-ramp	9,124	1.13	F	6,409	0.80	D	9,073	1.13	F	6,102	0.76	D
North of J Street off-ramp	9,539	1.00	E	7,181	0.75	D	<b>9,561</b>	<b>1.00</b>	<b>F</b>	7,485	0.78	D
North of I Street on-ramp	7,461	0.93	E	5,874	0.73	F <sup>3</sup>	7,125	0.89	D	5,864	0.73	F <sup>3</sup>
<b>Northbound SR 160</b>												
At the American River Bridge	2,351	0.38	B	5,941	0.95	E	2,359	0.38	B	6,006	0.96	E
<b>Southbound SR 160</b>												
At the American River Bridge	2,351	0.38	B	5,941	0.95	E	2,359	0.38	B	6,006	0.96	E
Source: Dowling Associates, Inc., 2007. 1 V/C = Volume / Capacity 2 LOS = Level of Service 3 Queue extends from downstream bottleneck Note: <b>Bold</b> values indicate potential significant impacts.												

- I-5 HOV lanes - U.S. 50 Interchange to Elk Grove Blvd: \$200 million.

No preliminary improvement plans have been prepared for these proposed freeway improvements, and it is unclear what the cost estimates are based on or include.

These proposed freeway improvement projects are included in Sacramento Area Council of Governments (SACOG) existing Metropolitan Transportation Plan (MTP) for preliminary engineering and environmental only. The MTP is a long-range plan which is based on growth and travel demand projections coupled with financial projections. The MTP lists hundreds of locally and regionally important projects. It is updated every three years, at which time projects can be added or deleted. SACOG uses the plan to help prioritize projects and guide regional transportation project funding decisions. The projects included in the MTP have not gone through the environmental review process and are not guaranteed for funding or construction.

Given the status of the freeway improvement projects identified by Caltrans and the information available at this time, the City has concluded that there is currently insufficient information and certainty on which to base a feasible and viable mitigation measure to address the Project's impacts on the identified freeway mainline segments. The proposed freeway improvement projects are not currently approved and funded. There is no fee or other funding mechanism currently in place for future funding. Furthermore, the City cannot determine either the cost of the proposed freeway improvement projects or the Project's fair share proportional contribution to the improvement projects with sufficient certainty to enable the City to develop a fee-based mitigation measure that would satisfy the legal requirements for fee-based mitigation under both CEQA (see CEQA Guidelines 15126.4), state planning and zoning laws (see Government Code Section 66000 et seq.) and constitutional principles that call for a nexus and rough proportionality between a project's impacts and the fee-based mitigation measure. Finally, the prospects of the proposed freeway improvements ever being constructed remains uncertain due to funding priorities and on-going policy developments that may favor other approaches to addressing freeway congestion.

Therefore, the impacts of the proposed project on the three I-5 freeway segments would remain significant and unavoidable. The City will mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode. However, because DNA may not fully mitigate the impact of the Project on the freeway system, the impact is still considered **significant and unavoidable**.

**6.12-4 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**

Freeway interchange operations under baseline conditions are summarized in Table 6.12-18. The Project would add traffic to freeway ramps and weaving areas and cause the interchange levels of service to be worse than freeway mainline levels of service at the following locations:

- (a) Northbound I-5 Richards Boulevard on-ramp (PM peak hour).
- (b) Southbound I-5 Richards Boulevard off-ramp (AM peak hour).

This is considered a *significant impact*.

**TABLE 6.12-18**

**FREEWAY INTERCHANGE OPERATIONS – BASELINE CONDITIONS**

Ramp	Without Project						With Initial Phase					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume
<b>Northbound I-5</b>												
P Street to J Street weave	C	25.16	8,076	C	20.78	6,983	C	25.35	8,097	C	20.22	6,841
L Street on-ramp	C	(355)	326	C	(1040)	954	C	(376)	345	C	(1144)	1,049
I Street on-ramp	B	12.71	232	C	21.50	1,134	B	12.49	214	C	22.27	1,244
Richards Boulevard off-ramp	C	23.07	1,038	D	33.80	629	C	23.51	1,155	E	35.50	910
Richards Boulevard on-ramp	C	(508)	466	D	(1510)	1,384	C	(671)	615	<b>F</b>	<b>(2210)</b>	<b>2,026</b>
Garden Highway off-ramp	C	22.31	1,008	E	40.17	1,243	C	22.38	1,038	E	41.86	1,242
<b>Southbound I-5</b>												
Garden Highway on-ramp	C	(1021)	936	C	(881)	808	C	(1097)	1,006	C	(919)	842
Richards Boulevard off-ramp	F	24.50	1,128	B	16.99	700	<b>F</b>	<b>25.05</b>	<b>1,407</b>	B	16.57	831
Richards Boulevard on-ramp	C	(453)	415	C	(842)	772	C	(532)	488	D	(1509)	1,383
J Street off-ramp	C	22.80	2,078	B	17.16	1307	C	22.85	2,436	B	17.89	1,621
I Street to Q Street weave	C	21.38	7,695	B	18.90	6803	C	20.70	7,438	C	20.01	7,025

Source: Dowling Associates, Inc., 2007.

1 LOS = Level of Service

2 Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

Note: **Bold** values indicate potential significant impacts.

Mitigation Measures (Baseline Plus Initial Phase)

*None available.*

No feasible mitigation measures were identified that would reduce the impact of the project on I-5 freeway ramps. Widening the freeway may reduce the impact but the freeway interchanges are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. Finally, no improvement is included in any of Caltrans' funding mechanisms. Because mitigation is beyond the control of the City and outside of its jurisdiction, and there is not an established funding mechanism available for contribution, this mitigation measure is considered infeasible and the impact is considered significant and unavoidable. Furthermore, the City cannot determine either the cost of the proposed freeway improvement project or the Project's fair share proportional contribution to the improvement project with sufficient certainty to enable the City to develop a fee-based mitigation measure that would satisfy the legal requirements for fee-based mitigation under both CEQA (see CEQA Guidelines 15126.4), state planning and zoning laws (see Government Code Section 66000 et seq.) and constitutional principles that call for a nexus and rough proportionality between a project's impacts and the fee-based mitigation measure. Therefore, the impacts of the proposed project on freeway ramps would remain significant and unavoidable. The City will mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode. However, because DNA may not fully mitigate the impact of the Project on the freeway system, the impact is still considered **significant and unavoidable**.

**6.12-5 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**

The Initial Phase would cause freeway off-ramp queue to exceed the available storage capacity at the following location:

(a) *Northbound I-5 to J Street (AM peak hour)*

This is considered a *significant impact*.

Mitigation Measures (Baseline Plus Initial Phase)

*None available.*

No feasible mitigation measures were identified that would reduce the impact on freeway ramp queues. Freeway ramps are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. In addition, to implement this mitigation measure would require acquisition of additional right of way for a new lane. Additional widening would create secondary impacts to adjacent properties; this right of way is currently unavailable. Finally, this improvement is not included in any of Caltrans' funding mechanisms. Because mitigation is outside the jurisdiction of the City, and there is not an established funding mechanism available for contribution, mitigation is considered infeasible and the impact is considered significant and unavoidable. Furthermore, the City cannot determine either the cost of the proposed freeway improvement project or the Project's fair share proportional contribution to the improvement project with sufficient certainty to enable the City to develop a fee-based mitigation measure that would satisfy the legal requirements for fee-based mitigation under both CEQA (see CEQA Guidelines 15126.4), state planning and zoning laws (see Government Code Section 66000 et seq.) and constitutional principles that call for a nexus and rough proportionality between a project's impacts and the fee-based mitigation measure. Therefore, the impacts of the project on freeway ramp queues would remain significant

and unavoidable. The City will mitigate freeway impacts by requiring the project applicant to pay a fair share contribution to fund the Downtown Natomas Airport (DNA) light rail system which will provide an alternative transportation mode. However, because DNA may not fully mitigate the impact of the Project on the freeway system, the impact is still considered **significant and unavoidable**.

#### **6.12-6 The Initial Phase would increase demand on the public transit system.**

The Initial Phase would increase demand for transit services and would cause significant impacts under baseline conditions. Peak period transit trips generated by the Initial Phase are estimated to be approximately 288 during the a.m. peak hour, and approximately 382 during the p.m. peak hour.

As RT buses would provide the only directly transit link to the project site under the baseline conditions, the demand would focus on the two RT bus routes, which offer connecting services to light rail and Amtrak trains. With 10 buses operating during each peak hour, the Initial Phase would add 38 riders per bus during the p.m. peak hour, the period with the highest transit demand. RT likely would not be able to accommodate the increased ridership without modifications to transit service. Hence, the Initial Phase would result in a *potentially significant impact*.

The Initial Phase would also generate demand for light rail service. Considering the recent increases in capacity associated with the LRT extension to the Downtown Amtrak Depot, the addition of Initial Phase generated trips would likely have nominal effect on the service.

The Initial Phase would generate demand for Amtrak service, particularly the Capitol Express service to the greater Bay Area. However, considering the recent service expansion and added capacity, the addition of Initial Phase generated trips would likely be accommodated.

#### Mitigation Measures (Baseline Plus Initial Phase)

Implementation of this mitigation measure would reduce the transit system impact to a *less-than-significant level*.

- 6.12-6 *The project applicant shall coordinate with RT to provide modifications to both bus and light rail services and to help fund necessary improvements in order to serve the transit demand generated by the Initial Phase. The project applicant shall also dedicate right of way for the Downtown Natomas Airport (DNA) light rail system for the alignment and station located within the Specific Plan Area and pay a fair share contribution to fund construction of the DNA light rail system to mitigate the impacts of the Project on transit capacity.*

#### **6.12-7 The Initial Phase may interfere with the implementation of proposed bikeways.**

The Initial Phase may interfere with implementation of proposed bikeways described in the City of Sacramento Bikeway Master Plan, and would result in a *potentially significant impact*.

The implementation of following proposed bikeways, identified in the City of Sacramento Bikeway Master Plan, may be impeded by the Initial Phase:

- (a) Proposed on-street bikeway along 5<sup>th</sup> Street from I Street to the proposed bike trail south of the American River.
- (b) Proposed bike trail along E Street from 8<sup>th</sup> Street to the existing on-street bikeway at the Sacramento River.

- (c) Proposed bikeway/bike trail from 7<sup>th</sup> Street southwest through the Project site to connect with on-street bikeway at the Sacramento River.
- (d) Proposed bikeway/bike trail from 7<sup>th</sup> Street southwest through the project site to connect with the on-street bikeway at the Sacramento River.

Mitigation Measures (Baseline Plus Initial Phase)

Implementation of the following mitigation measure would reduce the bikeway impact to a *less-than-significant level*.

- 6.12-7 *The applicant shall be required to prepare site plans showing all required bikeway facilities in compliance with City of Sacramento Standards. The Project entitlements shall be conditioned to provide the required bikeway facilities as part of improvement plan which includes alternate on-street and separated bikeway facilities that connect to the City's bicycle network. The project applicant shall work with the City to ensure that the proposed bikeway facilities would achieve the intent of the Bikeway Master Plan and meet the City's standards. Modifications to the proposed bikeways shall be made to satisfy the requirements of the City.*

**6.12-8 The Initial Phase would increase the number of pedestrians on the roadway system and some proposed project design elements could result in unsafe conditions for pedestrians.**

The Initial Phase would result in the addition of employees, residents and visitors on nearby Transportation System, particularly between different land uses within the project site. It would also provide pedestrian linkages to the Sacramento River waterfront. The specific design elements for pedestrian access have not been defined at a sufficient level of detail to ensure that unsafe conditions for pedestrians would not occur; therefore, this is considered a *potentially significant impact*.

Mitigation Measures (Baseline Plus Initial Phase)

With implementation of the following mitigation measure, the Initial Phase is not anticipated to result in unsafe conditions for pedestrians, including unsafe bicycle/pedestrian or pedestrian/motor vehicle conflicts and the potential impact would be reduced to a ***less-than-significant level***.

- 6.12-8 *Pursuant to Title 16 (Subdivisions) and Title 18 (Development Requirements) of the City of Sacramento Municipal Code, the Initial Phase shall be conditioned to provide all frontage improvements which include sidewalks, gutters and planters to the satisfaction of Development Engineering Division.*

**6.12-9 The Initial Phase of the Railyards Specific Plan could result in inadequate vehicle parking and bicycle parking capacity.**

Based on the generally-applicable provisions of the City's Zoning Code, the Initial Phase would be expected to provide up to 11,351 parking spaces, including 514 spaces in the depot district dedicated for transit users. Further, the City's Zoning Code Section 17.64.050 also typically requires new and expanded developments to provide one bicycle parking space for every 10 required vehicle parking spaces.

As a transit-oriented development, however, buildout of the Railyards Specific Plan, including the Initial Phase, may generate fewer parking spaces than set forth in the ratios of the City's Zoning Code that guide parking capacity outside of the Railyards Special Planning District ("SPD").



Table 6.12-19 summarizes and compares the Zoning Code parking ratios in relation to the parking minimums identified in the Railyards Specific Plan and SPD. In sum, the project could generate 1,450 fewer spaces (or 12.7%) than are typically provided as set forth in the City's Zoning Code in the Initial Phase. This potential reduction exceeds the 10% maximum reduction anticipated in the Central City Master Plan for development served by transit, mixed-use and shared use of parking spaces, adopted by the City Council in September 2006.

Description	Amount	Required Spaces	Proposed Parking Ratio	Proposed Spaces
Office (General Office Building)	2,071,000 KSF	2,071	No Change	2,071
Retail (Shopping Center)	1,374,000 KSF	5,482	3:1000 sq. ft.	4,122
Subtotal Residential	2,304 units	2,458	No change	2,458
Museum	188,000 KSF	376	No change	376
Performing Arts	1,800 KSF	450	1:5 seats	360
Transit Parking	514 spaces	514	No change	514
<b>Total Parking</b>		<b>11,351</b>		<b>9,901</b>
Required spaces are based on the following: 1 space per 1000 gross square feet of office space 1 space per 400 gross square feet of retail space for the first 9,600 square feet and 1 space per 250 square feet thereof 1 space per multi-family dwelling unit plus 1 visitor space per 15 dwelling units 1 space per 500 gross square feet of museum exhibit space 1 space per 4 seats for performing arts Source: Dowling Associates, Inc. 2007				

The Railyards SPD, as part of the City's comprehensive zoning ordinance, establishes the specific zoning standards, including parking, for development in the Railyards Specific Plan Area. (Zoning Code Chapter 17.124.) As described in the Railyards SPD, the Railyards Specific Plan encourages parking facilities that will optimize efficient use of parking facilities and promote alternate modes of transportation. On that basis, the Railyards SPD establishes the minimum parking ratios for uses within the Railyards Specific Plan Area. While these ratios establish *minimum* parking capacity in the Plan area and acknowledge that additional parking may be provided, the office ratios are lower than those in other areas of the Central City. If the Initial Phase of the Railyards Specific Plan would result in inadequate vehicle parking capacity, it could lead to physical environmental effects such as increased congestion as motorists circulate looking for parking spaces. In addition, the plans for development do not define how much bicycle parking would be provided. Therefore, this is considered a *potentially significant impact*.

#### Mitigation Measures (Baseline Plus Initial Phase)

Implementation of the following measures would reduce the above impact to a ***less-than-significant level***.

- 6.12-9 *In compliance with the Urban Permit Process and CEQA Conformity Report set forth in the Railyards SPD for development within the Railyards Specific Plan, all applications must include a parking management plan for City review to ensure adequate parking capacity based on the goals and objectives of the Central City Parking Master Plan adopted by the City Council in September 2006. Accordingly, more or less parking may be appropriate in a particular location based on factors such as geographic location, residential density, employment density, land use mix, transit accessibility, walkability, housing tenure and demographics, parking pricing or unbundling (parking sold or rented separately from building space). Parking management strategies may include:*

- Shared Parking: A parking facility may serve multiple uses or destinations, particularly if destinations have different peak periods, or if they share patrons so that motorists park at one facility and walk to multiple destinations.
- Parking Regulations: Parking facilities may control who, when and how long they may be used in particular locations in order to prioritize parking facility use.
- Remote Parking and Shuttle Service: Shuttles or free transit service may be provided to connect destinations with remote parking facilities, allowing them to be farther apart than typical.
- Walking and Cycling Improvements: Improved walking conditions expand the range of parking facilities that serve a destination and increase the feasibility of shared parking facilities and use of remote parking facilities. Parking in one location and walking rather than driving to other destinations reduces vehicle trips and the amount of parking required at each destination. Walking and cycling improvements allow these modes to substitute for some automobile trips, and they encourage transit use, since most transit trips involve walking or cycling links.
- Transportation Demand Management: Strategies for transportation demand management (“TDM”) can increase transportation system efficiency by changing travel behavior – frequency, mode, destination or timing (e.g., shifting from peak to off-peak). TDM strategies are numerous, and may include alternative work schedules, bicycle improvements, bike/transit integration, security improvements, park & ride, pedestrian improvements, ridesharing, shuttle services, improved taxi service, telecommuting, traffic calming, and transit improvements.
- Parking Facility Design and Operation: The physical layout, construction and day-to-day management of parking facilities can integrate them into communities, improve the quality of service experience by users, support parking management, and may be used to address specific problems.

The parking management strategy for the Initial Phase will include provision of bicycle parking capacity consistent with City Code requirements.

A well-constructed parking management plan for the Initial Phase and the provision of on-street parking will reduce the potential for increased congestion resulting from an inadequate parking supply. The number of on-street parking spaces has not been established and is not estimated to make up for the shortfall in the off-street parking supply. In addition, even a well-constructed parking management plan cannot be certain to eliminate the need for motorists to circulate to find parking. Therefore, the project will be required to provide parking consistent with the goals of the Central City Parking Master plan, after mitigation the impact on motor vehicle parking would be **less than significant**.

### **Near Term (2013) Impacts and Mitigation Measures**

#### **6.12-10 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**

A summary of intersection operations for near term conditions is provided in Table 6.12-20.

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	C	33.6	C	31.7
		PM	D	45.8	<b>F</b>	<b>137.2</b>
2. I-5 NB Ramps & Richards Blvd	Signal	AM	C	21.2	C	30.4
		PM	D	51.9	<b>E</b>	<b>63.1</b>
3. Bercut Dr & Richards Blvd	Signal	AM	B	14.7	<b>D</b>	<b>54.7</b>
		PM	D	39.0	<b>F</b>	<b>241.9</b>
4. N 5th St & Richards Blvd	Signal	AM	B	12.5	B	11.9
		PM	C	24.2	B	15.1
5. N 7th St & Richards Blvd	Signal	AM	D	46.7	<b>F</b>	<b>112.1</b>
		PM	C	32.9	<b>D</b>	<b>39.0</b>
6. N 10th St & Richards Blvd	Signal	AM	B	18.1	B	19.4
		PM	B	15.8	B	14.6
7. Dos Rios St & Richards Blvd & N F St	Signal	AM	A	9.9	B	10.2
		PM	B	12.2	B	11.6
8. 12th/N 16th St/Vine St	Signal	AM	F	104.2	<b>F</b>	<b>126.8</b>
		PM	F	293.7	<b>F</b>	<b>305.8</b>
9. N 12th St/Sunbeam/Sproule Av	Signal	AM	A	7.2	C	25.6
		PM	B	16.6	B	17.8
10. N 16th St & Sproule Ave	Signal	AM	B	12.2	B	12.6
		PM	A	6.0	A	9.8
13. Bercut Dr & Bannon St	Stop Signs	AM	A	1.9	B	14.3
		PM	A	6.5	<b>F</b>	<b>&gt;999</b>
17. 5th St & North B St	Signal	AM	N/A	N/A	B	11.2
		PM	N/A	N/A	A	6.9
18. N 7th St & North B St	Stop Signs: No Project; Signal: Project	AM	F	94.8	C	24.6
		PM	F	285.8	C	223.8
19. N 10th St & N B St	Stop Signs	AM	A	4.6	A	5.6
		PM	B	11.6	<b>F</b>	<b>81.8</b>
20. 12th St & North B St	Signal	AM	E	72.3	<b>F</b>	<b>235.4</b>
		PM	E	64.9	<b>F</b>	<b>202.7</b>
21. N 16th St & North B St	Signal	AM	A	3.4	A	3.2
		PM	C	24.0	<b>D</b>	<b>54.1</b>
22. Bercut Drive & South Park St	All-Way Stop Signs	AM	N/A	N/A	A	8.9
		PM	N/A	N/A	B	13.0
23. 5th St & South Park St	Signal	AM	N/A	N/A	A	8.1
		PM	N/A	N/A	A	6.4

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
26. Jibboom St & Railyards Blvd	Signal	AM	N/A	N/A	B	15.2
		PM	N/A	N/A	C	23.9
27. Bercut Dr & Railyards Blvd	Signal	AM	N/A	N/A	B	17.0
		PM	N/A	N/A	C	33.5
28. Crocker St & Railyards Blvd	All-Way Stop Signs	AM	N/A	N/A	A	8.3
		PM	N/A	N/A	C	16.0
29. Stanford St & Railyards Blvd	Signal	AM	N/A	N/A	B	17.3
		PM	N/A	N/A	C	22.9
30. 5th St & Railyards Blvd	Signal	AM	N/A	N/A	B	16.9
		PM	N/A	N/A	C	31.5
31. Judah St & Railyards Blvd	Stop Signs	AM	N/A	N/A	A	1.7
		PM	N/A	N/A	A	7.8
32. 6th St & Railyards Blvd	Signal	AM	N/A	N/A	B	11.9
		PM	N/A	N/A	B	17.1
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	C	25.0
		PM	N/A	N/A	<b>E</b>	<b>61.7</b>
36. Bercut Dr & Camille Ln	All-Way Stop Signs	AM	N/A	N/A	A	8.5
		PM	N/A	N/A	B	11.3
37. 7th St & F St	Stop Signs: No Project; Signal: Project	AM	A	5.2	<b>D</b>	<b>38.0</b>
		PM	A	9.3	C	21.8
38. 5th St & G St	Signal	AM	N/A	N/A	A	8.6
		PM	N/A	N/A	<b>E</b>	<b>73.2</b>
39. 6th St & G St	Signal	AM	N/A	N/A	<b>F</b>	<b>113.4</b>
		PM	N/A	N/A	<b>F</b>	<b>342.3</b>
40. 7th St & G St	Signal	AM	D	47.0	B	14.1
		PM	B	13.2	B	14.0
41. 8th St & G St	Signal	AM	A	9.8	A	8.5
		PM	A	9.2	A	7.8
42. 12th St & G St	Signal	AM	A	8.9	A	9.1
		PM	B	17.8	B	17.0
43. 5th St & H St	Signal	AM	N/A	N/A	A	1.4
		PM	N/A	N/A	B	18.6
44. 6th St & H St	Signal	AM	B	19.6	<b>F</b>	<b>102.7</b>
		PM	C	34.5	<b>F</b>	<b>216.7</b>

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
45. 7th St & H St	Signal	AM	B	14.2	C	23.0
		PM	B	18.3	<b>F</b>	<b>91.3</b>
46. 8th St & H St	Signal	AM	B	14.3	B	14.8
		PM	B	11.6	<b>D</b>	<b>36.2</b>
47. 16th St & H St	Signal	AM	B	12.5	B	12.9
		PM	C	27.0	C	30.1
48. Jibboom St & I St	Signal	AM	C	24.5	<b>D</b>	<b>43.3</b>
		PM	D	41.4	<b>F</b>	<b>173.6</b>
50. 5th St & I St	Signal	AM	A	7.8	B	13.2
		PM	B	15.6	<b>D</b>	<b>40.6</b>
51. 6th St & I St	Signal	AM	B	17.5	C	24.1
		PM	E	63.2	<b>F</b>	<b>437.1</b>
52. 7th St & I St	Signal	AM	B	10.3	B	10.2
		PM	C	27.0	C	29.7
53. 3rd St & J St	Signal	AM	F	81.5	<b>F</b>	<b>114.2</b>
		PM	C	28.5	<b>D</b>	<b>40.5</b>
54. 5th St & J St	Signal	AM	B	12.3	B	14.6
		PM	B	11.6	B	12.8
55. 6th St & J St	Signal	AM	B	10.2	B	11.3
		PM	B	16.6	B	14.7
56. 7th St & J St	Signal	AM	C	24.7	C	24.4
		PM	B	19.4	B	19.9
57. 3rd St & L St	Signal	AM	C	31.3	C	31.3
		PM	F	100.0	<b>F</b>	<b>165.1</b>
58. 5th St & L St	Signal	AM	B	12.8	B	12.5
		PM	C	25.6	C	26.3
59. 7th St & L St	Signal	AM	B	14.5	B	16.6
		PM	D	38.6	C	33.5
60. 5th St & Capitol Mall	Signal	AM	C	20.6	<b>D</b>	<b>39.5</b>
		PM	B	18.9	C	21.9
61. 3rd St & P St	Signal	AM	B	17.9	B	18.0
		PM	C	20.4	C	24.8
62. 3rd St & Q St	Signal	AM	B	11.8	B	12.1
		PM	A	7.6	A	7.8

Source: Dowling Associates, Inc., 2007.  
 1 LOS = Level of Service  
 2 Weighted average control delay in seconds  
 Note: **Bold** values indicate potential significant impacts.

The Initial Phase would increase traffic volumes at study area intersections and would cause *significant impacts* under near term plus Initial Phase conditions at the following intersections:

- (a) I-5 SB Ramps / Richards Boulevard (PM peak hour).
- (b) I-5 NB Ramps / Richards Boulevard (PM peak hour).
- (c) Bercut Drive / Richards Boulevard (AM and PM peak hours).
- (d) 7th Street / Richards Boulevard (AM and PM peak hours).
- (e) 12<sup>th</sup>/N 16<sup>th</sup> Streets / Richards Boulevard (AM and PM peak hours).
- (f) Bercut Drive / Bannon Street (PM peak hour).
- (g) 10th Street / North B Street (PM peak hour).
- (h) 12th Street / North B Street (AM and PM peak hours).
- (i) 16<sup>th</sup> Street / North B Street (PM peak hour).
- (j) 7<sup>th</sup> Street / Railyards Boulevard (PM peak hour).
- (k) 7<sup>th</sup> Street / F Street (AM peak hour).
- (l) 5th Street / G Street ( PM peak hour).
- (m) 6<sup>th</sup> Street / G Street (AM and PM peak hours).
- (n) 6th Street / H Street (AM and PM peak hours).
- (o) 7th Street / H Street (PM peak hour).
- (p) 8th Street / H Street (PM peak hour).
- (q) Jibboom Street / I Street (AM and PM peak hours).
- (r) 5th Street / I Street (PM peak hour).
- (s) 6th Street / I Street (PM peak hour).
- (t) 3rd Street / J Street (AM and PM peak hours).
- (u) 3<sup>rd</sup> Street / L Street (PM peak hour).
- (v) 5<sup>th</sup> Street / Capitol Mall (AM peak hour).

#### Mitigation Measures (2013)

The following measures would improve operations at study intersections. However, one or more of the intersections analyzed as part of this system would continue to operate at unacceptable levels after mitigation. Therefore, the impact on the transportation system is considered ***significant and unavoidable***.

The mitigation measures described below are in addition to the mitigation measures described for baseline conditions.

- 6.12-10(a) *At the I-5 SB off-ramp / Richards Boulevard intersection, optimizing signal timing would lessen the project impact; however, to further mitigate the impact would require widening of the freeway ramp to add an additional lane to the west. Freeway ramps are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. In addition, to implement this mitigation measure would require acquisition of additional right of way for a new lane. Additional widening of Richards Boulevard would be inconsistent with the City of*

*Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

- 6.12-10(b) *At the I-5 NB on-ramp / Richards Boulevard intersection, optimizing signal timing would lessen the project impact; however, to further mitigate the project impact would require widening of the freeway on-ramp and acquisition of right-of-way. Freeway ramps are not under the jurisdiction of the City but are subject to Caltrans' jurisdiction. In addition, to implement this mitigation measure would require acquisition of additional right of way for a new lane. Additional widening of Richards Boulevard would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*
- 6.12-10(c) *At the Bercut Drive / Richards Boulevard intersection, Mitigation Measure 6.12-1(b), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard. To further mitigate the project impact would require further widening of Richards Boulevard which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*
- 6.12-10(d) *At the 7<sup>th</sup> Street / Richards Boulevard intersection, Mitigation Measure 6.12-1(d), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard. To further mitigate the project impact would require further widening of Richards Boulevard which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*
- 6.12-10(e) *At the 12<sup>th</sup>/N 16<sup>th</sup> Streets / Richards Boulevard intersection, mitigating the project impact would entail widening of 12<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*
- 6.12-10(f) *At the Bercut Drive / Bannon Street intersection, Mitigation Measure 6.12-1(f), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and*

*monitoring of the signal to improve vehicle progression along Bercut Drive. To further mitigate the project impact would require further widening of Bercut Drive which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(g) *At the North 10<sup>th</sup> Street / North B Street intersection, the City shall install, or cause to be installed, a traffic signal, and optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along North B Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS A (7.4 seconds delay) in the a.m. peak hour and to LOS B (10.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-21.*

- 6.12-10(h) *At the 12<sup>th</sup> Street / North B Street intersection, the City shall optimize signal timing. The applicant shall pay a fair share of this mitigation measure and shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along North B Street.*

*With implementation of this mitigation measure, delay would be slightly reduced but the intersection would continue to operate at LOS F during both the a.m. and p.m. peak hours. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(i) *At the 16<sup>th</sup> Street / North B Street intersection, mitigating the project impact would require widening of 16<sup>th</sup> Street which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(j) *At the 7<sup>th</sup> Street / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-1(h) and optimizing signal timing would reduce the impact. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (20.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-21.*

- 6.12-10(k) *At the 7<sup>th</sup> Street / F Street intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*



*With implementation of this mitigation measure, the level of service would be improved to LOS C (32.5 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-21.*

- 6.12-10(l) *At the 5th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(i) and optimizing signal timing would reduce the impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (17.5 seconds delay) in the a.m. peak hour and to LOS D (37.3 seconds delay) in the p.m. peak hour, thus the impact would remain significant and unavoidable. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-10(m) *At the 6th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(j), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-10(n) *At the 6<sup>th</sup> Street / H Street intersection, implementation of Mitigation Measure 6.12-1(k), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(o) *At the 7<sup>th</sup> Street / H Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (40.9 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(p) *At the 8<sup>th</sup> Street / H Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic*

operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

With implementation of this mitigation measure, the level of service would be improved to LOS C (32.7 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-21.

- 6.12-10(q) At the Jibboom Street / I Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

With implementation of this mitigation measure, the level of service would be improved to LOS C (30.8 seconds delay) in the a.m. peak hour and the delay would be reduced to 139.4 seconds delay (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.

- 6.12-10(r) At the 5th Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

With implementation of this mitigation measure, the level of service would be improved to LOS C (31.0 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-21.

- 6.12-10(s) At the 6<sup>th</sup> Street / I Street intersection, implementation of Mitigation Measure 6.12-1(o), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

With implementation of this mitigation measure, the level of service would be improved to LOS D (46.3 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.

- 6.12-10(t) At the 3<sup>rd</sup> Street / J Street intersection, implementation of Mitigation Measure 6.12-1(p), supplemented by signal timing modifications, would lessen the project impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

With implementation of this mitigation measure, the level of service would be improved to LOS E (73.4 seconds delay) in the a.m. peak hour and to LOS D (39.2 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of

*Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(u) *At the 3<sup>rd</sup> Street / L Street intersection, implementation of Mitigation Measure 6.12-1(q), supplemented by signal timing modifications in the p.m. peak hour, would lessen the project impact. Therefore, the City shall optimize the signal timing in p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (28.1 seconds delay) in the a.m. peak hour and the delay would be reduced to 82.9 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Additional widening would also create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-10(v) *At the 5th Street / Capitol Mall intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (21.0 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-21.*

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase		With Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	C	33.6	C	31.7	D	40.3
		PM	D	45.8	F	<b>137.2</b>	F	82.9
2. I-5 NB Ramps & Richards Blvd	Signal	AM	C	21.2	C	30.4	D	36.7
		PM	D	51.9	E	<b>63.1</b>	D	39.9
3. Bercut Dr & Richards Blvd	Signal	AM	B	14.7	D	<b>54.7</b>	B	13.8
		PM	D	39.0	F	<b>241.9</b>	F	82.1
5. N 7th St & Richards Blvd	Signal	AM	D	46.7	F	<b>112.1</b>	E	75.7
		PM	C	32.9	D	<b>39.0</b>	C	34.8
8. 12th/N 16th St/Vine St	Signal	AM	F	104.2	F	<b>126.8</b>	F	126.8
		PM	F	293.7	F	<b>305.8</b>	F	305.8
13. Bercut Dr & Bannon St	Stop Signs; Signal for Mitigation	AM	A	1.9	B	14.3	B	15.7
		PM	A	6.5	F	<b>&gt;999</b>	D	45.9

TABLE 6.12-21

## INTERSECTION LEVELS OF SERVICE WITH MITIGATION – NEAR TERM (2013) CONDITIONS

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase		With Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
19. N 10th St & N B St	Stop Signs; Signal Mitigation	AM	A	4.6	A	5.6	A	7.4
		PM	B	11.6	F	<b>81.8</b>	B	10.6
20. 12th St & North B St	Signal	AM	E	72.3	F	<b>235.4</b>	F	88
		PM	E	64.9	F	<b>202.7</b>	F	196.2
21. N 16th St & North B St	Signal	AM	A	3.4	A	3.2	A	3
		PM	C	24.0	D	<b>54.1</b>	E	57.7
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	C	25.0	B	15.3
		PM	N/A	N/A	E	<b>61.7</b>	C	20.2
37. 7th St & F St	Stop Signs: No Project; Signal: Project	AM	A	5.2	D	<b>38.0</b>	C	32.5
		PM	A	9.3	C	21.8	C	21.8
38. 5th St & G St	Signal	AM	N/A	N/A	A	8.6	B	17.5
		PM	N/A	N/A	E	<b>73.2</b>	D	37.3
39. 6th St & G St	Signal	AM	N/A	N/A	F	<b>113.4</b>	D	43.6
		PM	N/A	N/A	F	<b>342.3</b>	F	131
44. 6th St & H St	Signal	AM	B	19.6	F	<b>102.7</b>	D	35.7
		PM	C	34.5	F	<b>216.7</b>	F	123.1
45. 7th St & H St	Signal	AM	B	14.2	C	23.0	C	22.8
		PM	B	18.3	F	<b>91.3</b>	D	40.9
46. 8th St & H St	Signal	AM	B	14.3	B	14.8	B	14.6
		PM	B	11.6	D	<b>36.2</b>	C	32.7
48. Jibboom St & I St	Signal	AM	C	24.5	D	<b>43.3</b>	C	30.8
		PM	D	41.4	F	<b>173.6</b>	F	139.4
50. 5th St & I St	Signal	AM	A	7.8	B	13.2	B	12.5
		PM	B	15.6	D	<b>40.6</b>	C	31.0
51. 6th St & I St	Signal	AM	B	17.5	C	24.1	C	21.9
		PM	E	63.2	F	<b>437.1</b>	D	46.3
53. 3rd St & J St	Signal	AM	F	81.5	F	<b>114.2</b>	E	73.4
		PM	C	28.5	D	<b>40.5</b>	D	39.2
57. 3rd St & L St	Signal	AM	C	31.3	C	31.3	C	28.1
		PM	F	100.0	F	<b>165.1</b>	F	82.9
60. 5th St & Capitol Mall	Signal	AM	C	20.6	D	<b>39.5</b>	C	21
		PM	B	18.9	C	21.9	C	21.9

Source: Dowling Associates, Inc., 2007.

1 LOS = Level of Service

2 Weighted average control delay in seconds

Note: **Bold** values indicate potential significant impacts.

## 6.12-11 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.

A summary of roadway segment operations for near term conditions is provided in Table 6.12-22.

Roadway Segment	Lanes	Without Project			With Initial Phase		
		ADT <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>3</sup>	ADT <sup>1</sup>	LOS <sup>2</sup>	V/C <sup>3</sup>
Richards Boulevard – east of Bercut Drive	4	28,600	C	0.79	26,075	C	0.72
Richards Boulevard – east of Dos Rios Street	4	26,325	C	0.73	25,420	C	0.71
5th Street – north of H Street	3	N/A	N/A	N/A	7,200	A	0.32
5th Street – south of Railyards Boulevard	3	N/A	N/A	N/A	8,910	A	0.40
5th Street – south of N. B Street	3	N/A	N/A	N/A	9,795	A	0.44
7th Street – north of N. B Street	3	11,405	A	0.51	14,095	B	0.63
7th Street – south of N. B Street	3	13,035	A	0.58	7,855	A	0.35
7th Street – north of H Street	3	9,865	A	0.44	10,155	A	0.45
6th Street – north of H Street	3	N/A	N/A	N/A	<b>21,250</b>	<b>E</b>	<b>0.94</b>
Jibboom Street – north of Railyards Boulevard	2	N/A	N/A	N/A	6,565	A	0.36
Bercut Drive – north of Railyards Boulevard	2	N/A	N/A	N/A	5,545	A	0.31
Railyards Boulevard – west of 7th Street	3	N/A	N/A	N/A	11,680	A	0.52
Railyards Boulevard – west of 5th Street	3	N/A	N/A	N/A	8,285	A	0.37
South Park Street – west of 5th Street	4	N/A	N/A	N/A	2,180	A	0.07
N. B Street – west of 7th Street	2	6,035	A	0.40	10,190	B	0.68
N. B Street – west of N. 10th Street	3	6,070	A	0.27	12,725	A	0.57
N. B Street – west of Dos Rios Avenue	4	7,790	A	0.26	14,515	A	0.48
Camille Lane – west of 5th Street	2	N/A	N/A	N/A	5,070	A	0.34
Huntington Street – north of Railyards Boulevard	2	N/A	N/A	N/A	5,400	A	0.36
Crocker Street – north of Railyards Boulevard	2	N/A	N/A	N/A	5,420	A	0.36
Stanford Street – north of Railyards Boulevard	2	N/A	N/A	N/A	3,750	A	0.25
Bannon Street - east of Bercut Drive	2	2,000	A	0.11	5,200	A	0.29
Jibboom Street – north of I Street	2	11,840	B	0.79	<b>15,350</b>	<b>D</b>	<b>0.85</b>

Source: Dowling Associates, Inc., 2007.  
 1 ADT = Averaged daily traffic  
 2 LOS = Level of service  
 3 V/C = Volume/Capacity  
 Note: **Bold** values indicate potential significant impacts.

The Initial Phase would increase traffic volumes at study area roadway segments and would cause *significant impacts* under near term plus Initial Phase conditions on the following roadway segments:

- (a) 6th Street north of H Street.
- (b) Jibboom Street north of I Street.

#### Mitigation Measures (2013)

*None available.*

At the 6<sup>th</sup> Street roadway segment just north of H Street, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Hence, the impact would remain **significant and unavoidable**.

At the Jibboom Street roadway segment just north of I Street, mitigating the project impact would entail widening of the elevated bridge structure to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive. Hence, the impact would remain **significant and unavoidable**.

**6.12-12 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**

Freeway mainline operating conditions for near term conditions are summarized in Table 6.12-23. The Initial Phase would add traffic to the following freeway segments that would operate at LOS F without the Projects:

- (a) Northbound I-5 South of Richards Blvd off-ramp (PM peak hour).
- (b) Northbound I-5 North of Richards Blvd on-ramp (PM peak hour).
- (c) Southbound I-5 North of Richards Blvd off-ramp (AM peak hour).
- (d) Southbound I-5 North of Richards Blvd on-ramp (AM peak hour).
- (e) Southbound I-5 North of J Street off-ramp (AM peak hour).

The Initial Phase would also add traffic to the following segments and cause the segment to degrade to LOS F:

- (f) Northbound SR 160 at the American River (PM peak hour).

This is considered a *significant impact*.

Mitigation Measures (2013)

*None required.*

For the reasons discussed in Mitigation Measure 6.12-3, the Initial Phase impact would remain **significant and unavoidable**.

**6.12-13 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**

Freeway interchange operations under 2013 near term conditions are summarized in Table 6.12-24. The Initial Phase would add traffic to freeway ramps and weaving areas and cause the interchange levels of service to be worse than freeway mainline levels of service at the following locations:

- (a) Northbound I-5 Richards Boulevard on-ramp (PM peak hour).
- (b) Northbound I-5 Garden Highway off-ramp (PM peak hour).

TABLE 6.12-23												
FREEWAY MAINLINE OPERATIONS – NEAR TERM (2013) CONDITIONS												
Location	Without Project						With Initial Phase					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>	Volume	V/C <sup>1</sup>	LOS <sup>2</sup>
<b>Northbound I-5</b>												
South of L Street on-ramp	6,455	1.07	F	7,130	1.18	F	6,430	1.07	F	6,993	1.16	F
South of I Street on-ramp	6,980	0.87	D	8,256	1.03	F <sup>3</sup>	6,952	0.86	D	8,205	1.02	F <sup>3</sup>
South of Richards Blvd off-ramp	7,316	0.77	D	9,648	1.01	F <sup>3</sup>	7,239	0.76	D	<b>9,688</b>	<b>1.02</b>	<b>F<sup>3</sup></b>
North of Richards Blvd off-ramp	6,216	0.65	C	8,795	0.92	F <sup>3</sup>	6,035	0.63	C	8,642	0.91	F <sup>3</sup>
North of Richards Blvd on-ramp	6,782	0.71	C	10,227	1.07	F	6,681	0.70	C	<b>10,675</b>	<b>1.12</b>	<b>F</b>
<b>Southbound I-5</b>												
North of Richards Blvd off-ramp	11,450	1.20	F	7,902	0.83	D	<b>11,736</b>	<b>1.23</b>	<b>F</b>	7,846	0.82	D
North of Richards Blvd on-ramp	10,089	1.25	F	7,119	0.89	D	<b>10,153</b>	<b>1.26</b>	<b>F</b>	6,915	0.86	D
North of J Street off-ramp	10,565	1.11	F	8,042	0.84	D	<b>10,634</b>	<b>1.11</b>	<b>F</b>	8,256	0.87	D
North of I Street on-ramp	8,401	1.04	F	6,707	0.83	F <sup>3</sup>	8,218	1.02	F	6,703	0.83	F <sup>3</sup>
<b>Northbound SR 160</b>												
At the American River Bridge	2,915	0.47	B	6,850	1.10	E	2,896	0.46	B	<b>7,694</b>	<b>1.23</b>	<b>F</b>
<b>Southbound SR 160</b>												
At the American River Bridge	4,663	0.75	D	2,882	0.46	B	4,791	0.77	D	3,701	0.59	C
Source: Dowling Associates, Inc., 2007. 1 V/C = Volume / Capacity 2 LOS = Level of Service 3 Queue extends from downstream bottleneck Note: <b>Bold</b> values indicate potential significant impacts.												

TABLE 6.12-24

## FREEWAY INTERCHANGE OPERATIONS – NEAR TERM (2013) CONDITIONS

Ramp	Without Project						With Initial Phase					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume
<b>Northbound I-5</b>												
P Street to J Street weave	C	27.27	8,533	C	24.37	7,922	C	27.98	8,639	C	26.51	8,187
L Street on-ramp	C	(573)	525	C	(1229)	1,127	C	(569)	522	C	(1323)	1,213
I Street on-ramp	B	14.32	336	C	25.03	1,392	B	13.87	287	C	25.67	1,483
Richards Boulevard off-ramp	C	25.16	1,100	E	39.45	853	C	25.46	1,204	E	40.64	1,046
Richards Boulevard on-ramp	C	(617)	566	D	(1562)	1,432	C	(705)	646	<b>F</b>	<b>(2218)</b>	<b>2,033</b>
Garden Highway off-ramp	C	23.30	1,080	F	44.16	1,292	C	23.01	1,088	<b>F</b>	<b>46.59</b>	<b>1,402</b>
<b>Southbound I-5</b>												
Garden Highway on-ramp	C	(1127)	1,033	C	(931)	853	C	(1150)	1,054	C	(952)	873
Richards Boulevard off-ramp	F	27.37	1,361	B	18.89	783	<b>F</b>	<b>28.05</b>	<b>1,583</b>	B	18.75	931
Richards Boulevard on-ramp	C	(519)	476	C	(1007)	923	C	(525)	481	D	(1463)	1,341
J Street off-ramp	C	25.25	2,164	B	19.22	1,335	C	25.42	2,416	B	19.73	1,553
I Street to Q Street weave	C	24.32	8,602	C	22.33	7,760	C	24.21	8,481	C	23.38	7,924

Source: Dowling Associates, Inc., 2007.

1 LOS = Level of Service

2 Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

Note: **Bold** values indicate potential significant impacts.



(c) *Southbound I-5 Richards Boulevard off-ramp (AM peak hour).*

This is considered a *significant impact*.

Mitigation Measures (2013)

*None required.*

For reasons discussed in Mitigation Measure 6.12-4, the impacts of the Initial Phase on freeway interchanges would remain ***significant and unavoidable***.

**6.12-14 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**

The Initial Phase would add traffic to freeway off-ramps where queues would exceed available storage capacity without the Project at the following location:

(a) *Northbound I-5 to J Street (AM peak hour).*

This is considered a *significant impact*.

Mitigation Measures (2013)

*None required.*

For reasons discussed in Mitigation Measure 6.12-5, the impacts of the Initial Phase on freeway ramp queues would remain ***significant and unavoidable***.

**6.12-15 The Initial Phase would increase demand on the public transit system.**

The Initial Phase would increase demand for transit services and would cause significant impacts under near term (2013) conditions. Peak period transit trips generated by the Initial Phase are estimated to be approximately 288 during the a.m. peak hour, and approximately 382 during the p.m. peak hour.

As RT buses would provide the only directly transit link to the project site under the Initial Phase conditions, the demand would focus on the two RT bus routes, which offer connecting services to light rail and Amtrak trains. With 10 buses operating during each peak hour, the Initial Phase would add 38 riders per bus during the p.m. peak hour, the period with the highest transit demand. RT likely would not be able to accommodate the increased ridership without modifications to transit service. Hence, the Initial Phase would result in a *potentially significant impact*.

The Initial Phase would also generate demand for light rail service. Considering the recent increases in capacity associated with the LRT extension to the Downtown Amtrak Depot, the addition of Initial Phase generated trips would likely have nominal effect on the service.

The Initial Phase would generate demand for Amtrak service, particularly the Capitol Express service to the greater Bay Area. However, considering the recent service expansion, the addition of Initial Phase generated trips would likely have nominal effect on the service.

Mitigation Measures (2013)

Implementation of the following mitigation measure would reduce this impact to a **less-than-significant level**.

(c) Implement Mitigation Measure 6.12-6.

Long Term (2030) Impacts and Mitigation Measures (Initial Phase)

**6.12-16 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**

A summary of intersection operations for the Initial Phase under long-term conditions is provided in Table 6.12-25.

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	D	36.5	E	<b>78.3</b>
		PM	C	33.9	E	<b>63.7</b>
2. I-5 NB Ramps & Richards Blvd	Signal	AM	A	9.7	B	16.6
		PM	B	10.0	E	<b>58.3</b>
3. Bercut Dr & Richards Blvd	Signal	AM	B	13.1	B	18.6
		PM	D	54.5	E	<b>77.3</b>
4. N 5th St & Richards Blvd	Signal	AM	B	15.2	E	<b>67.1</b>
		PM	F	106.9	F	<b>197.6</b>
5. N 7th St & Richards Blvd	Signal	AM	D	35.3	C	31.3
		PM	F	137.8	C	26.8
6. N 10th St & Richards Blvd	Signal	AM	B	13.1	D	<b>51.5</b>
		PM	C	21.5	F	<b>132.6</b>
7. Dos Rios St & Richards Blvd & N F St	Signal	AM	F	85.5	B	15.0
		PM	F	150.5	C	24.4
8. 12th/N 16th St/Vine St	Signal	AM	F	173.6	N/A	N/A
		PM	F	322.6	N/A	N/A
9. N 12th St/Sunbeam/Sproule Av	Signal	AM	B	11.5	A	4.4
		PM	B	20.0	A	2.4
10. N 16th St & Sproule Ave	Signal	AM	B	11.8	B	13.1
		PM	C	20.8	A	3.9
11. I-5 SB Ramps & Bannon St	Signal	AM	B	10.6	A	3.7
		PM	C	20.5	C	26.6
12. I-5 NB Ramps & Bannon St	Signal	AM	D	47.9	E	<b>65.8</b>
		PM	C	29.9	D	<b>51.6</b>
13. Bercut Dr & Bannon St	Signal	AM	B	16.5	C	21.4
		PM	C	23.6	D	<b>42.7</b>

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
14. N 5th St & Bannon St	Signal	AM	B	16.0	C	32.2
		PM	C	31.0	<b>D</b>	<b>53.1</b>
15. N 7th St & Bannon St	Signal	AM	C	28.9	A	9.2
		PM	F	91.7	A	9.6
16. 12th St & Bannon St	Signal	AM	N/A	N/A	<b>E</b>	<b>66.5</b>
		PM	N/A	N/A	<b>F</b>	<b>86.3</b>
17. 5th St & North B St	Signal	AM	N/A	N/A	A	8.8
		PM	N/A	N/A	B	15.0
18. N 7th St & North B St	Signal	AM	F	122.2	D	49.9
		PM	F	369.7	F	96.3
19. N 10th St & N B St	Stop Signs	AM	A	1.7	A	4.8
		PM	D	26.7	A	6.5
20. 12th St & North B St	Signal	AM	F	310.8	E	64.7
		PM	F	303.7	F	81.4
21. N 16th St & North B St	Signal	AM	A	5.7	A	4.3
		PM	D	49.8	<b>E</b>	<b>64.3</b>
22. Bercut Drive & South Park St	All-Way Stop Signs	AM	N/A	N/A	B	11.7
		PM	N/A	N/A	B	24.8
23. 5th St & South Park St	Signal	AM	N/A	N/A	A	8.1
		PM	N/A	N/A	B	10.8
26. Jibboom St & Railyards Blvd	Signal	AM	N/A	N/A	B	11.6
		PM	N/A	N/A	<b>D</b>	<b>39.9</b>
27. Bercut Dr & Railyards Blvd	Signal	AM	N/A	N/A	C	21.6
		PM	N/A	N/A	<b>E</b>	<b>58.7</b>
28. Crocker St & Railyards Blvd	Signal	AM	N/A	N/A	A	8.4
		PM	N/A	N/A	C	18.5
29. Stanford St & Railyards Blvd	Signal	AM	N/A	N/A	B	18.0
		PM	N/A	N/A	C	22.7
30. 5th St & Railyards Blvd	Signal	AM	N/A	N/A	B	19.1
		PM	N/A	N/A	<b>F</b>	<b>118.8</b>
31. Judah St & Railyards Blvd	Stop Signs	AM	N/A	N/A	A	2.7
		PM	N/A	N/A	C	23.6
32. 6th St & Railyards Blvd	Signal	AM	N/A	N/A	B	17.9
		PM	N/A	N/A	<b>E</b>	<b>62.3</b>
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	C	22.0
		PM	N/A	N/A	<b>F</b>	<b>127.5</b>
36. Bercut Dr & Camille Ln	All-Way Stop Signs	AM	N/A	N/A	B	10.3
		PM	N/A	N/A	B	11.9

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
37. 7th St & F St	Signal	AM	F	134.2	B	19.1
		PM	D	54.2	C	27.5
38. 5th St & G St	Signal	AM	N/A	N/A	B	10.2
		PM	N/A	N/A	F	<b>141.9</b>
39. 6th St & G St	Signal	AM	N/A	N/A	F	<b>174.9</b>
		PM	N/A	N/A	F	<b>438.1</b>
40. 7th St & G St	Signal	AM	B	15.5	D	<b>37.7</b>
		PM	C	29.5	F	<b>116.3</b>
41. 8th St & G St	Signal	AM	B	10.9	A	9.0
		PM	A	8.2	A	8.4
42. 12th St & G St	Signal	AM	B	10.8	C	20.1
		PM	B	16.7	B	13.9
43. 5th St & H St	Signal	AM	N/A	N/A	A	1.2
		PM	N/A	N/A	A	9.3
44. 6th St & H St	Signal	AM	D	45.4	F	<b>88.9</b>
		PM	F	179.7	F	182.6
45. 7th St & H St	Signal	AM	C	20.7	B	18.0
		PM	D	52.5	F	<b>93.8</b>
46. 8th St & H St	Signal	AM	B	15.7	B	19.6
		PM	B	13.5	B	15.3
47. 16th St & H St	Signal	AM	B	13.7	B	13.5
		PM	E	59.9	E	64.1
48. Jibboom St & I St	Signal	AM	E	62.5	F	<b>99.6</b>
		PM	F	135.8	F	<b>232.0</b>
50. 5th St & I St	Signal	AM	A	7.2	B	12.9
		PM	D	46.4	E	<b>64.5</b>
51. 6th St & I St	Signal	AM	D	40.8	C	31.8
		PM	F	201.5	F	<b>396.4</b>
52. 7th St & I St	Signal	AM	B	14.4	B	15.8
		PM	C	32.1	E	<b>63.8</b>
53. 3rd St & J St	Signal	AM	F	176.2	F	<b>189.5</b>
		PM	D	39.1	D	<b>53.8</b>
54. 5th St & J St	Signal	AM	B	14.0	B	19.1
		PM	B	14.7	B	18.8
55. 6th St & J St	Signal	AM	B	10.1	B	10.9
		PM	B	18.8	B	16.5
56. 7th St & J St	Signal	AM	C	29.3	C	27.2
		PM	B	19.4	C	20.9

Intersection	Traffic Control	Peak Hour	Without Project		With Initial Phase	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
57. 3rd St & L St	Signal	AM	F	130.4	<b>F</b>	<b>147.5</b>
		PM	F	258.7	<b>F</b>	<b>365.7</b>
58. 5th St & L St	Signal	AM	B	13.6	B	13.3
		PM	E	57.5	E	56.9
59. 7th St & L St	Signal	AM	B	16.6	B	16.0
		PM	D	44.1	D	37.7
60. 5th St & Capitol Mall	Signal	AM	C	20.2	<b>D</b>	<b>45.9</b>
		PM	C	20.1	C	21.3
61. 3rd St & P St	Signal	AM	B	13.5	B	13.8
		PM	D	50.1	<b>E</b>	<b>57.5</b>
62. 3rd St & Q St	Signal	AM	C	32.4	C	30.1
		PM	A	8.6	A	8.6
63. Dos Rios & Richards Blvd	Signal	AM	N/A	N/A	A	8.4
		PM	N/A	N/A	A	8.4
64. Richards Blvd & 12th St	Signal	AM	N/A	N/A	<b>E</b>	<b>65.3</b>
		PM	N/A	N/A	<b>D</b>	<b>35.8</b>

Source: Dowling Associates, Inc., 2007.  
<sup>1</sup> LOS = Level of Service  
<sup>2</sup> Weighted average control delay in seconds  
Note: **Bold** values indicate potential significant impacts.

The Initial Phase would increase traffic volumes and would cause *significant impacts* under long term conditions at the following intersections:

- (a) I-5 SB Ramps / Richards Boulevard (AM and PM peak hours).
- (b) I-5 NB Ramps / Richards Boulevard (PM peak hour).
- (c) Bercut Drive / Richards Boulevard (PM peak hour).
- (d) 5<sup>th</sup> Street / Richards Boulevard (AM and PM peak hours).
- (e) 10<sup>th</sup> Street / Richards Boulevard (AM and PM peak hours).
- (f) I-5 Northbound ramps / Bannon Street (AM and PM peak hours).
- (g) Bercut Drive / Bannon Street (PM peak hour).
- (h) 5<sup>th</sup> Street / Bannon Street (PM peak hour).
- (i) 12<sup>th</sup> Street / Bannon Street (AM and PM peak hour).
- (j) 16<sup>th</sup> Street / North B Street (PM peak hour).
- (k) Jibboom Street / Railyards Boulevard (PM peak hour).
- (l) Bercut Drive / Railyards Boulevard (PM peak hour).
- (m) 5<sup>th</sup> Street / Railyards Boulevard (PM peak hour).

- (n) 6<sup>th</sup> Street / Railyards Boulevard (PM peak hour).
- (o) 7<sup>th</sup> Street / Railyards Boulevard (PM peak hour).
- (p) 5th Street / G Street ( PM peak hour).
- (q) 6<sup>th</sup> Street / G Street (AM and PM peak hours).
- (r) 7<sup>th</sup> Street / G Street (AM and PM peak hours).
- (s) 6<sup>th</sup> Street / H Street (AM peak hour).
- (t) 7<sup>th</sup> Street / H Street (PM peak hour).
- (u) Jibboom Street / I Street (AM and PM peak hours).
- (v) 5<sup>th</sup> Street / I Street (PM peak hour).
- (w) 6<sup>th</sup> Street / I Street (PM peak hour).
- (x) 7<sup>th</sup> Street / I Street (PM peak hour).
- (y) 3<sup>rd</sup> Street / J Street (AM and PM peak hours).
- (z) 3<sup>rd</sup> Street / L Street (AM and PM peak hours).
- (aa) 5th Street / Capitol Mall (AM peak hour).
- (bb) 3<sup>rd</sup> Street / P Street (PM peak hour).
- (cc) Richards Boulevard / 12<sup>th</sup> Street (AM and PM peak hours).

#### Mitigation Measures (2030 Initial Phase)

The following measures would improve operations at study intersections. However, one or more of the intersections analyzed as part of this system would continue to operate at unacceptable levels after mitigation. Therefore, the impact on the transportation system is considered **significant and unavoidable**.

6.12-16(a) *At the I-5 SB Ramps / Richards Boulevard intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (29.8 seconds delay) in the a.m. peak hour and the delay would be reduced to 63.2 seconds (LOS E) in the p.m. peak hour. To further mitigate the impact of the Initial Phase would require widening of the freeway ramp and acquisition of right-of-way, which is under Caltrans jurisdiction, and is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(a). These results are shown in Table 6.12-26.*

6.12-16(b) *At the I-5 NB Ramps / Richards Boulevard intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (49.6 seconds delay) in p.m. peak hour. To further mitigate the impact of the Initial Phase would require widening of the freeway on-ramp and acquisition of right-of-way, which*

*is under Caltrans jurisdiction, and is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(b). These results are shown in Table 6.12-26.*

- 6.12-16(c) *At the Bercut Drive / Richards Boulevard intersection, the City shall install, or cause to be installed, one westbound through lane to provide one left-turn lane, four through lanes and one combination through-right lane; re-striping the northbound Bercut Drive approach to provide one left turn lane and one left-through lane; split phasing for northbound and southbound Bercut Drive; and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (17.7 seconds delay) in the a.m. peak hour and LOS D (39.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(d) *At the 5th Street / Richards Boulevard intersection, the City shall install, or cause to be installed, one westbound through lane to provide one left-turn lane, four through lanes and one combination through-right lane; modify the northbound 5<sup>th</sup> Street approach to provide one left turn lane and two through lanes, and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (20.4 seconds delay) in the a.m. peak hour and to LOS C (37.3 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(e) *At the 10<sup>th</sup> Street / Richards Boulevard intersection, the City shall re-stripe the northbound 10<sup>th</sup> Street approach to the intersection to provide two left turn lanes and one through lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (22.9 seconds delay) in the a.m. peak hour and to LOS C (33.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(f) *At the I-5 Northbound ramps / Bannon Street intersection, the City shall install, or cause to be installed, one eastbound through lane to provide one left-turn lane, three through lanes and one combination through-right lane; and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development*

*applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (38.3 seconds delay) in the a.m. peak hour and LOS C (29.8 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(g) *At the Bercut Drive / Bannon Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the delay would be reduced to 39.2 seconds delay (although the level of service would remain at LOS D) in the p.m. peak hour. To further mitigate the impact would require additional widening of Bercut Drive, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. These results are shown in Table 6.12-26.*

- 6.12-16(h) *At the N. 5<sup>th</sup> Street / Bannon Street intersection, the City shall install, or cause to be installed, re-striping of the eastbound Bannon Street approach to provide one left turn lane, one combination left-through lane and three through lanes, and optimize signal timing. The City has included the cost of this improvement in its approved Richards Boulevard Area Plan and Facility Element and the project applicant shall provide "fair-share" funding for this improvement through payment of traffic impact fees in accordance with the Railyards Financing Plan. The applicant's fair share contribution shall be calculated pro rata, on a per unit and/or square foot basis, based upon the land uses identified in development applications submitted to the City. The fair share contribution shall be paid to the City prior to the issuance of building permits.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (11.0 seconds delay) in the a.m. peak hour and to LOS C (21.0 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(i) *At the 12<sup>th</sup> Street / Bannon Street intersection, the City shall optimize the signal timing during both the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 12<sup>th</sup> Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (52.1 seconds delay) in the a.m. peak hour and to LOS E (77.7 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-16(j) *At the 16<sup>th</sup> Street / North B Street intersection, the City shall optimize the signal timing at both intersections during the p.m. peak hour. The applicant shall pay a fair share*



*toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 16<sup>th</sup> Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS E (57.4 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-16(k) *At the Jibboom Street / Railyards Boulevard intersection, the applicant shall re-stripe the westbound Railyards Boulevard approach to the intersection to provide one left turn lane and one combination left-through lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (10.1 seconds delay) in the a.m. peak hour and to LOS B (16.7 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(l) *At the Bercut Drive / Railyards Boulevard intersection, the applicant shall re-stripe the westbound Railyards Boulevard approach to the intersection to provide one left turn lane and one combination left-through lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (21.9 seconds delay) in the a.m. peak hour and to LOS D (45.4 seconds delay) in the p.m. peak hour. To further mitigate the impact of the Initial Phase would entail widening of the roadways, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-16(m) *At the 5<sup>th</sup> Street / Railyards Boulevard intersection, the City shall increase the cycle length at the intersection to 120 seconds, and optimize the signal timing during the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along Railyards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS E (57.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-16(n) *At the 6th Street / Railyards Boulevard intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard. With implementation of this mitigation measure, the level of service be improved to LOS C (32.0 seconds delay). These results are shown in Table 6.12-26.*

- 6.12-16(o) *At the 7th Street / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-1(h) and increasing the cycle length to 100 seconds in the p.m. peak hour would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (31.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(p) *At the 5th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(i) and optimizing signal timing would reduce the impact. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (20.1 seconds delay) in the a.m. peak hour and the delay would be reduced 89.9 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-16(q) *At the 6th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(j), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (47.9 seconds delay) in the a.m. peak hour and the delay would be reduced 200.1 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-16(r) *At the 7th Street / G Street intersection, the City shall re-stripe the southbound approach to the intersection to provide two through lanes and one combination through-right lane, and optimize signal timing. The applicant shall also pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (32.6 seconds delay) in the a.m. peak hour and to LOS E (79.3 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

6.12-16(s) *At the 6th Street / H Street intersection, implementation of Mitigation Measure 6.12-1(k), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (28.0 seconds delay) in the a.m. peak hour and to LOS F (141.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

6.12-16(t) *At the 7th Street / H Street intersection, implementation of Mitigation Measure 6.12-10(o), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (15.2 seconds delay) in the a.m. peak hour and the delay would be reduced to 92.0 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

6.12-16(u) *At the Jibboom Street / I Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS E (79.4 seconds delay) in the a.m. peak hour and the delay would be reduced to 184.9 seconds delay (although the level of service would remain at LOS F) in the p.m. peak hour. To further mitigate the impact would require widening of the elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.*

6.12-16(v) *At the 5<sup>th</sup> Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (44.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.*

6.12-16(w) *At the 6<sup>th</sup> Street / I Street intersection, implementation of Mitigation Measure 6.12-1(o), supplemented by signal timing modifications, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the delay would be reduced to 83.9 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(x) *At the 7<sup>th</sup> Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (35.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-16(y) *At the 3<sup>rd</sup> Street / J Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the delay would be reduced to 167.0 seconds (although the level of service would remain at LOS F) in the a.m. peak hour and the delay would be reduced to 51.0 seconds (although the level of service would remain at LOS D) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

- 6.12-16(z) *At the 3<sup>rd</sup> Street / L Street intersection, implementation of Mitigation Measure 6.12-1(q), supplemented by signal timing modifications in the p.m. peak hour, would lessen the impact of the Initial Phase. Therefore, the City shall optimize the signal timing in p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (39.1 seconds delay) in the a.m. peak hour and the delay would be reduced to 126.7 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(aa) *At the 5th Street / Capitol Mall intersection, the City shall optimize the signal timing in the a.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. With implementation of this mitigation measure, the level of service would be improved to LOS C (23.5 seconds delay) in the a.m. peak hour. These results are shown in Table 6.12-26.*

- 6.12-16(bb) *At the 3rd Street / P Street intersection, the City shall increase the cycle length to 100 seconds during the p.m. peak hour. The applicant shall pay a fair share toward the City*

of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. With implementation of this mitigation measure, the level of service would be improved to LOS D (39.4 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-26.

6.12-16(cc) At the Richards Boulevard / 12th Street intersection, the City shall increase the cycle length to 150 seconds and optimize the signal timing at both intersections during both the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of these signals to improve vehicle progression along 12<sup>th</sup> Street.

With implementation of this mitigation measure, the level of service would be improved to LOS D (38.9 seconds delay) in the a.m. peak hour and to LOS C (23.6 seconds delay) in the p.m. peak hour. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.

Intersection	Traffic Control	Peak Hour	No Project		Initial Phase Without Mitigation		Initial Phase With Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	D	36.5	E	<b>78.3</b>	C	29.8
		PM	C	33.9	E	<b>63.7</b>	E	<b>63.2</b>
2. I-5 NB Ramps & Richards Blvd	Signal	AM	A	9.7	B	16.6	C	22.0
		PM	B	10.0	E	<b>58.3</b>	D	<b>49.6</b>
3. Bercut Dr & Richards Blvd	Signal	AM	B	13.1	B	18.6	B	17.7
		PM	D	54.5	E	<b>77.3</b>	D	39.6
4. N 5th St & Richards Blvd	Signal	AM	B	15.2	E	<b>67.1</b>	C	20.4
		PM	F	106.9	F	<b>197.6</b>	D	37.3
6. N 10th St & Richards Blvd	Signal	AM	B	13.1	D	<b>51.5</b>	C	22.9
		PM	C	21.5	F	<b>132.6</b>	C	33.1
12. I-5 NB Ramps & Bannon St	Signal	AM	D	47.9	E	<b>65.8</b>	D	38.3
		PM	C	29.9	D	<b>51.6</b>	C	29.8
13. Bercut Dr & Bannon St	Signal	AM	B	16.5	C	21.4	C	20.3
		PM	C	23.6	D	<b>42.7</b>	D	<b>39.2</b>
14. N 5th St & Bannon St	Signal	AM	B	16.0	C	32.2	B	11.0
		PM	C	31.0	D	<b>53.1</b>	C	21.0
16. 12th St & Bannon St	Signal	AM	N/A	N/A	E	<b>66.5</b>	D	<b>52.1</b>
		PM	N/A	N/A	F	<b>86.3</b>	E	<b>77.7</b>
21. N 16th St & North B St	Signal	AM	A	5.7	A	4.3	A	4.3
		PM	D	49.8	E	<b>64.3</b>	E	<b>57.4</b>
26. Jibboom St & Railyards Blvd	Signal	AM	N/A	N/A	B	11.6	B	10.1
		PM	N/A	N/A	D	<b>39.9</b>	B	16.7
27. Bercut Dr & Railyards Blvd	Signal	AM	N/A	N/A	C	21.6	C	21.9
		PM	N/A	N/A	E	<b>58.7</b>	D	<b>45.4</b>
30. 5th St & Railyards Blvd	Signal	AM	N/A	N/A	B	19.1	B	18.4
		PM	N/A	N/A	F	<b>118.8</b>	E	<b>57.6</b>

TABLE 6.12-26

**INTERSECTION LEVELS OF SERVICE WITH MITIGATION -  
LONG TERM (2030) INITIAL PHASE CONDITIONS**

Intersection	Traffic Control	Peak Hour	No Project		Initial Phase Without Mitigation		Initial Phase With Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
32. 6th St & Railyards Blvd	Signal	AM	N/A	N/A	B	17.9	B	17.5
		PM	N/A	N/A	<b>E</b>	<b>62.3</b>	C	32.0
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	C	22.0	C	20.3
		PM	N/A	N/A	<b>F</b>	<b>127.5</b>	C	31.1
38. 5th St & G St	Signal	AM	N/A	N/A	B	10.2	C	20.1
		PM	N/A	N/A	<b>F</b>	<b>141.9</b>	<b>F</b>	<b>89.9</b>
39. 6th St & G St	Signal	AM	N/A	N/A	<b>F</b>	<b>174.9</b>	<b>D</b>	<b>47.9</b>
		PM	N/A	N/A	<b>F</b>	<b>438.1</b>	<b>F</b>	<b>200.1</b>
40. 7th St & G St	Signal	AM	B	15.5	<b>D</b>	<b>37.7</b>	C	32.6
		PM	C	29.5	<b>F</b>	<b>116.3</b>	<b>E</b>	<b>79.3</b>
44. 6th St & H St	Signal	AM	D	45.4	<b>F</b>	<b>88.9</b>	C	28.0
		PM	F	179.7	F	182.6	F	141.6
45. 7th St & H St	Signal	AM	C	20.7	B	18.0	B	15.2
		PM	D	52.5	<b>F</b>	<b>93.8</b>	<b>F</b>	<b>92.0</b>
48. Jibboom St & I St	Signal	AM	E	62.5	<b>F</b>	<b>99.6</b>	<b>E</b>	<b>79.4</b>
		PM	F	135.8	<b>F</b>	<b>232.0</b>	<b>F</b>	<b>184.9</b>
50. 5th St & I St	Signal	AM	A	7.2	B	12.9	B	11.9
		PM	D	46.4	<b>E</b>	<b>64.5</b>	D	44.2
51. 6th St & I St	Signal	AM	D	40.8	C	31.8	C	27.5
		PM	F	201.5	<b>F</b>	<b>396.4</b>	F	83.9
52. 7th St & I St	Signal	AM	B	14.4	B	15.8	B	15.2
		PM	C	32.1	<b>E</b>	<b>63.8</b>	<b>D</b>	<b>35.6</b>
53. 3rd St & J St	Signal	AM	F	176.2	<b>F</b>	<b>189.5</b>	F	167.0
		PM	D	39.1	<b>D</b>	<b>53.8</b>	<b>D</b>	<b>51.0</b>
57. 3rd St & L St	Signal	AM	F	130.4	<b>F</b>	<b>147.5</b>	D	39.1
		PM	F	258.7	<b>F</b>	<b>365.7</b>	F	126.7
60. 5th St & Capitol Mall	Signal	AM	C	20.2	<b>D</b>	<b>45.9</b>	C	23.5
		PM	C	20.1	C	21.3	C	21.3
61. 3rd St & P St	Signal	AM	B	13.5	B	13.8	A	8.7
		PM	D	50.1	<b>E</b>	<b>57.5</b>	D	39.4
64. Richards Blvd & 12th St	Signal	AM	N/A	N/A	<b>E</b>	<b>65.3</b>	<b>D</b>	<b>38.9</b>
		PM	N/A	N/A	<b>D</b>	<b>35.8</b>	C	23.6

Source: Dowling Associates, Inc., 2007.

1 LOS = Level of Service

2 Weighted average control delay in seconds

Note: **Bold** values indicate potential significant impacts.

**6.12-17 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**

A summary of roadway segment operations for the Initial Phase under long-term conditions is provided in Table 6.12-27. The Initial Phase would increase traffic volumes at study area roadway segments and would cause *significant impacts* under long term plus Initial Phase conditions on the following roadway segments:

TABLE 6.12-27

## ROADWAY LEVELS OF SERVICE – LONG TERM (2030) INITIAL PHASE CONDITIONS

Roadway Segment	Year 2030 No Project				Year 2030 with Initial Phase			
	Lanes	ADT	LOS	V/C	Lanes	ADT	LOS	V/C
Richards Boulevard – east of Bercut Drive	4	26,545	C	0.74	4	25,195	B	0.70
Richards Boulevard – east of Dos Rios Street	4	39,670	F	1.10	4	26,965	C	0.75
5th Street – north of H Street	N/A	N/A	N/A	N/A	3	7,460	A	0.33
5th Street – south of Railyards Boulevard	N/A	N/A	N/A	N/A	3	13,935	B	0.62
5th Street – south of N. B Street	N/A	N/A	N/A	N/A	3	<b>19,190</b>	<b>D</b>	<b>0.85</b>
7th Street – north of N. B Street	N/A	N/A	N/A	N/A	3	13,885	B	0.62
7th Street – south of N. B Street	4	24,250	D	0.81	3	15,780	C	0.70
7th Street – north of H Street	4	13,935	A	0.46	3	13,165	A	0.59
6th Street – north of H Street	N/A	N/A	N/A	N/A	3	<b>20,515</b>	<b>E</b>	<b>0.91</b>
Jibboom Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	5,295	A	0.29
Bercut Drive – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	8,810	A	0.49
Railyards Boulevard – west of 7th Street	N/A	N/A	N/A	N/A	4	11,255	A	0.38
Railyards Boulevard – west of 5th Street	N/A	N/A	N/A	N/A	4	7,905	A	0.26
South Park Street – west of 5th Street	N/A	N/A	N/A	N/A	4	4,450	A	0.15
N. B Street – west of 7th Street	2	6,835	A	0.46	2	<b>12,280</b>	<b>D</b>	<b>0.82</b>
N. B Street – west of N. 10th Street	3	11,895	A	0.53	4	16,030	A	0.53
N. B Street – west of Dos Rios Avenue	4	11,255	A	0.38	4	18,475	B	0.62
Camille Lane – west of 5th Street	N/A	N/A	N/A	N/A	2	5,645	A	0.38
Huntington Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	5,800	A	0.39
Crocker Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	5,840	A	0.39
Stanford Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	3,950	A	0.26
Bannon Street - east of Bercut Drive	4	26,320	C	0.73	4	27,655	C	0.77
Bannon Street - east of Dos Rios Street	N/A	N/A	N/A	N/A	4	<b>32,675</b>	<b>E</b>	<b>0.91</b>
Jibboom Street – north of I Street	2	15,590	D	0.87	2	<b>18,745</b>	<b>F</b>	<b>1.04</b>

Source: Dowling Associates, Inc., June 2007  
ADT = Average daily traffic  
LOS = Level of service  
V/C = Volume/Capacity

- (a) 5th Street – south of N. B Street.
- (b) 6th Street north of H Street.
- (c) N. B Street – west of 7th Street.
- (d) Bannon Street - east of Dos Rios Street.
- (e) Jibboom Street north of I Street.

Mitigation Measures (2030)

*None available.*

At the 5<sup>th</sup> Street roadway segment just south of N. B Street, mitigating the project impact would entail widening of 5<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Hence, the impact would remain **significant and unavoidable**.

At the 6<sup>th</sup> Street roadway segment just north of H Street, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. Hence, the impact would remain **significant and unavoidable**.

At the N. B Street roadway segment just west of 7th Street, mitigating the project impact would entail widening of N. B Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. Hence, the impact would remain **significant and unavoidable**.

At the Bannon Street roadway segment just east of Dos Rios Street, mitigating the project impact would entail widening of Bannon Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. Hence, the impact would remain **significant and unavoidable**.

At the Jibboom Street roadway segment just north of I Street, mitigating the project impact would entail widening of the elevated bridge structure to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive. Hence, the impact would remain **significant and unavoidable**.

**6.12-18 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**

Freeway mainline operating conditions for the Initial Phase under Long Term (2030) conditions are summarized in Table 6.12-28. The Initial Phase would add traffic to the following freeway segments that would operate at LOS F without the Projects:

- (a) Northbound I-5 South of L Street on-ramp (PM peak hour).
- (b) Northbound I-5 South of I Street on-ramp (PM peak hour).
- (c) Northbound I-5 South of Richards Blvd off-ramp (PM peak hour).
- (d) Northbound I-5 North of Richards Blvd on-ramp (PM peak hour).
- (e) Southbound I-5 North of Richards Boulevard off-ramp (AM peak hour).
- (f) Southbound I-5 North of I-Street on-ramp (PM peak hour).



TABLE 6.12-28												
FREEWAY MAINLINE OPERATIONS – LONG TERM (2030) INITIAL PHASE CONDITIONS												
Location	Without Project						With Initial Phase					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Vol	V/C <sup>1</sup>	LOS <sup>2</sup>	Vol	V/C <sup>1</sup>	LOS <sup>2</sup>	Vol	V/C <sup>1</sup>	LOS <sup>2</sup>	Vol	V/C <sup>1</sup>	LOS <sup>2</sup>
<b>Northbound I-5</b>												
South of L Street on-ramp	7,220	1.20	F	7,407	1.23	F	7,136	1.18	F	<b>7,434</b>	<b>1.23</b>	F
South of I Street on-ramp	7,850	0.98	E	8,505	1.06	F <sup>3</sup>	7,820	0.97	E	<b>8,632</b>	<b>1.07</b>	F <sup>3</sup>
South of Richards Blvd off-ramp	8,448	0.89	D	10,742	1.13	F <sup>3</sup>	8,309	0.87	D	<b>10,909</b>	<b>1.14</b>	F <sup>3</sup>
North of Richards Blvd off-ramp	6,627	0.69	C	9,324	0.98	F <sup>3</sup>	6,487	0.68	C	9,104	0.95	F <sup>3</sup>
North of Richards Blvd on-ramp	7,516	0.79	D	11,237	1.18	F	7,446	0.78	D	<b>11,517</b>	<b>1.21</b>	F
<b>Southbound I-5</b>												
North of Richards Blvd off-ramp	12,721	1.33	F	8,798	0.92	E	<b>13,223</b>	<b>1.39</b>	F	9,036	0.95	E
North of Richards Blvd on-ramp	11,149	1.39	F	7,870	0.98	E	11,060	1.38	F	7,775	0.97	E
North of J Street on-ramp	11,800	1.24	F	9,190	0.96	E	11,674	1.22	F	9,410	0.99	E
North of I Street on-ramp	9,667	1.20	F	7,754	0.96	F <sup>3</sup>	9,393	1.17	F	<b>7,832</b>	<b>0.97</b>	F <sup>3</sup>
<b>Northbound SR 160</b>												
At the American River	3,465	0.42	B	7,336	0.88	E	2,870	0.34	B	<b>9,526</b>	<b>1.14</b>	F
<b>Southbound SR 160</b>												
At the American River	5,599	0.67	C	3,715	0.45	B	5,385	0.65	C	3,661	0.44	B
Source: Dowling Associates, Inc., 2007. 1 V/C = Vol / Capacity 2 LOS = Level of Service 3 Queue extends from downstream bottleneck Note: <b>Bold</b> values indicate potential significant impacts.												

The Initial Phase would also add traffic to the following segments and cause the segment to degrade to LOS F:

(g) *Northbound SR 160 at the American River (PM peak hour).*

This is considered a *significant impact*.

Mitigation Measures (2030 Initial Phase)

*None required.*

For reasons discussed under Mitigation Measure 6.12-3, the Impact of the Initial Phase would remain ***significant and unavoidable***.

**6.12-19 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**

Freeway interchange operations for the Initial Phase under Long Term (2030) conditions are summarized in Table 6.12-29. The Initial Phase would add traffic to freeway ramps and weaving areas and cause the interchange levels of service to be worse than freeway mainline levels of service at the following locations:

(a) *Northbound I-5 Richards Boulevard off-ramp (PM peak hour).*

(b) *Northbound I-5 Richards Boulevard on-ramp (PM peak hour).*

(c) *Northbound I-5 Garden Highway off-ramp (PM peak hour).*

(d) *Southbound I-5 Richards Boulevard off-ramp (AM and PM peak hours).*

(e) *Southbound I-5 Richards Boulevard on-ramp (PM peak hour).*

This is considered a *significant impact*.

Mitigation Measures (2030 Initial Phase)

*None required.*

For reasons discussed under Mitigation Measure 6.12-4, the impacts of the Initial Phase on freeway interchange would remain ***significant and unavoidable***.

**6.12-20 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**

The Initial Phase would add traffic to freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity at the following locations:

(a) *Northbound I-5 to J Street (AM and PM peak hours).*

(b) *Northbound I-5 Richards Boulevard off-ramp (AM and PM peak hours).*

(c) *Southbound I-5 Richards Boulevard off-ramp (AM peak hour).*

TABLE 6.12-29

FREEWAY INTERCHANGE OPERATIONS – LONG TERM (2030) INITIAL PHASE CONDITIONS

Ramp	Without Project						With Initial Phase					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume
<b>Northbound I-5</b>												
P Street to J Street weave	E	37.44	10,319	D	32.25	8,978	E	37.36	10,281	D	34.00	9,236
L Street on-ramp	C	(687)	630	C	(1198)	1,099	C	(746)	684	C	(1307)	1,199
I Street on-ramp	B	17.95	598	D	32.24	2,237	B	17.02	489	D	32.79	2,277
Richards Boulevard off-ramp	D	32.72	1,821	F	46.95	1,418	D	32.27	1,822	<b>F</b>	<b>49.70</b>	<b>1,805</b>
Richards Boulevard on-ramp	C	(970)	889	F	(2087)	1,913	C	(1046)	959	<b>F</b>	<b>(2632)</b>	<b>2,413</b>
Garden Highway off-ramp	C	27.01	1,324	F	49.97	1,603	C	26.74	1,315	<b>F</b>	<b>51.34</b>	<b>1,644</b>
<b>Southbound I-5</b>												
Garden Highway on-ramp	C	(1053)	965	C	(279)	256	C	(1179)	1,081	C	(281)	258
Richards Boulevard off-ramp	F	30.40	1,572	C	21.03	928	<b>F</b>	<b>31.60</b>	<b>2,163</b>	C	21.60	1,261
Richards Boulevard on-ramp	C	(710)	651	D	(1440)	1,320	C	(670)	614	E	(1784)	1,635
J Street off-ramp	F	28.20	2,133	C	21.96	1,436	<b>F</b>	<b>27.90</b>	<b>2,281</b>	C	22.49	1,578
I Street to Q Street weave	D	29.94	9,907	C	26.47	8,810	D	29.10	9,684	C	27.50	9,017

Source: Dowling Associates, Inc., 2007.

1 LOS = Level of Service

2 Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

Note: **Bold** values indicate potential significant impacts.

This is considered a *significant impact*.

#### Mitigation Measures (2030 Initial Phase)

*None required.*

For reasons discussed in Mitigation Measure 6.12-5, the impacts of the Initial Phase on freeway ramp queues would remain ***significant and unavoidable***.

#### **6.12-21 The Initial Phase would increase demand on the public transit system.**

The Initial Phase would increase demand for transit services and would cause significant impacts under long-term (2030) conditions. Peak period transit trips generated by the Initial Phase are estimated to be approximately 570 during the a.m. peak hour, and approximately 762 during the p.m. peak hour.

The DNA corridor is expected to be fully operational and would link from downtown through the Project area to the Sacramento International Airport. The Railyards and the Sacramento Valley Stations would provide light rail connections for the project with LRT service at 15-minute headways during peak periods. It is expected that RT would modify its bus system to provide feeder service to the new light rail stations that would serve the project. The high demand for transit service is likely to require changes to bus routing and/or frequencies. Hence, the Initial Phase would result in a *potentially significant impact*.

The Initial Phase would also generate demand for light rail service. Considering the increases in capacity associated with the LRT DNA extension, the addition of Initial Phase generated trips would likely have nominal effect on light rail service.

The Initial Phase would generate demand for Amtrak service, particularly the Capitol Express service to the greater Bay Area. However, considering the recent service expansion, the addition of Initial Phase generated trips would likely have nominal effect on the service.

#### Mitigation Measures (2030 Initial Phase)

Implementation of the following measure would reduce the above impact to a ***less-than-significant level***.

6.12-21 Implement Mitigation Measure 6.12-6.

#### **Long Term (2030) Conditions Impacts and Mitigation Measures (Full Project)**

An analysis was performed to determine the potential traffic impacts of the Full Project under long-term (2030) conditions. The mitigation measures described below are in addition to the mitigation measures described for long-term (2030) conditions for the Initial Phase.

#### **6.12-22 The Full Project would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**

The operating conditions at the study intersections for the Full Project under long term conditions are summarized in Table 6.12-30.

<b>TABLE 6.12-30</b>						
<b>INTERSECTION LEVELS OF SERVICE – LONG TERM (2030) FULL PROJECT CONDITIONS</b>						
<b>Intersection</b>	<b>Traffic Control</b>	<b>Peak Hour</b>	<b>Without Project</b>		<b>With Full Project</b>	
			<b>LOS<sup>1</sup></b>	<b>Delay<sup>2</sup></b>	<b>LOS<sup>1</sup></b>	<b>Delay<sup>2</sup></b>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	D	36.5	<b>D</b>	<b>44.2</b>
		PM	C	33.9	<b>F</b>	<b>87.6</b>
2. I-5 NB Ramps & Richards Blvd	Signal	AM	A	9.7	<b>D</b>	<b>37.9</b>
		PM	B	10.0	<b>E</b>	<b>75.8</b>
3. Bercut Dr & Richards Blvd	Signal	AM	B	13.1	B	19.4
		PM	D	54.5	<b>F</b>	<b>85.8</b>
4. N 5th St & Richards Blvd	Signal	AM	B	15.2	D	48.8
		PM	F	106.9	<b>F</b>	<b>172.5</b>
5. N 7th St & Richards Blvd	Signal	AM	D	35.3	C	30.7
		PM	F	137.8	B	16.6
6. N 10th St & Richards Blvd	Signal	AM	B	13.1	<b>F</b>	<b>960.4</b>
		PM	C	21.5	<b>F</b>	<b>948.8</b>
7. Dos Rios St & Richards Blvd & N F St	Signal	AM	F	85.5	B	16.5
		PM	F	150.5	B	18.4
8. 12th/N 16th St/Vine St	Signal	AM	F	173.6	N/A	N/A
		PM	F	322.6	N/A	N/A
9. N 12th St/Sunbeam/Sproule Av	Signal	AM	B	11.5	A	4.3
		PM	B	20.0	A	3.0
10. N 16th St & Sproule Ave	Signal	AM	B	11.8	B	13.1
		PM	C	20.8	A	3.8
11. I-5 SB Ramps & Bannon St	Signal	AM	B	10.6	A	3.8
		PM	C	20.5	<b>D</b>	<b>37.2</b>
12. I-5 NB Ramps & Bannon St	Signal	AM	D	47.9	D	51.7
		PM	C	29.9	<b>F</b>	<b>81.0</b>
13. Bercut Dr & Bannon St	Signal	AM	B	16.5	C	24.5
		PM	C	23.6	<b>D</b>	<b>46.5</b>
14. N 5th St & Bannon St	Signal	AM	B	16.0	C	24.6
		PM	C	31.0	<b>F</b>	<b>92.9</b>
15. N 7th St & Bannon St	Signal	AM	C	28.9	A	7.1
		PM	F	91.7	<b>F</b>	<b>144.6</b>
16. 12th St & Bannon St	Signal	AM	N/A	N/A	<b>E</b>	<b>71.3</b>
		PM	N/A	N/A	<b>F</b>	<b>102.6</b>
17. 5th St & North B St	Signal	AM	N/A	N/A	B	14.0
		PM	N/A	N/A	C	34.4
18. N 7th St & North B St	Signal	AM	F	122.2	B	16.1
		PM	F	369.7	B	18.8
19. N 10th St & N B St	Signal	AM	D	32.9	B	11.1
		PM	F	402.6	B	12.5

TABLE 6.12-30						
INTERSECTION LEVELS OF SERVICE – LONG TERM (2030) FULL PROJECT CONDITIONS						
Intersection	Traffic Control	Peak Hour	Without Project		With Full Project	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
20. 12th St & North B St	Signal	AM	F	310.8	F	193.2
		PM	F	303.7	F	248.7
21. N 16th St & North B St	Signal	AM	A	5.7	A	4.4
		PM	D	49.8	<b>E</b>	<b>74.6</b>
22. Bercut Drive & South Park St	All-Way Stop Signs	AM	N/A	N/A	B	11.1
		PM	N/A	N/A	<b>D</b>	<b>28.8</b>
23. 5th St & South Park St	Signal	AM	N/A	N/A	A	6.3
		PM	N/A	N/A	B	12.2
24. 7th St & North Park St	Signal	AM	N/A	N/A	A	5.3
		PM	N/A	N/A	A	3.7
25. 7th St & South Park St	Signal	AM	N/A	N/A	B	11.9
		PM	N/A	N/A	C	21.5
26. Jibboom St & Railyards Blvd	Signal	AM	N/A	N/A	A	8.0
		PM	N/A	N/A	B	10.3
27. Bercut Dr & Railyards Blvd	Signal	AM	N/A	N/A	C	31.2
		PM	N/A	N/A	<b>D</b>	<b>47.8</b>
28. Crocker St & Railyards Blvd	Signal	AM	N/A	N/A	B	11.7
		PM	N/A	N/A	<b>E</b>	<b>40.8</b>
29. Stanford St & Railyards Blvd	Signal	AM	N/A	N/A	C	21.9
		PM	N/A	N/A	C	28.3
30. 5th St & Railyards Blvd	Signal	AM	N/A	N/A	C	24.8
		PM	N/A	N/A	C	34.5
31. Judah St & Railyards Blvd	Signal	AM	N/A	N/A	B	10.2
		PM	N/A	N/A	B	17.1
32. 6th St & Railyards Blvd	Signal	AM	N/A	N/A	C	33.6
		PM	N/A	N/A	<b>F</b>	<b>104.5</b>
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	<b>F</b>	<b>472.6</b>
		PM	N/A	N/A	<b>E</b>	<b>58.2</b>
34. N 10th St & Railyards Blvd	Signal	AM	N/A	N/A	A	7.4
		PM	N/A	N/A	A	6.5
35. Jibboom St & Camille Ln	All-Way Stop Signs	AM	N/A	N/A	A	7.6
		PM	N/A	N/A	A	7.0
36. Bercut Dr & Camille Ln	Signal	AM	N/A	N/A	<b>D</b>	<b>51.6</b>
		PM	N/A	N/A	<b>F</b>	<b>148.5</b>
37. 7th St & F St	Signal	AM	F	134.2	B	19.6
		PM	D	54.2	C	23.4
38. 5th St & G St	Signal	AM	N/A	N/A	B	13.1
		PM	N/A	N/A	<b>F</b>	<b>166.4</b>

<b>TABLE 6.12-30</b>						
<b>INTERSECTION LEVELS OF SERVICE – LONG TERM (2030) FULL PROJECT CONDITIONS</b>						
<b>Intersection</b>	<b>Traffic Control</b>	<b>Peak Hour</b>	<b>Without Project</b>		<b>With Full Project</b>	
			<b>LOS<sup>1</sup></b>	<b>Delay<sup>2</sup></b>	<b>LOS<sup>1</sup></b>	<b>Delay<sup>2</sup></b>
39. 6th St & G St	Signal	AM	N/A	N/A	<b>F</b>	<b>259.8</b>
		PM	N/A	N/A	<b>F</b>	<b>471.7</b>
40. 7th St & G St	Signal	AM	B	15.5	<b>F</b>	<b>93.7</b>
		PM	C	29.5	<b>E</b>	<b>66.3</b>
41. 8th St & G St	Signal	AM	B	10.9	A	9.4
		PM	A	8.2	A	8.0
42. 12th St & G St	Signal	AM	B	10.8	C	23.1
		PM	B	16.7	B	14.9
43. 5th St & H St	Signal	AM	N/A	N/A	A	1.2
		PM	N/A	N/A	A	8.9
44. 6th St & H St	Signal	AM	D	45.4	<b>F</b>	<b>159.0</b>
		PM	F	179.7	F	182.2
45. 7th St & H St	Signal	AM	C	20.7	B	17.2
		PM	D	52.5	<b>F</b>	<b>113.5</b>
46. 8th St & H St	Signal	AM	B	15.7	B	17.6
		PM	B	13.5	C	22.2
47. 16th St & H St	Signal	AM	B	13.7	B	13.7
		PM	E	59.9	<b>F</b>	<b>83.5</b>
48. Jibboom St & I St	Signal	AM	E	62.5	<b>F</b>	<b>160.6</b>
		PM	F	135.8	<b>F</b>	<b>410.4</b>
49. 3rd St & I St	Signal	AM	N/A	N/A	C	22.8
		PM	N/A	N/A	<b>E</b>	<b>72.9</b>
50. 5th St & I St	Signal	AM	A	7.2	B	13.3
		PM	D	46.4	D	40.1
51. 6th St & I St	Signal	AM	D	40.8	D	36.6
		PM	F	201.5	<b>F</b>	<b>384.1</b>
52. 7th St & I St	Signal	AM	B	14.4	B	16.3
		PM	C	32.1	<b>E</b>	<b>72.5</b>
53. 3rd St & J St	Signal	AM	F	176.2	<b>F</b>	<b>239.3</b>
		PM	D	39.1	<b>F</b>	<b>84.7</b>
54. 5th St & J St	Signal	AM	B	14.0	B	17.7
		PM	B	14.7	B	17.0
55. 6th St & J St	Signal	AM	B	10.1	B	11.4
		PM	B	18.8	B	18.0
56. 7th St & J St	Signal	AM	C	29.3	C	28.0
		PM	B	19.4	C	21.3
57. 3rd St & L St	Signal	AM	F	130.4	F	131.2
		PM	F	258.7	<b>F</b>	<b>354.0</b>

TABLE 6.12-30						
INTERSECTION LEVELS OF SERVICE – LONG TERM (2030) FULL PROJECT CONDITIONS						
Intersection	Traffic Control	Peak Hour	Without Project		With Full Project	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
58. 5th St & L St	Signal	AM	B	13.6	B	13.4
		PM	E	57.5	E	59.0
59. 7th St & L St	Signal	AM	B	16.6	B	18.0
		PM	D	44.1	C	31.8
60. 5th St & Capitol Mall	Signal	AM	C	20.2	C	29.9
		PM	C	20.1	C	21.1
61. 3rd St & P St	Signal	AM	B	13.5	B	14.5
		PM	D	50.1	<b>E</b>	<b>70.9</b>
62. 3rd St & Q St	Signal	AM	C	32.4	C	27.0
		PM	A	8.6	A	8.7
63. Dos Rios & Richards Blvd	Signal	AM	N/A	N/A	A	7.5
		PM	N/A	N/A	B	10.0
64. Richards Blvd & 12th St	Signal	AM	N/A	N/A	<b>D</b>	<b>53.9</b>
		PM	N/A	N/A	<b>E</b>	<b>73.0</b>

Source: Dowling Associates, Inc., 2007.  
 1 LOS = Level of Service  
 2 Weighted average control delay in seconds  
 Note: **Bold** values indicate potential significant impacts.

The Full Project would increase traffic volumes and would cause *significant impacts* under long term cumulative conditions at the following intersections:

- (a) I-5 SB Ramps / Richards Boulevard (AM and PM peak hours).
- (b) I-5 NB Ramps / Richards Boulevard (AM and PM peak hours).
- (c) Bercut Drive / Richards Boulevard (PM peak hour).
- (d) 5<sup>th</sup> Street / Richards Boulevard (PM peak hour).
- (e) 10<sup>th</sup> Street / Richards Boulevard (AM and PM peak hours).
- (f) I-5 Southbound ramps / Bannon Street (PM peak hour).
- (g) I-5 Northbound ramps / Bannon Street (PM peak hour).
- (h) Bercut Drive / Bannon Street (PM peak hour).
- (i) 5<sup>th</sup> Street / Bannon Street (PM peak hour).
- (j) 7<sup>th</sup> Street / Bannon Street (PM peak hour).
- (k) 12<sup>th</sup> Street / Bannon Street (AM and PM peak hour).
- (l) 16<sup>th</sup> Street / North B Street (PM peak hour).
- (m) Bercut Drive / South Park Street (PM peak hour).
- (n) Bercut Drive / Railyards Boulevard (PM peak hour).
- (o) Crocker Street / Railyards Boulevard (PM peak hour).



- (p) 6<sup>th</sup> Street / Railyards Boulevard (PM peak hour).
- (q) 7<sup>th</sup> Street / Railyards Boulevard (AM and PM peak hour).
- (r) Bercut Drive / Camille Lane (AM and PM peak hour).
- (s) 5th Street / G Street (PM peak hour).
- (t) 6<sup>th</sup> Street / G Street (AM and PM peak hours).
- (u) 7<sup>th</sup> Street / G Street (AM and PM peak hours).
- (v) 6<sup>th</sup> Street / H Street (AM peak hour).
- (w) 7<sup>th</sup> Street / H Street (PM peak hour).
- (x) 16<sup>th</sup> Street / H Street (PM peak hour).
- (y) Jibboom Street / I Street (AM and PM peak hours).
- (z) 3<sup>rd</sup> Street / I Street (PM peak hour).
- (aa) 6<sup>th</sup> Street / I Street (PM peak hour).
- (bb) 7<sup>th</sup> Street / I Street (PM peak hour).
- (cc) 3rd Street / J Street (AM and PM peak hours).
- (dd) 3<sup>rd</sup> Street / L Street (PM peak hour).
- (ee) 3<sup>rd</sup> Street / P Street (PM peak hour).
- (ff) Richards Boulevard / 12<sup>th</sup> Street (AM and PM peak hours).

#### Mitigation Measures (2030 Full Project)

The following measures would improve operations at study intersections. However, one or more of the intersections analyzed as part of this system would continue to operate at unacceptable levels after mitigation. Therefore, the impact on the transportation system is considered **significant and unavoidable**.

The mitigation measures described below are in addition to the mitigation measures described for the 2030 Initial Phase.

6.12-22(a) *At the I-5 SB off-ramp / Richards Boulevard intersection, optimizing signal timing would lessen the impact of the Full Project; however, to further mitigate the impact would require widening of the freeway ramp to add an additional lane to the west and acquisition of right-of-way. Freeway ramps are under Caltrans jurisdiction and widening is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(a). The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(b) *At the I-5 NB Ramps / Richards Boulevard intersection, optimizing signal timing would lessen the impact of the Full Project; however, to further mitigate the project impact would require widening of the freeway on-ramp and acquisition of right-of-way. Freeway ramps are under Caltrans jurisdiction and widening is not a feasible mitigation measure for the reasons set out in Mitigation Measure 6.12-1(b). The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(c) *At the Bercut Drive / Richards Boulevard intersection, implementation of Mitigation Measure 6.12-16(c), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (18.7 seconds delay) in the a.m. peak hour and LOS D (39.8 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(d) *At the 5th Street / Richards Boulevard intersection, implementation of Mitigation Measure 6.12-16(d), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (20.6 seconds delay) in the a.m. peak hour and to LOS C (28.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(e) *At the 10<sup>th</sup> Street / Richards Boulevard intersection, implementation of Mitigation Measure 6.12-16(e), and optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(f) *At the I-5 Southbound ramps / Bannon Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Bannon Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (17.0 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(g) *At the I-5 Northbound ramps / Bannon Street intersection, implementation of Mitigation Measure 6.12-16(f), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (36.0 seconds delay) in the a.m. peak hour and LOS C (34.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(h) *At the Bercut Drive / Bannon Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(i) *At the N. 5<sup>th</sup> Street / Bannon Street intersection, implementation of Mitigation Measure 6.12-16(h), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (11.6 seconds delay) in the a.m. peak hour and LOS B (17.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(j) *At the 7<sup>th</sup> Street / Bannon Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street and Bannon Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (20.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(k) *At the 12th Street / Bannon Street intersection, optimizing signal timing would lessen the impact of the Full Project during the p.m. peak hour but would not lessen the impact in the a.m. peak hour due to interaction with other signals along 12<sup>th</sup> Street that would also be reoptimized. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(l) *At the 16<sup>th</sup> Street / North B Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(m) *At the Bercut Drive / South Park Street intersection, the applicant shall install an additional northbound lane to provide one through lane and one right turn lane. With implementation of this mitigation measure, the level of service would be improved to LOS B (10.3 seconds delay) in the a.m. peak hour and to LOS C (20.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(n) *At the Bercut Drive / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-16(l), and optimizing signal timing would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (14.4 seconds delay) in the a.m. peak hour and LOS B (14.7 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(o) *At the Crocker Street / Railyards Boulevard intersection, the applicant shall install a traffic signal, modify the westbound lanes to provide one left turn lane and one combination through-right lane, and optimize signal timing. The applicant shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS B (14.8 seconds delay) in the a.m. peak hour and to LOS B (17.4 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(p) *At the 6<sup>th</sup> Street / Railyards Boulevard intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Richards Boulevard.*

6.12-22(q) *At the 7<sup>th</sup> Street / Railyards Boulevard intersection, implementation of Mitigation Measure 6.12-16(o) and optimizing signal timing would lessen the impact of the Full Project. The applicant shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along Railyards Boulevard.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (32.2 seconds delay) in the a.m. peak hour and to LOS C (28.8 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

6.12-22(r) *At the Bercut Drive / Camille Lane intersection, the applicant shall install a traffic signal, and optimize signal timing. The applicant shall pay toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression. This intersection is located along a primary pedestrian/bicycle corridor linking the project to the Sacramento River trail. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be*

*inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*

- 6.12-22(s) *At the 5th Street / G Street intersection, implementation of Mitigation Measure 6.12-1(i) and optimizing signal timing would reduce the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*
- 6.12-22(t) *At the 6<sup>th</sup> Street / G Street intersection, implementation of Mitigation Measure 6.12-1(j), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.*
- 6.12-22(u) *At the 7<sup>th</sup> Street / G Street intersection, implementation of Mitigation Measure 6.12-16(r), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*
- 6.12-22(v) *At the 6th Street / H Street intersection, implementation of Mitigation Measure 6.12-1(k), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*
- 6.12-22(w) *At the 7<sup>th</sup> Street / H Street intersection, implementation of Mitigation Measure 6.12-10(o), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown. To further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable.*

6.12-22(x) At the 16<sup>th</sup> Street / H Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

6.12-22(y) At the Jibboom Street / I Street intersection, no feasible mitigation measure was identified that would lessen the impact of the Full Project. To mitigate the impact would require widening of the existing and/or proposed elevated bridge structures to add vehicle lanes to increase vehicle capacity. The costs for such improvement cannot be justified because the improvements would be temporary as the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive.

6.12-22(z) At the 3<sup>rd</sup> Street / I Street intersection, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 7<sup>th</sup> Street and Bannon Street.

With implementation of this mitigation measure, the level of service would be improved to LOS C (29.5 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.

6.12-22(aa) At the 6<sup>th</sup> Street / I Street intersection, implementation of Mitigation Measure 6.12-1(o), supplemented by signal timing modifications, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

With implementation of this mitigation measure, the level of service would be improved to LOS C (31.1 seconds delay) in the a.m. peak hour and to LOS E (78.1 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.

6.12-22(bb) At the 7<sup>th</sup> Street / I Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.

6.12-22(cc) At the 3<sup>rd</sup> Street / J Street intersection, optimizing signal timing would lessen the impact of the Full Project. However, to further mitigate the impact would require widening of the roadways to add vehicle lanes to increase vehicle capacity, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies and would create secondary impacts to adjacent properties through the acquisition of additional right of way for a new vehicle travel lane; this

*right of way is currently unavailable. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

- 6.12-22(dd) *At the 3<sup>rd</sup> Street / L Street intersection, implementation of Mitigation Measure 6.12-1(q), supplemented by signal timing modifications in the p.m. peak hour, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the delay would be reduced to 123.3 seconds (although the level of service would remain at LOS F) in the p.m. peak hour. These results are shown in Table 6.12-31.*

- 6.12-22(ee) *At the 3<sup>rd</sup> Street / P Street intersection, implementation of Mitigation Measure 6.12-16(bb), supplemented by signal timing modifications in the p.m. peak hour, would lessen the impact of the Full Project. Therefore, the City shall optimize the signal timing in the p.m. peak hour. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression downtown.*

*With implementation of this mitigation measure, the level of service would be improved to LOS D (46.2 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

- 6.12-22(ff) *At the Richards Boulevard / 12<sup>th</sup> Street intersection, the City shall optimize the signal timing in the a.m. and p.m. peak hours. The applicant shall pay a fair share toward the City of Sacramento traffic operations center for the re-timing and monitoring of the signal to improve vehicle progression along 12<sup>th</sup> Street.*

*With implementation of this mitigation measure, the level of service would be improved to LOS C (35.0 seconds delay) in the a.m. peak hour and to LOS C (20.6 seconds delay) in the p.m. peak hour. These results are shown in Table 6.12-31.*

Intersection	Traffic Control	Peak Hour	Without Project		With Full Project		With Full Project Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
1. I-5 SB Ramps & Richards Blvd	Signal	AM	D	36.5	D	44.2	C	24.6
		PM	C	33.9	F	87.6	F	110.2
2. I-5 NB Ramps & Richards Blvd	Signal	AM	A	9.7	D	37.9	E	58.5
		PM	B	10.0	E	75.8	E	59.3
3. Bercut Dr & Richards Blvd	Signal	AM	B	13.1	B	19.4	B	18.7
		PM	D	54.5	F	85.8	D	39.8
4. N 5th St & Richards Blvd	Signal	AM	B	15.2	D	48.8	C	20.6
		PM	F	106.9	F	172.5	C	28.2

TABLE 6.12-31

**INTERSECTION LEVELS OF SERVICE WITH MITIGATION –  
LONG TERM (2030) FULL PROJECT CONDITIONS**

Intersection	Traffic Control	Peak Hour	Without Project		With Full Project		With Full Project Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
6. N 10th St & Richards Blvd	Signal	AM	B	13.1	F	960.4	D	40.9
		PM	C	21.5	F	948.8	D	50.8
11. I-5 SB Ramps & Bannon St	Signal	AM	B	10.6	A	3.8	A	3.7
		PM	C	20.5	D	37.2	B	17.0
12. I-5 NB Ramps & Bannon St	Signal	AM	D	47.9	D	51.7	D	36.0
		PM	C	29.9	F	81.0	C	34.1
13. Bercut Dr & Bannon St	Signal	AM	B	16.5	C	24.5	C	22.7
		PM	C	23.6	D	46.5	D	38.7
14. N 5th St & Bannon St	Signal	AM	B	16.0	C	24.6	B	11.6
		PM	C	31.0	F	92.9	B	17.5
15. N 7th St & Bannon St	Signal	AM	C	28.9	A	7.1	A	8.8
		PM	F	91.7	F	144.6	C	20.6
16. 12th St & Bannon St	Signal	AM	N/A	N/A	E	71.3	F	92.7
		PM	N/A	N/A	F	102.6	E	76.8
21. N 16th St & North B St	Signal	AM	A	5.7	A	4.4	A	4.4
		PM	D	49.8	E	74.6	E	66.7
22. Bercut Drive & South Park St	All-Way Stop Signs	AM	N/A	N/A	B	11.1	B	10.3
		PM	N/A	N/A	D	28.8	C	20.2
27. Bercut Dr & Railyards Blvd	Signal	AM	N/A	N/A	C	31.2	B	14.4
		PM	N/A	N/A	D	47.8	B	14.7
28. Crocker St & Railyards Blvd	Signal	AM	N/A	N/A	B	11.7	B	14.8
		PM	N/A	N/A	E	40.8	B	17.4
32. 6th St & Railyards Blvd	Signal	AM	N/A	N/A	C	33.6	C	33.1
		PM	N/A	N/A	F	104.5	F	105.9
33. 7th St & Railyards Blvd	Signal	AM	N/A	N/A	F	472.6	C	32.2
		PM	N/A	N/A	E	58.2	C	28.8
36. Bercut Dr & Camille Ln	Signal	AM	N/A	N/A	D	51.6	D	51.6
		PM	N/A	N/A	F	148.5	F	112.4
38. 5th St & G St	Signal	AM	N/A	N/A	B	13.1	B	19.7
		PM	N/A	N/A	F	166.4	F	110.8
39. 6th St & G St	Signal	AM	N/A	N/A	F	259.8	F	106.7
		PM	N/A	N/A	F	471.7	F	198.7
40. 7th St & G St	Signal	AM	B	15.5	F	93.7	F	86.2
		PM	C	29.5	E	66.3	F	89.7
44. 6th St & H St	Signal	AM	D	45.4	F	159.0	D	50.6
		PM	F	179.7	F	182.2	F	157.8



Intersection	Traffic Control	Peak Hour	Without Project		With Full Project		With Full Project Mitigation	
			LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>1</sup>	Delay <sup>2</sup>
45. 7th St & H St	Signal	AM	C	20.7	B	17.2	B	13.1
		PM	D	52.5	<b>F</b>	<b>113.5</b>	<b>F</b>	<b>86.3</b>
47. 16th St & H St	Signal	AM	B	13.7	B	13.7	B	13.7
		PM	E	59.9	<b>F</b>	<b>83.5</b>	<b>E</b>	<b>79.1</b>
48. Jibboom St & I St	Signal	AM	E	62.5	<b>F</b>	<b>160.6</b>	<b>F</b>	<b>164.2</b>
		PM	F	135.8	<b>F</b>	<b>410.4</b>	<b>F</b>	<b>416.4</b>
49. 3rd St & I St	Signal	AM	N/A	N/A	C	22.8	C	22.8
		PM	N/A	N/A	<b>E</b>	<b>72.9</b>	C	29.5
51. 6th St & I St	Signal	AM	D	40.8	D	36.6	C	31.1
		PM	F	201.5	<b>F</b>	<b>384.1</b>	E	78.1
52. 7th St & I St	Signal	AM	B	14.4	B	16.3	C	15.7
		PM	C	32.1	<b>E</b>	<b>72.5</b>	<b>D</b>	<b>36.6</b>
53. 3rd St & J St	Signal	AM	F	176.2	<b>F</b>	<b>239.3</b>	<b>F</b>	<b>212.2</b>
		PM	D	39.1	<b>F</b>	<b>84.7</b>	<b>E</b>	<b>74.2</b>
57. 3rd St & L St	Signal	AM	F	130.4	F	131.2	D	43.7
		PM	F	258.7	<b>F</b>	<b>354.0</b>	F	123.3
61. 3rd St & P St	Signal	AM	B	13.5	B	14.5	A	8.9
		PM	D	50.1	<b>E</b>	<b>70.9</b>	D	46.2
64. Richards Blvd & 12th St	Signal	AM	N/A	N/A	<b>D</b>	<b>53.9</b>	C	35.0
		PM	N/A	N/A	<b>E</b>	<b>73.0</b>	C	32.8

Source: Dowling Associates, Inc., 2007.  
<sup>1</sup> LOS = Level of Service  
<sup>2</sup> Weighted average control delay in seconds  
Note: **Bold** values indicate potential significant impacts.

**6.12-23 The Full Project would add traffic to the study roadway segments that result in substandard levels of service.**

A summary of roadway segment operations for the Full Project under long term conditions is provided in Table 6.12-32. The Full Project would increase traffic volumes at study area roadway segments and would cause *significant impacts* under long term plus Initial Phase conditions on the following roadway segments:

- (a) 6th Street north of H Street.
- (b) South Park Street west of 7<sup>th</sup> Street.
- (c) Camille Lane west of 5<sup>th</sup> Street.
- (d) 6<sup>th</sup> Street north of Railyards Boulevard.

TABLE 6.12-32

## ROADWAY LEVELS OF SERVICE – LONG TERM (2030) FULL PROJECT CONDITIONS

Roadway Segment	Year 2030 No Project				Year 2030 with Initial Phase			
	Lanes	ADT	LOS	V/C	Lanes	ADT	LOS	V/C
Richards Boulevard – east of Bercut Drive	4	26,545	C	0.74	4	26,740	C	0.74
Richards Boulevard – east of Dos Rios Street	4	39,670	F	1.10	4	30,200	D	0.84
5th Street – north of H Street	N/A	N/A	N/A	N/A	3	6,670	A	0.30
5th Street – south of Railyards Boulevard	N/A	N/A	N/A	N/A	3	12,825	A	0.57
5th Street – south of N. B Street	N/A	N/A	N/A	N/A	3	14,070	B	0.63
7th Street – north of N. B Street	4	22,155	C	0.74	3	14,315	B	0.64
7th Street – south of N. B Street	4	24,250	D	0.81	3	13,480	A	0.60
7th Street – north of H Street	4	13,935	A	0.46	3	13,420	A	0.60
6th Street – north of H Street	N/A	N/A	N/A	N/A	3	<b>22,085</b>	<b>E</b>	<b>0.98</b>
N. 10th Street – south of N. B Street	N/A	N/A	N/A	N/A	3	4,705	A	0.21
Jibboom Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	4,295	A	0.24
Bercut Drive – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	9,220	A	0.51
Railyards Boulevard – east of N. 10th Street	N/A	N/A	N/A	N/A	2	11,430	C	0.76
Railyards Boulevard – east of 7th Street	N/A	N/A	N/A	N/A	3	12,690	A	0.56
Railyards Boulevard – west of 7th Street	N/A	N/A	N/A	N/A	4	9,955	A	0.33
Railyards Boulevard – west of 5th Street	N/A	N/A	N/A	N/A	4	11,405	A	0.38
South Park Street – west of 5th Street	N/A	N/A	N/A	N/A	4	5,090	A	0.17
South Park Street – west of 7th Street	N/A	N/A	N/A	N/A	1	<b>6,170</b>	<b>D</b>	<b>0.82</b>
North Park Street – east of 7th Street	N/A	N/A	N/A	N/A	1	1,595	A	0.21
N. B Street – west of 7th Street	2	6,835	A	0.46	3	12,655	A	0.56
N. B Street – west of N. 10th Street	3	11,895	A	0.53	3	14,710	B	0.65
N. B Street – west of Dos Rios Avenue	4	11,255	A	0.38	3	16,100	C	0.72
Camille Lane – west of 5th Street	N/A	N/A	N/A	N/A	2	<b>13,690</b>	<b>E</b>	<b>0.91</b>
Huntington Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	5,000	A	0.33
Crocker Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	5,035	A	0.34
Stanford Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	3,100	A	0.21
Judah Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	6,860	A	0.46
6th Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	<b>12,605</b>	<b>D</b>	<b>0.84</b>
8th Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	2,200	A	0.15
9th Street – north of Railyards Boulevard	N/A	N/A	N/A	N/A	2	2,200	A	0.15
Bannon Street - east of Bercut Drive	4	26,320	C	0.73	4	27,870	C	0.77
Bannon Street - east of Dos Rios Street	N/A	N/A	N/A	N/A	4	<b>33,780</b>	<b>E</b>	<b>0.94</b>
Jibboom Street – north of I Street	2	15,590	D	0.87	2	<b>22,835</b>	<b>F</b>	<b>1.27</b>

Source: Dowling Associates, Inc., June 2007  
ADT = Average daily traffic  
LOS = Level of service  
V/C = Volume/Capacity

(e) Bannon Street east of Dos Rios Street.

(f) Jibboom Street north of I Street.

Mitigation Measures (2030 Full Project)

*None available.*

At the 6<sup>th</sup> Street roadway segment just north of H Street, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.

At the South Park Street roadway segment just west of 7<sup>th</sup> Street, mitigating the project impact would entail widening of South Park Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.

At the Camille Lane roadway segment just west of 5<sup>th</sup> Street, mitigating the project impact would entail widening of Camille Lane, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.

At the 6<sup>th</sup> Street roadway segment just north of Railyards Boulevard, mitigating the project impact would entail widening of 6<sup>th</sup> Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.

At the Bannon Street roadway segment just east of Dos Rios Street, mitigating the project impact would entail widening of Bannon Street, which would be inconsistent with the City of Sacramento goals and objectives to create pedestrian-friendly streets and Smart Growth policies.

At the Jibboom Street roadway segment just north of I Street, mitigating the project impact would entail widening of the elevated bridge structure to add vehicle lanes to increase vehicle capacity. However, the Plan proposes to replace the Jibboom Street structure with an elevated connection from Bercut Drive at Full Project.

**6.12-24 The Full Project would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**

Freeway mainline operating conditions for the Full Project under long term conditions are summarized in Table 6.12-33. The Full Project would add traffic to the following freeway segments that would operate at LOS F without the Full Project:

- (a) *Northbound I-5 South of L Street on-ramp (PM peak hour).*
- (b) *Northbound I-5 South of I Street on-ramp (PM peak hour).*
- (c) *Northbound I-5 South of Richards Blvd off-ramp (PM peak hour).*
- (d) *Northbound I-5 North of Richards Blvd on-ramp (PM peak hour).*
- (e) *Southbound I-5 North of Richards Boulevard off-ramp (AM peak hour).*
- (f) *Southbound I-5 North of J Street on-ramp (PM peak hour).*

This is considered a *significant impact*.

Mitigation Measures (2030 Full Project)

*None available.*

Location	Without Project						With Full Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	Vol	V/C <sup>1</sup>	LOS <sup>2</sup>	Vol	V/C <sup>1</sup>	LOS <sup>2</sup>	Vol	V/C <sup>2</sup>	LOS <sup>3</sup>	Vol	V/C <sup>2</sup>	LOS <sup>3</sup>
<b>Northbound I-5</b>												
South of L Street on-ramp	7,220	1.20	F	7,407	1.23	F	7,141	1.18	F	<b>7,550</b>	<b>1.25</b>	<b>F</b>
South of I Street on-ramp	7,850	0.98	E	8,505	1.06	F <sup>3</sup>	7,845	0.98	E	<b>8,746</b>	<b>1.09</b>	<b>F<sup>3</sup></b>
South of Richards Blvd off-ramp	8,448	0.89	D	10,742	1.13	F <sup>3</sup>	8,364	0.88	D	<b>11,260</b>	<b>1.18</b>	<b>F<sup>3</sup></b>
North of Richards Blvd off-ramp	6,627	0.69	C	9,324	0.98	F <sup>3</sup>	6,465	0.68	C	9,134	0.96	F <sup>3</sup>
North of Richards Blvd on-ramp	7,516	0.79	D	11,237	1.18	F	7,640	0.80	D	<b>11,632</b>	<b>1.22</b>	<b>F</b>
<b>Southbound I-5</b>												
North of Richards Blvd off-ramp	12,721	1.33	F	8,798	0.92	E	<b>13,211</b>	<b>1.38</b>	<b>F</b>	9,163	0.96	E
North of Richards Blvd on-ramp	11,149	1.39	F	7,870	0.98	E	11,101	1.38	F	7,834	0.97	E
North of J Street off-ramp	11,800	1.24	F	9,190	0.96	E	<b>11,830</b>	<b>1.24</b>	<b>F</b>	9,393	0.98	E
North of I Street on-ramp	9,667	1.20	F	7,754	0.96	F <sup>3</sup>	9,230	1.15	F	7,723	0.96	F <sup>3</sup>
<b>Northbound SR 160</b>												
At the American River	3,465	0.42	B	7,336	0.88	E	3,093	0.37	B	7,279	0.87	D
<b>Southbound SR 160</b>												
At the American River	5,599	0.67	C	3,715	0.45	B	5,411	0.65	C	3,857	0.46	B

Source: Dowling Associates, Inc., 2007.  
1 V/C = Volume / Capacity  
2 LOS = Level of Service  
3 Queue extends from downstream bottleneck  
Note: **Bold** values indicate locations with significant impacts.

For the reasons discussed in Mitigation Measure 6.12-3, the Full Project impact would remain **significant and unavoidable**.

**6.12-25 The Full Project would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**

Freeway interchange operations for the Full Project under long term conditions are summarized in Table 6.12-34. The Full Project would add traffic to freeway ramps and weaving areas and cause the interchange levels of service to be worse than freeway mainline levels of service or operate at LOS F range at the following locations:

- (a) Northbound I-5 I Street on-ramp (PM peak hour).
- (b) Northbound I-5 Richards Boulevard on-ramp (PM peak hour).
- (c) Northbound I-5 Garden Highway off-ramp (PM peak hour).
- (d) Southbound I-5 Richards Boulevard off-ramp (AM peak hour).
- (e) Southbound I-5 Richards Boulevard on-ramp (AM and PM peak hours).
- (f) Southbound I-5 J Street Off-ramp (PM peak hours).

This is considered a *significant impact*.

Mitigation Measures (2030 Full Project)

*None available.*

For reasons discussed in Mitigation Measure 6.12-4, the impacts of the Full Project on freeway interchanges would remain **significant and unavoidable**.

**6.12-26 The Full Project would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**

The Full Project would add traffic to freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity at the following locations:

- (a) Northbound I-5 to J Street (AM and PM peak hours).
- (b) Northbound I-5 Richards Boulevard off-ramp (AM and PM peak hours).

This is considered a *significant impact*.

Mitigation Measures (2030)

*None available.*

For reasons discussed in Mitigation Measure 6.12-5, the impacts of the Full Project on freeway ramp queues would remain **significant and unavoidable**.

TABLE 6.12-34

## FREEWAY INTERCHANGE OPERATIONS – LONG TERM (2030) FULL PROJECT CONDITIONS

Ramp	Without Project						with Full Project					
	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume	LOS <sup>1</sup>	Density <sup>2</sup> (Flow)	Volume
<b>Northbound I-5</b>												
P Street to J Street weave	E	37.44	10,319	D	32.25	8,978	E	38.66	10,453	E	36.45	9,665
L Street on-ramp	C	(687)	630	C	(1198)	1,099	C	(769)	705	C	(1305)	1,196
I Street on-ramp	B	17.95	598	D	32.24	2,237	B	17.31	519	<b>F</b>	<b>34.89</b>	<b>2,514</b>
Richards Boulevard off-ramp	D	32.72	1,821	F	46.95	1,418	D	32.86	1,899	<b>F</b>	<b>52.85</b>	<b>2,126</b>
Richards Boulevard on-ramp	C	(970)	889	F	(2087)	1,913	C	(1282)	1,175	<b>F</b>	<b>(2725)</b>	<b>2,498</b>
Garden Highway off-ramp	C	27.01	1,324	F	49.97	1,603	C	27.44	1,328	<b>F</b>	<b>51.89</b>	<b>1,658</b>
<b>Southbound I-5</b>												
Garden Highway on-ramp	C	(1053)	965	C	(279)	256	C	(1207)	1,106	C	(289)	265
Richards Boulevard off-ramp	F	30.40	1,572	C	21.03	928	<b>F</b>	<b>31.58</b>	<b>2,110</b>	C	21.90	1,329
Richards Boulevard on-ramp	C	(710)	651	D	(1440)	1,320	C	(795)	729	E	(1701)	1,559
J Street off-ramp	F	28.20	2,133	C	21.96	1,436	<b>F</b>	<b>28.27</b>	<b>2,600</b>	C	22.45	1,670
I Street to Q Street weave	D	29.94	9,907	C	26.47	8,810	D	29.38	9,657	0	0.00	0

Source: Dowling Associates, Inc., 2007.

1 LOS = Level of Service

2 Numbers with decimals indicate the density of passenger vehicles per mile per lane in the merge or diverge area. Whole numbers indicate the ramp flow rate in passenger car equivalents where a lane is added to the freeway at an on-ramp.

Note: **Bold** values indicate locations with significant impacts

**6.12-27 The Full Project would increase demand on the public transit system.**

The Full Project would increase demand for transit services and would cause significant impacts under long-term (2030) conditions. Peak period transit trips generated by the Full Project are estimated to be approximately 895 during the a.m. peak hour, and approximately 1,123 during the p.m. peak hour.

The DNA corridor is expected to be fully operational and would link from downtown through the Project area to the Sacramento International Airport. The Railyards and the Sacramento Valley Stations would provide light rail connections for the project with LRT service at 15-minute headways during peak periods. It is expected that RT would modify its bus system to provide feeder service to the new light rail stations that would serve the project. The high demand for transit service is likely to require changes to bus routing and/or frequencies. Hence, the Initial Phase would result in a *potentially significant impact*.

The Full Project would also generate demand for light rail service. Considering the increases in capacity associated with the LRT DNA extension, the addition of Initial Phase generated trips would likely have nominal effect on light rail service.

The Full Project would generate demand for Amtrak service, particularly the Capitol Express service to the greater Bay Area. However, considering the recent service expansion, the addition of Initial Phase generated trips would likely have nominal effect on the service.

Mitigation Measures (2030 Full Project)

Implementation of the following measure would reduce the above impact to a ***less-than-significant level***.

6.12-27 Implement Mitigation Measure 6.12-6.

**6.12-28 The Full Project may interfere with the implementation of proposed bikeways.**

The Full Project may interfere with implementation of proposed bikeways described in the City of Sacramento Bikeway Master Plan, and would result in a *potentially significant impact*.

The implementation of following proposed bikeways, identified in the City of Sacramento Bikeway Master Plan, may be impeded by the Full Project:

- (e) Proposed on-street bikeway along 5<sup>th</sup> Street from I Street to the proposed bike trail south of the American River.
- (f) Proposed bike trail along E Street from 8<sup>th</sup> Street to the existing on-street bikeway at the Sacramento River.
- (g) Proposed bikeway/bike trail from 7<sup>th</sup> Street southwest through the Project site to connect with on-street bikeway at the Sacramento River.
- (h) Proposed bikeway/bike trail from 7<sup>th</sup> Street southwest through the project site to connect with the on-street bikeway at the Sacramento River.

Mitigation Measures (2030 Full Project)

Implementation of the following measure would reduce the above impact to a ***less-than-significant level***.

6.12-28 *Implement Mitigation Measure 6.12-7.*

**6.12-29 The Full Project would increase the number of pedestrians on the roadway system and some proposed project design elements could result in unsafe conditions for pedestrians.**

The Full Project would result in the addition of employees, residents and visitors on nearby Transportation System, particularly between different land uses within the project site. It would also provide pedestrian linkages to the Sacramento River waterfront. The specific design elements for pedestrian access have not been defined at a sufficient level of detail to ensure that unsafe conditions for pedestrians would not occur; therefore, this is considered a *potentially significant impact*.

Mitigation Measures (2030 Full Project)

With implementation of the following mitigation measure, the Initial Phase is not anticipated to result in unsafe conditions for pedestrians, including unsafe bicycle/pedestrian or pedestrian/motor vehicle conflicts and the potential impact would be reduced to a ***less-than-significant level***.

6.12-29 *Pursuant to Title 16 (Subdivisions) and Title 18 (Development Requirements) of the City of Sacramento Municipal Code, the Full Project shall be conditioned to provide all frontage improvements which include sidewalks, gutters and planters to the satisfaction of Development Engineering Division.*

**6.12-30 Buildout of the Full Project could result in inadequate vehicle parking and bicycle parking capacity.**

Based on the current Railyards Special Planning District parking requirements and the City's Zoning Code, buildout of the full project would be expected to provide up to 23,150 parking spaces, including 1,028 spaces in the depot district dedicated for transit users. Further, the City's Zoning Code Section 17.64.050 also requires new and expanded developments to provide one bicycle parking space for every 10 required vehicle parking spaces.

As a transit-oriented development, buildout of the Railyards Specific Plan may generate fewer parking spaces than set forth in the ratios of the City's Zoning Code that guide parking capacity outside of the Railyards. Table 6.12-35 summarizes and compares the Zoning Code parking ratios in relation to the parking minimums identified in the Railyards Specific Plan. In sum, buildout of the full project could generate 1,642 fewer spaces (or 7.1%) than are typically provided as set forth in the City's Zoning Code. This potential reduction meets the 10% maximum reduction anticipated in the Central City Master Plan for development served by transit, mixed-use and shared use of parking spaces, adopted by the City Council in September 2006.



<b>TABLE 6.12-35</b>					
<b>PARKING REQUIREMENTS FOR FULL PROJECT LONG TERM (2030) CONDITIONS</b>					
Description	Amount	Required Spaces	Proposed Parking Ratio	Proposed Spaces	
Office (General Office Building)	2,993,000 sq. ft.	2,993	No change.	2,993	
Retail (Shopping Center)	1,566,000 sq. ft.	6,250	3:1000 sq. ft.	4,698	
Subtotal Residential	11,300 units	12,053	No change	12,053	
Museum	188,000 sq. ft.	376	No change	376	
Performing Arts	1,800 seats	450	1:5 seats	360	
Transit Parking	1,028 spaces	1,028	No change	1,028	
<b>Total Parking</b>		<b>23,150</b>		<b>21,508</b>	
Required spaces are based on the following: 1 space per 1000 gross square feet of office space 1 space per 400 gross square feet of retail space for the first 9,600 square feet and 1 space per 250 square feet thereof 1 space per multi-family dwelling unit plus 1 visitor space per 15 dwelling units 1 space per 500 gross square feet of museum exhibit space 1 space per 4 seats for performing arts Source: Dowling Associates, Inc. 2007.					

The Railyards SPD, as part of the City's comprehensive zoning ordinance, establishes the specific zoning standards, including parking, for development in the Railyards Specific Plan Area. (Zoning Code Chapter 17.124.) As described in the Railyards SPD, the Railyards Specific Plan encourages parking facilities that will optimize efficient use of parking facilities and promote alternate modes of transportation. On that basis, the Railyards SPD establishes the minimum parking ratios for uses within the Railyards Specific Plan Area. While these ratios establish *minimum* parking capacity in the Specific Plan Area and acknowledge that additional parking may be provided, the office ratios are lower than those in other areas of the Central City. If buildout of the Railyards Specific Plan would result in inadequate vehicle parking capacity, it could lead to physical environmental effects such as increased congestion as motorists circulate looking for parking spaces. In addition, the plans for development do not define how much bicycle parking would be provided. Therefore, this is considered a *potentially significant impact*.

#### Mitigation Measures (2030 Full Project)

Implementation of Mitigation Measure 6.12-9 would reduce the bicycle parking impact to a **less-than-significant level**. In addition, after implementation of the mitigation measures discussed for parking impacts of the Initial Phase, the impact to motor vehicle parking would be **less than significant**. To further mitigate the impact, parking demand will be monitored during build out and adjustments to parking standards may occur as needed.

*6.12-30 The Full Project shall provide enough parking spaces to comply with City code requirements unless otherwise approved by the City.*



## **6.13 URBAN DESIGN AND VISUAL RESOURCES**

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## 6.13 URBAN DESIGN AND VISUAL RESOURCES

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### INTRODUCTION

This section describes existing visual resources in the project area and describes the changes to those conditions that would result from implementation of the proposed project.

In particular, descriptions of existing visual characteristics, both on site and in the vicinity of the project site, are presented. Existing plans and policies relevant to urban design and visual resource issues associated with implementation of the project are provided. Potential impacts to aesthetic and visual resources due to the project are evaluated, based on analyses of photographs, site reconnaissance, and project data. In addition, where appropriate, mitigation measures intended to reduce impacts to urban design and visual resources are described.

Information for this section was obtained from project plans and graphic renderings, the City of Sacramento General Plan, the Central City Community Plan (CCCP), the Sacramento River Parkway Plan, and other environmental documentation for the project area. In addition, information about the proposed project was obtained through a review of the proposed Specific Plan, Design Guidelines and Development Standards.

No comments associated with aesthetics or visual resources were received in response to the Notice of Preparation.

### ENVIRONMENTAL SETTING

#### Regional Setting

The Specific Plan Area (or the project site) is located within the CCCP area, which encompasses the property lying between the Sacramento River on the west, the American River on the north, Alhambra Boulevard on the east, and Broadway on the south. This area includes downtown Sacramento (located southeast of the project site), which is characterized by office, commercial, parks, and governmental uses. Governmental uses in the Central City are distinguished by the California State Capitol building, located on 10<sup>th</sup> Street between L and N streets. Office uses include mixed-use one- to three-story buildings, as well as multi-story skyscrapers.

Sacramento's downtown skyline is visible from miles around the City, including from eastbound Interstate 80 (I-80) from the Sacramento-Yolo Causeway, from westbound I-80 east of the City of Roseville, from westbound US-50 east of the City of Folsom, from northbound Interstate 5 (I-5) between Elk Grove and Sacramento, and from southbound I-5 north of the downtown area. High-rise buildings are the distinctive features of the skyline, including the Wells Fargo Center, the California Environmental Protection Agency building, the U.S. Federal Courthouse, the U.S. Bank Plaza Building, the Sheraton Grande Hotel, the California State Capitol building, the Renaissance Tower Building, and, by night, the distinctive blue light of the Esquire Plaza building. Additionally, several new development projects are planned or are under consideration in the City including The Towers on Capitol Mall (approved but currently undergoing replanning), Aura Residential Tower (approved but not yet under construction), and Epic Tower—all of which would add to the high-rise character of the City's skyline. The height of these and other notable Sacramento high-rise buildings are listed below in Table 6.13-1.

<b>Name</b>	<b>Number of Floors</b>	<b>Height (ft.)</b>	<b>Status</b>
Capitol Grand Tower	56	701	Proposed
Capitol Mall Tower I	53	615	Under construction
Capitol Mall Tower II	53	615	Approved
Epic Tower	50	615	Proposed
500 Capitol Mall	29	456	Proposed
The Aura	35	443	Proposed
701 L Street	31	428	Proposed
Wells Fargo Center	30	423	Completed in 1992
621 Capitol Mall	25	400	Approved
U.S. Bank Plaza	26	373	Completed in 1992
California EPA Building	25	371	Completed in 2000
Renaissance Tower	28	372	Completed in 1989
Capitol Square	25	351	Completed in 1991
U.S. Courthouse and Federal Building	18	350	Completed in 1999
Sheraton Grande Hotel	32	318	Completed in 2001
Raley's Landing River 3 Building	19	300	Under Construction
Meridian Plaza 2	22	300	Proposed
Esquire Plaza	22	322	Completed in 1999
West America Bank Building	18	N/A	Completed in 1984
Raley's Landing River 2 Building	24	268	Approved
Raley's Landing River 1 Building	18	245	Approved
12 <sup>th</sup> and K Tower	18	240	Completed in 1992
Department of Justice Building	18	226	Completed in 1995
Elks Club Building	15	226	Completed in 1925
Capitol Western States Life	15	216	Completed in 1925
Ziggurat	11	158	Completed 1993
Meridian Plaza 1	12	150	Completed in 2003
One Capitol Mall	8	N/A	Completed in 1992
Embassy Suites Hotel	8	90	Completed in 2002
California State Capitol	6	210	Completed in 1874

Source: SkyscraperPage.com, <http://skyscraperpage.com/diagrams/>, accessed June 28, 2006; City of West Sacramento, 2007.

The City of West Sacramento has adopted plans for intensive development on the west bank of the Sacramento River, across from Old Sacramento and the Docks Area, between the I Street Bridge and the Pioneer Bridge. The most visible development from the project site is that which has and will occur between the I Street Bridge and the Tower Bridge. In 1993, the Ziggurat Building was constructed as an 11-story, 158-foot office building with a distinctive ziggurat shape. More recently, the City has approved the Raley's Landing project, which includes three riverfront buildings ranging in height from 245 feet (River 1) to 300 feet (River 3). All of these buildings are across the river from the urbanized Old Sacramento riverfront. The heights of these buildings are presented in Table 6.13-1.

### **Project Site Characteristics**

The visual character of the project site is dominated by reminders of its historic railroad past, including the Union Pacific main railroad lines, rail spur lines that traverse the site, the red-brick passenger rail depot, the recently renovated red-brick REA building, and the massive Central Shops buildings. The riverfront edge of the site is dominated by the historic I Street swing bridge, the elevated section of Jibboom Street, and remnants of historic structures on the river levee itself.

The Depot is situated on the southernmost portion of the Railyards Area, adjacent to the newly renovated REA building (outside of the project area), and is visible along I Street and in views from 3<sup>rd</sup> Street, 5<sup>th</sup> Street, and H Street. Both the passenger depot building and the REA building are distinguished by red brick façades with symmetrical elevations and patterned bricks that frame the windows. Common elements that these buildings share include pale bases, parapet cornices, and metal canopies. In addition, both structures incorporate two-story arched openings and patterned metal window mullions. The similarity between these two buildings lends the area visual consistency.

The Central Shops are historic buildings located north of the passenger depot and consist primarily of former manufacturing and maintenance shops. Historically these buildings were used for producing and maintaining rail equipment. However, they have been mostly vacant since the early 1990s. The California State Railroad Museum leases two of these buildings to repair and maintain its historic train stock.

Although the styles vary among these buildings, and exterior materials range from corrugated metal to decorative brick, particular design features persist within the Shops area. A common pattern can be established throughout these structures. Variations on the following components appear on buildings throughout the site: brick facades; a height range from one to three stories; gabled roofs, often metal-clad; rows of segmented arched windows and bays, frequently separated by shallow brick pilasters; grid patterns created by the recurrence of these bays and pilasters; multi-paned windows; and clerestory windows. Although historic, these structures have declined over the past years as they have sat vacant.

Along the western boundary of the project site, the elevated section of Jibboom Street runs parallel to the river, directly west of I-5, which is also elevated. The project site is most visible from the elevated section of the I-5 between the site and the Richards Boulevard exit. The waterfront portion of the project site is located on the east bank of the Sacramento River. Characterized by steep embankments (levees) and riparian woodland (dominated by several large cottonwood trees) along the riverbanks, the river is largely out of sight from the majority of the project site. The Sacramento River is only visible from the far western boundaries of the project site, directly along the waterfront.

A continuous levee, approximately 20 feet high, runs along the north and southeast edges of the project site, as well as the southeastern edge of the site. The levee forms a partial barrier, visually separating much of the project site from the adjacent Alkali Flat neighborhood to the southeast and from the Richards Area to the north and east.

North of the existing depot, rail lines, and Central Shops, the majority of the remainder of the project site is undeveloped. Remediation efforts have been underway for many years, and efforts are ongoing on portions of site leaving fenced off areas and large dirt mounds scattered throughout the site. The northerly extension of 7<sup>th</sup> Street is the one recent visual change to the site.

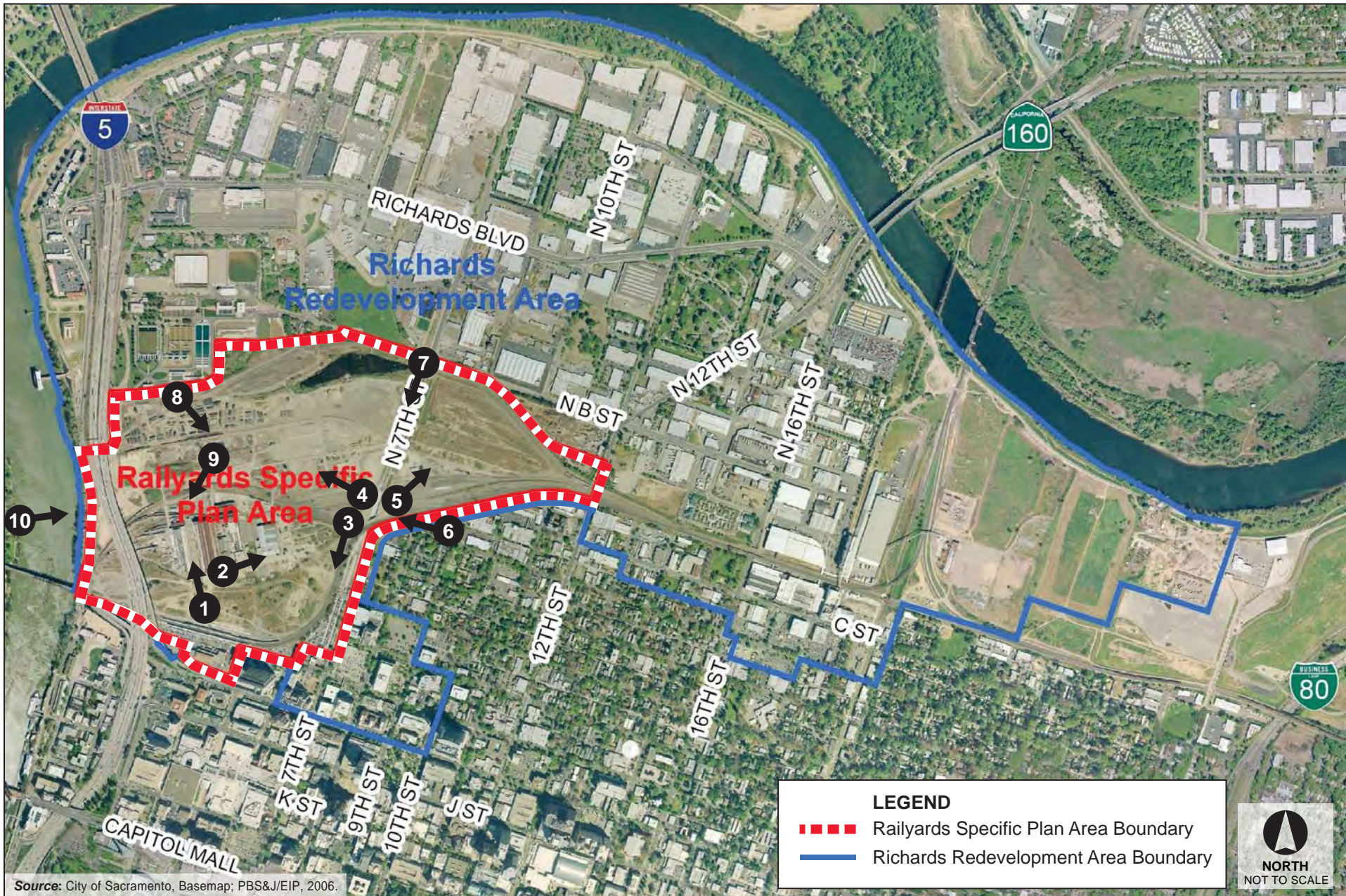
Figures 6.13-1 through 6.13-6 provide an overview of the existing visual characteristics of the project site.

### **Views To and From the Project Site**

Because the site has historically been an industrialized railyard visually secluded from surrounding development by a levee on the north, the railroad embankment on the south, the Sacramento River and elevated section of I-5 on the west, and buildings on the southwest, views to and from the site are limited in number and range. The site is most visible from the elevated section of I-5 where drivers and passengers in vehicles can see the site in both the northbound and southbound







**FIGURE 6.13-1**  
**Aesthetics Photo Location Map**





**Viewpoint 1:** Central Shops Looking Northwest



**Viewpoint 2:** Central Shops Looking East

Source: PBS&J/EIP, 2006.



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**FIGURE 6.13-2**  
**Viewpoints 1 and 2**

D51234.00





**Viewpoint 3:** Southwest of Central Shops, Looking South



**Viewpoint 4:** West of 7th Street Tracks, Looking South

Source: PBS&J/EIP, 2006.



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**FIGURE 6.13-3**  
**Viewpoints 3 and 4**

D51234.00





**Viewpoint 5:** Eastern Portion, North of Tracks, Looking Northeast



**Viewpoint 6:** D Street, Near 8th Street, Looking West

Source: PBS&J/EIP, 2006.



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**FIGURE 6.13-4**  
**Viewpoints 5 and 6**

D51234.00







Viewpoint 7: Heading South on 7th Street, Looking Southwest



Viewpoint 8: Northwest Corner Looking Southwest

Source: PBS&J/EIP, 2006.



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FIGURE 6.13-5  
Viewpoints 7 and 8

D51234.00





**Viewpoint 9:** Central/Western Portion Looking West



**Viewpoint 10:** From West Sacramento Looking East onto Jibboom Street

Source: PBS&J/EIP, 2006.



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**FIGURE 6.13-6**  
**Viewpoints 9 and 10**

D51234.00



directions. The site is also visible from higher floors of high-rise buildings in downtown. Views from ground level are much more limited.

Views of the Railyards from downtown are generally from I Street where the existing rail depot and the adjacent REA building are the most visible structures. Limited views past those buildings and trains on the tracks provide glimpses of the Central Shops buildings and scattered vegetation on the site. Views to the site from Alkali Flat are limited by the height of the railroad embankment, as depicted from Viewpoint 6 on Figure 6.13-4. Views to the site from 7<sup>th</sup> Street (which passes through the central part of the Plan Area) provide visual access to the north and east sides of the Central Shops at a distance, but are limited by the grade differential between 7<sup>th</sup> Street and the remainder of the site. Seventh Street provides the only location where the full extent of the eastern portion of the project site is visible.

As is seen from Viewpoint 10, Figure 6.13-6, views from West Sacramento and the Sacramento River are very limited due to the height of the Sacramento River levee, the elevated section of Jibboom Street, and the elevated I-5.

### **Visual Character of Surrounding Uses**

For purposes of this analysis, “scenic resources” can include natural open spaces, topographic formations, and landscapes. Many people associate natural landforms and landscapes with scenic resources, such as oak woodlands, lakes, rivers, streams, and some historical areas. Scenic resources can also include urban open spaces and the built environment. Examples of these would include parks, trails, pathways, nature centers, archaeological, historical resources, and architectural features. With respect to the project area, the Sacramento River, I Street, and 4<sup>th</sup> Street in downtown qualify as a scenic resource under this definition.

The Sacramento River Water Treatment Plant is located immediately north of the project site (east of I-5 and south of Richards Boulevard). Concrete block structures, mechanical equipment, piping, and at least three to four white cylindrical structures, open water sedimentation basins are presently visible from the northern portion of the project site.

Adjacent to the water treatment plant to the north and extending towards the east, are various industrial and commercial uses within the Richards Boulevard Redevelopment Area. The visual character of the area is defined primarily by large warehouses and distribution facilities that occupy most of the frontage along Richards Boulevard, and are surrounded by expansive paved parking and outdoor storage areas. These uses are not characterized by any unique architectural styles or features. No significant landscaping exists, giving the area a highly industrial appearance. Other than roadway views (heading south on 7<sup>th</sup> Street), minimal views of the project site are available from this area, primarily due to existing structures as well as the levee, which forms a visual barrier to the area.

The Alkali Flat neighborhood borders the project site to the southeast and comprises 25 blocks of residential, commercial, and industrial uses. The Alkali Flat neighborhood is generally bounded by the Union Pacific Railroad to the north, 13<sup>th</sup> Street to the east, G Street to the south, and 7<sup>th</sup> Street to the west. The Alkali Flat neighborhood is characterized by low-rise buildings with a mix of Victorian homes and more modern architecture with buildings ranging from one to three stories in height, small neighborhood parks, and tree-lined streets. Typical buildings include single-family residences, apartment buildings, retail shops, and restaurants, commercial and office uses, and warehouse-type industrial buildings. The area is characterized by its tree-lined streets and emphasis on the preservation and enhancement of its Victorian structures.

The Central Business District of downtown Sacramento is largely built-up with a mix of building types and sizes, interspersed with parks and municipal uses. As discussed previously, the downtown area is distinguished by existing and planned high-rise office towers in excess of 40 stories high. As indicated in Table 6.13-1 above, more recently constructed (or planned) buildings tend to be taller than the older buildings. Sacramento's downtown skyline is visible from miles around the City due to the flat terrain of the region. Building designs run from 1920s architecture to modern structures. Most blocks in the Central Business District are dominated by a few large buildings. A sense of unity is formed by a recurring pattern of large buildings with uniform setbacks, block-like shapes, and exterior materials of concrete, glass, terra-cotta, stucco, and other similar building façade materials. Particular buildings tend to represent distinct areas of downtown, such as the Ping Yuen building across I Street from the Depot, at the southern boundary of the project site, which represents Sacramento's historical "Chinatown." Buildings near the southern edge of the project site, including the federal Courthouse, the County jail, the County Administrative Building, and, further to the east, Sacramento City Hall represent the Civic Center portion of the downtown.

Located southwest of the project site, Old Sacramento is a National Registered Landmark and 28-acre State Historic Park, on the river, in downtown Sacramento. With a mix of retail shops, offices, and museums, the area has 53 historic buildings and is generally characterized by gold rush and post-gold rush era western-style structures, with plank sidewalks and cobbled streets.<sup>1</sup> The historic I Street Bridge frames the southern boundary of Old Sacramento, and goes across the Sacramento River, connecting the cities of Sacramento and West Sacramento.

The Sacramento River is located on the western edge of the project site and represents a primary natural scenic resource in the City. Along the edge of the site, the River has steep embankments, concrete remains of old wharf footings, and large cottonwood trees lining the riverbank. Although the river is difficult to see from the project site, as discussed above, many vantage points of the Railyards area are available along the river. Because of the undeveloped nature of the site, only the elevated portions of Jibboom Street and I-5 are presently visible. A new Sacramento River water intake facility was recently developed approximately 700 feet downstream of the original 1920s intake facility, which was located on the Sacramento River approximately one-half mile downstream of the confluence with the American River. The new intake facility is designed with concrete and glass and is lined with lights, which provides a visual attraction along the waterfront at night.

Located across the River, West Sacramento is visually connected by the Sacramento River Parkway, a predominantly undeveloped area along the river. Downstream on the west bank of the River, the City of West Sacramento has approved several high-rise projects that are or will be in the future very visible from the river corridor. In 1993, the 11-story, 158-foot Ziggurat office building was constructed in the Raley's Landing area, north of the Tower Bridge. More recently, the City of West Sacramento approved three additional high-rise buildings in the Raley's Landing area, including the 245-foot River 1 mixed-use tower adjacent to Tower Bridge, the 268-foot, 24-story River 2 residential tower immediately north of the Ziggurat Building, and the 19-story, 300-foot River 3 office tower immediately south of the I Street Bridge. All of these building sites are located across the river from Old Sacramento.

### **Sensitive Receptors**

Eventual buildout of the proposed project anticipates high-rise development that could be highly visible from much of the surrounding area. People using area parks and the Sacramento River, visitors to Old Sacramento, residents of Alkali Flat, and pedestrians along protected view corridors would generally have high concern for scenic quality in the project vicinity.

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1 Old Sacramento-History, <http://www.oldsacramento.com/index.php?page=History>, accessed June 28, 2006.

Receptors considered most sensitive to high-rise development include people who travel along nearby protected view corridors, local residents, and recreational users. People and uses within protected view corridors are considered sensitive because large numbers of individuals use these routes, which have been identified as areas of outstanding scenic quality. The protected view corridors designated along 4<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> streets would fall into this category. Local residents are considered sensitive due to the duration of their exposure to any change, their familiarity with the existing landscape, and their ability to detect change. Consequently, residents of the Alkali Flat neighborhood would be considered highly sensitive to visual change. Scenic quality also generally carries importance for recreational users enjoying activities such as bicycling, hiking, picnicking, and water-related uses, such as fishing and boating. The Sacramento River is a heavily utilized recreational area and would be considered a sensitive receptor.

## **REGULATORY SETTING**

The following goals and policies from the City of Sacramento General Plan, CCCP, and Riverfront Master Plan are applicable to the proposed project.

### **Federal**

There are no federal regulations associated with aesthetic and visual resources that are applicable to the proposed project.

### **State**

There are no State regulations associated with aesthetic and visual resources that are applicable to the proposed project.

### **Local**

#### Sacramento Central Business District Urban Design Plan

The Sacramento Urban Design Plan designates particular streets in the Central Business District as protected view corridors. View corridors adjacent to the project area include I Street, 4<sup>th</sup> Street, 7<sup>th</sup> Street, 9<sup>th</sup> Street and 10<sup>th</sup> Street. The project area itself does not fall within the Central Business District; however, as views along 4<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> streets lead directly to the project area, the Plan is considered relevant to this project in relation to these view corridors.

#### City of Sacramento General Plan

The following goals from the City of Sacramento General Plan's Residential Land Use Element are applicable to the proposed project:

- Section 2: Residential Land Use Element; Overall Goal**
- Goal A Maintain and improve the quality and character of residential neighborhoods in the City.**
- Section 2: Residential Land Use Element; Specific Goals, Policies, Actions**
- Goal A Improve the quality of residential neighborhoods, Citywide by protecting, preserving and enhancing their character.**
- Section 6: Conservation and Open Space Element; Specific Goals, Policies, Actions**
- Goal E Establish development standards for water related open space lands throughout the City to enhance the visual amenities of these uses.**

## Central City Community Plan

The following goal, sub-goals, and guidelines from the CCCP are applicable to the proposed project:

### **Section 3: Goals**

#### **Environmental Goal:**

**Create an attractive urban setting through the preservation of existing amenities in the Central City and development of an urban design addendum to the Central City Plan.**

**Sub-Goals Encourage new residential office and commercial development which is human in scale, sensitive to open space and aesthetic needs and which will minimize air and noise pollution.**

Improve visual qualities, especially signing, building and yard maintenance, commercial developments and overhead utilities.

Develop urban design standards which provide open space, attractive landscaping, and encourage creative design features which are sensitive to the urban forms, scales, and patterns found in the Central City.

Protect and enhance the unique visual features such as entrances into the Central City, attractive arterials, notable landmarks, and access to views of the rivers.

### **Section 4: Transportation**

#### **B. Parking**

##### **8) Design Guidelines**

Future parking facilities should reflect the location and design guidelines, which will enhance the character and environment of the Central City. Some of the more important considerations are:

- a. Future Core area parking should be located at the periphery or outside the Core area where possible to reduce traffic circulation, vehicle-pedestrian conflicts, and aesthetic problems within the downtown area.

## Sacramento Urban Design Plan, Central Business District Framework Plan

The Sacramento Central Business District Urban Design Plan (CBD Urban Design Plan) is a comprehensive set of guidelines for developing downtown Sacramento.<sup>2</sup> The CBD Urban Design Plan identifies four key Plan Concepts:

1. Creating a City Center
2. Enhancing Streets as Places
3. Linking Activity Areas and Landmarks
4. Choreographing the Urban Experience.

Key policies from the CBD Urban Design Plan that would be relevant to the project site or the proposed project would include:

#### **Linking Activity Areas and Landmarks – 4<sup>th</sup> Street North of K Street**<sup>3</sup>

The 4<sup>th</sup> Street pedestrian link to the Southern Pacific Depot would connect existing and future downtown employees to the retail and cultural core via the K Street Mall. This link would have retail continuity and streetscape amenities that would make it a pleasing pedestrian environment. Features of this connection include:

2 City of Sacramento and Sacramento Housing and Redevelopment Agency, Sacramento Urban Design Plan, Central Business District Framework Plan, Ordinance No. 87—13 and Ordinance No. 87-071, 1987, page 1.  
3 Ibid., page 16.



1. Development of the "Travelers" public parking site should provide for a pedestrian oriented street that connects to the Chinatown courtyard via a grade level crossing.
2. Existing and future retail frontage should be reinforced by enhanced landscaping and lighting.
3. A re-engineered I Street / I-5 ramp would allow for a grade level connection to the train station.

#### **Preservation of Vistas**

Preservation of vistas protect the uniqueness of Sacramento. The following statements act as policy criteria for protection of vistas in the downtown.

1. Second level pedestrian bridges over public streets should not be allowed except for special circumstances.
2. Construction or intrusion of private or public development over public streets and rights-of-way should not be permitted.
3. Landscaping and building mass should enhance views of landmarks.

Further, the CBD Urban Design Plan identifies a number of protected view corridors, including I Street and 4<sup>th</sup> Street in the project vicinity. Development is not allowed to block views and vistas on these streets in any way.<sup>4</sup>

#### **Sacramento River Parkway Plan**

The Sacramento River Parkway Plan (Parkway Plan) is a comprehensive plan for the Sacramento River Parkway adopted by the City of Sacramento in October, 1997.<sup>5</sup> The Parkway Plan area includes all land within a 10 foot landside of the landward tow of the Sacramento River levee or the inland boundary of public land along the River, whichever is the most appropriate for land uses.<sup>6</sup> The plan contains specific goals and policies that address recreation, trails, public access, urban development, public safety, security, natural and cultural resources, erosion, and land use. The primary policies of the Sacramento River Parkway Plan that are relevant to the aesthetic character of the project site and the proposed project are the Urban Development Policies, as noted below.<sup>7</sup>

- D1. The City shall ensure that all developments which take place within and adjacent to the Parkway will adhere to the intent and purpose of the Parkway Concept.
- D3. Commercial and residential development within the Parkway, subject to the city's planning review process, shall be designed to visually blend with and be in scale with the surrounding riverine environment. Color, texture, style, height, width, and bulk should be considered in design.
- D4. Commercial, office, residential, or residential structures within the Parkway should be built so as to not obscure the view of or public access to the River. All development within or immediately adjacent shall have linear lot coverage no greater than 60%.
- D5. Proposed development within the Parkway should strive to create a visually appealing landscape along the river by incorporating, to the extent feasible, native or indigenous vegetation for landscaping consistent with the City's Plant List.
- D6. All commercial development within the Parkway shall incorporate amenities that enhance the public's enjoyment of the river resource. The following are examples of possible amenities:
  - o Public promenades

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4 Ibid., page 50.

5 City of Sacramento, The Sacramento City General Plan (Reflects City Council Amendments through December 2004), October 7, 2004, page 1-33.

6 City of Sacramento, Sacramento River Parkway Plan, October 21, 1997, page 3.

7 City of Sacramento, Sacramento River Parkway Plan, October 21, 1997, page 36.

- Picnic areas
- Parks
- Amphitheaters for public performances
- Museums or interpretive centers
- Bicycle paths.

The portion of the Sacramento River frontage that passes through the project site is designated Urban Waterfront Recreation in the Parkway Plan. Uses that are considered appropriate for this area include “development and uses that provide opportunities for public access, commercial, and recreational activities for residents, employees, and visitors along the River.” Examples of activities that are planned to occur in this area include scenic viewing, bicycling, public gathering, boating, fishing, short-term boat docking, marina, restaurant, and other river-related commercial uses.

### Sacramento Riverfront Master Plan

This Sacramento Riverfront Master Plan is intended as a blueprint for possible future actions that may be considered discretely as opportunities and resources arise; however, it does not have a legally binding effect on future actions. The Master Plan outlines a number of strategies to realize the four guiding principals—*creating riverfront neighborhoods and districts, establishing a web of connectivity, strengthening the green backbone of the community, and making places for celebration*. With respect to the project area, the Master Plan envisions the Railyards Park as a broad expanse of public open space starting from and encompassing the old Central Shops and extending all the way to the river in order to create a public connection to the river. The following goals and proposed policies are relevant to the visual character of the riverfront area.

**Goal            Treat the Sacramento River and the river’s edge as a focus of the riverfront area.**

Proposed Policies

- Provide a strong public open space framework that is continuous along the riverfront and connects into the neighboring districts
- Maintain a mostly natural and semi-formal character in the riverfront open space areas
- Give the riverfront a public, open space emphasis
- Site housing and other adjacent mixed-uses to capture maximum orientation to the river and to the riverfront open space, as well as to parkways and streets
- Provide visual and physical connections among neighboring districts that emphasize the river and its public open space
- Where feasible, orient private development toward open space features and the river.

**Goal            Provide for uses and amenities that complement the existing parks and visitor attractions.**

Proposed Policies

- Provide for visitor and community-serving uses and amenities

**Goal            Establish the riverfront area as an active, vibrant, urban district and public precinct.**

Proposed Policies

- Provide people-oriented land uses, public space, and amenities that attract people and activity
- Provide for mixed/integrated land uses
- Vary development densities, intensities, and mix of uses along the riverfront edge

### Existing Railyards Specific Plan Design Guidelines

The existing Railyards Specific Plan for the project area contains design guidelines for future development. However, implementation of the proposed project would replace these existing guidelines with a new set of Sacramento Railyards Design Guidelines, discussed further below.

## **IMPACTS AND MITIGATION MEASURES**

### **Methods of Analysis**

This qualitative analysis compares the existing built environment to the future built environment. Key view corridors were examined, and existing views to and from the site were compared to those that would be expected to occur in the future.

### **Standards of Significance**

Based on the standards of significance included in the City of Sacramento Initial Study Checklist, a significant impact would occur if:

- The project has a demonstrable negative aesthetic effect.
- The project casts glare in such a way as to cause a public hazard or annoyance for a sustained period of time; or
- The project casts light onto oncoming traffic or residential uses.

For the purposes of this EIR, a demonstrable negative aesthetic effect is defined as follows:

- An obstruction of public views of scenic resources or a scenic vista, such as the riverfront, that degrades the visual unity of the aesthetic resource.
- The project is located on a visually prominent site and, due to its height, bulk, architecture, or signage, would be in such contrast to the surrounding development or environment that it would degrade the visual unity of the area; or
- The project would result in the introduction of an architectural feature, building mass, or height that clearly conflicts with the character of adjacent buildings.

### **Impacts and Mitigation Measures**

#### **6.13-1 East of I-5, the potential development of large-floor plate and high-rise buildings across the project site could alter public views.**

The proposed Specific Plan seeks to provide an integrated and revitalized urban core, and would guide the future development and improvements of the Railyards area over a 20-year planning period via the implementation of the proposed Specific Plan. Development under the proposed Specific Plan would intensify the land uses in the Plan area by incorporating a 244-acre mixed-use development, including high-density housing, parks and hardscape open space, cultural uses in the historic Central Shops buildings, offices, hotels, entertainment, and retail uses. As the majority of the project site (aside from the southern portion) is undeveloped, the proposed project would establish the framework for a new development pattern in the area. Implementation of the proposed project would serve to guide future development in the Railyards Area such that the physical design of the proposed uses would enhance the visual character and quality of the Plan area.

The proposed Specific Plan would establish five distinct districts that contain varying mixtures of building heights and aesthetic characteristics to create a visually diverse urban village in downtown Sacramento. New structures could range in height from one or two-stories, up to 35 or more stories.

The proposed new structures would effectively extend the visual continuity of the present western boundaries of Sacramento's Downtown towards the north and would contribute to a prominent skyline of taller buildings. The varying heights and massing of new buildings would provide a distinctive skyline with planar changes that would create visual interest in the area.

Although existing views of the project site are limited due to existing development, landscaping, road corridors, and topography, the existing limited views of the project site that do exist would be significantly altered with the introduction of new development. Views of the project site from the I-5 would be altered most, as the project area as a whole is most visible when traveling north and south along this route.

Sensitive receptors located near the project area include residences in the Alkali Flat neighborhood that are directly adjacent the eastern boundary of the project area. Under the proposed Specific Plan, the Depot District connects to the Alkali Flat neighborhood, and the scale and design of buildings in this area would reflect this relationship. For example, the SPD and the Design Guidelines would establish that structures proposed on the west side of 7<sup>th</sup> Street between F and D streets, across from existing residents of the Alkali Flat neighborhood, would step up from 35-feet at the streetwall (with a 30-foot setback), to a maximum height of 85 feet. On all other blocks in the Depot District, that face existing City blocks would have a maximum streetwall height of 60 feet.

In addition to guiding the construction of new buildings, approval of the proposed Specific Plan would also guide the construction of new roads that would add dimension to the site and provide more views of the area than are currently available. Specifically, the proposed project would connect the project area into the transportation fabric of existing downtown Sacramento by raising 5<sup>th</sup> and 6<sup>th</sup> streets gradually over the realigned railroad tracks towards the north and through the site.

A new roadway, Railyards Boulevard, would traverse the project site from east to west, and a new Camille Lane would connect 6<sup>th</sup> Street on the east with Bercut Drive on the west. With the incorporation of these street extensions, new views could be afforded of existing downtown Sacramento as well as of the project site for motorists, bicyclists and pedestrians because the bridging of these streets would reduce, and in some cases eliminate, the existing visual and physical barriers between downtown and the Railyards. For example, motorists and pedestrians traveling south on 5<sup>th</sup> and 6<sup>th</sup> streets, and east on Railyards Boulevard may be provided with intermittent skyline views of the existing downtown buildings. Similarly, those traveling westbound on Camille Lane and Railyards Blvd, along with those using open spaces on the western portion of the site (west of the Central Shops) may have new views, under the elevated section of I-5, of the Sacramento River corridor and the City of West Sacramento to the west.

Although future development would incorporate a range of architectural styles, building heights, and massing, the proposed project would provide a visual transition from the existing downtown area. Specifically, the existing downtown skyline of varying building forms and heights would be extended to the north by the new development, and would not degrade views from adjacent roadways or uses. Under the Specific Plan, the new design guidelines are intended to create a unified identity within the plan area, with buildings that are compatible in scale, design, character, quality, and style. While some portions of the project site are more visually prominent than others due to location of streets and existing view corridors, policies of the proposed Specific Plan would require that new structures utilize building materials that are complementary to the existing downtown character. For example, the following policies from the proposed Specific Plan would ensure that future development in the area would complement existing uses.

Policies

- CC-2.1. Ensure that the form and massing of buildings contribute to the creation of a cohesive urban fabric that:

- Extends the pattern of downtown Sacramento
  - Complements the historic Central Shops and Depot complex
  - Reinforces the civic scale and role of the 7<sup>th</sup> Street corridor
  - Transitions in scale to the surrounding areas
- CC-2.2. Ensure that the form, height, and treatment of buildings reinforce the prominence and role of major urban spaces and streets.
- CC-2.3. Ensure an appropriate scale transition to the Alkali Flat neighborhood.
- CC-2.4. Ensure that any new buildings in the Central Shops district or extensions to existing buildings in the district respect the scale, design, and character of existing historic structures.
- CC-2.5. Ensure an appropriate scale transition between the Central Shops and new districts adjacent to the Central Shops district.

Thus, although future development would include high-rise buildings, the height, bulk, architecture, and/or signage would not be in vivid contrast to the visual character and scale of development in the nearby downtown area, and would not degrade the visual unity of the area.

The addition of open space, and landscape and streetscape improvements throughout the project site would also improve the aesthetics of the overall area and create a pedestrian-friendly environment that could include bike paths, street trees, street furniture, and different types of paving. The proposed Specific Plan would provide the area with a set of improvement and development standards that enhance the current aesthetic shortcomings associated with the under-utilized project site. Upon its adoption, all future development on the project site would be guided by and would be required to be in conformance with the General Development Standards of the proposed Specific Plan, which would result in new buildings with common architectural design and that would be compatible in scale, mass, and density.

The project site currently consists of underutilized land, abandoned, and weathered historic buildings, and vacant land. Although long-term visual characteristics of the project site would be altered with development under the proposed Specific Plan, it would visually enhance an unattractive area and improve conditions on the project site, particularly by redeveloping the deteriorated historic buildings. Project implementation would also create contiguous landscaped pedestrian areas throughout the site that would be connected with the Sacramento River waterfront; thus creating a visual relationship from downtown Sacramento to the Sacramento River through the Railyards project area.

Although views of and from the project site would be modified from the existing conditions, the proposed project would not degrade the existing visual character or quality of the site and its surrounding. Rather, development consistent with the proposed Specific Plan would contribute to the visual character and interest of downtown Sacramento, and would improve the visual quality of the downtown area. As such, development under the proposed project would not degrade the existing visual quality of the area or obstruct key existing views and/or vistas in the vicinity. This impact is considered ***less than significant***.

#### Mitigation Measure

*None required.*

**6.13-2 The potential development of high-rise buildings adjacent to the riverfront could represent an introduction of building height and mass that conflicts with the character of the riverfront between Old Sacramento and the Jibboom Street Bridge.**

The Sacramento Riverfront plays an integral aesthetic role in the City by providing a key open space amenity within a dense urban area. The Sacramento Riverfront Master Plan, as discussed in the Regulatory Framework, provides a vision for the future of the Riverfront, which establishes a high-quality riverfront public space and calls for surrounding it with vibrant urban neighborhoods. Implementation of proposed changes along the riverfront include many similar themes that are reiterated throughout the Riverfront Master Plan, such as increased pedestrian connectivity from the Plan Area to the riverfront and development of public open space along the riverfront. The Sacramento River Parkway Plan establishes that commercial development on the riverfront should “visually blend with and be in scale with the surrounding riverine environment” (Policy D3), and should not “obscure the view of or public access to the River” (Policy D4).

The proposed Specific Plan allows for development of a resort hotel/residential mixed-use project with buildings 30-stories (up to 450 feet above grade) or more on land that is between I-5 and the river, currently bisected by the elevated section of Jibboom Street. Open space and park uses would surround the proposed hotel/residential structures on the west, north, and east sides. Relevant goals of the proposed Sacramento Railyards Design Guidelines include:

- Enhance the connection between the Railyards and the waterfront with clear and accessible linkages for vehicles, pedestrians and bicycles.
- Design open spaces and parks to fully utilize the waterfront and create an important regional open space for Sacramento.
- Include visual cues and public amenities to encourage pedestrian and bicycle access through district.
- Complement the Riverfront Master Plan.
- Create a national monument to recognize the City’s railroad and cultural history.
- Activate plazas and open space adjacent to buildings with pedestrian-oriented design elements on the ground floor. New development should contribute to the visual quality and beauty of its setting.
- Views from the tall buildings towards the Sacramento River, Central City and the rest of the Railyards should be preserved for as many users as possible.
- Careful attention should be paid to the impact of the composition of buildings in regards to the Sacramento River corridor views from the rest of the Railyards and the City.
- Tall and slender buildings that maximize views of the Sacramento River corridor are strongly recommended.<sup>8</sup>

The Design Guidelines contain Site Planning guidelines that pertain specifically to the Riverfront District, including:

- Projects in the Riverfront District should be sited to maximize, to the extent possible, views from the Railyards to the Sacramento River, as well as physical connections through the district to the River.

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8 Thomas Enterprises, Sacramento Railyards Design Guidelines, July 9, 2007, page 4-18.

- The building development should provide permeability at plaza level to facilitate movement between the Riverfront District and the adjacent Districts.

The Massing and Building Configuration guideline pertaining to the Riverfront District states:

- In the Riverfront District, maximum height of the street wall (that is, the part of the building with no bulk limit) should be no more than 85 feet. There is no step back requirement in the Riverfront District, and towers are encouraged to rise from the ground to the top.

The Riverfront District Height Diagram (see Figure 6.13-7) provides more specific controls on the location and height of future structures in the Riverfront District.

Existing development along the Sacramento side of the river is substantially lower than the proposed hotel development. The elevated section of Jibboom Street rises to a height of approximately 50 feet and the elevated section of I-5 is approximately 70 feet in height. Further to the north, the historic PG&E powerhouse structure is approximately 50 feet in height, and the California Railroad History Museum in Old Sacramento to the south is approximately 35 feet high.

Further south, in the more urban reach of the Sacramento Riverfront between the I Street Bridge and the Tower Bridge, there are several buildings of substantial height on the Sacramento and West Sacramento sides of the River. On the Sacramento side of the river, two eight-story mid-rise buildings, the One Capitol Mall Building and Embassy Suites Hotel, are located along the riverfront immediately north and south of the Tower Bridge.

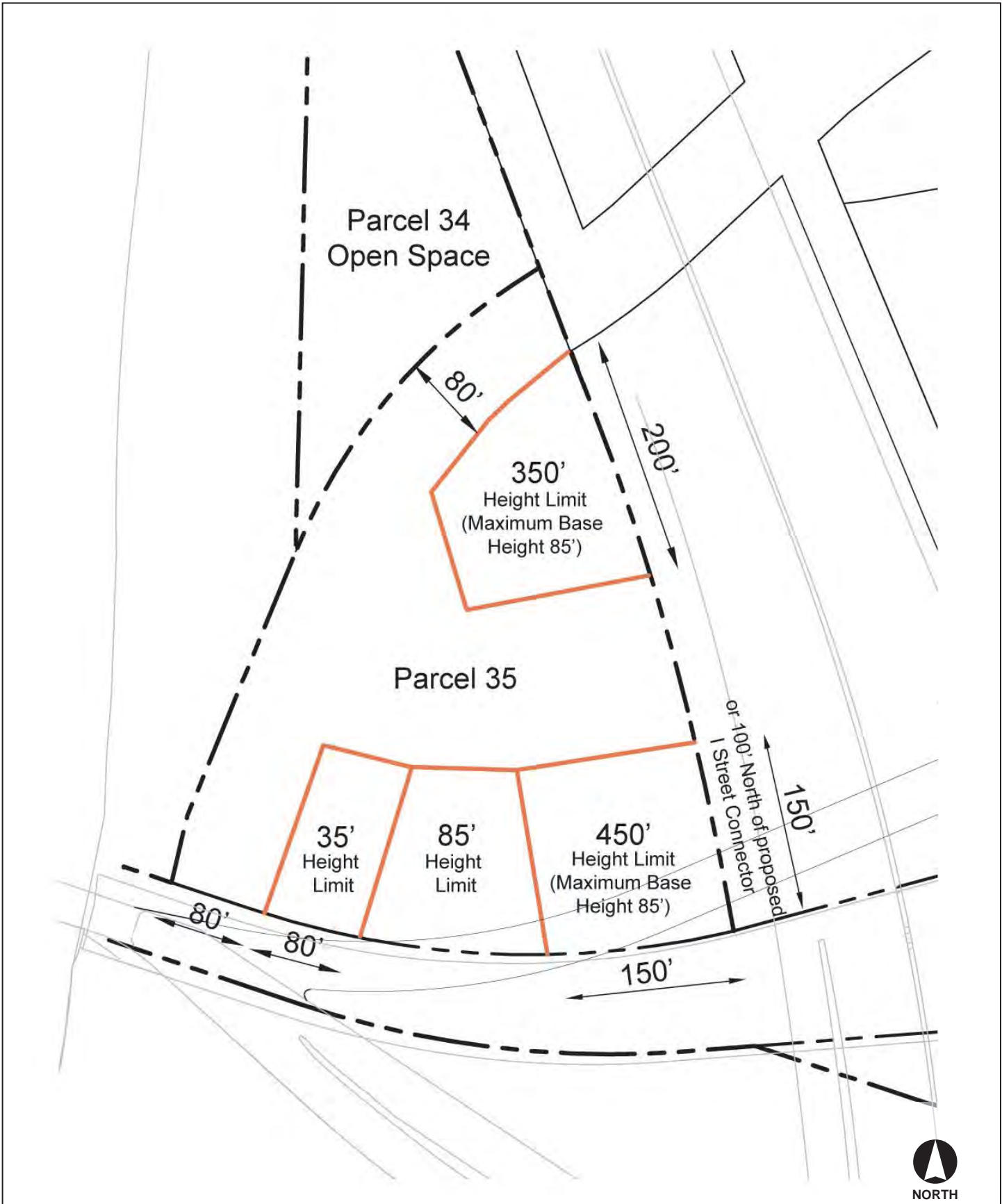
Across the river, in West Sacramento, the “Ziggurat” building at Raley’s Landing is 12 stories, rising to a height of 157 feet. Between the Ziggurat and the I Street Bridge on the West Sacramento side of the riverfront, two new high-rise projects have been approved. The River 2 residential tower may rise to 24 stories (approximately 268 feet in height) and the CalSTRS building, an office tower currently under construction, will rise to approximately 300 feet (19 stories). All of these buildings on the west bank of the river face Old Sacramento, designated as an urban waterfront in the Sacramento River Parkway Plan.

The evaluation of potential for a new building to visually conflict with the scale of surrounding develop is inherently a subjective one. Two people can look at the same building in the same location and have very different reactions to the visual character of the building. Recognizing this subjectivity, it is possible that, depending on the specific design of the buildings within the Plan Area, development of a high-rise hotel/residential building could be seen by some as out of scale with the riverfront environment and could be seen create a visual barrier that would disconnect the remainder of the Railyards project site to the riverfront. Such with a conclusion would be informed by the direction of Policies D1, D3 and D4 of the Sacramento Riverfront Parkway Plan.

However, implementation of Riverfront District Design Guidelines, including the Height Diagram, would ensure that views of the river are maintained and enhanced by facilitating increased pedestrian access and public open space along a portion of the river that has been previously of limited access. The Guidelines provide for the tall structures on the site to be situated away from the River, adjacent to Interstate 5. On the south side of the District, adjacent to I Street Bridge, building height would be a maximum of 450-feet adjacent to I-5, and then would step down toward the River, first to 85 feet, and then to 35 feet, with an 80-foot wide open space adjacent to the Sacramento River parkway. At the northern end of the District, the Guidelines allow for a 350-foot tower that would step down to an 85-foot building base, again with an 80-foot wide open space adjacent to the Parkway. The two structures would be separated by a visually-permeable open space that would allow pedestrian access and views between the River and the Railyards site to the east.







Source: Railyards Specific Plan, 2007.



FIGURE 6.13-7  
Riverfront District Height Diagram

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The Guidelines establish specific bulk requirements that would ensure the creation of slender towers with sufficient separation that through-views to the River from I-5 would remain. Notwithstanding the subjective nature of visual effects, the implementation of these Design Guidelines would guide development so that it would be consistent with the intent of the relevant policies of the Sacramento River Parkway Plan and would eliminate the potential for a significant visual conflict or blockage of views such that the impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

### **6.13-3 The proposed project could create substantial new sources of light.**

#### **Ambient Nighttime Light**

Implementation of the proposed Specific Plan would result in a large infill development of vacant or underutilized parcels, as well as intensification and reuse of existing sites (e.g., the Central Shops and the Sacramento Intermodal Transportation Facility). Nighttime lighting would be included in future project development in a variety of forms including security lighting, monument lighting of buildings, lighting along the riverfront, and street and parking area lighting, in addition to interior lighting. Because current conditions on the project site do not involve significant sources of lighting, development under the proposed project would increase the ambient light in the project area over current levels.

Due to the urbanized nature of the surrounding area, a significant amount of ambient nighttime light currently exists, reducing the views of stars and affecting views of the nighttime sky. The increase in nighttime light that would occur under the proposed project would not significantly affect nighttime views of the sky (ability to see stars), because such views are already limited in city settings.

#### **Spillover Light**

The historic Alkali Flat neighborhood is located immediately adjacent to the southeast of the project site. Maximum building heights of proposed office/residential mixed use development along 7<sup>th</sup> Street, immediately west of the neighborhood, would include structures with heights up to 20 stories south of F Street and up to 8 stories between F and D streets. To the east, between 7<sup>th</sup> Street and 11<sup>th</sup> Street, building heights could range up to 25 stories, and up to 30 stories between 11<sup>th</sup> and 12<sup>th</sup> streets. The existing railroad embankment forms a low barrier that visually separates much of the project site from the adjacent Alkali Flat neighborhood to the southeast. Further, much of the Alkali Flat edge in this area is occupied by the KCRA (Channel 3) and Crystal Creamery facilities.

The increase in project area lighting could affect adjacent uses if new buildings were developed next to existing or future sensitive uses (i.e., residential uses) that would not otherwise experience impacts from existing lighting sources or if tall buildings included significant neon lighting or lighted signs. The proposed Sacramento Railyards Design Guidelines contain guidelines relevant to spillover lighting onto to adjacent properties, including:

#### Public Realm

- Height of Light Fixtures. The height of light fixtures generally should be kept low to promote a pedestrian scale to the public realm and to minimize light spill to adjoining properties. In active and more intimately scaled pedestrian zones, pole-mounted fixtures should not exceed twelve (12) to fifteen (15) feet in height from grade to light source. On larger streets, at major intersections, a mounting height of up to eighteen (18) feet may be acceptable.

- o Levels, Direction, and Quality of Illumination Limit Light Pollution. Illumination generally should be focused down toward the ground, avoiding all unnecessary lighting of the night sky. In addition to standard street light poles, light sources that are mounted closer to and focus illumination directly onto the ground plane, such as bollard-mounted lighting, stair lighting, and wall- and bench-mounted down-lighting, are desirable. Light fixtures should include internal reflector caps, refractors, or shields that provide an efficient and focused distribution of light and avoid glare or reflection into upper stories of adjacent buildings.
- o Levels of Activity and Illumination. Levels of illumination should be responsive to the type and level of anticipated activity, without over-illuminating the area (i.e., bright, uniform lighting of all public right-of-ways is not desirable). The level of illumination for pedestrian areas generally should range from 0.5-foot candles in lower activity areas up to 2.0-foot candles in more critical areas (A foot-candle is a unit of illumination, measured at the distance of one foot from the source of light.)

#### Private Realm

- o Lighting: Nighttime lighting should be limited and discreet, with light-levels similar to adjacent properties.
- o Facade lighting should focus on illuminating the building's surfaces. Light fixtures should include internal reflector caps, refractors, or shields that provide an efficient and focused distribution of light and avoid glare or reflection across property edges, onto adjacent buildings. Illumination should avoid all unnecessary lighting of the night sky. For the lighting of open spaces within the private realm, refer to the Pedestrian Realm: Street Lighting

Depending on the specific lighting design, the construction of new buildings to the west and north that could reach as high as 25 to 30 stories (300 to 360 feet) could result in light spillover onto adjacent residential properties. Additionally, because a lighting plan has not yet been submitted for the proposed Specific Plan, it is possible that high-rise buildings could include neon lights, monument lighting, or lighted signs, new sources of nighttime lighting that could shine into windows of the residential neighborhood and create light pollution disturbances, which do not presently exist. The policies contained in the Draft Railyards Design Guidelines encourage lighting that could minimize or avoid such effects; however, the policies are not sufficiently protective to ensure avoidance of such adverse effects. Depending on the location and design specifications of lighting on tall buildings, this type of lighting could also present a *potentially significant impact*.

#### Mitigation Measure

Implementation of Mitigation Measures 6.13-3(a) through 6.13-3(c) would be required to reduce these potentially significant lighting impacts to a ***less-than-significant level***.

- 6.13-3 a) *East of 6<sup>th</sup> Street, all exterior lighting and advertising (including signage) shall be directed onto the specific location intended for illumination (e.g., parking lots, driveways, and walkways) and shielded away from adjacent properties and public rights-of-way to minimize light spillover onto adjacent areas. Light structures for surface parking areas, vehicular access ways, and walkways shall not exceed a height of 25 feet. In addition, monument lighting and night-lit signage is prohibited on building facades that face existing residential neighborhoods.*
- b) *Prior to issuance of a Site Development Permit for each specific development project, the applicant shall submit a lighting plan to the Development Services Department for review and approval. The plan shall specify the lighting type and placement to ensure that the effects of security and other outdoor lighting are minimized on adjacent uses and do not create spillover effects.*
- c) *Landscape illumination and exterior sign lighting shall follow the City's Municipal Code.*

Implementation of Mitigation Measure 6.13-3(a) through 6.13-3(c) would reduce potential lighting impacts to surrounding areas through appropriate site design and configuration. Review and approval of the proposed lighting plan by Development Services Department would ensure that spillover lighting would be minimized so as not to create light pollution disturbances to adjacent uses. This impact would be reduced to a ***less-than-significant level***.

#### **6.13-4 The proposed project could create a new source of glare.**

Glare is caused by light reflections from pavement, vehicles, and building materials such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on the intensity and direction of sunlight. Glare can create hazards to motorists and nuisances for pedestrians and other viewers.

Implementation of the proposed Specific Plan could result in the construction of numerous new structures within the Specific Plan Area. Because detailed site design proposals are not included within the proposed Specific Plan, it is presently unknown what materials would be used to construct individual structures. The Draft Railyards Design Guidelines contain guidelines that address the façade materials of future buildings, as presented below:

- The use of reflective glass should not exceed 50 percent of any surface of a building, and never on the ground three floors. Mirrored glass should be avoided.
- The use of black glass should not exceed 25 percent of any surface of a building.
- The use of metal should not exceed 50 percent of any street-facing surface of a primarily residential building.
- The use of exposed concrete should not exceed 50 percent of any of any building.

In districts other than the Central Shops, it appears to be possible that buildings could include substantial amounts of glass or other reflective materials on the surfaces of facades.

Highly reflective surfaces could pose the most significant impact along major road corridors, such as I-5, Railyards Boulevard, and 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> streets depending upon the height and façade materials used for buildings. The maximum height of proposed structures adjacent to I-5 on the west could rise to 30 stories, and on the east would vary in height from four stories in the Central Shops to 30 stories in the West End District. Buildings could reach as high as 25 stores along 7<sup>th</sup> Street, 50 stories along 6<sup>th</sup> Street, and 15 stories along 5<sup>th</sup> Street. If buildings along these key streets are clad in reflective façade materials glare could be created when the sun is low in the sky. These glare effects could obscure the vision of drivers traveling along these routes, causing safety concerns. Further, intense glare during the summer could adversely create heat islands which could limit the usefulness of open spaces or cause substantial increases in energy use for building air conditioning. Because the details of construction materials to be used are unknown, it is possible that the cladding of future buildings could cause substantial increases in the amount of glare in the project area if the surfaces of structures are highly reflective. This is a *potentially significant impact*.

#### Mitigation Measure

Implementation of Mitigation Measure 6.13-4 would be required to reduce this potentially significant glare impact to a ***less-than-significant level***.

6.13-4 *Highly reflective mirrored glass walls shall not be used as a primary building material (no more than 35 percent) for building facades adjacent to major roadways. Instead, low emission (Low-E) glass shall be used in order to reduce the reflective qualities of the building, while maintaining energy efficiency.*

Implementation of Mitigation Measure 6.13-4 would ensure that potential glare impacts would be minimized by limiting the permitted construction materials of new buildings to non-reflective materials. This impact would be reduced to a ***less-than-significant level***.

### **Cumulative Impacts and Mitigation Measures**

The geographic context for the analysis of cumulative aesthetic and visual resources impacts varies by threshold. Thus, the geographic context scenarios are presented individually for the various potential cumulative impacts identified below.

#### **6.13-5 Implementation of the proposed project, in combination with cumulative development in the areas surrounding the project site, could substantially degrade the existing visual character or quality of the vicinity.**

The geographic context for cumulative impacts associated with the degradation of visual quality includes the areas adjacent to the Specific Plan Area that are visible from the Specific Plan Area or from locations which currently afford views of the Specific Plan Area. Aside from the existing project site itself, the surrounding areas are largely built out. Due to the existing water treatment plant to the northwest, the Alkali Flat historic neighborhood to the east, and Old Sacramento to the southwest, it is assumed that the majority of cumulative development surrounding the project site would occur either south of the project site in the Central Business District or northeast of the site in the Richards Boulevard Area. There are other cumulative projects that are planned in these areas. In the Richards Boulevard Area, such projects as Township 9, Continental Plaza, and Discovery Center have been previously approved by the City. In the CBD, such projects as the Towers, the Aura residential tower, the 500 Capitol Mall office tower, and others have been approved or are under construction along Capitol Mall. There is a pending application for a reconfiguration and expansion of Downtown Plaza and several other commercial projects in the K Street Mall. However, because of the relative visual isolation of the Specific Plan Area, and the distance of the Specific Plan Area to other cumulative development locations in the vicinity, none of these projects are anticipated to add to the visual effects of the proposed Specific Plan.

Because the Central City portion of Sacramento is a fully-developed urban area, it is anticipated that any future projects would generally be consistent with the community design pattern established in the General Plan and embodied in the CCCP or the Richards Boulevard Redevelopment Plan. In addition, future development will continue to be guided by the General Plan and Zoning Code and would be subject to design review, which would consider the types and placement of planned development throughout the City. Consequently, changes in land use that would substantially degrade the visual characteristics of the area south of the project site would generally not be permitted to occur under the General Plan or CEQA review, thereby protecting the visual character of these areas.

The Zoning Code ensures that development occurs consistent with its surroundings, in terms of design, massing, and building heights. Additional development within these areas surrounding the project site would constitute further intensification of an already suburban and largely built-out area and would generally occur through infill development. Therefore, cumulative development would not be expected to result in substantial degradation of the visual quality of the area.

Although Impact 6.13-2 identifies a significant impact with respect to incompatible visual character and massing of the proposed hotel/residential buildings adjacent to the riverfront, this project-specific impact constitutes the only proposed development along the riverfront within the identified cumulative context. In short, this parcel represents a small portion of the larger framework in which the cumulative context was established for the overall visual character and quality of the area. As such, because the overall project site would not degrade the existing visual quality of the area, the

project would not have cumulatively considerable contribution to this impact. Consequently, the cumulative change in the visual character of the areas surrounding the project site would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.13-6 Implementation of the proposed project, in combination with cumulative development along the riverfront in Sacramento, could cause an introduction of building height and mass that conflicts with the character of the Sacramento River riverfront between Old Sacramento and Discovery Park.**

The cumulative context for riverfront visual conflicts is that portion of the Downtown/Land Park Area of the Sacramento Riverfront, as defined in the Sacramento River Parkway Plan, from 25<sup>th</sup> Avenue to the Jibboom Street bridge at the confluence of the American River. Cumulative development in this reach of the River includes the proposed project, future development activities in the Docks Area, south of Old Sacramento, as well as cumulative development on the west bank of the Sacramento River in West Sacramento, as described previously in this section. In conjunction with the proposed Railyards project, cumulative development on the Sacramento and West Sacramento riverfronts may have a substantial cumulative adverse effect on the character of the riverfront, including effects on public views of scenic vistas.

The major public views within proximity to the project site consist of views to and from the Sacramento River. Although the Sacramento River defines the western boundary of the City, existing public views of the river from the downtown area and other portions of the City are quite limited due to the presence of I-5 (which visually separates the City from the Sacramento riverfront), intervening structures and landscaping, the topography of the levee which is raised over grade in areas, as well as the sloping edge of the river bank. In addition to the pedestrian path along the riverbank, most public viewing opportunities are afforded while driving across along frontage roads (like Front Street and Jibboom Street), bridges or I-5.

The 2003 Sacramento Riverfront Master Plan calls for revitalization in order to provide more high-quality open space along the riverfront around which dense urban redevelopment could occur; the long-planned Docks Area project is consistent with this guidance. Thus, new cumulative development could occur along the riverfront. While some of the development activities may occur in areas intended for development (such as the Docks Area or Raley's Landing area of the West Sacramento riverfront), construction of cumulative projects, particularly high-rise development as would be allowed in the Railyards Riverfront District, high-rise development in the Raley's Landing and Triangle areas of West Sacramento, and intensive development in the Dock's Area would cumulatively alter the riverfront in ways that fail to visually blend with and be in scale with the surrounding riverine environment, as called for in policy D3 of the Sacramento River Parkway Plan, and may reduce the visual openness of the river corridor. Because future cumulative development could adversely affect public views to and from the river, and because some of that development could conflict with the desired scale and mass of the riverfront, this cumulative impact is considered *potentially significant*.

The proposed Design Guidelines for the Riverfront District establish criteria for the location of structures, ensuring that they would be set back as far as possible adjacent to I-5. The Guidelines also establish that buildings will step down toward the riverfront, with open space mandated adjacent to the Sacramento River Parkway. Further, the bulk requirements would ensure the creation of slender towers with sufficient separation that future buildings would avoid a monolithic massing along the river, facilitating through-views to and from the river. For these reasons, the contribution of

the proposed project to the cumulative visual effects on along the Sacramento River is less than considerable, and therefore this cumulative impact would be ***less than significant***.

#### Mitigation Measure

*None required.*

#### **6.13-7 Implementation of the proposed project, in combination with cumulative development in the areas adjacent to the project site, could create cumulative light effects that could impact adjacent properties.**

Sacramento is an urbanized city and contains numerous existing sources of nighttime lighting. The geographic context for lighting includes the areas adjacent to the Specific Plan Area. More specifically, and similar to Impact 6.13-6 above, it is assumed that the majority of cumulative development surrounding the project site would occur either south of the project site in the Central Business District or northeast of the site in the Richards Boulevard Redevelopment Area.

#### **Ambient Nighttime Light**

As discussed above, additional development within the areas surrounding the project site would constitute further intensification of an already urban and nearly built-out area and would generally occur through infill development. Nighttime lighting currently exists in these surrounding areas. Although cumulative new development or redevelopment could include direct illumination of project structures, features, and/or walkways, the increase in ambient nighttime lighting levels in these areas would only rise minimally because a significant amount of ambient lighting currently exists due to the urbanized nature of the City as a whole. Increases in nighttime lighting that would occur under cumulative development would not significantly affect nighttime views of the sky because such views are already limited. Because the project site is currently vacant, future development under the Specific Plan would increase the ambient nighttime lighting in the area. However, because nighttime views of the sky are already limited due to the urbanized nature of the City, cumulative development within the areas surrounding the project site, in combination with development under the proposed project, is not anticipated to result in the creation of new sources of light that could negatively affect nighttime views. Therefore, cumulative impacts associated with ambient nighttime lighting would be considered *less than significant*.

#### **Spillover Light**

The cumulative context for spillover light would be other development that could add to the spillover light effects of the project on properties in the Alkalai Flat neighborhood, adjacent to the project site. Spillover light is a site-specific effect that could only be added to by other projects in the immediate vicinity of the affected property. There are no other known projects along the 7<sup>th</sup> Street or northern edge of Alkali Flat between 7<sup>th</sup> Street and 12<sup>th</sup> Street. Therefore, there would be ***no cumulative impact*** associated with spillover lighting.

#### Mitigation Measure

*None required.*

#### **6.13-8 Implementation of the proposed project, in combination with cumulative development along major roadways in the project vicinity, could create cumulative glare that could affect adjacent properties.**

The cumulative context for glare effects would be other glare-generating development adjacent to roadways potentially affected by glare produced from development in the Railyards Plan Area. The



only other known project along I-5 in the project vicinity is the Towers on Capitol Mall project located about 4 blocks south of the Railyards, on Capitol Mall adjacent to I-5. In the EIR prepared for the Towers on Capitol Mall project, the City identified a significant glare impact of that project. The glare effect was mitigated to a less-than-significant level through the use of glare-minimizing light fixtures and a prohibition on the use of reflective glass as a primary façade material.<sup>9</sup> For potential glare effects internal to the Railyards area, there would be no other cumulative projects that could add to the effect generated by the project itself. As such, the cumulative effect considered herein is limited to the additive effect of other projects in the I-5 corridor.

The cumulative effect of glare generated by the proposed project in conjunction with the glare effect generated by the Towers on Capitol Mall project would result in potential glare effects along a longer stretch of I-5 as it passes through downtown Sacramento. Other buildings along I-5 that could generate glare include the One Capitol Mall building, on Capitol Mall immediately west of I-5. However, these potential increases are likely to be minor and consistent with the existing built environment due to limited development potential and existing City regulations. Further, future projects would in many cases be subject to CEQA review and would require mitigation for these effects (similar to the proposed project), which could likely also reduce the impacts to a less-than-significant level. However, since the proposed buildings in the Railyards area have yet to be designed and could produce glare effects, cumulative daytime glare along these major roadways in the project vicinity would be a *potentially significant impact*. The buildings built adjacent to I-5 in the Railyards could result in a significant daytime glare impact, therefore the proposed project could result in a *cumulatively considerable contribution to this significant cumulative impact*.

#### Mitigation Measure

##### 6.13-8 *Implement Mitigation Measure 6.13-4.*

Implementation of Mitigation Measures 6.13-4 would reduce the project contribution to this significant cumulative effect to a less-than-considerable level. Thus, with implementation of this mitigation measure, this cumulative impact would be reduced to a ***less-than-significant level***.

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9 EIP Associates, *The Towers on Capitol Mall Draft Environmental Impact Report*, May 2005, page 5.1-27.



## **6.14 ENERGY**

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### INTRODUCTION

This section describes the existing distribution system for electricity and natural gas in the Specific Plan Area. This section also estimates energy consumption for the proposed project and describes service delivery effects of projected demands. Existing plans and policies relevant to electricity and natural gas are provided. This section addresses Appendix F of the CEQA Guidelines, which requires that Environmental Impact Reports include a discussion of the potential energy impacts of proposed projects, with particular emphasis on measures to avoid or reduce the inefficient, wasteful, or unnecessary consumption of energy. In addition to the traditional analysis of operational demands on electricity and natural gas supply, this section also includes an analysis of energy consumption due to the gasoline use from vehicle trips during construction and operation.

Information for this analysis was obtained from the 1998 Sacramento General Plan, the Sacramento Municipal Utility District (SMUD), and the Pacific Gas and Electric Company (PG&E).

Comments received on the Notice of Preparation regarding the ability of existing electrical capacity to serve the proposed project, as well as the project's ability to use energy efficient technologies and designs, are addressed in this section.

### ENVIRONMENTAL SETTING

#### Regional Energy Supplies

Senate Bill 1389 requires the California Energy Commission (CEC) to conduct "assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices." The CEC reports the results of these assessments and forecasts every two years to the Governor, the Legislature, and the California public in the *Integrated Energy Policy Report*. In the alternate years, the CEC prepares the *Integrated Energy Policy Report Update* to discuss the status of energy issues identified in the previous *Integrated Energy Policy Report* and to identify energy issues that may have emerged since that report was completed.

In the most recent Energy Policy Report (2005),<sup>1</sup> the CEC indicated that as the State's demand for electricity increases, California could face severe shortages in the next few years. Of particular concern are the potential impacts of higher-than-average summer temperatures, which can drastically increase the State's electricity demand, as well as shortages resulting from decreased hydroelectric generation in lower-than-average precipitation years. Either of these situations could cause dangerously low reserve margins and potential supply disruptions, particularly in southern California. Reserve margins could also be affected by the retirement of aging natural gas-fired power plants, which remain critical components of California's generation fleet, despite strong policy directives to diversify the State's electricity supplies.

The 2005 Energy Report assessment of electricity supply and demand concludes that maintaining adequate electricity reserves will be difficult over the next few years. The State has made some progress toward resource adequacy for investor-owned utilities by requiring them to maintain year-round 15 to 17 percent reserve margins. Jurisdictional authority over other load-serving entities is less clear. Until recently, there was no formal mechanism to ensure resource adequacy for publicly owned utilities, which provide up to 30 percent of the State's electricity. In September 2005, the

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1 California Energy Commission, *2005 Integrated Energy Policy Report*, November 2005.

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Legislature passed and the Governor signed Assembly Bill (AB) 380 (Nunez), Chapter 367, Statutes of 2005, which extends jurisdiction over independent load serving entities and requires publicly owned utilities to report their respective supply circumstances to the CEC so that their resource adequacy progress can be accurately assessed.

Reducing the demand for energy is the most effective way to conserve energy. Reducing demand also reduces the likelihood of supply shortages that can affect reliability. It should be noted that after electricity, natural gas is the most volatile energy commodity.<sup>2</sup> While California will continue to depend upon petroleum fuels and natural gas to meet its energy needs for the foreseeable future, the use of various energy efficiency measures and renewable resources are top priorities in California's electricity policy. These ideas are reflected in the subsequent Energy Policy Report as discussed below.

The most recent Integrated Energy Policy Report, the 2006 Integrated Energy Policy Report Update,<sup>3</sup> discusses the status of energy issues since the previous Energy Report (2005) and identifies energy issues that may have emerged since that report was completed. The 2006 Energy Report focuses on two topics: the progress towards meeting renewable energy goals to generate 20 percent of the State's electricity from renewable resources by 2010 and 33 percent by 2020 (the Renewable Portfolio Standard); and clean energy development and energy saving opportunities arising from sustainable land use planning.

### **Renewable Energy Goals**

The CEC initiated a midcourse review of the Renewable Portfolio Standard program because the State did not appear to be on track to achieve the near-term goal of supplying 20 percent of the State's electricity needs with renewable energy by 2010 and the long-term goal of 33 percent by 2020. California has achieved only minimal increases in renewable generation. Between 2002, the year in which the Renewable Portfolio Standard took effect, and 2005, the percentage of renewable energy in California's generation mix has remained nearly constant, rather than increasing by at least one percent per year as required under the statute.

The 2006 Energy Report found five primary barriers to achieving the State's Renewable Portfolio Standard goals: inadequate transmission infrastructure to connect remotely located renewable resources; uncertainty regarding whether projects with supplemental energy payment awards will be able to obtain project financing; complexity and lack of transparency in the Renewable Portfolio Standard program implementation for investor-owned utilities; insufficient attention to the possibility for contract failure and delay; and lack of progress in repowering aging wind facilities.

Although stakeholders acknowledge that problems exist with the Renewable Portfolio Standard structure, most parties recommend that the State not make wholesale changes to the program structure at this time. Therefore, the CEC recommends making no major changes to this structure now, but rather, working within the current protocols to meet the 2010 goals. However, California must work to accelerate its pace of renewable development if it is to meet its long-term Renewable Portfolio Standard goal of generating 33 percent of the State's electricity from renewable resources by 2020. This long-term goal is essential to meeting the State's greenhouse gas emission reduction goals and to achieve other benefits associated with the use of renewable energy. The CEC recommends that the following issues be further analyzed to help shape the achievement of post-2010 Renewable Portfolio Standard goals: the relationship between renewable energy, renewable energy certificates, and carbon emission trading in implementing greenhouse gas reductions called for in Assembly Bill 32; alternative structures to meet 2020 Renewable Portfolio Standard goals,

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2 California Energy Commission, *2006 Integrated Energy Policy Report Update*, January 2007, page 61.

3 California Energy Commission, *2006 Integrated Energy Policy Report Update*, January 2007.

including whether revised system benefit charge mechanisms or tariffs would spur additional renewable development; and changing or eliminating the market price referent/supplemental energy payment award structure.

### **Energy and Land Use**

Experts expect California's population to grow by 20 million people between 2000 and 2050. This growth will severely tax already constrained energy resources and the associated infrastructure and challenge the State's ability to provide the energy that new communities, homes, schools, industry, and other workplaces will require. This rapidly advancing scenario highlights the important relationship between land use decisions and energy consumption.

The burden that a rapidly increasing population will place on energy supply and infrastructure suggests a need for a fundamental shift in approaches to land use and development. The State needs to investigate approaches that go beyond decreasing transportation fuel use and relieving congestion to approaches that can serve as a nexus for developing distributed renewable generation and efficient transportation in communities to help California meet its statewide energy and climate change goals.

One of the single best ways to meet those goals resides with "smart growth." Smart growth refers to the application of specific development principles to make prudent use of resources and create genial, low-impact communities through enlightened design and layout. Assuming that all new U.S. housing is smart growth, the total nationwide savings after 10 years, based on a projected level of 24.3 million housing starts from 2005 to 2020, would be in the range of 977 trillion miles of travel reduced; 5.69 trillion Btu saved; 49.5 billion gallons of gasoline saved; 1.18 billion barrels of oil saved; 595 million metric tons of CO<sub>2</sub> emissions reduced; and \$2.18 trillion savings.<sup>4</sup>

In general, there is a lack of energy consideration on the part of land use decision making authorities and developers in their planning processes. Although some exceptions exist, most energy considerations of current land use planning practices relate exclusively to transportation issues: reducing the number of vehicle miles traveled (VMT), thus reducing fuel consumption, air pollution, and roadway congestion. Specifically, planners tend to focus on increasing density, changing zoning to allow for mixed use development, and building near transit stations to achieve these aims. The host of related support services and infrastructure—fueling stations, transmission lines, power plants and pipelines—and the potential for distributed renewable generation and energy efficient design are rarely considered in planning uses for land parcels.

Investor-owned and publicly owned utilities are responsible for meeting energy demand and planning how to meet future needs. Utilities have a keen understanding of the processes for delivering natural gas and generating and delivering electricity. They know the strengths and weaknesses of their infrastructures in relation to past and future growth. As such, utilities can be a resource to local planners in understanding the energy implications of land use decisions, including the demand created by new development and the cost of infrastructure to serve this growth.

Despite these obstacles to meet the Renewable Portfolio Standard, California continues to be the national leader in efficiency. While energy use per person in the rest of the nation has increased by 45 percent over the last 30 years, California's per capita use has remained relatively flat as a result of the State's energy efficiency measures. In 2004, the California Public Utilities Commission (CPUC) established aggressive energy savings goals and authorized a significant increase in energy efficiency funding. Meeting these goals will reduce the utilities' need for additional electricity supplies between 2004 and 2013 by more than half. The recent passage of SB 1037 (Kehoe)

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4 California Energy Commission, *2006 Integrated Energy Policy Report Update*, January 2007, page E-7.

Chapter 366, Statutes of 2005, further reinforces the State's energy efficiency policies by requiring all utilities to meet their unmet resource needs first with energy efficiency and demand reduction resources that are cost-effective, reliable, and feasible.

## **ELECTRICITY**

### **Local Electricity Supplies**

Electrical service is provided to the Specific Plan Area by SMUD, which is the entity responsible for the generation, transmission, and distribution of electrical power to its 900 square mile service area. The service area includes most of Sacramento County and a small portion of Placer County. SMUD is a publicly-owned utility governed by a board of seven directors that make policy decisions and appoint the general manager, the individual responsible for the District's operations.

SMUD obtains its electricity from a variety of sources, including hydro-generation, co-generation plants, advanced and renewable technologies (such as wind, solar, and biomass/landfill gas power) and power purchased on the wholesale market.<sup>5</sup>

SMUD offers a variety of programs that serve to preserve natural resources and reduce pollution. Through SMUD's Greenergy program, members can choose to buy energy from natural resources of energy, such as the sun, wind, or methane gas. SMUD also offers incentives to its residential customers for purchasing and installing photo-voltaic solar panels. With regard to wind energy, the recent addition of eight wind turbines to SMUD's wind farm in Solano County produces up to 39 megawatts of power. SMUD owns additional land in the area with room for expansion to 200 megawatts pending approval by the Board of Directors.

With regard to hydroelectric power, SMUD's Upper American River Project (UARP), consisting of 11 reservoirs and eight powerhouses, generates enough electricity to meet about 20 percent of SMUD's customer demand. In a normal water year, the UARP provides roughly 1.8 billion kilowatt-hours of electricity, which is enough to power 180,000 homes. The UARP is able to provide operational flexibility, system reliability, and economical power.

The CEC and SMUD are also working together on research, development, and demonstration projects for renewable power generation under the Public Interest Energy Research (PIER) program. The program consists of a number of projects, most of which are developing new technologies that use the sun, wind, and biomass to generate electricity. Each project is helping to: (1) reduce California's dependency on non-renewable energy sources; (2) develop technologies and products that will create broad new renewable energy sources for California and the West; (3) develop resources that will allow SMUD and other electric utilities to increase their use of renewable generation; (4) provide technologies to help SMUD reduce its peak demand for electricity; and (5) make Sacramento a center for the development, testing, and implementation of new renewable generating technologies.

### **Existing Electrical Facilities**

The Specific Plan Area is presently served by one 21 Kilovolt (kV) primary feeder located along the easterly edge of the Interstate 5 (I-5) freeway and connected to a substation and distribution system owned and operated by UPRR. SMUD has duct banks<sup>6</sup> in place along 7<sup>th</sup> Street from between E

5 Sacramento Municipal Utilities District website, <http://www.smud.org/about/power/index.html>, accessed May 16, 2007.

6 Duct banks consist of polyvinyl chloride (PVC) conduit buried within backfill. Duct banks are primarily used when placing cable underground, and where replacement of direct buried cable at a later date would be difficult and expensive.



and F streets to North B Street. The 21kV duct bank is connected to manhole MH 0750 for maintenance access near 7<sup>th</sup> and F streets.

## **NATURAL GAS**

### **Local Gas Supplies**

Natural gas service is provided to the Specific Plan Area by PG&E. PG&E provides electrical and natural gas services through State regulated public utility contracts. The utility company is bound by contract to update its systems to meet any additional demand.

PG&E provides electricity and natural gas distribution, electricity generation, transportation and transmission, natural gas procurement, transportation, and storage. Services are provided within 48 counties in California with a total service area of approximately 70,000 square miles in northern and central California. The utility provides services with 40,123 miles of natural gas distribution pipelines and 6,135 transportation pipelines.<sup>7</sup>

PG&E serves approximately 5 million electricity distribution customers and approximately 4.1 million natural gas distribution customers. It is anticipated that electric and natural gas distribution lines in new development will be placed underground in accordance with CPUC rules. However, the construction or reconstruction of overhead distribution facilities is periodically required to supply the underground circuits within new developments.

### **Existing Facilities**

Gas distribution lines in the Central City core adjacent to the Specific Plan Area are a combination of low-pressure and medium-pressure pipelines. PG&E is in the process of phasing out low-pressure lines and replacing them with medium-pressure pipelines. Currently there is an abandoned 6-inch gas main that extends onto the eastern portion of the project site and continues west through the middle of the site past the 7<sup>th</sup> Street extension. There are currently no phasing plans for the existing abandoned line or any lines around the property. Potential hook up points are located near the southeastern portion of the Railyards project site in the vicinity of the 7<sup>th</sup> Street and F Street intersection. An additional hook up point is near the northwestern portion of the project site near the terminus of existing Bercut Drive.

## **TRANSPORTATION ENERGY**

Because of California's size and its dependence on the automobile, approximately 51 percent of all energy in the State is used by the transportation sector. California has nearly 28 million vehicles that consume more than 16 billion gallons of gasoline and nearly 3 billion gallons of diesel each year.<sup>8</sup> In addition, almost all of the fuel California uses for transportation is made from petroleum. Gasoline and diesel fuel account for about 99.75 percent of California's transportation fuel.<sup>9</sup> California is the second largest consumer of gasoline in the world behind the entire United States and just ahead of Japan.<sup>10</sup>

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7 Pacific Gas & Electric, <http://www.pge.com>, Accessed May 11, 2007.

8 California Energy Commission, Fuels and Transportation Division, <http://www.energy.ca.gov/transportation/index.html>, Accessed May 16, 2007.

9 California Energy Commission, A Student's Guide to Alternative Fuel Vehicles, <http://www.energyquest.ca.gov/transportation/index.html>, accessed May 16, 2007.

10 California Energy Commission, Gasoline Consumption by Country, [http://www.energy.ca.gov/gasoline/statistics/gasoline\\_consumption\\_country.php](http://www.energy.ca.gov/gasoline/statistics/gasoline_consumption_country.php), accessed May 16, 2007; as cited from the International Energy Agency, Data for 2004, September 2005.

The State's dependence on petroleum fuels is escalating with the demand for petroleum fuels in the residential and commercial sectors. California's refineries cannot keep up with the mounting need for petroleum fuels and consequently depend upon increasing levels of imports to meet the State's needs. Because it is dependent on imports, California is vulnerable to supply disruptions and price increases.

Transportation issues became a new focus in planning with the oil crises of 1973 and 1979. Planners concentrated on increasing density, changing zoning to allow for mixed use development, and building near transit stations to reduce the number of VMT, thus reducing fuel consumption and air pollution, and decreasing roadway congestion.

As California makes plans to accommodate growth into the future, smart growth is proving to have potential as a powerful, innovative, and largely untapped tool, much as Title 24 has been an extremely effective tool in reducing energy demands of residential and nonresidential buildings. By including energy demand, supply, and infrastructure as central factors in the land use planning equation, the State and local governments can make intelligent use of all resources and meet energy-related goals. The State needs to investigate approaches that go beyond decreasing transportation fuel use and relieving congestion to approaches that can serve as a nexus for developing distributed renewable generation and efficient transportation in communities to help California meet its statewide energy and climate change goals.

While smart growth is a useful tool to ensure all energy considerations are included in land use decisions, transportation energy remains a significant part of reducing the State's dependency on nonrenewable fuels.

## **REGULATORY SETTING**

### **Federal**

The Federal Energy Regulatory Commission regulates the transmission and sale of electricity in interstate commerce, licensing of hydroelectric projects, and oversight of related environmental matters.

### **State**

The CPUC sets forth specific rules that relate to the design, installation, and management of California's public utilities, including electric, natural gas, water and transportation, and telecommunications. CPUC Decision #77187 and #78500 State that utilities must be underground if the developable lots are less than three acres in size. CPUC Decision #81620 states that lots over three acres (large lot subdivision) are not required to underground utilities. A formal waiver from the CPUC is required for an exemption from complying with these decisions.

CPUC Decision 95-08-038 governs the planning and construction of new transmission facilities, distribution facilities, and substations. The Decision requires permits for the construction of certain power line facilities or substations if the voltages would exceed 50 kilovolts or the substation would require the acquisition of land or an increase in voltage rating above 50 kilovolts. Distribution lines and substations with voltages less than 50 kilovolts do not need to comply with this Decision; however, the utility must obtain any applicable local permits required for the construction and operation of these projects.

### Title 20 and Title 24, California Code of Regulations

New buildings constructed in California must comply with the standards contained in Title 20, Energy Building Regulations, and Title 24, Energy Conservation Standards, of the California Code of

Regulations (CCR). Title 20 contains standards ranging from power plant procedures and siting to energy efficiency standards for appliances to ensuring reliable energy sources are provided and diversified through energy efficiency and renewable energy resources. Title 24 (AB 970) contains energy efficiency standards for residential and nonresidential buildings based on a State mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating and air conditioning, including the energy impact of the building envelope such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs.

#### Warren-Alquist Energy Resources Conservation and Development Act

The State Energy Commission regulates energy resources by encouraging and coordinating research into energy supply and demand problems to reduce the rate of growth of energy consumption (Warren-Alquist Energy Resources Conservation and Development Act Government Code section 25000 *et seq.*).

#### CEQA Guidelines Appendix F

Appendix F of the CEQA Guidelines contains energy conservation measures that promote the efficient use of energy for projects. In order to assure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The following discussions may be included in an EIR:

- A. Project Description may include the following items:
  - 1. Energy consuming equipment and processes which will be used during construction, operation, and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
  - 2. Total energy requirements of the project by fuel type and end use.
  - 3. Energy conservation equipment and design features.
  - 4. Initial and life-cycle energy costs or supplies.
  - 5. Total estimated daily trips to be generated by the project and the additional energy consumed per trip by mode.
- B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.
- C. Environmental Impacts may include:
  - 1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
  - 2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
  - 3. The effects of the project on peak and base period demands for electricity and other forms of energy.
  - 4. The degree to which the project complies with existing energy standards.
  - 5. The effects of the project on energy resources.
  - 6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.
- D. Mitigation Measures may include:
  - 1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion

- should explain why certain measures were incorporated in the project and why other measures were dismissed.
2. The potential siting, orientation, and design to minimize energy consumption, including transportation energy.
  3. The potential for reducing peak energy demand.
  4. Alternate fuels (particularly renewable ones) or energy systems.
  5. Energy conservation which could result from recycling efforts.
- E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.
- F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.
- G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.
- H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the energy costs over the lifetime of the project.
- I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

## Local

### City of Sacramento General Plan 1988

**Goal A**      **Continue to improve and provide communication and utility services to all areas of the City.**

#### Policies

1. Continue to work closely with utility companies on long-range planning for newly developing areas.
2. Support and encourage the utility companies to place utilities underground in new development areas.

## IMPACTS AND MITIGATION MEASURES

### Methods of Analysis

To determine whether implementation of the proposed project would result in impacts on electricity, natural gas, and gasoline supplies, the projected increase in energy demand for each utility was analyzed and calculated using a per-square foot or per-dwelling unit (du) consumption rate. For electricity, the estimated consumption rate, or electricity demand, was estimated by engineering staff at SMUD based on the proposed land uses for the project. For natural gas, the demand factors were taken from several environmental documents that used natural gas demand rates for land uses that were the similar to the proposed project. In the case of transportation energy, the estimated VMT was used to calculate the project's demand for gasoline.

### **Electricity and Natural Gas Demands of the Proposed Specific Plan**

The proposed ORMU land use under the Specific Plan allows for the development of either residential units or office square footage. Either 491,000 square feet (sf) of office use or 400 dus would be constructed under this land use designation. For the electricity analysis, because residential uses generate the highest demand over office uses, the maximum amount of residential units were assumed. Table 6.14-1 shows the calculations for the electricity demand of the proposed project with the maximum amount of residential units and the minimum amount of office uses, in addition to the retail, hotel, and historical/cultural uses. It was assumed that the proposed project would result in the development of approximately 12,501 dus, 2,337,200 sf of office uses, 1,384,800

sf of retail uses, 1,100 hotel rooms, and 485,390 sf of historical/cultural uses to analyze the most conservative estimate for electricity demand. The proposed project would require an estimated 67 megawatts (MW) annually to serve the project site.

Land Use	Number of dus/sf	Demand Factor per year in kW	Estimated Electrical Demand in MW per year
Residential	12,501 du	4.22 kW per du	52.75 MW
Office	2,337,200 sf	0.00046 kW per sf	1.08 MW
Retail	1,384,800 sf	0.0056 kW per sf	8.17 MW
Hotel	1,100 rooms	2.44 kW per room	2.68 MW
Historical/Cultural Use	485,390 sf	0.0048 kW per sf	2.33 MW
<b>Total</b>			<b>67.01 MW</b>
Notes:			
1. Electricity demand based on calculations from SMUD.			
Source: Gary Shimitzu, Associate Distribution System Engineer, SMUD, written communication, June 2006.			

For the natural gas analysis, because office uses generate the highest demand over residential and hotel uses, the maximum amount of office uses were assumed, in addition to the minimum amount of residential and hotel uses. Table 6.14-2 shows the calculations for the maximum amount of office uses and the minimum amount of residential units, in addition to the retail, hotel, and historical/cultural uses. It was assumed that the proposed project would result in the development of approximately 12,101 dus, 2,828,200 sf of office uses, 1,384,800 sf of retail uses, 1,100 hotel rooms, and 485,390 sf of historical/cultural uses to analyze the most conservative estimate for natural gas demand. The project would require approximately 24,531,748 Therms annually.

Land Use	Number of dus/sf/Rooms	Demand Factor per year	Estimated Natural Gas Demand (Therms) per year
Residential	12,101 du	1,440 Therms per du	17,425,440
Office	2,828,200 sf	63,600 Therms per acre	4,129,328
Retail	1,384,800 sf	63,600 Therms per acre	2,021,884
Hotel	1,100 rooms <sup>2</sup>	0.28 Therms per sf <sup>1</sup>	246,400
Historical/Cultural Use	485,390 sf	63,600 Therms per acre	708,696
<b>Total</b>			<b>24,531,748 Therms</b>
Notes:			
1. From the <i>Glendale Embassy Suites Hotel Draft EIR</i> , November 2001, page 4.8-5; as cited from the California Energy Commission.			
2. Each hotel room is assumed to be a maximum of 800 sf.			
Source: <i>North Roseville Specific Plan Draft EIR</i> 1997; EIP Associates 2003; EIP Associates, University of California, <i>Los Angeles 2002 Long Range Development Plan Draft Environmental Impact Report</i> , February 2003.			

### Transportation Energy Demands of the Proposed Project

In addition to an analysis of electricity and natural gas demands from the proposed project, this section also includes an analysis of energy consumption due to the gasoline use associated with the proposed project's vehicle trips during construction and operation. Implementation of the proposed project would create the need for significant transportation resources (e.g., gasoline) for the construction and operation of the project. This analysis is based on the VMT which were calculated in the Traffic Report prepared by Dowling Associates for the Specific Plan. Because the office uses

would generate the most vehicle trips, the transportation analysis assumes full buildout of the proposed project with the maximum square footage of office (2,828,200 sf). The proposed project would generate 70,000 VMT during the AM peak hour and 100,000 VMT during the PM peak hour. The miles per gallon (mpg) was estimated from inputting the land use information for the proposed project into the EMFAC2007 air quality model.

Based on these numbers, operation of the proposed project would require a considerable amount of gasoline for vehicle trips associated with buildout of the proposed project. Approximately 7,000 gallons of gasoline would be required per day during the peak AM and peak PM hours upon buildout of the proposed project. Gasoline consumption associated with construction of the project would be considerably less than gasoline consumption during operation because construction of the proposed project would occur in incremental development phases over the course of 20 years. While individual construction vehicles are typically larger than traditional passenger vehicles and use more gasoline per vehicle on the average, the overall fleet size of construction vehicles during the identified construction phases would be far less when compared to that of a passenger vehicle fleet under buildout conditions. Therefore, 7,000 gallons of gasoline per day represents the worst-case scenario in regards to vehicle energy consumption.

### **Standards of Significance**

For the purposes of this EIR, impacts are considered significant if the proposed project would:

- Require or result in the construction of new energy production and/or transmission facilities or expansion of existing facilities, the construction of which could cause significant environmental effects, or
- Encourage the wasteful or inefficient use of energy.

### **Project Components**

The proposed project would require electricity and possibly natural gas for residential, retail, and other uses, and fuel for household travel. The following goals and policies pertaining to transportation alternatives, and electrical and natural gas service are found in Section 4, Principles, Goals and Policies of the Specific Plan.

**Goal S-1     Maximize the use of sustainable development practices in the Plan Area to the extent feasible.**

Policies

- S-1.1.     Reduce the use of energy in new construction through techniques, including using energy-efficient appliances, thermal windows, and more energy-efficient insulation.
- S-1.2.     Encourage site and building design that improves energy efficiency by incorporating natural cooling and passive solar heating systems. This may include extended eaves, window overhangs, awnings and tree placement for natural cooling, and building and window orientation to take advantage of passive solar heating.
- S-1.3.     Encourage alternative modes of transportation through site planning and building orientation. Connections to sidewalks, bike paths, trail networks, transit shops as well as between public open spaces, should be emphasized. Also, attractive and comfortable pedestrian spaces should be constructed that incorporate shade trees for natural cooling and UV protection.
- S-1.4.     Encourage the use of green or sustainable building materials, including recycled content materials that are consistent with the underlying architectural style and character of the building.
- S-1.6.     Encourage green site design by utilizing native trees and plants where possible, incorporating permeable paving and designing resource-efficient landscapes and gardens.

S-1.7. Encourage development of LEED certified buildings.

**Goal C-1 Reinforce downtown Sacramento as the regional transportation hub with improved light rail, street car, intercity rail, commuter rail and intercity and local bus service.**

Policies

C-1.1. Establish a regional intermodal facility at the SITF that is easily accessible by walking and bicycling which brings together intercity rail, commuter rail, light rail, and bus services in a manner that facilitates convenient transfer between various modes of transit.

C-1.2. Promote acceleration of the extension of the light rail system from the downtown to the airport in a manner that maximizes service to existing and future uses.

C-1.3. Extend local bus service from the downtown to the Plan Area and locate intercity bus service at the SITF.

C-1.4. Provide safe and efficient rail facilities at the SITF to meet the operational needs of the freight and passenger service providers to accommodate current and projected ridership.

**Goal C-2 Organize roadway and pedestrian circulation systems that extend the downtown grid system to serve the Plan Area.**

**Goal C-3 Create a street system that extends the unique qualities of downtown neighborhood streets, gives structure and orientation to the downtown experience and enhances the pedestrian environment.**

**Goal C-4 Extend and improve the existing system of bicycle circulation in downtown Sacramento that it is safe and efficient.**

C-4.1. Provide bicycle connections to improve circulation.

C-4.2. Provide both on-street and off-street bikeways that provide connectivity within the development and connects to existing and planned bikeways along the Plan Area boundary.

C-4.3. Include secure bike parking and bicycle commuter facilities in all new office developments and transit facilities.

C-4.4. Provide bicycle and personal vehicle parking in all residential projects.

**Goal C-5 Create and reinforce safe and efficient pedestrian connections within the Plan Area and in relation to surrounding districts.**

**Goal CS-4 Provide adequate electrical and gas service to serve the project development, and provide a program of energy conservation.**

Policies

CS-4.1. Implement strategies to promote additional energy conservation, beyond the level required under California Title 24 building standards, to the extent that such approaches are found to be feasible and cost effective.

CS-4.3. Encourage early consultation between project developers and the Sacramento Municipal Utilities District (SMUD) to determine the appropriate electrical and gas infrastructure to serve the Plan area, including appropriate energy conservation measures.

In addition, the Specific Plan acknowledges the opportunity for the project to further reduce energy use and power demand by incorporating additional energy efficiency measures as part of building design. The Specific Plan states that “the [proposed project] provides an opportunity to demonstrate and feature advanced energy concepts. While there is a strong commitment of the Railyards property owner to the types of innovative energy conserving technologies described above, it is important to recognize that the feasibility of actually implementing such approaches depends on financial and other considerations. Nonetheless, it is an important goal of the Specific Plan that opportunities to implement energy conserving measures be considered by project applicants wherever it is feasible to do so.”

Based on calculations from California Title 24 standards in the Specific Plan, the proposed project would have an estimated peak electrical demand of approximately 30 MW and 200 million kilowatt-

hours (kWh) of energy per year, which is less than presented in Table 6.14-1 as estimated by SMUD. To calculate peak electrical demands, Title 24 standards allow for the incorporation of the “coincidence” of loads, which refers to the different timing of peak demands from residential and non-residential uses; therefore, when calculating peak electrical demand under this method, the demand would be lower than if the peak demands from these different land uses were combined. As discussed above, SMUD has estimated the maximum project demand at approximately 67 MW. This estimate does not take into account non-coincidental uses to ensure a conservative estimate for planning electrical infrastructure. More specific projections of actual energy demand will be developed during the detailed design phase of the project. While there has been discussion of incorporating a co-generation facility on the project site to help reduce overall energy consumption, there are currently no plans to include this facility in the proposed project. If, at a later date, the project applicant decides to incorporate a co-generation facility on site, it would be required to undergo separate environmental review.

### **Specific Plan Impacts and Mitigation Measures**

#### **6.14-1 The proposed project could increase the demand for electricity supply and conveyance.**

Implementation of the proposed project would increase the use of electricity at the project site, to light, heat, and air condition the new buildings, parking areas, streets, sidewalks, trails, and residential units. While the proposed project would have an estimated peak electrical demand of approximately 30 MW and 200 million kWh of energy per year based on Title 24 standards that consider “coincidence” of loads, according to SMUD, the total annual electricity consumption by the proposed project is estimated to be approximately 67 MW (see Table 6.14-1). SMUD has indicated that there are no constraints to obtaining a reliable energy source to serve development in the project site.<sup>11</sup>

In order to meet the increased demand for electrical service, SMUD has determined that two substations, 250 feet by 200 feet each, would be required to accommodate the electrical demand from the Specific Plan, as well as the Richards Boulevard Redevelopment Area north of the project site. A four-way, six-inch and one- to two-inch duct bank on the west side of 7<sup>th</sup> Street is planned for 115kV transmission lines. A six-way, six-inch and one- to two-inch duct bank on the east side of 7<sup>th</sup> Street is planned for 21kV distribution lines. Details of how SMUD would supply the substations from the 115 kV and 21 kV systems have not yet been determined.<sup>12</sup>

The construction impacts anticipated to result from implementation of the proposed project, including the construction or undergrounding of energy transmission and/or distribution lines are comprehensively analyzed in the 6.1, Air Quality; 6.8, Noise; and 6.12, Transportation and Circulation sections of this EIR. Further, as required by law, all utility connections would be constructed in accordance with all applicable Uniform Codes, City Ordinances, and Public Works standards to ensure an adequately sized and properly constructed electrical transmission and conveyance system. Implementation and extension of utility infrastructure would be constructed prior to occupancy and in a manner that would minimize the potential for utility disruption.

Implementation of Title 20 and 24 of the CCR would reduce impacts associated with an increased demand for electricity by implementing energy efficient standards for residential and non-residential buildings. These standards would help reduce the amount of energy required for lighting, water heating, and heating and air conditioning in the buildings. They would also reduce the energy impact of the building envelope through use of efficient building materials, such as windows, doors, skylights, wall/floor/ceiling assemblies, attics, and roofs. In addition, implementation of the Warren-

11 Gary Shimizu, Associate Distribution System Engineer, SMUD, written communication, June 2006.

12 Gary Shimizu, Associate Distribution System Engineer, SMUD, written communication, June 2006.



Alquist Energy Resources Conservation and Development Act would coordinate research and development into energy supply and demand problems to reduce the rate of growth of energy consumption. The proposed project would also implement strategies to promote additional energy conservation beyond Title 24 standards to the extent feasible.

Because the impacts associated with the construction of on-site transmission and/or electrical distribution lines are considered in the appropriate technical sections of this DEIR, and because there is adequate electrical supply, and implementation of the proposed project would not result in the construction of electrical infrastructure beyond what has already been assumed, impacts to electricity as a result of the proposed project would be considered ***less than significant***.

Mitigation Measure

*None required.*

No mitigation is required to reduce this impact to a less-than-significant level. However, the proposed project is encouraged to adopt measures to further reduce electricity consumption.

While the proposed project would be designed to comply with Title 20 and Title 24 of the CCR which would ensure energy efficient building design that is far more stringent than the rest of the U.S., the proposed project has the ability to further decrease its dependence on non-renewable energy sources, and to contribute to the State's goal of meeting the Renewable Portfolio Standard. As discussed in the 2006 Integrated Energy Policy Report Update, California must work to accelerate its pace of renewable development if it is to meet its long-term Renewable Portfolio Standard goal of generating 33 percent of the State's electricity from renewable resources by 2020. This long-term goal is essential to meeting the State's greenhouse gas emission reduction goals and to achieve other benefits associated with the use of renewable energy.

Although this impact is considered less than significant, there are opportunities to incorporate several energy conservation measures into the proposed project in order to further reduce the electricity demand of the project, which equates to lower energy bills and assisting the State in meeting its short-term and long-term Renewable Portfolio Standard goals.

SMUD offers a wide variety of incentive programs for builders who include energy efficient designs in both residential and commercial developments. As part of SMUD's Residential New Construction program, SMUD offers two levels of Advantage Homes, Tier III and Gold. Advantage homes include energy-saving components that provide energy efficiency which lower energy bills and reduces emissions that affect the region's air quality. These homes include HVAC systems engineered to Air Conditioning Contractors of America (ACCA) standards to provide optimal performance and energy savings. They also include high efficiency Seasonal Energy Efficiency Rating (SEER) air conditioning units. Title 24 requires builders to install 10.0 Seer AC units, while advantage homes are equipped with 13.0 SEER AC units. Advantage homes are also built with a tight-sealed air distribution duct system to reduce air loss and increase efficiency, as well as dual pane, LoE<sup>2</sup> windows that reflect the sun's heat outside in the summer. SMUD has also been partnering with other builders in Sacramento on the SMUD SolarSmart Homes, which are homes built with energy efficient features, like those described above, but also include a rooftop solar electric system.<sup>13</sup>

SMUD also offers incentives and financing for particular energy efficiency measures for commercial, industrial, and multifamily developments. Some of the incentives include changing to energy

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13 Sacramento Municipal Utilities District (SMUD), Serving Your Home, Saving Energy, SMUD Advantage Homes, <http://smud.org>, accessed June 4, 2007.

efficient lighting and lighting controls, HVAC and HVAC controls, refrigeration and controls, energy management systems, and food service equipment.<sup>14</sup>

The proposed project could also participate in one or more of the variety of financing incentives for improving energy efficiency in commercial, industrial, and multi-family developments. The incentives offered by SMUD include, but are not limited to:

1. Installing lighting that exceeds Title 24 requirements by 10 percent for an incentive of \$0.05 per kilowatt hour;
2. Installing HVAC systems that are more than 20 tons and exceed Title 24 requirements;
3. Installation of energy efficient process, control systems, refrigeration, and refrigeration controls;
4. Installation of energy management systems (EMS) which can reduce energy consumption of refrigeration units from 5 to 24 percent;
5. Installing energy efficient food service equipment; and
6. Installation of solar photo-voltaic system which SMUD will pay a one-time incentive of \$2.80 for every watt the system is capable of generating (up to 100 kilowatts).

#### **6.14-2 The proposed project could increase the demand for natural gas supply and conveyance facilities.**

Implementation of the proposed project would increase the use of natural gas at the project site. Based on the information provided in Table 6.14-2, the total annual natural gas consumption by the proposed project is estimated to be approximately 24,531,748 Therms.

PG&E will install new distribution facilities as needed to serve buildout of the proposed project, according to CPUC rules. PG&E has indicated that an adequate supply of natural gas is currently available to serve the proposed project, and that the natural gas level of service provided to the surrounding area would not be impaired by the proposed project.<sup>15</sup> New natural gas lines to serve the project site would be located underground and would be constructed in accordance with PG&E's policies and extension rules on file with the CPUC at the time contractual agreements are made.

The construction impacts anticipated to result from implementation of the proposed project, including the construction of natural gas transmission lines, are comprehensively analyzed in the Air Quality, Noise, and Transportation and Circulation Sections of this EIR. Further, as required by law, all utility connections would be constructed in accordance with all applicable Uniform Codes, City Ordinances, and Public Works standards to ensure an adequately sized and properly constructed electrical transmission and conveyance system. Implementation and extension of utility infrastructure would be constructed prior to occupancy and in a manner that would minimize the potential for utility disruption.

Because the impacts associated with the construction of on-site transmission and/or electrical distribution lines is considered in the appropriate technical sections of this DEIR, and because the natural gas demand projected for the proposed project would not exceed the available or planned supply of natural gas resources, and implementation of the proposed project would not result in the

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14 Sacramento Municipal Utilities District, *Serving Your Business, Incentives and Financing*, <http://www.smud.org>, accessed June 4, 2007.

15 Larry R. Schlaht, Senior New Business Representative, PG&E, Written communication, December 19, 2006.

construction of new (unplanned) natural gas supply facilities, the impacts to natural gas resources as a result of the proposed project would be considered ***less than significant***.

#### Mitigation Measure

*None required.*

No mitigation is necessary to reduce this impact to a less-than-significant level. However, the project applicant is encouraged to implement measures to further reduce natural gas consumption.

While the proposed project would be designed to comply with Title 20 and Title 24 of the CCR to ensure energy efficient building design that is far more stringent than the rest of the U.S., the proposed project has the ability to further decrease its dependence on non-renewable energy sources, and to contribute to the State's goal of meeting the Renewable Portfolio Standard. As discussed in the 2006 Integrated Energy Policy Report, California must work to accelerate its pace of renewable development if it is to meet its long-term Renewable Portfolio Standard goal of generating 33 percent of the State's electricity from renewable resources by 2020. This long-term goal is essential to meeting the State's greenhouse gas emission reduction goals and to achieve other benefits associated with the use of renewable energy.

Although this impact is considered less than significant, there are opportunities to incorporate several energy conservation measures into the proposed project. As part of its Residential New Construction Program, PG&E offers builders of single-family homes within its service area financial incentives based on the energy efficiency of their homes. There are three programs offered by PG&E: energy efficient features may be individually added to homes through the PG&E Prescriptive Option; builders can upgrade to the California Energy Star New Homes Program by meeting the specifications of the EPA; or builders may choose to participate in the New Solar Homes Partnership Performance Method. In addition to energy efficiency incentives builders may qualify for incremental incentives from the CEC's New Solar Homes Partnership (NSHP) by adding photovoltaic solar systems to their homes.<sup>16</sup>

The PG&E Energy Star Performance Method is available to builders of single-family homes that are at least 15 percent more energy efficient than required by the 2005 Title 24 Energy Code and meet all EPA specifications. Participating builders become part of the California Energy Star New Homes Program, and their homes earn the Energy Star label. Incremental incentives can also be earned by adding energy efficient appliances and/or lighting to homes.

The New Solar Homes Partnership Performance Method is available to builders of single-family homes that are at least 15 percent more efficient than required by the 2005 Title 24 Energy Code and meet all EPA specifications. A second tier of participation is available to single-family homes that exceed Title 24 by 35 percent, demonstrate a 40 percent reduction in cooling load, and include solar generation as an option for buyers. Both tiers require that all appliances provided by the builder must be Energy Star qualified. Builders may also qualify for additional solar incentives through the CEC's New Solar Homes Partnership.

#### **6.14-3 The proposed project could result in the wasteful or inefficient use of energy.**

As discussed in the Regulatory Setting section (above), all new buildings are required to conform to the energy conservation standards specified in CCR Titles 20 and 24. Further, as discussed in Mitigation Measures 6.14-1 and 6.14-2, the project proposes to include a variety of additional energy

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16 Pacific Gas & Electric, Residential New Construction Program, <http://www.pge.com>, accessed May 15, 2007.

conservation measures that could be included in the project's design and/or operational features to decrease the amount of overall energy consumed by the project.

Implementation of the proposed project would generate an additional 70,000 VMT during AM peak hour and 100,000 VMT during PM peak hour, resulting in a maximum gasoline consumption of 7,000 gallons per day during construction and operation of the project. Much of the demand for gasoline comes from the vehicle trips associated with project operation. However, it should be noted that the project includes a number of alternative transportation choices, including local and regional bus service, light rail, as well as passenger, freight, and high-speed rail. Inclusion of the SITF in the project site will promote increased commuter and intercity rail service. Because the proposed project is located in downtown Sacramento, and a number of alternative modes of transportation would be offered, the VMT on a per-capita basis associated with the project are significant lower than if the same uses were constructed in a community at lower densities and further away from the Central City and from alternative modes of transportation. For those living in the Specific Plan Area, the home-to-work and work-to-home commutes would be short, if not eliminated by the variety of choices and the proximity of the project to the regional jobs center in Sacramento's Central City.

Although there are no data to provide a quantitative comparison between the proposed project and a similar project constructed outside of downtown Sacramento, it is reasonable to assume that a project located in downtown Sacramento, such as the proposed Specific Plan, would result in fewer VMT than a similarly-sized project located in more distant locations in the region. As discussed in Chapter 5.0 Population and Housing, the City of Sacramento has an employee per housing ratio of 1.87. Ratios exceeding 1.0 indicate that many jobs are filled by employees that do not reside within the City. Thus, a considerable number of employees are commuting to the City from outlying areas for work. It is therefore concluded that the proposed Specific Plan would result in fewer VMTs and less gasoline usage than one proposed outside of the Central City.

The Specific Plan also includes a number of policies and goals that encourage the development of alternate modes of transportation, such as improved light rail service, street cars, intercity rail, commuter rail, intercity and local bus service, attractive, pedestrian friendly streets and walkways, and improvements to existing bicycle circulation. These policies would help reduce the number of VMTs generated by the project, and as a result, would also reduce the gallons of gasoline that would be consumed by project operation. Decreased consumption of gasoline would promote the use of alternative energy sources and would reduce the amount of emissions generated by project traffic. The proposed project would also be required to comply with Titles 20 and 24 of the CCR and energy efficient buildings and designs would be incorporated into the project. Impacts from the project resulting in a wasteful or unnecessary use of energy would not occur; therefore, this impact would be considered ***less than significant***.

#### Mitigation Measure

*None required.*

#### **Cumulative Impacts and Mitigation Measures**

The cumulative context for electricity is the SMUD service area. The cumulative context for natural gas is the City of Sacramento Service Area of PG&E. For both contexts, this includes all planned projects, such as the Richards Boulevard Redevelopment Project. The cumulative context for transportation energy includes the Sacramento metropolitan area.

#### **6.14-4 The proposed project would contribute to cumulative increases in energy use.**

All new projects constructed in California are required to conform to the energy conservation standards specified in Titles 20 and 24 of the CCR, and many individual projects include other energy conservation measures in order to achieve green building status, either officially (as recognized by the Leadership in Energy and Environmental Design [LEED] Green Building Rating System) or unofficially (in other recognized sustainable building principles).

SMUD is a utility provider that obtains its electricity from a variety of sources, including hydro-generation, co-generation plants, advanced and renewable technologies (such as wind, solar, biomass/landfill gas power), and power purchased on the wholesale market. SMUD has stated that electricity would be available to supply energy to the City at full implementation of the Sacramento 2030 General Plan over the next 25 years which assumes development of the Railyards Specific Plan, and has also stated that sufficient energy could be provided to serve the proposed project. Because SMUD is able to meet all future projected demands, there will be no significant cumulative impacts in terms of either supply or a potential need for added facilities. The cumulative impact related to the supply of electricity and the need for additional or expanded facilities is less than significant, and the proposed project's contribution to demand would not be cumulatively considerable. This is considered to be a *less-than-significant impact*.

With regard to natural gas, the proposed project would also result in permanent and continued use of this resource. Because PG&E's demand projections are continuously updated, and PG&E's system has ample capacity to ensure continued levels of service to all customers within the region, PG&E has stated that it can supply natural gas to the proposed project without jeopardizing other existing or projected service commitments.<sup>17</sup> The cumulative impact related to the supply of natural gas and the need for additional or expanded facilities is less than significant, and the proposed project's contribution to demand would not be cumulatively considerable. This is considered to be a *less-than-significant impact*.

Future development in the region will increase residential, commercial, and office needs for electricity and natural gas. Development in previously undeveloped areas would require the extension of existing lines, and new transmission facilities and substations would be needed. The environmental impacts associated with the installation of new facilities will be analyzed by each development under separate environmental review as the utilities are extended. Although it is unknown at this time how SMUD and PG&E would accommodate the energy demand of the proposed project, both utility providers would install new distribution facilities as needed to serve the buildout of the proposed project, according to CPUC rules. The same is true for any additional development within the City of Sacramento or in SMUD's service area. As part of the development review process, PG&E and SMUD receive sufficient opportunity to provide input on proposed projects to ensure their capability of providing an adequate level of service to the project site.

Development in the Sacramento metropolitan region will continue to commit transportation energy (e.g., gasoline) to be consumed by traffic associated with the construction and operation of future projects. Specifically, development in areas located outside of Sacramento's urban area would consume a significant amount of gasoline due to the higher number of VMTs that are typical of these developments. Workers living outside of an urban area must commute farther than workers who live in close proximity to the urban area and are able to commute fewer miles or to use alternative modes of transportation. Development in the entire Sacramento region would result in a significant cumulative effect on committing non-renewable resources, such as gasoline and natural gas, to use for transportation and heating and cooling offices and homes. However, the proposed project's contribution to this cumulative effect is less than considerable due to its location within downtown Sacramento and the integration of alternate modes of transportation offered within the project site. Implementation of the measures described in Impacts 6.14-1 and 6.14-2 could further reduce the

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17 Hal Hackney, Gas Distribution Engineer, PG&E, Written communication, January 23, 2007.

project's potential for using energy. Because the proposed project would not use energy in a wasteful or inefficient manner, and would comply with exceed Title 20 and Title 24 standards. Therefore, this is a ***less-than-significant cumulative impact***.

Mitigation Measure

*None required.*

**Sports and Entertainment Facility Overlay**

Should the Sports and Entertainment Facility Overlay be implemented, potential impacts to energy resources would be relatively equal when compared to build out of the Specific Plan due to a potential replacement of residential and office units with an Arena facility. It is estimated that a proposed Arena facility would generate more gas, electricity, and vehicle gas consumption per day than the planned Residential Mixed Use (RMU), Office/Residential Mixed Use (ORMU), and Residential/Commercial Mixed Use (RCMU) uses due to the facility size and the anticipated trips generated by facility events. However the yearly output would likely operate at an equal level, as the arena would operate approximately 200 days a year, many times not at capacity. No new impacts or mitigation measures would be required.

## **7. OTHER CEQA REQUIRED CONSIDERATIONS**





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## 7.0 OTHER CEQA REQUIRED CONSIDERATIONS

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### INTRODUCTION

Section 15126 of the CEQA Guidelines requires that all phases of a project must be considered when evaluating its impact on the environment, including planning, acquisition, construction, and operation. Further, the evaluation of significant impacts must consider direct and reasonably foreseeable indirect effects of the project over the short-term and long-term. As part of this analysis, the EIR must identify (1) significant environmental effects of the proposed project, (2) mitigation measures proposed to minimize significant effects, (3) significant environmental effects that cannot be avoided if the proposed project is implemented, (4) significant irreversible environmental changes that would result from implementation of the proposed project, (5) growth-inducing impacts of the proposed project, (6) potential urban decay effects caused by economic competition created by the project, and (7) alternatives to the proposed project.

Chapter 3 of this EIR, Summary of Environmental Effects, and Sections 6.1 through 6.14 of this EIR provide a comprehensive presentation of the proposed project's environmental effects, proposed mitigation measures, and conclusions regarding the level of significance of each impact both before and after mitigation.

Chapter 8 of this EIR presents a comparative analysis of alternatives to the proposed Specific Plan.

The other CEQA-required analyses described above are presented below.

### SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the proposed project on various aspects of the environment are discussed in detail in Chapter 6 of this EIR. Project-specific and cumulative impacts that cannot be avoided if the project is approved as proposed include:

#### Project-Specific Significant and Unavoidable Impacts

- 6.1-3 Operation of the proposed project would result in the generation of increased ROG and NO<sub>x</sub> emissions.**
- 6.8-1 Construction of the proposed Specific Plan would temporarily produce loud noise.**
- 6.8-2 The proposed Specific Plan could permanently expose sensitive receptors to traffic and rail noise levels.**

#### Initial Phase Only (see Section 6.12, Transportation and Circulation)

- 6.12-1 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**
- 6.12-2 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**
- 6.12-3 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**

- 6.12-4 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-5 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.
- 6.12-10 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.
- 6.12-11 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.
- 6.12-12 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.
- 6.12-13 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-14 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.
- 6.12-16 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.
- 6.12-17 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.
- 6.12-18 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.
- 6.12-19 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-20 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.

#### **Cumulative Significant and Unavoidable Impacts**

- 6.1-8 Project construction activities would contribute to cumulative increases in ozone precursors.
- 6.1-9 The proposed project would contribute to cumulative air quality degradation.
- 6.1-10 Project construction would contribute to cumulative increases in particulate matter in the vicinity of the Specific Plan Area.
- 6.8-6 The proposed project would contribute to increases in traffic and rail noise levels.
- 6.12-22 The Full Project would increase traffic volumes at study area intersections and cause the level of service to deteriorate.
- 6.12-23 The Full Project would add traffic to the study roadway segments that result in substandard levels of service.

**6.12-24 The Full Project would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**

**6.12-25 The Full Project would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**

**6.12-26 The Full Project would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**

### **SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL EFFECTS**

Under CEQA, an EIR must analyze the extent to which a project's primary and secondary effects would generally commit future generations to the allocation of nonrenewable resources and to irreversible environmental damage [CEQA Guidelines section 15126.2(c); 15127]. Specifically, Section 15126.2(c) states:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible, since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irrecoverable commitments of resources should be evaluated to assure that such current consumption is justified.

Generally, a project would result in significant irreversible environmental changes if:

- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve a large commitment of nonrenewable resources;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Development of the proposed project would result in the dedication of the Specific Plan Area to dense mixed-use urban development, thereby precluding other conflicting uses for the lifespan of the project. Restoration of the Specific Plan Area to a less developed condition would not be feasible due to the degree of disturbance of the entire Specific Plan Area, the urbanization of the surrounding area, and the level of capital investment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by an accident associated with the project. While the project could result in the use, transport, storage, and disposal of hazardous wastes during construction and operation, as described in Section 6.5, Hazards and Hazardous Substances, all activities would comply with applicable state and federal laws related to hazardous materials, which significantly reduce the likelihood and severity of accidents that could result in irreversible environmental damage.

Implementation of the proposed project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts are alteration of the visual character of the Specific Plan Area, increased generation of pollutants from vehicle travel and stationary operations, and the short-term commitment of non-renewable and/or slowly renewable natural and energy resources, such as water resources during construction activities. Operations associated with future uses would also consume natural gas and electrical energy. These

unavoidable consequences of urban growth are described in the appropriate sections in Chapter 6 of this EIR.

Resources that would be permanently and continually consumed by project implementation include water, electricity, natural gas, and fossil fuels; however, the amount and rate of consumption of these resources would not result in the unnecessary, inefficient, or wasteful use of resources. With respect to operational activities, compliance with all applicable building codes, as well as mitigation measures, planning policies, and standard conservation features, would ensure that natural resources are conserved to the maximum extent possible. It is also possible that new technologies or systems will emerge, or will become more cost-effective or user-friendly, to further reduce the reliance upon nonrenewable natural resources. Nonetheless, construction activities related to the proposed project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels (including fuel oil), natural gas, and gasoline for automobiles and construction equipment.

Recent discussions of the issue of global warming within the scientific community have speculated that ozone depletion and resultant atmospheric warming could soon be irreversible. Although there continues to be considerable debate among experts and within our society at large, and although the relative contribution of the proposed project to global warming is not currently possible to determine, this issue is explored in section 6.1 of this EIR.

## **GROWTH-INDUCING EFFECTS**

As required by Section 15126.2(d) of the CEQA Guidelines, an EIR must discuss ways in which a proposed project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. The purpose of this section is to evaluate the potential growth-inducing effects resulting from the implementation of the Specific Plan in the City of Sacramento, and throughout the SACOG region. Additional analysis of the growth-inducing effects of the proposed Specific Plan is provided in Chapter 5, Population and Housing.

In general, a project may foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public service, the provision of the new access to an area; a change in zoning or general plan amendment approval); or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion, etc). These circumstances are further described below:

- **Elimination of Obstacles to Growth:** This refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity, or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- **Economic Effects:** This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include such effects as the Multiplier Effect. A “multiplier” is an economic term used to describe inter-relationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the onsite employment and population growth of each project is not the complete picture of growth caused by the project.

### **Elimination of Obstacles to Growth**

The elimination of physical obstacles to growth is considered a growth-inducing effect. The Specific Plan Area would be developed in a built-out, highly urbanized area in Downtown Sacramento; however, some physical constraints to growth currently exist in the vicinity of the Specific Plan Area. The primary growth obstacles in the proposed project include:

- Limited capacity of the storm drainage system serving this portion of the City of Sacramento;
- Limited circulatory access connecting the Central Business District to the River District; and
- Limited capacity of the wastewater system serving this portion of the City of Sacramento.

The implementation of the Specific Plan would result in the elimination of growth obstacles by expanding the capacity of the existing at-capacity infrastructure system. The storm drainage and wastewater systems serving the Specific Plan Area are at or beyond capacity during severe storm events. Although the proposed project would contribute flows to these wet utility systems and would likely contribute funding to their expansion or other improvements, it is likely these improvements would be made regardless of whether the proposed project is developed. In addition, it is anticipated that offsite upgrading/upsizing of existing utilities (water, sewer, and drainage) would occur within street right-of-ways for 5<sup>th</sup> Street, 6<sup>th</sup> Street, 7<sup>th</sup> Street, and 12<sup>th</sup> Street. While these offsite improvements would be designed to accommodate uses proposed within the Specific Plan Area, the improvements could be sized to support other development in the Specific Plan Area, which could remove an obstacle to growth.

The provision of additional access routes from the Specific Plan Area to the Richards Boulevard Area via the Bercut Street extension, 5<sup>th</sup> Street extension, 6<sup>th</sup> Street extension, and the 7<sup>th</sup> Street alignment as well as the development of the SITF would provide increased access to and from the Central Business District and the River District. While the planned road alignments changes are unique to the project development, the recent proposals of high density downtown residential projects such as the Township 9, Towers on 3<sup>rd</sup> Street and Capitol Mall, the Aura Building on 5<sup>th</sup> Street and Capitol Mall, and the Epic Tower on 12<sup>th</sup> Street and I Street could trigger improved circulatory road connections as well. Although these offsite roadway improvements would be intended to facilitate improved circulation in and around the Specific Plan Area, they would improve the circulation system in the project vicinity and could remove obstacles for further development in the Specific Plan Area.

Electricity and natural gas transmission infrastructure presently exists in the vicinity of the Specific Plan Area. Development of the project would necessitate the construction of an onsite distribution system to convey this energy to uses on the site or an offsite connection to the offsite facility.

While the Specific Plan Area is currently surrounded by urban uses, implementation of the proposed Specific Plan includes offsite improvements to roadways and utilities distribution infrastructure that would be sized to accommodate more growth than just that associated with the proposed project. As such, these improvements could eliminate an obstacle to further redevelopment and growth in the Central City.

### **Economic Effects**

In addition to the employment generated by development consistent with the proposed Specific Plan, additional local employment could be generated through what is commonly referred to as the "multiplier effect." The multiplier effect refers to the secondary economic effects caused by spending from project-generated residents and employees. The multiplier effect tends to be greater in regions with larger diverse economies due to a decrease in the requirement to import goods and services

from outside the region, as compared to the effects of spending in smaller economies where goods and services must be imported from elsewhere.

Two different types of additional employment are tracked through the multiplier effect. *Indirect* employment includes those additional jobs that are generated through the expenditure patterns of residents and direct employment associated with the project. For example, future residents and workers in the office, hotel and retail portions of the Specific Plan would spend money in the local economy, and the expenditure of that money would result in additional jobs. Indirect jobs tend to be in relatively close proximity to the places of employment and residence.

The multiplier effect also calculates *induced* employment. Induced employment follows the economic effect of employment beyond the expenditures of the employees within the Specific Plan Area to include jobs created by the stream of goods and services necessary to support businesses within the Specific Plan Area. For example, when a manufacturer buys products or sells products, the employment associated with those inputs or outputs are considered *induced* employment.

For example, when an employee from the project goes out to lunch, the person who serves the project employee lunch holds a job that was *indirectly* caused by the proposed project. When the server then goes out and spends money in the economy, the jobs generated by this third-tier effect are considered *induced*.

The multiplier effect also considers the secondary effect of employee expenditures. Thus, it includes the economic effect of the dollars spent by those employees who support the employees of the project.

Increased future employment generated by resident and employee spending ultimately results in physical development of space to accommodate those employees. It is the characteristics of this physical space and its specific location that determine the type and magnitude of environmental impacts of this additional economic activity. Although the economic effect can be predicted, the actual environmental consequences of this type of economic growth are too speculative to predict or evaluate, since they can be spread throughout the Sacramento metropolitan region and beyond.

It should be noted that, while the proposed project would contribute to direct, indirect, and induced growth in the region, it would develop residential, commercial, and retail land uses in a manner that is efficient and utilizes existing and planned urban resources. Development of the Specific Plan Area is a goal of the City's General Plan and the Railyards Special Planning District. Contributing to the vitality of the community is also a General Plan Goal which would be achieved as a result of the proposed project.

### **Environmental Effects of Induced Growth**

While growth in the Specific Plan Area of the City is an intended consequence of the proposed Specific Plan, growth induced directly and indirectly by the Specific Plan could also affect the greater Sacramento region. Potential effects caused by induced growth in the region could include: increased traffic congestion; increased air pollutant emissions; loss of agricultural land and open space; loss of habitat and associated flora and fauna; increased demand on public utilities and services, such as fire and police protection, water, recycled water, wastewater, solid waste, energy, and natural gas; and increased demand for housing.

Specifically, an increase in housing demand in the greater Sacramento region could cause significant environmental effects as new residential development would require governmental services, such as schools, libraries, and parks. Indirect and induced employment and population

growth would further contribute to the loss of open space because it would encourage conversion to urban uses for housing, commercial space, and infrastructure.

## **URBAN DECAY**

As used in CEQA, the term “urban decay” was introduced by the Court of Appeal in the case entitled *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4<sup>th</sup> 1184. In that decision, the court required the City of Bakersfield to revised and recirculate two EIRs for two proposed Wal-Mart stores because the documents both failed to address the possible indirect physical effects flowing from the direct economic effects of the two projects. Though the court did not expressly define “urban decay,” the court seemed to equate the concept with a “chain reaction of store closures and long-term vacancies, ultimately destroying existing neighborhoods and leaving decaying shells in their wake.” (*Id* at p. 1204) Building on this concept, the City of Sacramento focused the analysis of urban decay on the proposed Specific Plan’s retail/entertainment component. For the purposes of this assessment and consistent with the above described court decision, “urban decay” is defined as the closure of retail and other stores in the surrounding area as a result of market competition, which results in decaying building shells in sustained vacancy, long-term abandonment, and/or deteriorated conditions that significantly impair the proper and safe utilization of the real estate.

This assessment of the potential for urban decay is based on *Sacramento Railyards: Urban Decay Assessment* prepared by the urban economics firm Keyser Marston Associates. The full report is contained in Appendix N of this DEIR.

## **Methodology**

The analysis of urban decay for the Specific Plan is based on an assessment of the market supply of, and demand for, retail and entertainment space planned for the Specific Plan Area. The analysis involved five steps:

- Definition of retail trade areas;
- Identification of market support segments for the specific retail concepts
- Projection of total expenditure retail potential for specific retail uses proposed;
- Competitive supply and projected retail sales demands; and
- Projection of net retail expenditure potential based on a comparison of total expenditure potential with projected retail sales requirements for existing and planned retail centers in the trade areas.

The supply/demand comparison was prepared for two points in time: Year 2015 (at the end of Phase 1) when a substantial percentage of the total retail and eating and drinking space proposed in the Specific Plan Area would be built and the operations would be stabilized, and Year 2025 (at the end of Phase IV) when 100% of the proposed retail and eating and drinking space would be constructed and stabilized.

In addition to the numeric analysis of retail/entertainment supply and demand, the assessment of urban decay included a comparative exploration of two specific case studies where new major shopping developments were introduced into an existing central business area. The comparative examples included the Gateway Center, an approximately 650,000 square foot (sf) railyard redevelopment project in downtown Salt Lake City, and Bay Street, an approximately 400,000 sf brownfield retail/entertainment development project in the City of Emeryville, in Alameda County. A

brief description of the two comparative examples is provided below. A complete description of the comparative analysis can be found in Appendix N.

### **Gateway Center**

Due to the project's location and composition, the Gateway Center offers many parallels to the proposed project. The Gateway Center is a mixed use development project centered on the historic Pacific rail depot in the 650-acre Gateway District of Salt Lake City, Utah, southwest of the State Capitol. The district was once a vibrant and prosperous area that had become a forgotten and neglected older industrial, warehousing, and transportation area west of downtown. In 1998, the Depot District Redevelopment Project was created to revitalize the area in anticipation of the 2002 Olympic Games, leading to the development of the Gateway project. The specific project developed approximately 2.5 million square feet (msf) of mixed uses within a 40-acre portion of the Gateway District. Completed in 2001, the project covers three whole blocks and included approximately 650,000 sf of retail/entertainment uses, consisting of about 590,000 sf of retail and eating and drinking, plus a 60,000 sf 12-screen theater. Other components of the project included 3 Class A office buildings, a renovated train depot, cultural attractions (e.g., Children's Museum), an open air public plaza, parking, 500 residential units and a hotel. The project is about a block away from the intermodal hub and a 44-mile commuter rail and light rail station, which are expected to be completed by 2008. South of the site is the Pierpoint Art District, including a Farmer's Market and a concentration of new restaurants.

### **Emeryville Bay Street**

Opened in late 2002, Emeryville Bay Street project is an open-air, mixed use development on 26 acres in downtown Emeryville, consisting of 400,000 sf of retail and entertainment, 346 residential units, a 230-room hotel, a 16-screen Cineplex, a 2,000-car parking garage, 3.8 msf of Class A office space, a renovated train depot, and a public plaza. The project provides an eclectic urban village setting, combining a mix of lifestyle retail, residential, hotel, and entertainment uses within three city blocks in the City of Emeryville. The project is located adjacent to I-80 and approximately a mile from three existing retail centers along the I-80 corridor: Powell Street Plaza (a 170,000 sf promotional center), Emeryville Marketplace (190,000 sf complex with a public market, a 12-screen UA theater, a book store, and other retail/entertainment), and East Bay Bridge Center (a 397,000 sf power center). Bay Street is also adjacent to a 275,000 sf IKEA store, which opened in 2000. It is also located within a mile of the Amtrak Station. The second phase of Bay Street, with a hotel, residential, and approximately 82,000 to 100,000 sf retail use, is being planned for completion by 2010/2011.

### **Retail Trade Areas**

The retail and entertainment space proposed in the Specific Plan was determined to include three types of such space, characterized as Comparison Retail, Convenience Retail, and Eating and Drinking, each of which draws customers from different areas of the region. It is anticipated that the Comparison Retail and Eating and Drinking components of the Specific Plan could draw essentially 100% of their patronage from a Regional Trade Area (RTA) with a radius of approximately 30 miles. For the purposes of this analysis, the boundaries of the RTA is defined as extending north to almost Marysville, east to the Sierra foothills, south to Lodi, and west to Vacaville. The RTA includes the City of Sacramento, and the cities of Davis, West Sacramento, Woodland, Lincoln, Rocklin, Roseville, Citrus Heights, Folsom, Elk Grove, Vacaville, Dixon, and portions of unincorporated Sacramento, Placer, Solano, Sutter, Yolo and Yuba counties.

The bulk of the patronage in the Specific Plan Area is expected to come from a Primary Trade Area (PTA) that has a radius of approximately 10-15 miles, extending generally to the cities of Davis and Woodland on the west, Folsom to the east, Roseville to the north/northeast, and the southern edge



of Sacramento (but north of Elk Grove) to the south. The PTA would generate the majority of the sales in the project; the remainder would come from other portions of the RTA.

For Convenience Retail and Services proposed in the Specific Plan, the trade area is defined as the Downtown Central Business District, essentially bounded by the Sacramento River on the west, the American River on the north, US 50/Business 80 on the south and east. This area has a radius of approximately one to one-and-a-half miles.

### **Market Support Segments**

Within the relevant trade areas, the proposed Specific Plan retail and entertainment space would be supported by residents, employees, visitors, and special use-generated visitors, as described further below.

- *Residents.* By 2015, approximately 2.3 million total residents will reside in the RTA, including approximately 1.2 million residents in the PTA, and 44,000 residents in downtown Sacramento. By 2025, the increase in residents would rise to approximately 2.7 million in the RTA, with approximately 1.3 million in the PTA and 77,000 in downtown.
- *Downtown Office Employees.* The total number of office employees in downtown Sacramento is estimated to be 91,000 in 2015, increasing to 106,000 by 2025. To be conservative, it is estimated that 50% of these employees also are downtown residents, and thus should not be accounted for to avoid double-counting.
- *Downtown Visitors.* Assuming a 50 percent reduction to eliminate multiple visits to events or venues by the same venue and to avoid overlap with the trade area resident and employee counts, it is estimated that there would be approximately 2.4 million visitors to downtown Sacramento in 2015, rising to approximately 2.7 million visitors for 2025. According to figures provided by the applicant, the proposed Bass Pro Venue would draw between 2 and 4 million visitors per year. These figures have been incorporated into the overall Downtown visit assumptions.
- *Special Use-Generated Visitors.* Special use-generated visitors to downtown include those regional residents that visit to attend museums, theater, or other live-performance venues. It is estimated that every year approximately 175,000 people would visit the State Museum of Railroad Technology, assuming it is located in the Central Shops. Further, it is expected that approximately 500,000 people would attend the entertainment venues envisioned in the Specific Plan Area by 2015, with attendance rising to 700,000 by 2025.

### **Demand Analysis - Spending Potential**

The demand for retail and entertainment space is based upon the spending potential of the residents, employees and visitors in the relevant trade areas. In summary, the spending potential in the relevant trade areas are estimated as follows:

- *Comparison Retail.* Total RTA spending on Comparison Retail would be approximately \$9.2 billion in 2015, rising to approximately \$12.1 billion in 2025.
- *Eating and Drinking.* Total RTA spending on Eating and Drinking would be approximately \$3.2 billion in 2015, rising to approximately \$4.2 billion in 2025.
- *Convenience Retail.* Downtown spending on Convenience Retail and Services would be approximately \$141 million in 2015, rising to approximately \$242 million in 2025.

### **Supply Analysis – Available Competitive Space**

The available and planned supply of competitive retail and eating and drinking space provides the supply context for evaluating the potential effects of the proposed project on urban decay. A summary of the available supply is presented below.

- *Downtown.* There are an estimated 2.1 msf of competitive supply in downtown Sacramento, including about 1.7 msf in Downtown Plaza, Old Sacramento, the K Street Mall, and the Midtown Corridor. As proposed, the Specific Plan Area would nearly double the amount of existing retail space in the four major retail concentrations in downtown. By 2015, the proposed project would account for about 26% of existing, planned, and under construction retail supply in downtown; by 2025 this percentage would increase to about 32%.
- *Remainder of the PTA.* Outside of downtown, there are an additional 9.8 msf of retail, with the largest single concentration being the 1.1 msf Arden Fair Mall. In 2015, the Specific Plan Area would account for about 7% of the existing, planned and under construction retail supply in the PTA. By 2025, this percentage would increase to about 9%.
- *Remainder of the RTA.* Beyond the PTA, there is an additional approximately 9.1 msf of retail space in the RTA, including the 1.0 msf Roseville Galleria, and the 1.2 msf Sunrise Mall. Further, there are plans for over an additional 5.0 msf of retail space in other locations in the RTA. If the proposed project were built, it would represent about 3% of the retail space in the RTA in 2015 and about 4% by 2025.

### **Analytical Findings**

The market analysis made findings about the relative balance of supply and demand for Comparison Retail space, Eating and Drinking space, and Convenience Retail space, including the development of the proposed project.

#### **Comparison Retail**

There is projected to be sufficient support for Comparison Retail in the PTA in 2025, however, supply will exceed demand in 2015. In the larger RTA, due to the addition of new retail projects in the outlying communities such as Elk Grove and Rocklin, the supply of Comparison Retail space is expected to substantially exceed the demand for such space by 2015. However, by 2025 growth of residents, office workers, and visitors is expected to create sufficient demand to result in a balance with the supply in both the PTA and the RTA.

#### **Eating and Drinking**

The supply of existing and new Eating and Drinking space, including the proposed project, is expected to slightly exceed the demand for such space in the PTA in 2015. In the larger RTA, demand will be in balance with supply in 2015. By 2025, assuming growth of demand as expected in PTA and RTA, there is anticipated to be more than enough demand to supply the supply of Eating and Drinking space.

#### **Convenience Retail**

The demand for Convenience Retail space is expected to be sufficient to be in balance with the existing and new supply of Convenience Retail space in downtown in 2015 and 2025.

A full description of the analytical findings of the market analysis is contained in Appendix N.

## **Conclusions**

On a project-specific basis, adequate demand will exist in the future to support existing retail uses plus the retail/entertainment uses in the Specific Plan Area. Under the scenario in which the proposed project represents the only future retail/entertainment space developed in the foreseeable future, no effects related to urban decay would occur as a result of the project.

In the cumulative analysis, considering the future in the context of development of the Specific Plan Area along with other existing, approved, and planned retail and entertainment space, in the outlying communities, such as Elk Grove and Rocklin, with or without the proposed project, projected demand for Eating and Drinking space and Convenience Retail space is expected to be close to or in balance with projected supply in the relevant trade areas in 2015 and 2025. On the other hand, with or without the Specific Plan Area, projected Comparison Retail space supply in the larger RTA will likely be greater than demand for Comparison Retail space by year 2015. By 2025, the imbalance between the supply and demand for Comparison Retail is expected to be resolved as growth in demand catches up with the supply in the region. In the meantime, communities in the region may further add to the supply of Comparison Retail space by approving the construction of projects not currently known, but any attempt to analyze the impacts of projects that have not been proposed is speculative.

During the period of time when supply exceeds demand, there is an increased possibility of a negative effect on existing, under-construction, and planned retail in the RTA, including downtown and the Specific Plan Area. The extent and exact nature of the negative effects on individual retail developments will depend on the relative strength of the individual retail locations, including the downtown retail concentrations at Downtown Plaza, Old Sacramento, the K Street Mall, and the Midtown Corridor. It is possible, however, that the more vulnerable comparison retail locations in the trade area could experience a period of soft economic demand that could lead to urban decay. This economic instability could include transfers of sales from weaker to stronger retail venues, and increased vacancy and longer absorption of vacant retail space in the trade area. If the vacancies and closures are sustained over a long period (more than 3 years), they may result in long-term abandonment of decaying building shells and/or deteriorated conditions that significantly impair the proper and safe utilization of the real estate. Those buildings that are abandoned could experience vandalism, graffiti, degraded landscaping, and other similar effects.

The conditions that lead to urban decay may be avoided through a coordinated public and private strategy including investments to protect and preserve the more vulnerable retail locations in Downtown. There are several examples in Downtown Sacramento that show that vacancies can be eliminated through the evolution of space to uses that are supported by the market. Through public and private investment there are, in locations around the Downtown area, renovations and/or conversions of existing buildings. For example, Downtown Plaza is currently processing plans to add a Target store and an upscale grocer. In addition, the Sacramento Downtown Partnership Strategic Area Plan has identified the following goals for the downtown over the next five years including:

- Increase downtown housing by approximately 3,000 units,
- Increase activity to 5 million visitors and provide 3 new or expanded venues.
- Increase office market with 3 msf for private sector use.
- Increase retail sales growth by 25%.

Changes that would help reach the Sacramento Downtown Partnership goals are occurring on a smaller scale and on a scattered basis in the Downtown, through projects such as the conversion of

rental office space to office condominiums at 13<sup>th</sup> and I Streets, automotive-based retail space to restaurant/residential mixed use along 16<sup>th</sup> Street, and warehouse uses to residential, retail, and office in the R Street corridor. In most of the cases, these projects have been undertaken with a combination of private and public investment.

For retail concentrations in Downtown to remain competitive with those in the suburbs and/or the farther out trade area, steps that could be taken include:

- Reinforcement and enhancement of the differentiated retail offerings in the four retail concentrations in the Downtown (i.e., repositioned regional shopping center for Downtown Plaza, specialty retail and eating and drinking/entertainment for the K Street Mall, visitor-oriented retail in Old Sacramento, and neighborhood-oriented retail/eating and drinking in the Midtown Corridor.
- Identification of a special, unrepresented retail niche for the Specific Plan Area to create a separate identity and destination to minimize overlaps with the other four existing retail concentrations in the Downtown;
- Development of physical linkages between the proposed project and other retail concentrations in the Downtown to create retail synergy and a large draw for the Downtown so that it can truly become a desirable and attractive place to be for residents and visitors;
- Continued development of new residential projects in the Downtown to transform the area into both a vibrant and attractive retail destination and living/working community in the Greater Sacramento region.

Implementation of the aforementioned strategies would occur through the enforcement of existing and planned City policies related to downtown development, as well as consistency with the goals of the Sacramento Downtown Partnership. In addition, the proposed project would resolve blighted conditions on-site, as the proposed project would replace the existing parcel which is currently defined as an example of urban blight, with a variety of land uses which would reinvigorate a parcel which has lied dormant for generations. This project would alter the City's pattern of being dominated by lower density suburban housing developments. However, it is reasonable to assume that if the Specific Plan Area is not developed, more projects located at a greater distance from the regional core in downtown Sacramento would be developed, resulting in an additional loss of downtown patronage, resulting in increased urban decay. The full analysis of potential urban decay effects of the proposed Specific Plan is contained in Appendix N.

## **8.0 ALTERNATIVES TO THE PROPOSED PROJECT**



### INTRODUCTION

This chapter describes and considers the comparative effects of a reasonable range of alternatives to the proposed project. The alternatives are developed to substantially lessen or eliminate the significant or potentially significant adverse environmental effects identified as a result of the proposed project, while still meeting most of the basic project objectives.

### California Environmental Quality Act Requirements

An Environmental Impact Report (EIR) must evaluate a reasonable range of alternatives to the proposed project, or to the location of the proposed project, which could feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives (California Environmental Quality Act (CEQA) Guidelines, section 15126.6). An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. CEQA provides the following guidelines for discussing alternatives to a proposed project:

The specific alternative of the "no project" shall also be evaluated along with its impacts....If the environmentally superior alternative is the "no project" alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines, section 15126.6 subd.(e)(2)).

The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the proposed objectives, or would be more costly (CEQA Guidelines, section 15126.6 subd.(b)).

If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed (CEQA Guidelines, section 15126.6 subd.(d)).

The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice....The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making....An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative (CEQA Guidelines, section 15126.6 subd.(f)).

The requirement that an EIR evaluate alternatives to the proposed project or alternatives that address the location of the proposed project is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the proposed project. Alternatives that are included and evaluated in the EIR must be feasible alternatives. However, the Public Resources Code and the CEQA Guidelines direct that the EIR need "set forth only those alternatives necessary to permit a reasoned choice." The CEQA Guidelines provide a definition for "a range of reasonable alternatives" and, thus, limit the number and type of alternatives that need to be evaluated in a given EIR. According to the CEQA Guidelines (section 15126.6(b)):

The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project.

First and foremost, alternatives in an EIR must be feasible. In the context of CEQA, “feasible” is defined as:

...capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors.

Further, the following factors may be taken into consideration in the assessment of the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (section 15126.6(f)(1)). Finally, an EIR is not required to analyze alternatives when the effects of the alternative “cannot be reasonably ascertained and whose implementation is remote and speculative (section 15126.b(f)(3)).”

### **Project Objectives**

As noted above, the selection of a reasonable range of alternatives must take into account the project objectives that are presented in Chapter 3 (Project Description). The stated objectives of the proposed project are to:

- Integrate the Railyards area into the fabric of the existing Central City. The Railyards have historically been isolated from the City. Now the opportunity exists to integrate the area from all points, not just downtown, into a seamless patch of the City fabric;
- Create a dynamic 24-hour mixed use urban village that provides a range of complementary uses—including cultural, office, hospitality, entertainment, retail, residential and open space--and a mixture of housing products, including affordable housing;
- Connect the Railyards area with Sacramento’s downtown office, retail, government center areas, Old Sacramento, the Richards Boulevard area, and the Alkali Flat neighborhood, using pedestrian and bicycle facilities, roadways, and public transportation routes;
- Connect the Railyards area to the Sacramento River waterfront, and allow for hotel, public open space, residential waterfront and recreational uses consistent with the Riverfront Master Plan that will result in a vibrant waterfront, valuable to the region and the City;
- Transform the Railyards area from an under-utilized and environmentally contaminated industrial site into a transit-oriented, attractive, and nationally renowned mixed-use urban village;
- Utilize the historic Central Shops buildings as a heritage tourism draw and as inspiration for a mix of uses that will help to create a culturally-vibrant, urban community;
- Create a development that is a regional draw for the City of Sacramento due to its geographic location downtown near the Sacramento River waterfront and its unique mix of transportation, residential, cultural, office, hospitality, entertainment, retail and open space uses;
- Provide a mixture of uses that complement and support the City’s planned Sacramento Intermodal Transit Facility (SITF), connecting the Central City to the region, the state and beyond; and
- Create a sustainable community that utilizes green building technology, water conservation measures and renewable energy sources.



### **Significant and Unavoidable Impacts**

In determining a reasonable range of alternatives for consideration in the EIR, equally important to attaining the project objectives is the reduction of some or all significant impacts, particularly those that could not be mitigated to a level below the threshold of significance. The project-specific and cumulative significant and unavoidable impacts of the proposed project, after mitigation, are listed below.

#### **Project-Specific Significant and Unavoidable Impacts**

- 6.1-3 Operation of the proposed project would result in the generation of increased ROG and NO<sub>x</sub> emissions.**
- 6.8-1 Construction of the proposed Specific Plan would temporarily produce loud noise.**
- 6.8-2 The proposed Specific Plan could permanently expose sensitive receptors to traffic and rail noise levels.**

#### **Initial Phase Only (see Section 6.12, Transportation and Circulation)**

- 6.12-1 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**
- 6.12-2 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**
- 6.12-3 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**
- 6.12-4 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**
- 6.12-5 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**
- 6.12-10 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**
- 6.12-11 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.**
- 6.12-12 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.**
- 6.12-13 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.**
- 6.12-14 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.**
- 6.12-16 The Initial Phase would increase traffic volumes at study area intersections and cause the level of service to deteriorate.**

- 6.12-17 The Initial Phase would add traffic to the study roadway segments that result in substandard levels of service.
- 6.12-18 The Initial Phase would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.
- 6.12-19 The Initial Phase would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-20 The Initial Phase would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.

#### Cumulative Significant and Unavoidable Impacts

- 6.1-8 Project construction activities would contribute to cumulative increases in ozone precursors.
- 6.1-9 The proposed project would contribute to cumulative air quality degradation.
- 6.1-10 Project construction would contribute to cumulative increases in particulate matter in the vicinity of the Specific Plan Area.
- 6.8-6 The proposed project would contribute to increases in traffic and rail noise levels.
- 6.12-22 The Full Project would increase traffic volumes at study area intersections and cause the level of service to deteriorate.
- 6.12-23 The Full Project would add traffic to the study roadway segments that result in substandard levels of service.
- 6.12-24 The Full Project would add traffic to the study freeway mainline segments and cause the level of service to degrade below LOS E.
- 6.12-25 The Full Project would add traffic to the study freeway interchanges and cause the level of service to degrade below those of the freeway mainline.
- 6.12-26 The Full Project would add traffic to the study freeway off-ramps and cause freeway off-ramp queues to exceed the available storage capacity.

#### ALTERNATIVES CONSIDERED AND DISMISSED FROM FURTHER CONSIDERATION

The City has given consideration to a wide array of alternatives that could reduce significant impacts. Those alternatives that would have impacts identical to or more severe than the proposed project, or that would not meet most of the project objectives, were considered, explored, and then dismissed from further consideration. The following alternatives were also considered but dismissed from further consideration and evaluation:

**Low Density Residential-Only Alternative:** To reduce or avoid effects that are associated with the population intensity on the site that creates indirect effects on traffic, air quality, service demands, and similar uses, City staff considered the idea of developing the Specific Plan Area as primarily lower density housing consistent with the density of single-family units found elsewhere in Midtown, East Sacramento, and other inner parts of the City. This alternative would reduce the number of proposed units and the population in the Specific Plan Area. However, the alternative would be

economically infeasible due to the costs associated with site clean up, utilities extension, and construction versus the cost of the proposed units. This alternative would also include residential uses in areas not considered for residential under the proposed project. These areas would be subject to additional Department of Toxic Substance Control (DTSC) approval, which may not be granted, because of limitations on first floor residences. Additionally, the development of a residential-only alternative would be inconsistent with existing General Plan land uses. It is likely that such an alternative would not generate revenues adequate to support the preservation of the historic buildings on the site and could result in the removal of historic Central Shops buildings. A Low Density/Residential-Only Alternative would fail to meet the majority of the proposed objectives of both the City and the applicant.

Further, while the traffic and air quality effects caused by this alternative would be lower, it is reasonable to assume that the housing, office, retail, and other uses eliminated from the Specific Plan to accommodate this alternative would be developed somewhere else in the greater Sacramento region. This is illustrated in the Sacramento Area Council of Governments (SACOG) Blueprint. The SACOG Blueprint is based upon smart growth principles, which encourage growth patterns with more compact, mixed-use communities that use space in such a manner to encourage more walking, biking, and transit use, thus shortening auto trips. The proposed project, a development with residential, employment, entertainment, and retail, with access to transit, all within Sacramento's Central City, would be considered smart growth. The level of growth in the proposed project is similar to that called for in the Blueprint. A residential-only alternative is not consistent with the Blueprint and would not be supportive of such a growth pattern. SACOG estimates that compact development, similar to that in the proposed project, would result in less than half the acreage converted to urban uses compared to that of typical development patterns.<sup>1</sup> In addition, vehicle miles traveled would be reduced from 47.2 miles per household per day under SACOG's Base Case Scenario to 34.9 miles per household per day under the Preferred Blueprint Scenario.<sup>2</sup> Thus, it is reasonable to assume that development that would have been developed under the proposed project would be developed at a greater distance from the regional core in downtown Sacramento, resulting in greater dependence on the automobile, more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl.

Because the Low Density Residential-Only Alternative would result in greater environmental effects and because it would fail to meet most of the basic objectives of the Specific Plan, it is not further considered or evaluated in this EIR.

**Low Building Height Alternative:** City staff also considered a low building height alternative. While maintaining much of the density, urban character, and mix of uses as proposed in the Specific Plan, this alternative would generate fewer residents and employees, and would tend to reduce the magnitude of intensity-caused effects, such as traffic congestion, water demand, air emissions, and the like. This alternative would maintain the land use types proposed in this EIR, but would limit building heights to a maximum of four stories or a maximum of 56 feet. The building height limit would drastically reduce the density of the area and change both onsite and offsite views of the project area.

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- 1 The Preferred Blueprint Alternative would convert 304 square miles versus 661 square miles converted under the base Case Scenario. Sacramento Area Council of Governments, *Special Report: Preferred Blueprint Alternative*, January 2005, page 5.
  - 2 Sacramento Area Council of Governments, *Special Report: Preferred Blueprint Alternative*, January 2005, page 9.

It is unlikely that this alternative would generate adequate internal or municipal revenues to support the high cost of infrastructure improvements necessary to make the site developable, including the cost of new roads crossing the railroad tracks, or the rehabilitation of the Central Shops buildings. As such, it is likely that such an alternative would be required to have its primary vehicular access from Richard's Boulevard in the north or 7<sup>th</sup> Street. As such, it would fail to meet the objectives to connect the Specific Plan Area with Sacramento's downtown, to integrate the Specific Plan Area into the fabric of the existing Central City, to use the Central Shops buildings, or to create a nationally renowned mixed-use urban village. A Low Building Height Alternative would fail to meet most of the basic objectives of both the City and the applicant.

Further, like the residential-only alternative discussed above, while the traffic and air quality effects caused by this alternative would be lower, it is reasonable to assume that the housing, office, retail and other uses eliminated from the Specific Plan to accommodate this alternative would be developed somewhere else in the greater Sacramento region. In that case, it is also reasonable to assume that such development would be at a greater distance from the regional core in downtown Sacramento, resulting in more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl.

Because the Low Building Height Alternative would result in greater environmental effects and because it would fail to meet most of the basic objectives of the Specific Plan, it is not further considered or evaluated in this EIR.

**Central Shops Rehabilitation/Center City Park Alternative:** In order to avoid environmental effects associated with bringing new population and employees to the Specific Plan Area, the City staff considered an alternative that would focus around the redevelopment of the Central Shops and provide a large-scale active and passive park space in the remainder of the Specific Plan Area. The proposed park would be modeled as a small scale version of Golden Gate Park in San Francisco or Central Park in New York City. The new park would provide a logical pedestrian link to Old Sacramento, the Sacramento River, and Discovery Park/American River Parkway. While the proposed park would be a logical destination for tourists and locals during their leisure time, the number of peak hour trips generated by the proposed alternative would be far less than the proposed project. The result would be much lower levels of congestion in the vicinity of the Specific Plan Area, less air pollutant emissions originating from the Specific Plan Area, fewer demands on public services and infrastructure in the Central City, and the like.

This alternative would, however, fail to meet all of the stated objectives of the proposed Specific Plan. Further, like the residential-only alternative discussed above, while the traffic and air quality effects caused by this alternative would be lower, it is reasonable to assume that the housing, office, retail and other uses eliminated from the proposed Specific Plan to accommodate this alternative would be developed somewhere else in the greater Sacramento region. In that case, it is also reasonable to assume that such development would be at a greater distance from the regional core in downtown Sacramento, resulting in more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl.

Because the Central Shops Rehabilitation/Center City Park Alternative would result in greater environmental effects and because it would fail to meet any the objectives of the Specific Plan, it is not further considered or evaluated in this EIR.

**Different Location Alternative:** Section 15126.6(f)(2)(B) states that “[i]f the lead agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR. For example, in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location.”

The most prominent and important project objective is to improve and redevelop the Specific Plan Area, the historic downtown Sacramento Railyards. While the mere construction of residential, office, retail, cultural, or other uses identified in the Specific Plan Area could be accomplished at other locations in the region, no other location would meet the primary objective of the project – to redevelop the Specific Plan Area. In this case, no feasible alternative location exists that would achieve the primary and most important objective of the project. As such, the evaluation of a Different Location Alternative is not further considered in this EIR.

### **ALTERNATIVES CONSIDERED IN THIS EIR**

Although any number of alternatives could be designed that could result in the reduction or elimination of project impacts, a total of four alternatives, each intended to reduce or eliminate one or more of the significant impacts identified for the proposed project, are evaluated in this Draft EIR, as described below.

- **Alternative 1: No Project/No Development Alternative.** This alternative assumes that the proposed project would not occur and there would be no new development of the Specific Plan Area. This alternative assumes the existing Specific Plan Area would remain undeveloped with the exception of the existing depot (Intermodal Facility) and the Central Shops structures, currently used to store and repair old train cars.
- **Alternative 2: No Project/General Plan Buildout.** This alternative assumes that the Plan Area would be redeveloped consistent with the existing land use designations identified in the current General Plan. The No Project/General Plan Buildout Alternative allows for the development of over 9.6 million sf of office, 527,000 sf of retail, 320,000 sf of public/cultural space, 2,800 residential units, and 640 hotel rooms.<sup>3</sup>
- **Alternative 3: Reduced Density/Reduced Intensity Alternative.** This alternative assumes that the density and or intensity of all of the proposed land uses besides Parcel 2, Parcel 11a, and Parcel 35 would be reduced by approximately 30 percent. The retail uses anticipated for Parcel 2 under the proposed project would remain the same as the proposed project, while the amount of retail in Parcel 11a would be reduced by 50 percent compared to the proposed project. This alternative would eliminate residential uses from Parcel 35 and reduce the number of hotel rooms from 500 rooms to 300 rooms. All of the retail within Parcel 35 in the proposed project would be included in the Reduced Density/Reduced Intensity Alternative. The Reduced Density/Reduced Intensity Alternative would place a 60-foot height limit on the proposed hotels within Parcels 35, 14, and 3c. The roads included in the proposed project would remain the same under this alternative. Under a maximum buildout scenario, the Reduced Density/Reduced Intensity Alternative would generate approximately 7,400 du, 956,143 sf of retail, 343,700 sf of mixed use, 720 hotel rooms, 1,571,360 sf of office, 339,773 sf of cultural space, and 41.6 acres of open space.
- **Alternative 4: Water Supply Constrained Alternative.** This alternative assumes the development of the proposed project would be reduced to an enlarged Initial Phase, which would allow the project to be completed by 2020, when it is anticipated that a potable water

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3 Economic and Planning Systems, Inc., *Draft Report, Railyards/Richards/Downtown Nexus Study*, September 3, 1996, page 2.

treatment capacity deficit may occur within the City without a new Sacramento River diversion and WTP, based on the proposed maximum day demand. The entire Initial Phase and parcels 50, 52N, 52S, 53N, 53S, 54a, 57N, 57a, 58N, 59N, 60, 61, 62, 63, 64, 65, and 72 would be developed in a manner consistent with the proposed project. Parcels 71N, 70N, 69N, 68N, 67N, and 66N would not be developed under this alternative, which would result in a reduction the development footprint size (a reduction of 6.59 acres). To address issues related to visual resources along the river, the land uses within the Riverfront District, (Parcels 34 and 35), which include the proposed 350- to 450-foot tall hotel, would be converted to passive open space under this alternative. Under this alternative, all proposed roads would be included, but Parcels 49a, 54N, 54S, 66S, 67S, 68S, 69S, 70S, and 71S would be converted from RMU to open space. Parcels 47a, 48, 51, 57S, 58S and 59S would be converted to surface and above-ground parking. At maximum buildout, the Water Supply Constrained Alternative would generate approximately 4,678 du, 1,720,190 sf of retail (including the Central Shops), 491,000 sf of mixed use, 600 hotel rooms, 1,045,200 sf of office, and 35.51 acres of open space by the year 2020.

An assessment of each of the alternative's comparative environmental impacts relative to the proposed project analysis is included below. The focus of this analysis is the difference between the alternative and the proposed project, with an emphasis on addressing the significant impacts identified under the proposed project. For each alternative, the analysis indicates which proposed project mitigation measures would be required of the alternative, and which significant and unavoidable impacts would be avoided. In some cases, the analysis indicates what additional mitigation measures, if any, would be required for the alternative being discussed, and what significant and unavoidable impacts would be less (or more) severe. Unless otherwise indicated, the level of significance and required mitigation would be the same for the alternative as for the proposed project and no further statement of the level of significance is made. Table 8-1 provides a summary comparison of the severity of impacts for each alternative by topic. Table 8-2 provides the level of development for each of the alternatives compared to the proposed project.

### **Alternative 1: No Project/No Development Alternative**

The CEQA Guidelines require the evaluation of the comparative impacts of the "No Project" alternative (CEQA Guidelines section 15126.6(e)(1)). The No Project/No Development Alternative describes an alternative in which no development would occur in the Specific Plan Area with the exception of the continued current use of the existing depot and the Central Shops structures. Because the Specific Plan Area is assumed to remain undeveloped under the No Project/No Development Alternative, the site-specific conditions of the No Project/No Development alternative are best described by the existing conditions presented in the environmental setting sections in Chapter 6 of this Draft EIR.

### **Comparative Environmental Effects**

Because the site would remain in its current condition under the No Project/No Development Alternative, there would be no physical changes to the Specific Plan Area. Under the No Project/No Development Alternative, there would be no change in the existing visual environment: no light sources would be created and there would be no change to the existing visual character of the Specific Plan Area. There would be no increase in air pollutants associated with project construction nor an increase in pollutants associated with more vehicles accessing the area. Under this alternative, historic structures would remain inaccessible and in disrepair. In addition, the potential disturbance of any biological resources or unknown subsurface cultural resources would not be an issue because the site would not be disturbed to accommodate the construction of new buildings. Hazards associated with building design or use would not occur. The current drainage pattern would not be changed. There would be no effects on water quality. There would be no increase in noise

Issue Area	Proposed Project	No Project/No Development	No Project/General Plan Buildout	Reduced Density/Intensity	Water Supply Constrained
Air Quality	SU	NI	SU-Reduced	Reduced	Reduced
Biological Resources	LS	NI	Equal	Equal	Equal
Cultural Resources	LS	NI	Equal	Equal	Equal
Seismicity, Soils, and Geology	LS	NI	Equal	Equal	Equal
Hazardous Materials	LS	NI	Equal	Equal	Equal
Hydrology and Water Quality	LS	NI	Equal	Equal	Equal
Land Use	LS	NI	Equal	Equal	Equal
Noise and Vibration	SU	NI	Reduced	Reduced	Reduced
Parks and Open Space	LS	NI	Reduced	Reduced	Reduced
Public Services	LS	NI	Reduced	Reduced	Reduced
Public Utilities	LS	NI	Reduced	Reduced	Reduced
Transportation and Circulation	SU	NI	Reduced	Reduced	Reduced
Aesthetics and Visual Resources	LS	NI	Equal	Reduced	Reduced
Energy	LS	NI	Reduced	Reduced	Reduced

Notes:  
 SU = Significant and Unavoidable – if any impact was identified as significant and unavoidable, after mitigation, in the technical analysis.  
 LS = Less than Significant – if all impacts were identified as less than significant, after mitigation, in the technical analysis.  
 NI = No impact would occur.  
 Equal = Level of significance is equal to the proposed project.  
 Greater = Level of significance is greater compared to the proposed project.  
 Reduced = Level of significance is reduced compared to the proposed project, but not necessarily to a less-than-significant level.  
 Source: PBS&J/EIP, 2007.

Use	Proposed Project	No Project/No Development	No Project/General Plan Buildout	Reduced Density/Intensity	Water Supply Constrained
Office	2,828,200	N/A	9,600,000	1,571,360	1,045,200
Retail	1,384,000	N/A	527,000	956,143	1,244,800
Cultural Space	485,390	N/A	320,000	339,773	485,390
Mixed Use	491,000	N/A	0	343,700	491,000
<b>Total Non-Residential</b>	<b>5,188,590</b>		<b>10,447,000</b>	<b>3,210,976</b>	<b>3,266,390</b>
Residential (DUs)	10,000 to 12,501	N/A	2,800	7,400	4,678
Hotel (rooms)	1,100	N/A	640	720	600

Source: EIP Associates, a Division of PBS&J, 2007.

associated with project construction and/or any noise impacts associated with construction or future operational activities. Lastly, because the site would not be developed, impacts on public utilities would not occur under this alternative, so there would be no need for additional sewer and drainage capacity or potable water. Under this alternative, the number of vehicles accessing the site would not change; therefore, there would be no operational impacts on the surrounding roadway network or freeway interchanges.

Nevertheless, while the local traffic and air quality effects caused by this alternative would be lower, it is reasonable to assume that the housing, office, retail and other uses not developed on in the Specific Plan Area as called for under the Specific Plan would need to be developed somewhere else in the greater Sacramento region. In that case, it is also reasonable to assume that such development would be at a greater distance from the regional core in downtown Sacramento, and would be developed at substantially lower densities than proposed as discussed above. The resulting development would be characterized by a greater dependence on the automobile, more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl.

### **Mitigation That Would No Longer Be Required**

None of the mitigation measures identified in this Draft EIR would be required under the No Project/No Development Alternative.

### **Significant Unavoidable Impacts That Would No Longer Occur**

None of the significant and unavoidable impacts identified in this Draft EIR would occur under the No Project/No Development Alternative. It is reasonable, however, to assume that there would be significant unavoidable environmental effects caused by the accommodation of a similar amount of development at much lower densities elsewhere in the region.

### **Relationship of the No Project/No Development Alternative to the Project Objectives**

The No Project/No Development Alternative would not meet any of the stated objectives of the proposed project. In particular, it would not develop the Specific Plan Area into a mixed use urban village near Downtown and the Sacramento waterfront. This alternative would not integrate the Plan Area into the fabric of the existing Central City. Therefore, the No Project/No Development Alternative would not achieve any of the project objectives.

## **Alternative 2: No Project/General Plan Buildout Alternative**

### **Comparative Environmental Effects**

The No Project/General Plan Buildout Alternative would develop the same footprint as the proposed project; therefore, effects related to the location of development, such as potential loss of biological and cultural resources, exposure to seismic or other geologic hazards, exposure to hazardous materials, and changes to local hydrology, would be the same as the proposed project. The No Project/General Plan Buildout Alternative includes a mix of uses similar to the proposed project, so land use impacts, such as potential incompatibility of uses, would be the same as the proposed project. The No Project/General Plan Buildout Alternative would include a greater proportion of non-residential uses than the proposed project, but would redevelop the site at urban densities, similar to the proposed project. Although the site would have a different look, the No Project/General Plan Buildout Alternative would result in similar aesthetic effects as the proposed project.

The No Project/General Plan Buildout Alternative would develop the same area as the proposed project, but the alternative would include more than five million sf more of non-residential construction than the proposed project. Therefore, construction-related noise and air emission impacts would be greater than the proposed project. Because the No Project/General Plan Buildout Alternative would include fewer residential units, fewer residents would be exposed to traffic and rail noise. However, traffic generated by the alternative would also contribute to noise levels that exceed standards at existing sensitive receptors. Therefore, this would be a significant and unavoidable impact, like the proposed project. Based upon gross vehicle trip generation, the No



Project/General Plan Buildout Alternative would generate fewer trips than the proposed project. If greater internalization of trips is realized for the proposed project, the proposed project could result in fewer trips and, thus, fewer emissions. However, based upon gross vehicle trips, the No Project/General Plan Buildout Alternative would result in fewer vehicle-related emissions than the proposed project. Nonetheless, the No Project/General Plan Buildout Alternative would result in significant and unavoidable impacts related to operational emissions.

As shown in Table 8-2, the No Project/General Plan Buildout Alternative would allow more than twice the amount of non-residential development, but approximately 25 percent of the residential development of the proposed project. Assuming a household size of 2.1 persons per dwelling unit (see Chapter 5.0, Population and Housing), the 2,800 units would generate a population of 5,880 persons. Because park demand is based upon population (generated from residential units), the demand for parks would be less under the No Project/General Plan Buildout Alternative: 14.7 acres of Neighborhood Serving Parks, 14.7 acres of Community Serving Parks, 47 acres of Citywide/Regionally Serving, and 2.9 miles of Trails/bikeways, for a total of approximately 80 acres. Like the proposed project, all the parkland may not be able to be accommodated within the Specific Plan Area; therefore, this alternative would also require that the City and developer reach agreement regarding the approximate amount of parkland. However, because less parkland would be required for this alternative, the impact would be less severe than the proposed project.

The No Project/General Plan Buildout Alternative would increase demand for public services, including police services, fire protection services, schools, libraries, and solid waste. As with the proposed project, the demand for these services would be met through City planning processes. Also like the proposed project, if a school were to be located within the Specific Plan, mitigation recommending that the District prepare a safety study would still apply.

Water demand and wastewater generation of the No Project/General Plan Buildout Alternative would be approximately 40 percent of the proposed project. Even with this reduction, there could still be a shortfall in the availability of treated water by 2020, which would be exacerbated by the increased demand. Energy demands would be less under the No Project/General Plan Buildout Alternative: electricity demand would be approximately one third of the proposed project and natural gas would be approximately 96 percent of that of the proposed project. Energy impacts of this alternative would also be less than significant.

Based upon the trip generation by land use contained in section 6.12 Transportation, the No Project/General Plan Buildout Alternative would generate fewer gross automobile trips than the proposed project. It should be noted, however, that the gross trip generation does not take into account any potential reductions from transit use or the fact that internal trips could be reduced or eliminated under the proposed project due to the mixed-use nature of the project and proximity of more residential uses to employment opportunities and retail. If the proposed project could result in a higher proportion of internal trips than the No Project/General Plan Buildout Alternative, the overall impact on traffic in the area and region could be less for the proposed project. Nonetheless, because the No Project/General Plan Buildout Alternative would generate fewer gross automobile trips than the proposed project, the impact of the alternative is assumed to be less severe than the proposed project.

This alternative would continue and exacerbate the historic pattern of downtown Sacramento serving as the jobs center of the region, supported by suburban areas dominated by lower density housing development. While the local traffic and air quality effects caused by this alternative may be somewhat lower, based upon regional growth projections discussed in Chapter 5.0, Population and Housing, it is reasonable to assume that the approximately 9,000 housing units not developed in the Specific Plan Area as called for under the proposed Specific Plan would need to be developed somewhere else in the greater Sacramento region. In that case, it is also reasonable to assume that

such development would be at a greater distance from the regional core in downtown Sacramento, and would be developed at substantially lower densities than proposed. The resulting housing development would be characterized by a greater dependence on the automobile, more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl. Under this alternative, the environmental benefits of infill, high density housing in close proximity to the regional jobs center in downtown Sacramento would be largely lost.

### **Mitigation That Would No Longer Be Required**

All of the mitigation measures identified in this Draft EIR would be required under the No Project/General Plan Buildout Alternative.

### **Significant Unavoidable Impacts That Would No Longer Occur**

All of the significant and unavoidable impacts identified in this Draft EIR would occur under the No Project/General Plan Buildout Alternative. It is also reasonable to assume that there would be additional significant unavoidable environmental effects caused by the accommodation of approximately 9,000 housing units at much lower densities elsewhere in the region.

### **Relationship of the No Project/General Plan Buildout Alternative to the Project Objectives**

The No Project/General Plan Buildout Alternative would develop the Specific Plan Area with a mix of uses near Downtown and the Sacramento waterfront. This alternative could integrate the Specific Plan Area into the fabric of the existing Central City. Each of the project objectives include some aspect of the mixed-use development which relies upon interactions between the internal uses. However, given the proportions of non-residential to residential use, this alternative would be considered more of an office development than a true mixed-use project. As such, this alternative would not be the regional draw for the City of Sacramento for its unique mix of uses that is a project objective. This alternative would be able to take advantage of the proximity of transit for employment on the site, but the transit use generally occur during peak commute hours and would be used for entertainment and retail as envisioned in the project objectives. Therefore, because the No Project/General Plan Buildout Alternative would not create a mixed-use development, it would generally be inconsistent with the project objectives.

### **Alternative 3: Reduced Density/Intensity Alternative**

#### **Comparative Environmental Effects**

The Reduced Density/Intensity Alternative would develop the same footprint as the proposed project; therefore, effects related to the location of development, such as potential loss of biological and cultural resources, exposure to seismic or other geologic hazards, exposure to hazardous materials, and changes to local hydrology, would be the same as the proposed project. The Reduced Density/Intensity Alternative includes a mix of uses the same as the proposed project, only less intense, so land use impacts, such as potential incompatibility of uses, would be the same as the Specific Plan Area.

Although the Reduced Density/Intensity Alternative would develop the same footprint as the proposed project, it represents an approximately 40 percent reduction in the amount of non-residential development and 2,500 to 5,000 fewer residential units compared to the proposed project. Therefore, impacts related to the level of development of the Reduced Density/Intensity Alternative would be reduced compared to the proposed project. Construction noise and air quality impacts of the Reduced Density/Intensity Alternative would be less than the proposed project;

however, these effects would be significant even with implementation of measures identified for the proposed project. While operational air emissions would be reduced compared to the proposed project, the reductions would not be sufficient to reduce the operational emissions to a level below the threshold. The demand for public services and utilities (police, fire, solid waste, libraries, schools, parks, wastewater and drainage, potable water, electricity, and natural gas) would be less under the Reduced Density/Intensity Alternative, because of the reduced population. The Reduced Density/Intensity Alternative would generate fewer vehicle trips than the proposed project, so effects on traffic would be less severe. However, the Reduced Density/Intensity Alternative would also result in significant effects on local road segments, intersections, freeway on- and off-ramps, and freeway segments that could not be mitigated to a less-than-significant level. Although the entire site would still be developed at an urban density under the Reduced Density/Intensity Alternative, because the Reduced Density/Intensity Alternative would limit the height of the proposed waterfront hotel to 60 feet, compared to up to 30 stories under the proposed project, the effect on the visual character of the area would be less than that of the proposed project.

While the local traffic and air quality effects caused by this alternative may be somewhat lower, it is reasonable to assume that the non-residential space and up to 5,000 housing units not developed in the Specific Plan Area as called for under the proposed Specific Plan would need to be developed somewhere else in the greater Sacramento region. As discussed above, it is also reasonable to assume that such development would be at a greater distance from the regional core in downtown Sacramento, and would be developed at substantially lower densities than proposed. The resulting housing development would be characterized by a greater dependence on the automobile, more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl.

### **Mitigation That Would No Longer Be Required**

All of the mitigation measures identified in this Draft EIR would be required under the Reduced Density/Intensity Alternative.

### **Significant Unavoidable Impacts That Would No Longer Occur**

All of the significant and unavoidable impacts identified in this Draft EIR would occur under the Reduced Density/Intensity Alternative. It is reasonable to assume that there would also be additional significant unavoidable environmental effects caused by the accommodation of approximately 3,000 to 5,000 housing units at much lower densities elsewhere in the region.

### **Relationship of the Reduced Density/Intensity Alternative to the Project Objectives**

The Reduced Density/Intensity Alternative would develop the Specific Plan Area into a mixed use urban village near Downtown and the Sacramento waterfront, thereby integrating the Specific Plan Area into the fabric of the existing Central City. Therefore, the project objectives could be achieved through the Reduced Density/Intensity Alternative.

### **Alternative 4: Water Supply Constrained Alternative**

#### **Comparative Environmental Effects**

The Water Supply Constrained Alternative would eliminate development on six parcels, totaling 6.59 acres, on the northern portion of the project. Other areas would be developed with open space uses instead of intensive uses, as proposed for the project. However, while the uses in these areas would be open space, due to the current condition of the site, some construction activity would be required to make these areas suitable for active or passive open space use. Thus, the area of

disturbance under the Water Supply Constrained Alternative would be only reduced by the 6.59 acres discussed above. Because the Water Supply Constrained Alternative would develop a smaller footprint than the proposed project, effects related to the location of development, such as potential loss of biological and cultural resources, exposure to seismic or other geologic hazards, exposure to hazardous materials, and changes to local hydrology, would be similar to, but proportionately reduced, compared to the proposed project. The Water Supply Constrained Alternative includes the same uses as the proposed project, except Parcels 71S, 70S, 69S, 68S, 67S, 66S, 54N, 54S, and 49a would be developed as open space (instead of RMU) and Parcels 59S, 58S, 57S, 51, 48, and 47a would be developed with surface and above-ground parking (instead of RMU and ORMU). Nonetheless, the uses within the proposed project would be considered internally compatible, so land use impacts, such as potential incompatibility of uses, would be the same as the proposed project.

The Water Supply Constrained Alternative would reduce development compared to the proposed project (an approximately 28 percent reduction in the amount of non-residential development and up to 7,823 fewer residential units compared to the proposed project). Therefore, impacts related to the level of development of the Water Supply Constrained Alternative would be reduced compared to the proposed project. Construction noise and air quality impacts of the Water Supply Constrained Alternative would be less than the proposed project; however, these effects would be significant even with implementation of measures identified for the proposed project. While operational air emissions would be reduced compared to the proposed project, the reductions would not be sufficient to reduce the operational emissions to a level below the threshold. Like the proposed project, the Water Supply Constrained Alternative would result in impacts related to exposure of onsite receptors to existing and future noise levels from traffic noise levels (local and interstate traffic noise sources) and rail noise associated with freight, passenger rail, and light rail services, which would also be significant and unavoidable under this alternative. However, because this alternative would result in fewer residents on site, the impact would be less severe. The demand for public services and utilities (police, fire, solid waste, libraries, schools, parks, wastewater and drainage, potable water, electricity, and natural gas) would be less under the Water Supply Constrained Alternative, because of the reduced population. The Water Supply Constrained Alternative would generate fewer vehicle trips than the proposed project, so effects on traffic would be less severe. However, the Water Supply Constrained Alternative would also result in significant effects on local road segments, intersections, freeway on- and off-ramps, and freeway segments that could not be mitigated to a less-than-significant level. The Water Supply Constrained Alternative includes less urban development and larger areas of open space than the proposed project, including open space where a 30-story hotel is proposed for the project. Because the Water Supply Constrained Alternative would not include a 30-story hotel, the development of which could conflict with the Riverfront Master Plan or the Sacramento River Parkway Plan, the effect on the visual character of the area would be less than that of the proposed project.

While the local traffic and air quality effects caused by this alternative may be somewhat lower, it is reasonable to assume that the non-residential space and up to approximately 7,800 housing units not developed in the Specific Plan Area as called for under the proposed Specific Plan would need to be developed somewhere else in the greater Sacramento region. In that case, it is also reasonable to assume that such development would be at a greater distance from the regional core in downtown Sacramento, and would be developed at substantially lower densities than proposed. The resulting housing development would be characterized by a greater dependence on the automobile, more vehicle miles traveled, and more land converted to urban uses. The net result of this type of development would be greater levels of congestion on regional roadways, higher levels of air pollutant emissions, greater consumption of land resulting in losses of farmland and/or habitat, and other effects caused by development typically considered to be sprawl.

### **Mitigation That Would No Longer Be Required**

All of the mitigation measures identified in this Draft EIR would be required under the Water Supply Constrained Alternative.

### **Significant Unavoidable Impacts That Would No Longer Occur**

All of the significant and unavoidable impacts identified in this Draft EIR would occur under the Water Supply Constrained Alternative. It is reasonable, however, to assume that there would be significant unavoidable environmental effects caused by the accommodation of approximately 3,300 to 5,800 housing units at much lower densities elsewhere in the region.

### **Relationship of the Water Supply Constrained Alternative to the Project Objectives**

The Water Supply Constrained Alternative would develop a mixed-use urban village near Downtown and the Sacramento waterfront on the western portion of the Specific Plan Area. The open space areas included in the alternative would provide some recreational and scenic amenities. However, this alternative does not include waterfront development, as included in the project objectives. In addition, because the circulation system connecting the development on the western portion of the project to areas to the north, south, and east would still be required under this alternative, the open space would be a series of block- or partial-block-sized open space parcels. The disconnected nature of these parcels would detract from their utility for recreational use. The physical separation from areas to the east created by this expanse of open space could also reduce pedestrian connectivity to the Central City. Therefore, the Water Supply Constrained Alternative would not achieve the project objectives of developing a mixed-use village, including waterfront development, and may not achieve effective pedestrian connectivity with adjacent areas of the City.

### **Environmentally Superior Alternative**

Under CEQA, an EIR is required to identify the environmentally superior alternative (see CEQA Guidelines, section 15126 (e)). If the environmentally superior alternative to a project is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines, section 15126.6 (e) (2)).

Among the alternatives considered and evaluated in this EIR, the environmentally superior alternative is the No Project/No Development Alternative, due to the lack of environmental impacts associated with this alternative. However the No Project/No Development Alternative does not achieve any of the project’s objectives.

Among the other alternatives, the Reduced Density/Intensity Alternative would be the environmentally superior alternative in that it would reduce the identified impacts in the vicinity of the Specific Plan Area. However, as discussed in Chapter 5.0, Population and Housing, the population in the City of Sacramento is projected to increase to 72,000 by 2020. As discussed above, development potentially displaced from the proposed Specific Plan would need to be developed elsewhere in the region. If this development occurs at densities commonly being produced at this time, there would be off-site impacts associated with the Reduced Density/Intensity Alternative that would be in addition to those direct impacts associated with construction and operation on the project site. Therefore, the Reduced Density/Intensity Alternative would result in higher overall levels of environmental impact, which would lead to a conclusion that the Specific Plan is the environmentally superior alternative.



## **9.0 LIST OF ACRONYMS AND ABBREVIATIONS**

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## 9.0 LIST OF ACRONYMS AND ABBREVIATIONS

<b>LIST OF ACRONYMS AND ABBREVIATIONS</b>	
<b>Acronym</b>	<b>Definition</b>
AAR	Association of American Railroads
AB	Assembly Bill
ACCA	Air Conditioning Contractors of America
ACM	asbestos-containing materials
ADT	Average daily trips
AFA	acre-feet annually
AFNIA	Alkali Flat Neighborhood Improvement Association
AHU	Air Handling Units
AMSL	Above mean sea level
ANSI	American National Standards Institute
APN	Assessor's Parcel Number
AQMP	Air Quality Mitigation Plan
ARG	Architectural Resources Group
ASAs	Archaeologically Sensitive Areas
ASC	Anthropological Studies Center
ATP	Archaeological Testing Plan
BACT	best available control technology
BAT	best available technology
BCT	best conventional pollutant control technology
BMPs	Best Management Practices
BMR	Basin Management Report
C&D	construction and demolition
Cal-EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
Carl Moyer Program	Carl Moyer Memorial Air Quality Standards Attainment Program
CBC	California Building Code
CBD	Central Business District
CCA	Central Corridor Study Area
CCAA	California Clean Air Act
CCCP	Central City Community Plan
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERT	Community Emergency Response Team
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHP	California Highway Patrol
CIWMB	California Integrated Waste Management Board
CMUD-1	Downtown Commercial Mixed Use
CMUD-2	Transit-oriented Commercial Mixed Use
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
COCs	constituents of concern
COHb	carboxyhemoglobin

<b>LIST OF ACRONYMS AND ABBREVIATIONS</b>	
<b>Acronym</b>	<b>Definition</b>
Corps	U.S. Army Corps of Engineers
CPRR	Central Pacific Railroad
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSA	Central Shops Study Area
CSCGF	Central Sacramento County Groundwater Forum
CSCGMP	Central Sacramento County Groundwater Management Plan
CSD	Central Shops District
CSLC	California State Lands Commission
CSN	Car Shop Nine Study Area
CSS	Combined Sewer and Stormwater System
CTR	California Toxics Rule
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
CWTP	Combined Wastewater Treatment Plant
dB	decibel
dBA	A-weighted decibel
Decon	Decontamination Team
DEIR	Draft Environmental Impact Report
Delta	Sacramento-San Joaquin Delta
DHS	California Department of Health Services
DNA	Downtown-Natomas-Airport
DO	dissolved oxygen
DOF	California Department of Finance
DOSH	Division of Occupational Safety and Health
DOT	Department of Transportation
DPM	diesel particulate matter
DPP	Domestic Preparedness Program
DPR	California Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
du	dwelling units
DWR	Department of Water Resources
e21	Education for the 21st Century
EIR	Environmental Impact Report
EMS	energy management systems
EPA	Environmental Protection Agency
ESAs	Environmental Site Assessments
ESD	equivalent single-family dwelling unit
ESUs	Evolutionary Significant Units
FAR	floor area ratio
FCAA	Federal Clean Air Act
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Map
FMP	Facilities Master Plan
FHWA	Federal Highway Administration
FCAA	Federal Clean Air Act
FOSA	Former Oil Storage Area
FPF	Focused Purpose Facilities
FS	Feasibility Study
FTA	Federal Transit Administration
Fund 11	County Library Fund
FWTP	Fairbairn Water Treatment Plant
General Plan	City of Sacramento General Plan

<b>LIST OF ACRONYMS AND ABBREVIATIONS</b>	
<b>Acronym</b>	<b>Definition</b>
GHGs	Greenhouse gasses
GMP	groundwater management plan
GO	general obligation
gpd	gallons per day
HAER	Historic American Engineering Record
HAP	hazardous air pollutants
HazMat	Hazardous Materials Program
HCP	Habitat Conservation Plan
HMP	Hazardous Materials Management Plan
HMRTs	Hazardous Materials Response Teams
HOV	High occupancy vehicles
HRA	Health Risk Assessment
HRC	Historic Environment Consultants
HSWA	Hazardous and Solid Waste Amendments Act
HVAC	heating, ventilation and air conditioning
Hz	Hertz
I-5	Interstate 5
I-80	Interstate 80
ITE	Institute of Transportation Engineers
ksf	Thousand square feet
kV	Kilovolt
kWh	kilowatt-hours
Lbs	pounds
L <sub>dn</sub>	day-night average noise level
L <sub>eq</sub>	equivalent energy noise level
LEED	Leadership in Energy and Environmental Design
LOS	level of service
Low-E	low emission
LRT	Light Rail Transit
LSA	Lagoon Study Area
LUD	Land Use Designation
MACT	maximum available control technology
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant levels
MDO	Medium Density Overlay
MEI	maximally exposed individual
MEP	maximum extent practicable
mg	million gallons
mgd	million gallons per day
MGP	Manufactured Gas Plant
MHEP	Multi-Hazard Emergency Plan
MICR	maximum individual cancer risk
MMI	Modified Mercalli Intensity Scale
MMRP	Mitigation Monitoring and Reporting Program
MOU	memorandum of understanding
mpg	miles per gallon
mph	miles per hour
MSDS	Material Safety Data Sheets
msf	million square feet
MTP	Metropolitan Transportation Plan
M <sub>w</sub>	Moment magnitude
MW	Megawatts
NAHC	Native American Heritage Commission
NBC	Nuclear, biological or chemical
NCCP	Natural Communities Conservation Plan
NCIC	North Central Information Center of the California Historical Resources Information System

<b>LIST OF ACRONYMS AND ABBREVIATIONS</b>	
<b>Acronym</b>	<b>Definition</b>
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMCs	Nine Minimum Controls
NMFS	National Marine Fisheries Service
NO <sub>2</sub>	Nitrogen Dioxide
NOAA	National Oceanic & Atmospheric Administration
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NO <sub>x</sub>	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	US Department of Agriculture Natural Resources Conservation Service
NHRP	National Register of Historic Places
NSA	Northern Shops Study Area
NSHP	New Solar Homes Partnership
NTU	Nephelometric turbidity unit
O <sub>3</sub>	Ozone
OES	State Office of Emergency Services
ORMU	Office/Residential Mixed Use
OPR	State of California Office of Planning and Research
OS	Open Space
OSHA	Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbons
Parks Department	City of Sacramento Department of Parks and Recreation
PCB	polychlorinated biphenyl
PCE	tetrachloroethylene
PCWA	Placer County Water Agency
PEA	Preliminary Endangerment Assessment
PG&E	Pacific Gas & Electric
PIER	Public Interest Energy Research
PM	particulate matter
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
POP	Problem Oriented Patrol
Porter-Cologne Act	Porter-Cologne Water Quality Control
POU	places of use
pph	persons per household
PPM	parts per million
PPMRP	pollution prevention, monitoring, and reporting program
PRC	Public Resources Code
PRMP	City of Sacramento Parks and Recreation Master Plan
PSA	Purveyor Specific Agreement
PTA	Primary Trade Area
PU	Public Utilities
PUC	California Public Utilities Commission
PVC	polyvinyl chloride
ROG	reactive organic gases
RA	Risk Assessment
RAO	Remedial Action Objective
RAP	Remediation Action Plan
RAW	Remedial Action Workplan
RBAP	Richards Boulevard Area Plan
RCHRRT	Rail Corridor Hazmat Response and Recovery Tool
RCMU	Residential/Commercial Mixed Use
RCRA	Resource Conservation and Recovery Act
RCRD	Riverfront Commercial Recreational

<b>LIST OF ACRONYMS AND ABBREVIATIONS</b>	
<b>Acronym</b>	<b>Definition</b>
RCRMT	Rail Corridor Risk Management Tool
RDIP	Remedial Design Implementation Plan
REA	Railway Express Agency
Rec Board	California State Reclamation Board
RI	Remedial Investigation
RMU	Residential Mixed-Use
RRMU	Residential/Retail Mixed-Use
ROG	Reactive organic gases
RSP	Railyards Specific Plan
RT	Sacramento Regional Transit District
RTA	Regional Trade Area
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alternation Agreement
SACMET	SACOG Sacramento Metropolitan model
SACOG	Sacramento Area Council of Governments
Sacramento PD	Sacramento Police Department
SAFCA	Sacramento Area Flood Control Agency
SAMCC	Sacramento Archives and Museum Collection Center
SARA	Superfund Amendments and Reauthorization Act
SARA Title III	Emergency Planning and Community Right-to-Know
SB	Senate Bill
SCEMD	Sacramento County Environmental Management Department
SCRSD	Sacramento County Regional Sanitation District
SCUSD	Sacramento City Unified School District
SEER	Seasonal Energy Efficiency Rating
SEIR	Supplemental Environmental Impact Report
SEL	Single Event Noise Level
sf	square feet
SFD	Sacramento Fire Department
SGA	Sacramento Groundwater Authority
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SITF	Sacramento Intermodal Transportation Facility
SLC	California State Lands Commission
SLC	Small Learning Communities
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMCS	Sutter Medical Center, Sacramento
SMUD	Sacramento Municipal Utility District
SO <sub>2</sub>	sulfur dioxide
SPCP	Spill Prevention and Control Program
SPD	Special Planning District
Specific Plan	Railyards Specific Plan
SPL	Sacramento Public Library
SPP	Spill Prevention Plans
SQIP	City of Sacramento Stormwater Quality Improvement Program
SRA	Shaded riverine aquatic (habitat)
SRCSA	Sacramento Regional County Sanitation District
SRFECC	Sacramento Regional Fire/EMS Communications Center
SRRE	Source Reduction and Recycling Element
SRWRS	Sacramento River Water Reliability Study
SRWTP	Sacramento Regional Wastewater Treatment
SRWTP	Sacramento River Water Treatment Plant
SVAB	Sacramento Valley Air Basin
SVE	Soil Vapor Extraction
SVOCs	Semivolatile Organic Compounds
SWA	Sacramento Regional Solid Waste Authority

<b>LIST OF ACRONYMS AND ABBREVIATIONS</b>	
<b>Acronym</b>	<b>Definition</b>
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
TAZs	Traffic Analysis Zones
TCE	trichloroethylene
TDM	Transportation Demand Management
TDS	total dissolved solids
TIH	toxic inhalation hazard
TMDL	total maximum daily load
TNM	Traffic Noise Model
TPH	total petroleum hydrocarbons
TR	Corridor/Rail Intermodal Terminal
TSCA	Toxic Substances Control Act
TU	Transportation Use
UARP	Upper American River Project
UFC	Uniform Fire Code
ug/l	Micrograms per liter
ug/m <sup>3</sup>	Micrograms per cubed meter
UMWP	Urban Water Management Plan
UP	Union Pacific
UPRR	Union Pacific Railroad
USBR	U.S. Bureau of Reclamation
USC	United States Code
U.S. EPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USPS	United States Postal Service
UST	underground storage tank
v/c	Volume to capacity ratio
V>C	volume exceeds capacity
VdB	vibration decibels
VELB	Valley Elderberry Longhorn Beetle
VFDs	Variable frequency drives
VMT	vehicle miles traveled
VOCs	Volatile Organic Compounds
Water Code	California Water Code
WDRs	waste discharge requirements
WFA	Water Forum Agreement
WIA	Wilson, Ihrig and Associates, Inc.
WSA	Water Supply Assessment
WTP	Water Treatment Plant
Source: PBS&J/EIP, 2007.	

## **10.0 REFERENCES**

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## 10.0 REFERENCES

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## **11.0 REPORT PREPARATION**

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